A Grammar of Chemehuevi

A dissertation submitted in partial satisfaction of the requirements for the degree Doctor of Philosophy in Linguistics

by

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1975
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ABSTRACT OF THE DISSERTATION

A Grammar of Chemehuevi

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Professor William O. Bright, Chairman

Chemehuevi is a Uto-Aztecan language currently spoken by
a few dozen Indians living in Southern California and Arizona.
This study attempts to provide a fairly comprehensive generative
description of Chemehuevi phonology and syntax, using
original fieldwork data.

Phonological features used contrastively in the language
are proposed, along with morpheme structure conditions and
rules for most of the major phonological processes. Several
arguments are discussed for the treatment of one of these
processes, namely internal consonant mutation.

A set of phrase structure rules generating most types of
sentences is presented, each rule being motivated and exem-
plified in the remainder of the section on syntax. These
rules are written with the intention of increasing the burden
of the lexicon and semantic component (interpretive rules) in
order to dispense with transformational rules which delete
or insert lexical material.
With a few notable exceptions most aspects of sentence structure and word order, word derivation and morphology are discussed. Alphabetized word-lists are included in the appendix.
0 INTRODUCTION
0.1 The People

The Chemehuevi Indians currently number somewhat over three hundred. They reside primarily in the eastern portions of San Bernardino and Riverside Counties in California, and on the Arizona bank of the Colorado River near Parker. Their recent homeland is considered to be Chemehuevi Valley, at the eastern edge of the Mohave Desert in Southern California. Officially this area has only recently been returned to the Chemehuevis; from about 1940 to 1970 the tribe was not legally recognized by the Bureau of Indian Affairs. Currently many members are moving back to Chemehuevi Valley as part of an attempt to rebuild and reorganize the tribe.

The Chemehuevis actually migrated into California fairly recently, being the last major wave of Great Basin Indians to travel south.¹ The time of their move apparently coincides roughly with their first entrance into recorded history, some time in the late seventeen hundreds. Within the next hundred years they wandered as far west as the Tehachapi Mountains.

Bands living at Twentynine Palms and along the Colorado River apparently did some farming; however, by and large the Chemehuevis were seed-gatherers and small-game hunters. They enjoyed a rich oral tradition and highly structured tribal life. Territorial rights and clan membership were defined in songs each Chemehuevi youth inherited from his father. The major song cycles were known as the Mountain Sheep, Deer, and Salt Songs.
In addition to basket making, the Chemehuevis were apparently well-known for their practice of "visiting" (constantly being somewhere else), which they do to this day. In the past, Indian agents responsible for various bands would on occasion lose them for years.

The Chemehuevi language is part of the branch of Southern Numic languages, consisting additionally of Southern Paiute, Ute and Kawaiisu. The Numic languages as a whole comprise what was formerly termed the Plateau Shoshonean branch of Uto-Aztecan.

The Uto-Aztecan family of languages stretches down the western United States and into Mexico. Lexicostatistical analyses have suggested that substocks of Uto-Aztecan began splitting up on the order of four to five thousand years ago. Until about forty years ago linguists tended to divide the family into three substocks, namely Shoshonean, Sonoran, and Nahuatlan. This division however was made largely on geographical grounds; as more information was obtained about individual languages, the linguistic basis for such a classification was found to be shaky. In particular, Whorf (1935) suggested that "Shoshonean" be dismantled, and Lamb (1958) did precisely that by proposing that the four subgroupings within Shoshonean be considered direct substocks of Uto-Aztecan. For reference a rough diagram of the current (though not uncontested) view of Uto-Aztecan relationships is given in (1) below.
(1)

Uto-Aztecan

Takic  Hopi  Tubatulabal  Numic  Piman  Coran  Taracahitian  Aztecan

Western Numic  Southern Numic  Central Numic

Kawaiisu  Ute

Ute  Chemehuevi  Southern Paiute
Mary Hanks Molino, my principal informant for over two and a half years, was born in Chemehuevi Valley in 1916. She remembers as a child having few playmates, the older children from the families around her being "away at school." During the cotton season her father would travel down to Parker to work, returning at season's end with staples for the family and frequently candy for the children. It was a two-day walk from Parker to Chemehuevi Valley; the night before his return the family would spot the glow of his campfire in the distant hills.

The Indians in the valley planted cotton on the bank of the Colorado, relying on the annual flooding of the river. In 1940 Parker Dam was built, and Lake Havasu which resulted covered the eastern portion of the valley. By this time the Hankses had moved down to Parker. Most of the family live now in what is known as 'Hanks' Village', a few miles south of town.

When she was older Mary was sent by train to the Indian School in Riverside, from which she graduated in the thirties.

Mary's father was a possessor of the Bird Song, since he belonged to that moiety. In addition he sang the Salt Song² at funerals in Parker for many years, being the last head singer in that area. Mary's brothers in turn inherited the Bird Song, but never learned it.

² Salt Song: A religious song associated with the Navajo people, often sung during ceremonial events.
0.2 Previous Work

Very little has ever been published on the Chemehuevi language to date. A few words and notes are recorded in Kroeber's Notes on Shoshonean Dialects of Southern California (1909). One of the more closely related languages, Southern Paiute, is of course extensively documented in Sapir's Southern Paiute, A Shoshonean Language (1930). Some linguists consider Chemehuevi to be a dialect of Southern Paiute—the two are certainly mutually intelligible. They differ now in several phonological rules, and a considerable amount of vocabulary has changed, as have portions of the tense-aspect system. Each language has in addition a subset of personal pronouns the other lacks. Syntactic constraints seem to differ somewhat, to the extent that such constraints can be inferred from Sapir's data.

Sapir's work has been extremely useful, although its concentration is on morphology and phonology rather than syntax, and of course his theoretical approach differs radically. Most subsequent analyses of Southern Paiute have used Sapir's data and many of his generalizations.

On Chemehuevi itself field work has been done recently by Pamela Munro concurrent to my own, and some of her findings have appeared in recent papers (1974a, 1974b).

The most exhaustive work previously done on this language was that of John P. Harrington in the early part of this century. With the (considerable) help of his wife
Carobeth, numerous Chemehuevi texts were recorded, and extensive lists of vocabulary and paradigms collected, along with boxes of field notes. He left behind thousands of scraps of paper with observations and excerpts from the texts. Harrington had access to an early outline manuscript of Sapir's Southern Paiute monograph, and many of his comments are organized around this outline.

None of this Chemehuevi material ever appeared in print. Most of it presently resides in the National Anthropological Archives in the Smithsonian Institution.

The nature and quality of Harrington's work are a reflection not of prevailing linguistic theory, but of the eccentricities of the man himself. On the one hand his transcriptions are remarkable in their attention to phonetic detail. Harrington had an incredible ear for pronunciation—perhaps the best of any American linguist, Sapir and Kroeber are both said to have stated. Furthermore he was totally preoccupied with his fieldwork, obsessed with the task of amassing as much data as humanly possibly from languages in danger of extinction, of "rescuing from oblivion information that otherwise would be forever lost." Despite his ruggedly apollonian appearance (according to his obituary he "appeared in Southern California a little too early for Hollywood") and polished manners, he wasted little time on affairs of the heart. Eventually, he married in 1916 a student of his, Carobeth Tucker, who proved to be a valuable
and indefatigable coworker in the field—until in 1919 he sent her to Parker (against her protestations) to interview a Chemehuevi blacksmith named George Laird. Her work with Laird over the next four years gained for Harrington a sizable quantity of high-quality data, but lost for him his wife. Carobeth married George Laird in 1923 and moved with him to San Diego.

The other aspect of Harrington's personality which had consequences for his collected materials was his desire for secrecy and reluctance to share his findings. He feuded constantly with other ethnologists who unwittingly wandered into his language territories; and though he published a great deal (including numerous poems), the amount in print never scratched the surface of his warehouse-fuls of notes and manuscripts. Most curious however was his utter disinterest in the fate of his painstakingly recorded field data, with the exception, toward the end of his life, that it not fall into the hands of the Bureau of American Ethnology, which employed him. Throughout the years, as he accumulated boxes of notes, he would bury them in warehouses and postoffice basements all over the country. These caches are gradually being unearthed to this day.

Carobeth Laird (now aged 78) has recently written a book on the history, customs and oral traditions of the Chemehuevis, which includes a sketch of the language. Less germane to this dissertation is her second book, on her life with Harrington.
0.3 **Organization and Theoretical Framework**

The grammar is organized into two parts: section one deals with phonology, section two with syntax.

For the phonological analysis of Chemehuevi I am utilizing a generative approach, such as is outlined in Chomsky and Halle's *Sound Pattern of English*, Harms' *Introduction to Phonological Theory*, and others. My analysis differs in two respects, however. It has been pointed out that for many languages several so-called morpheme structure conditions must often be restated as phonological rules, for example sequence constraints which apply across morpheme boundaries as well as within morphemes. Stating these rules twice results in an obvious loss of generality. Therefore I am following instead the convention of marking these morpheme structure rules as "persistent" rules, meaning they can reapply as feature-changing rules in the phonological component.

The second departure is that instead of taking advantage of extrinsic rule ordering in writing phonological rules, I have chosen to complicate individual rules somewhat wherever that has eliminated the need for ordering. Of the alternatives to rule ordering that have been proposed, I prefer the convention that rules be allowed to apply whenever their structural description is met. 7

In the syntax section, I use what is known as the Standard Theory as a point of departure, employing a model
which assumes a syntactic level of "deep structure" independent of the level of semantic representation. The model I ultimately adopt however differs substantially from the Standard Theory in several respects.

One of the most serious criticisms of current transformational grammar is that the model on which it is based is far too powerful, i.e. its "weak generative capacity" is excessive. One would like to say the model defines the notion "possible natural language", however some types of rules permissible in the Standard Theory allow the generation of classes of languages we would not want to call "natural".

In particular, much of the excessive power is due to the fact that currently rules are allowed to delete portions of a string in the course of its derivation. Unconstrained, this type of rule could allow an infinite set of derivations for any given string. Therefore, heavy restrictions have been placed on the types of deletion such rules can effect.

If one accepts the premise that of two models equally descriptive of the data the more tightly constrained one is to be preferred, then one should look for alternatives to those types of rules most seriously increasing the power of the theory.

Reconsideration of the role of the transformational component has recently lead to various "lexicalist" and "interpretive" approaches in such areas of grammar as
nominalization (Chomsky 1970), pronominalization (Jackendoff 1972), derivation, inflection and compounds (Halle 1973, Jackendoff to appear), deletion under identity (Jackendoff 1972) and deletion in general (Shopen 1972).

Shopen in fact proposes the most revolutionary changes in the Standard Theory, essentially taking the lexicalist hypothesis to its logical conclusion. Basically he dispenses with all transformations except those involving certain kinds of permutation. His base rules are somewhat more complex, the bulk of the task of "relating sentence types" being placed in the lexical and interpretive components.

As a model for this grammar I am adopting by and large the theory sketched by Shopen in his dissertation (1972). Several proposals made by Jackendoff (some based on Gruber 1965 and 1967) can be made to complement rather nicely the basic analysis in Shopen, at least for English. Whether either theory, or a combination of the two, can work as well for a more agglutinative language like Chemehuevi will be tested in this work. Some of the strongest arguments raised by Shopen and Jackendoff apply by nature universally (e.g. the problem of excessive generative power). I am convinced of the validity of enough of these arguments to feel the attempt at testing such a model on a language other than English is worthwhile.

I will not attempt to cite here the tremendous amount of evidence amassed in the above sources, nor can I do their
arguments full justice in this short space. I will sketch briefly the basic thrust of the most important (and relevant) points, and give only enough illustration of how the alternative formalism operates to make the following sections of Chemehuevi grammar approachable. (I assume a knowledge of the Standard Theory, or "Aspects model" throughout.)

Since the publication of Aspects several separate issues have arisen to rock the boat and provoke a fragmentation in the original following of the transformational school. One major branch which resulted, Generative Semantics, responded to the problems by abandoning the level of Deep Structure which was inherent, in fact basic, to the Aspects model. The arguments pro and con this issue are well documented elsewhere and will not be taken up here. Basically I accept such a level as a useful and explanatory one in syntax.

The other major branch, called the Extended Standard Theory, has had to counter various deleterious observations (such as the fact that some transformational rules seem to change meaning) by either giving up the claim that all semantic interpretation is done at the deep structure level or by modifying the offending rules. In general, proponents of the Extended Standard Theory have done both. Jackendoff's model allows rules of semantic interpretation to work at all levels of the derivation. Shopen takes many of these rules out of the transformational component and puts them in the
lexicon, in the form of lexical redundancy rules, where meaning differences can be captured straightforwardly.

Other objections to the Aspects model have been raised. Shopen contends that much generality is lost because deictic and anaphoric antecedents for deletion (or pronominalization) are not treated in the same way. His main premise in fact is that "incomplete" sentences, whether subparts (clauses) of other sentences or full utterances in their own right, should be generatable by the syntactic component without recourse to deletion rules. Utterances which an Aspects model would judge incomplete and therefore ill-formed are demonstrated to be often acceptable under the appropriate circumstances. In these cases such utterances have what Shopen calls "integrity" (i.e. are "internally well-formed and complete", as in his examples, A cup of coffee, the theft of the crown jewels from the queen by the Pink Panther, and Into the dungeon with him! Compare with *John sent, which lacks integrity in any situation.) In some instances the hearer supplies the ellipted portions from context or other extralinguistic knowledge in the same manner as he would obtain them from a preceding sentence or clause.

In fact most sentences have ellipted arguments of one sort or another, e.g. John sent a book, where the GOAL (to whom) is left unspecified. A standard analysis could argue that such sentences derive from sentences like John sent a book to \{someone somewhere\}. This type of ellipsis Shopen terms
"indefinite" and he distinguishes it from the type involved in sentences like John wanted to. In the latter case the sentence is not paraphrasable by John wanted to do something; it can only mean there was a definite argument ellipted which the speaker assumed the hearer knew. Shopen argues that the second type, which he calls "definite ellipsis", results in sentences equally as grammatical as the first, and that both should be generatable by the syntactic component. The second type involves "unrecoverable deletion" and could not be handled transformationally without giving enormous additional power to the model.

Shopen does not attempt to specify semantic functions of arguments in the deep structure. Rather, he provides each verb (and some nouns, etc.) in the lexicon with (a) a syntactic strict-subcategorization feature, showing how many NPs and PPs (arguments) it cooccurs with and their linear arrangement, and (b) a template which specifies the function(s) of each of those arguments. The example in (2) below is from Shopen, though it closely parallels similar examples in Jackendoff and Gruber:

(2) \[
\begin{array}{c}
give, +V \\
\left[\begin{array}{cccc}
NP & (NP) & (PP)\\
y & x & z\\
\end{array}\right] \\
\left[\begin{array}{c}
\text{CAUSE} y [\text{CHANGE} x y z]
\end{array}\right]
\end{array}
\]

The predicate CAUSE takes two arguments, the agent and the thing caused, in that order. The predicate CHANGE takes three arguments, THEME, SOURCE, and GOAL, in that order.
The symbols $x, y, z$, etc. are used as indices, thus the above entry says that the subject in a sentence with give is both the agent and the SOURCE; the subject causes the noun in object position to move from the subject to the object of the preposition. (For why the unmarked preposition in this case is to, see Shopen p. 128.)

Given the fact that one needs such features in the lexicon anyway, respecifying the possibilities in the Deep Structure (as a Case Grammar does) is unnecessary and redundant. Furthermore, such specification may not even be possible in the syntactic component; the mapping of the notion "subject" onto various semantic functions, for example, is less than straightforward.

Omitting deletion rules from the grammar has the following consequences:

a) Clauses where the subject is pronominalized or missing will be generated with a pronominal subject$^9$ or no subject at all, respectively.

b) Conjoined constituents (to the extent that they occur) will be generated as e.g. conjoined NPs or VPs, not as reductions of conjoined sentences.

c) Passives without agents will be generated with the surface subject in deep structure subject position,$^{10}$ with no deep structure agent to be deleted. (This is a particularly favorable analysis for Chemehuevi since passive sentences can never occur with agents.)
d) Compounds and nominalizations cannot be formed transformationally, but must be assembled in the lexicon.

e) Attributive adjectives will not arise from "reduced relative clauses", but will originate in the NP in which they occur.

Arguments for the lexicalist approach toward nominalization, originating in Chomsky (1970), have been extended to cover entirely productive morphological processes as well (in Jackendoff to appear, Halle (1973) and Shopen (op. cit.)). The result of this extension is that even such things as noun inflection and verb paradigms appear to be better handled in the lexicon. Since irregularities must be marked anyway, including the regularities as well adds no extra cost if one can state them in a lexical redundancy rule. Transformational rules of concord and agreement are eliminated by allowing inflected forms to be inserted freely, constrained only by rules of interpretation and output conditions (one of which will discard as "uninterpretable" any sentence for which interpretive rules fail to account for any reason).

Although I will not deal specifically with the general class of "incomplete sentences" in this work, Shopen's treatment of these has important consequences for the rest of the grammar. In theory my rules should be assumed to be expandable to include an analysis of all elliptical utterances (e.g. A cup of coffee), though I will not write them thusly here.
It has been helpful to me to treat some aspects of the syntax first in a fairly conservative manner, for example in sorting out relativization, participles and nominalization. (The kinds of structure emerging in such a treatment are not totally useless since some of what they capture will actually be expressed and differentiated in semantic representations.) The final syntactic structures I ultimately propose in each case, however, are in keeping with the revised theory adopted here.

0.4 Key to Symbols and Terms

MM Mary Hanks Molino (principal Chemehuevi informant)

# Phonological rules use # to indicate 'word-boundary', and

+ to indicate 'morpheme-boundary'. The cover symbol

C represents any consonant, glide, or r, i.e. replaces

\([+\text{cons}]\)

\([-\text{voc}]\).

V represents only [+voc] segments.

[-cons]

I am following conventions adopted in Chomsky and Halle (1968) and Harms (1968), unless otherwise noted.

c = the affricate [ts].

j = the palatal glide.

? = the glottal stop.

g In the syntax sections and in the lexicons the fricative

\(\gamma\) is written as g.

/ / Slashes enclose underlying segments or morphemes when
it is useful or important to distinguish them as such.

[ ] Square brackets are similarly used for phonetic strings.

x

When the status is irrelevant, or the level is intermediate, segments will simply be underlined and morphemes and strings will be unmarked.

* Forms or sentences which are unacceptable in Chemehuevi are preceded by an asterisk.

(X)* = a string of any number of Xs (including none).

C? Glottalized consonants, although analyzed as single segments, are written as a sequence of consonant + glottal stop.

Chemehuevi forms:

Within words, morphemes are separated by dashes. In sections dealing with syntax, forms are given in a taxonomic phonemic transcription (i.e. rules of vowel deletion, consonant alternation are assumed to have applied, but backing of k, rounding of m, etc. are ignored.) Stress is predictable and will not be indicated.

(Morphemes or strings cited in isolation which end in a dash normally are followed by suffixes and therefore are not "complete words". Their final vowels are left undeleted.)

Underlined Chemehuevi forms, or portions of forms, are borrowings from English, and are given in English orthography. They are pronounced essentially as in
English, except for indicated modifications, such as
the addition of stem-final vowels (e.g. /Anni/ for
"Ann").

English glosses:

Following Chemehuevi strings, morpheme by morpheme
translations are given in English with the equivalent
of each morpheme being underlined. Within a word
these are separated by dashes.

Free translations are given in double quotes. Material
inserted for fluency of translation for which there is
no Chemehuevi counterpart is indicated in parentheses.
Chemehuevi material which is not easily rendered in
the translation is omitted, since it is glossed in the
morpheme by morpheme translation.

Abbreviations used in glosses:

abs = absolutive (derivational) suffix on noun
      stems.

anim = animate agreement marker.

cont(in) = continuative aspect marker, /-ni?i/.

du = dual, [-several] [-singular]. Two only.

dur = verb suffix indicating non-momentaneous
      (or "durative") aspect. As verb-stem
      feature, [-mom] will be used.

fut = future tense, marked by /-vas/ or /-mpaa/.

habit~ptc = "habitual aspect" marker, not a true
            aspect, but a special use of the subject
            relativization participle ending.

imp~mom = momentaneous aspect marker used to form
          imperatives of some verbs.
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<th>Description</th>
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<tbody>
<tr>
<td>intr</td>
<td>= intransitive.</td>
</tr>
<tr>
<td>K</td>
<td>= third person inanimate (invisible) post-fix pronoun, used as copular or other auxiliary element, (section 2.225), or in place of the subject pronoun &quot;you&quot; (singular).</td>
</tr>
<tr>
<td>mom</td>
<td>= any of several verb suffixes indicating momentaneous aspect. As a feature on a verb stem, [+mom] marks the verb as inherently momentaneous.</td>
</tr>
<tr>
<td>neg</td>
<td>= negative morpheme; /-wai~waʔa/ or /-apa/, depending on syntactic properties of stem. Attaches to predicate (noun or verb).</td>
</tr>
<tr>
<td>nml</td>
<td>= nominalizer suffix on verbs; /-na/ or /-pə/.</td>
</tr>
<tr>
<td>not</td>
<td>= negative adverb optionally cooccurring in sentence with negative markers given above. The adverb may be omitted, but the suffixes may not.</td>
</tr>
<tr>
<td>ob</td>
<td>= oblique case marker. Normally /-a~ja/ on nouns, /-ku/ on numbers, postpositions.</td>
</tr>
<tr>
<td>pass</td>
<td>= passive (agentless) suffix on verbs, /-tɪ/.</td>
</tr>
<tr>
<td>perf</td>
<td>= perfect, or completed action. Marked by /-kai/, verb suffix, or /-caʔ/, enclitic (or both).</td>
</tr>
<tr>
<td>pl</td>
<td>= plural, specifically [-singular]. (i.e. a cover term for dual and several.)</td>
</tr>
<tr>
<td>plob</td>
<td>= agreement suffix marking (on verb) plural object.</td>
</tr>
<tr>
<td>p/p</td>
<td>= present/past; a verb tense suffix /-ka/ which can translate either as present or past.</td>
</tr>
<tr>
<td>pres</td>
<td>= present tense, marked by /-jə/ for most verbs.</td>
</tr>
<tr>
<td>ptc</td>
<td>= participle ending; /-tɪ/ is used for participles arising from subject relativization (see sect. 2.33); /-na/ is used for those arising from object relativization (so-called &quot;passive&quot; participles.)</td>
</tr>
<tr>
<td>Symbol</td>
<td>Definition</td>
</tr>
<tr>
<td>--------</td>
<td>------------</td>
</tr>
<tr>
<td>Q</td>
<td>interrogative morpheme; /urâ/, enclitic /-raa/, or glottal stop (see section 2.24.)</td>
</tr>
<tr>
<td>rem</td>
<td>remote past tense suffix, /-pîgai/.</td>
</tr>
<tr>
<td>result</td>
<td>resultative, difficult to distinguish from perfect marker, since it is also /-kai/. Means 'being in the state of having ---ed'; can cooccur with perfect.</td>
</tr>
<tr>
<td>sev</td>
<td>several, <a href="%5B-singular%5D">+several</a>; includes three or more.</td>
</tr>
<tr>
<td>sing</td>
<td>singular, <a href="%5B-several%5D">+singular</a>.</td>
</tr>
<tr>
<td>subord</td>
<td>subordinating morpheme, /-gâi~ju/-, /-gu/, /-ci/, or /-ka/, attached to verb in subordinate clause.</td>
</tr>
<tr>
<td>tran</td>
<td>transitive; any verb taking one or more objects (without postpositions).</td>
</tr>
<tr>
<td>X(ob)</td>
<td>oblique ending added to X, but deleted by vowel-deletion rule. Stem-final vowel on X surfaces.</td>
</tr>
</tbody>
</table>

Pronouns are not glossed with all the relevant features, unless needed for clarity, e.g. tam would be glossed simply as "we"; for complete translation, see charts in sections on pronouns. Since postfix forms in general are not marked for case in Chemehuevi, they will simply be translated according to the semantics, e.g. "I" vs. "me", etc. Third person pronoun glosses will vary freely between personal pronouns and demonstrative pronouns, since they are equivalent in Chemehuevi. Thus, mana will be glossed variously as "he" ("s/he"), "that one", or "that".

21
Terms used in text:

affix: includes bound morphemes which are associated with a particular stem class, e.g. occur only with verbs. "Suffix" is used for post-stem affixes, "prefix" for pre-stem affixes.

enclitic: used in somewhat more restricted sense than normal: refers to bound morphemes which, if they show up in a sentence, must be attached to the first word. All enclitics in Chemehuevi are postclitic, i.e. are attached after the stem rather than before.

oblique case: the only non-nominative case in Chemehuevi will be called "oblique". It is used both for possessor and object nouns. Postpositions attached to nouns are attached directly to the bare stem (which could be considered the nominative, except that some absolutes, etc. are deleted before postpositions). For motivation for not calling postpositions "cases", see section 2.23.

postfix: includes bound morphemes often referred to as "enclitic" in other sources; unlike normal suffixes, they may appear on (almost) any word in the sentence, without regard to the type of stem. Most notable examples are the bound forms of pronouns, which attach to nouns, verbs, postpositions, adverbs, conjunctions and modifiers, anywhere in the sentence. They are not restricted to the first word in the sentence, the only difference between them and (my) enclitics.
root: any lexical category stem stripped of all derivational affixes; a single morpheme. Compounds consist of two roots.

stem: that portion of a word to which inflectional affixes are added, i.e. the root plus any derivational affixes.

word: defined phonologically; the domain of the stress rules and the final vowel-deletion rule. When there is any doubt, I will use the latter as the criterion. Word boundaries must be inserted in a string before the phonological rules can apply. I will assume all bound morphemes to be so marked in the lexicon, with a separate feature for enclitics. The only postfixes seem to be the bound pronouns, so [+bnd, +pro] will be used rather than introducing a third feature. It is the job of the syntactic component to position and order all morphemes correctly. Readjustment rules, at the end of the transformational cycle, insert word boundaries fairly straightforwardly.

(Prefixes will have to be distinguished from suffixes at some point; e.g. since many "free" morphemes are optionally prefixed to verbs, a general feature [pref], "prefix" will be used, with most nouns being marked [*pref] (obligatorily specified as + or -. In general, conventions regarding features used in Stockwell, Schachter, and Partee 1973 will be followed here.)
Footnotes

1 Sources on the history of the Chemehuevi include: Kroeber (1907), Miller and Miller (1967), and Laird (to appear).

2 Traditionally sung on such occasions.


4 op. cit.

5 One letter to Harrington (in 1919) from Kroeber: "You had better get ready to duck into a hiding place. I am likely to appear in Washington before a month is over and my first question will surely be about Esselen manuscript. I am confident you will have many explanations to give and not a single good one. I am not going to urge you to attend the Boston meeting even though I shall make an effort to get a threshing out of the linguistic relationship problem in its wider bearings. I know from experience that the probability of John P. Harrington's actual materialization at a meeting is in inverse ratio to the urgency with which he is desired and the firmness of his promises to attend.

I hope you took in the spirit in which they were meant my remarks about you in the review of your Tewa Ethnography. I wish I could have made my statements stronger. I consider the way you let your brain go idle a crying shame. I cannot think of another man who turns so good a mind into so complete a machine. Sincerely yours, Kroeber".

6 The Chemehuevis (to appear) and Not the Yawning Graves (to appear), respectively.

7 See for example Hooper (1973).


9 I am also accepting the discarding of rules of pronominalization (see Jackendoff 1972). All pronouns including the reflexive morphemes will be directly inserted in DS.

10 I recognize that the deep structure position of the surface subject is itself not a "consequence" of dispensing with deletion rules, and that there are other possible means of handling it.
There are actually two ways of utilizing redundancy rules—either leave out the redundant features in individual items and have the rules "fill them in" before lexical insertion, or leave them in each entry and merely use the redundancy rules to state the generalization and "subtract the cost". I agree in principle with both Jackendoff and Shopen that the latter is to be preferred, though for Chemehuevi the long agglutinated word forms may suggest a compromise.
1 PHONOLOGY
1.1 Phonetics

The following phonetic segments appear in Chemehuevi:

(1) Consonants \( p \ t \ k \ q \ ? \ k^w \)
    \( s \ y \ h \ c \)
    \( \beta^v \ y \ y^w \)
    \( r \ (l^1) \)
    \( m \ n \ \eta \ \eta^w \)
    \( m^? \ n^? \ \eta^? \)
    \( w \ j \)
    \( w^? \ j^? \)

Consonant clusters

\( mp \ nt \ \eta k \)
\( nc \ \eta kw \)

Vowels \( i \ i^? \ u \ i: \ \dot{i}: \ u: \)
\( \text{(a)} \ a \ o \ a: \ o: \)

Vowel clusters \( \dot{i}i \ ia \)
\( ui \ ia \ au \)
\( oi \ ua \ e^i \ a_i \ i_i \)
\( ai \ oa \)

Consonants

Stop consonants in Chemehuevi are unaspirated. The velar, \( k \), is fronted (to \( \dot{k} \)) after \( i \) and backed (to \( g \)) after \( a \) and \( o \). There is only one affricate, \( c \), in this dialect (in contrast to Southern Paiute). Pamela Munro reports instances of \( \dot{c} \) in her informant's speech. Neither dialect of Chemehuevi contains \( \dot{y} \).
The fricative $\gamma$ may show up voiceless when word-final, as in paran?$\gamma$ "Paiute", or in jaja$\gamma$ "burst into tears!" It seems to be in free variation with $[\gamma]$ in this environment.

The segment $l$ appears in only a handful of loanwords. Most loans substitute $r$ for $l$; the residue of unaltered loans probably varies from speaker to speaker. Thus, for MM, volita in Chemehuevi means "marble", and papiliv "paper", both from Spanish. On the other hand, aporos "apple" has lost the $l$. The second source of $l$ in MM's dialect is its usage in baby-talk, where it frequently replaces $r$; e.g. ní-lua-ci-$\eta$ "give me!" for adult ní-rua-$\eta$, and kalì-ci-$\eta$-? "sit!" for karì-$\eta$-?.

Vowels

Although fronting of $a$ to $a$ is common in Southern Paiute, it is rare in this dialect of Chemehuevi. The only clear case I've found where $a$ is fairly consistently fronted in rapid speech is in /tirawi?i/ "dash off", showing up as [tirawi?]. (Here, $a$ is sandwiched between two high vowels.)

The diphthong $e^i$-$a$-$i$ arises only from an underlying $i$ following a sequence of $a$ plus a back consonant, as in /pahiju/ "three" [pahei]?], /ja?i-jì/ "dead" [ja?i?i]?, and /jaaqì-vìì/ "brought" [jaaqì?ivì].

1.2 Lexical Representation

The above segments can be reduced to the set of underlying segments given in (2) below; Table I gives the
distinctive feature specification for each. (For features filled in by morpheme structure rules, see Table II.)

\[(2) \begin{array}{ccccccc}
    p & t & k & kw & ? \\
    s & h \\
    c & i & u \\
    v & r & y & \gamma & w & a & c \\
    m & n & \eta \\
    m? & n? & \eta? \\
    w & j \\
    w? & j?
\end{array} \]

(For discussion of \(/v, r, \gamma, \gamma w/ \) see section 1.31.)

The following morpheme structure rules specify segmental redundancies in lexical entries in Chemehuevi:

**MSR 1**

\[
[+cons] \rightarrow [+cnt \\
    -nasal \\
    [+cor \\
    -back ]
\]

(Fills in predictable features for the segment \(/r/\).)

**MSR 2**

\[
[-cons] \rightarrow [-nasal \\
    -cor \\
    -ant ]
\]

(Glides and vowels are all nonnasal, nonanterior, and noncoronal.)

**MSR 3**

\[
[+cor] \rightarrow [+ant]
\]

(There are no underlying palatals in Chemehuevi.)

**MSR 4**

\[
[+cons \\
    -cor \\
    -ant ] \rightarrow [+hi \\
    [+back ]
\]

(Velar consonants (not including glides) are high and back.)

29
MSR 5  [+ant] → [-hi]  
(Anterior consonants are not high.)

MSR 6  [+nasal] → [-cnt]  
(Nasal consonants are considered to be stops, i.e. noncontinuants.)

MSR 7  
\[
\begin{array}{c}
[-\text{cons}] \\
\{+\text{hi}\} \\
+\text{voc}
\end{array} \rightarrow [+\text{cnt}]
\]
(Marks all vowels and the glides /w, j/ as continuants.)

MSR 8  
\[
\begin{array}{c}
[-\text{hi}] \\
[-\text{voc}]
\end{array} \rightarrow [-\text{back}]
\]
(All nonhigh consonants and glides are also nonback.)

MSR 9  [-back] → [-rnd]  
(Nonback segments are never round.)

MSR 10  [+nasal] → [-rnd]  
(Nasals are never round, i.e. there is no /ŋw/.)

MSR 11  
\[
\begin{array}{c}
[-\text{cons}] \\
-\text{voc} \\
+\text{back}
\end{array} \rightarrow [+\text{rnd}]
\]
(The only back glide /w/ is also round.)

MSR 12  
\[
\begin{array}{c}
[+\text{voc}] \\
[+\text{cons}] \\
\{-\text{nasal}\} \\
[-\text{cons}] \\
[-\text{hi}]
\end{array} \rightarrow [-\text{glot}]
\]
(Everything except the nasals and /w, j/ is nonglottalized; i.e. all vowels, all non-nasal consonants, and the nonhigh glides, /h, ?/.)

MSR 13  
\[
\begin{array}{c}
-\text{voc} \\
+\text{cons} \\
-\text{nasal}
\end{array} \rightarrow [-\text{son}]
\]
(Vowels, glides, r and nasals are sonorant, all other segments are not.)

(V, ʃ, ʒ, and s are [+del rel].)

(nasals, glides, vowels, p, k, kw, are [-del rel]. t, c are lexically marked for this feature.)

(Vowels and r, nasals, high sonorants, and noncoronal continuant consonants are voiced. All other segments are voiceless.)

(c and s are strident. All other segments are not.)

(Vowels are originally unstressed.)
Many of the above segmental MSRs are persistent; i.e. can be used to specify redundant features in the output of phonological rules. These include MSRs 1, 4-9, 11, 12, 14-16, 19 and 20.

Table II, on the following page, gives the full specifications of the underlying segments as filled in by the above rules.

Sequential redundancies are specified by the following morpheme structure rules:

**MSR 22**  
\[ [+\text{seg} ] \rightarrow [+\text{voc} ] / \left( \left( \left( \left( \left( [+\text{cons} ] \right) \right) \right) \right) \right) \]

(All morphemes end in vowels. Except for nasals, all consonants (including r and glides) must be followed by a vowel, i.e. clusters of nonnasal consonants are prohibited.)

**MSR 23**  
\[ [-\text{cons} ] \rightarrow [-\text{voc} ] / [+\text{voc} ] [+\text{voc} ] [+\text{voc} ] \]

(The maximum string of vowels in a morpheme is three; if a nonconsonantal segment follows, it can only be a glide. Otherwise only [+cons] segments or morpheme boundaries may follow.)

**MSR 24**  
\[ [+\text{voc} ] \rightarrow [+\text{cons} ] / [+\text{nasal} ] \]

(Any nonvowel after a nasal must be p, t, k, kw, or c.)

**MSR 25**  
\[ [+\text{nasal} ] \rightarrow [+\text{cons} ] \]

(Nasals in nasal plus obstruent clusters are always homorganic.) (Persistent rule.)
Table II

|     | p | t | k | kw | v | r | j | jw | c | s | m | n | η | m? | n? | η | v | J | w? | J? | h | i | i' | u | o | a |
| voc |   |   |   |    |   |   |   |    |   |   |   |   |   |   |   |   |   |   |   |   | + |   |   |   |   |   |
| cons| + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |   |   |   |   |   |
| nasal| - | - | - | - | - | - | - | + | + | + | + | + | - | - | - | - | - | - | - | - |   |   |   |   |   |
| cnt | - | - | - | + | + | + | + | - | - | - | - | - | - | - | - | - | + | + | + | + | + | + | + | + |   |
| del |   |   |   |    | + | + | + | + | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |   |
| rel |   |   |   |    | + | + | + | + | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |   |
| glot|   |   |   |    | - | - | - | - | - | - | - | - | - | + | + | + | - | - | + | + | - | - | - | - |   |
| cor | + | - | - | - | + | - | + | + | - | - | + | + | - | - | - | - | - | - | - | - | - | - | - | - |   |
| ant | + | + | - | + | - | + | + | + | - | + | - | - | - | - | - | - | - | - | - | - | - | - | - | - |   |
| hi  | - | + | + | - | + | - | - | - | + | + | + | + | - | + | + | + | - | + | + | + | - | + | - | - |   |
| back| - | + | + | - | + | + | - | - | - | + | - | - | + | + | + | + | - | + | + | + | - | - | - | - |   |
| rnd | - | - | + | - | - | + | - | - | - | - | - | - | - | - | - | - | - | + | - | - | - | - | - | - |   |
| son | - | - | - | + | - | - | - | - | - | - | - | - | - | - | - | - | - | + | - | + | + | + | + | + |   |
| voiced| - | - | + | + | + | - | - | + | + | + | + | + | + | + | + | + | + | + | - | + | + | + | + | + |   |
| strid| - | - | - | - | - | + | + | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |   |
(Sequences of two vowels are restricted as follows:

\textit{a} or \textit{i} can follow any vowel.
\textit{u} or \textit{o} can only follow themselves (i.e. forming long vowels) or \textit{a}. (*\textit{ao} is prohibited in the next rule.)

This is a persistent rule, e.g. whenever \textit{u} follows a vowel other than \textit{a} it assimilates:

/\textipa{upaa}/ \textit{in} \textit{\gamma} \textit{kani-IPA} "in the house"
/\textipa{na-upa} "in that"

/t\textsuperscript{k}aka-v\textsuperscript{i\textacircumflex}k-\textsuperscript{uka}/ \textit{eat-past-it} \textit{\rightarrow t\textsuperscript{k}aka-v\textsuperscript{i\textacircumflex}k} "ate it"

I know of no morphemes beginning with \textit{i}– or \textit{o}– as contrasted with \textit{\textacircumflex{i}}– or \textit{\textacircumflex{o}–} so can't verify the "persistence" (phonological status) of this rule for these segments.)

(The sequence *\textit{ao} is unpermissible.)

(Sequences of *\textit{wo}, *\textit{wu}, *\textit{kwo}, *\textit{kvu} are forbidden.)

(*\textit{\textacircumflex{i}} is an unpermissible sequence.)

(*\textit{ti} is an unpermissible sequence.)
1.3 **Phonological Rules**

1.3.1 **Analysis of Consonants**

The clusters $kw$ and $yw$ are treated as single phonological segments since $w$ does not cluster with nonvelars. (Also, there are no parallel clusters with $j$.) The cluster $yw$ arises in Chemehuevi only from an underlying $\eta$ following the vowel $u$.

One of the most complex aspects of Chemehuevi phonology is the behavior of nonglide consonants in medial position, particularly after morpheme boundaries. These consonants behave almost identically in Southern Paiute, and for that language many analyses have been proposed. Most are potentially applicable to Chemehuevi as well, and deserve some consideration here.

The problem is as follows:

(a) The consonants $v$, $r$, $y$, $yw$, and the nasal clusters never occur word-initially (in either language; Southern Paiute has the same underlying segments as Chemehuevi except for /h/).

(b) Word-internally these occur in two situations:

(i) morpheme-initially, where for most morphemes the voiced continuants given above alternate with the stop series and the nasal cluster series. In each case the preceding morpheme determines the following consonant series.

(ii) morpheme-internally, where except for a few situations, they don't alternate at all.
In Southern Paiute the word-internal stop series shows up in some cases as geminate stops, the distribution with respect to single stops being predictable on the basis of stress. (Sapir called this series the "geminated" series, the nasal clusters he called "nasalized" and the voiced continuants "spirantized.")

The alternations in Chemehuevi are tabulated in (3) below, the differences in Southern Paiute are as noted:

<table>
<thead>
<tr>
<th>stop series (a)</th>
<th>voiced continuant series</th>
<th>nasal cluster series</th>
</tr>
</thead>
<tbody>
<tr>
<td>p</td>
<td>v</td>
<td>mp</td>
</tr>
<tr>
<td>t</td>
<td>r</td>
<td>nt</td>
</tr>
<tr>
<td>k</td>
<td>j</td>
<td>ηk</td>
</tr>
<tr>
<td>kw</td>
<td>jw</td>
<td>ηkw</td>
</tr>
<tr>
<td>c</td>
<td>c/nc</td>
<td>nc</td>
</tr>
<tr>
<td>s</td>
<td>s</td>
<td>s</td>
</tr>
<tr>
<td>m</td>
<td>w (b)</td>
<td>m (c)</td>
</tr>
<tr>
<td>n</td>
<td>n</td>
<td>n</td>
</tr>
<tr>
<td>η</td>
<td>η</td>
<td>η</td>
</tr>
</tbody>
</table>

(a) When non-word-initial, these consonants ("geminate series") occur as geminates before an unstressed vowel segment in So. Paiute.

(b) ηw in So. Paiute.

(c) Nasals in this series are long in So. Paiute.

Examples of these morpheme-initial alternations are given in (4) below; morpheme-internal examples, where they don't alternate, follow in (5):
In a-g the first morpheme (/na/ or the reduplicating morpheme) triggers a following voiced continuant:

a. /na + puni-kai/ → navunika

b. /na + tika/ → narika-

c. /na + koa/ → nayo-

d. /REDUP + kwii'antê/ → kwii'wii'ant

left handed one

left handed ones

e. /na + cikwî/ → nancikwî-

cut

f. /na + mavao/ → navavao- namavao-

cover

cover -self

g. /na + wîn?o?î/- → nawîn?o?î-

shave

shave -self

The same verb stems show up with stops after morphemes like /piŋka/:

h. /piŋka + puni-kai/ → piŋkapunika

keep on

keep on locking

i. /piŋka + tika/ → piŋkatika-

eat

keep on eating

The first morphemes below trigger nasal clusters in the stems following:

j. /ni + po?o-tu?î/- → nimpo?otu?î-

person

person

teach tran teach intr
k. /jhu-γai + ti/ \(\rightarrow\) jhuγant

fat-be ptc \(\rightarrow\) being fat

1. /ni\ + kuu/ \(\rightarrow\) niŋkuu-

person bury tran \(\rightarrow\) bury intr

m. /ni\ + kwĩhĩ/ \(\rightarrow\) niŋkwĩštuʔikat

catch policeman (person-catcher)

(5) Nonalternating internal occurrences of consonants in (3) above: (second syllable consonant)

a. /opi/ mesquite bean
b. /otavi/ sand
c. /tĩka/ eat
d. /cikwĩ/ cut
e. /kaaci/ rat
f. /asivĩ/ skin
g. /kamiʔ/ jack-rabbit
h. /tivací/ wolf
i. /tiriñavĩ/ root
j. /niŋyarĩ/ wind
k. /uŋwi/ smell
l. /tĩmpi/ rock
m. /tantĩcci/ northerner
n. /puŋku/ pet
o. /oncia/ fox
p. /naŋkwaruʔu/ metal

In the analyses for Southern Paiute there are two schools of thought. The first is to treat whatever controls
the consonant alternation as a feature on the preceding morpheme. For example, /na/ in (4a-g) above would be lexically marked as [+spirantizing] or the equivalent. Sapir implied such an analysis, though he represented what he called the "inherent spirantizing, geminating or nasalizing power" of each morpheme as a superscript on the form. Recently, Nichols (1973) has proposed an analysis (for Numic languages in general) which also utilizes a type of superscript, though he relabels (and increases the number of) the three consonant series. Nichols calls such superscripts "final features". They differ from normal segments in that they are unspecified phonologically (except being marked [+segment]), and that they reflect somehow a "lexical marking on the entire form" (p. 30) in much the same way Sapir's do. And yet they are not simply features on morphemes since the same type of mechanism is intended to be used in triggering internal occurrences of the various consonant series as well as initial occurrences in the following morpheme. Sapir somehow intended his "features" to be distributed likewise, since he claims all [v]s come from organic /p/s, etc. not just morpheme-initial ones. Yet he never actually uses his superscripts morpheme-internally, and skirts the issue of how to handle these situations.

The second school of thought treats these alternations as phonological interactions with normal morpheme-final segments. Chomsky and Halle (1968) present the clearest example
of this approach. They propose that (1) nasalizing roots actually end in a nasal consonant (unspecified for point of articulation), (2) geminating roots end in a nonnasal obstruent (unspecified for point of articulation), and (3) spirantizing roots are "spirantizing" by virtue of (a) ending in vowels and (b) a general rule making voiced continuants out of single intervocalic stops. Chomsky and Halle add a rule which causes the first of two consonants in a cluster to assimilate to the second, and a rule which deletes these morpheme-final consonants at the end of a word or before a vowel (since they surface only before consonants.)

With minor modifications in their rules, Chomsky and Halle (as most segmental treatments) allow a single unified method of marking both the morpheme-internal and the morpheme-initial occurrences of these three series of consonants. In (6) below the underlying forms of some of the morphemes exemplified in (4) and (5) above are postulated as they would be in the three treatments:

<table>
<thead>
<tr>
<th>(6)</th>
<th>Sapir</th>
<th>Nichols</th>
<th>Chomsky and Halle</th>
</tr>
</thead>
<tbody>
<tr>
<td>na⁻</td>
<td>na</td>
<td>na</td>
<td>[na⁻] self</td>
</tr>
<tr>
<td>pįŋka⁻</td>
<td>pi&quot;ka'</td>
<td>pįNkaT</td>
<td>[piŋka⁻] keep on</td>
</tr>
<tr>
<td>nį⁻</td>
<td>nį&quot;</td>
<td>nįN</td>
<td>[nį⁻] person</td>
</tr>
<tr>
<td>?</td>
<td>o'pi</td>
<td>oTpi</td>
<td>[opi⁻] mesquite bean</td>
</tr>
<tr>
<td>?</td>
<td>tįpaci</td>
<td>tįpaci</td>
<td>[tįvaci⁻] wolf</td>
</tr>
<tr>
<td>?</td>
<td>tį&quot;pi</td>
<td>tįNpi</td>
<td>[tįmpi⁻] rock</td>
</tr>
</tbody>
</table>
The mechanism by which Nichols allows internal "final features" is not clear. If one thinks of them actually as "features", then one would presumably assign them to units intermediate between phonological segments and morphemes, perhaps to syllables. The notion "syllable feature" has widespread implications for the theory, one of which is the resulting increase in its power. (Nichols cites sporadic instances of feature metathesis and shifting within a stem as suggesting that for some words, even internal "final features" are assigned to the whole morpheme--their placement being unspecified. However for most morphemes, somehow or other the internal placement will have to be specified.) If one instead accepts final features as segments, the theoretical power is still expanded by allowing segments to serve as (or be reflexes of) "labeling features" on the morpheme of which they are a part. Furthermore as segments the kinds of conditioning they have on following morpheme-initial segments are peculiar--see discussion of Chomsky and Halle's analysis below.9

Allowing either of these extremely powerful additions to the theory greatly increases the set of possible grammars, when instead we should be seeking to limit the set. As an informal descriptive notation however, final features do seem to offer an appealing way to view comparative Numic phonology.

In terms of utilizing existing mechanisms, then, the normal segmental analysis (e.g. of Chomsky and Halle) seems
the most straightforward way of handling the data thus far. However there is a large chunk of data Chomsky and Halle do not consider, which when taken into account makes the pure segmental analysis less "straightforward" and less phonologically motivated than it appears at first glance.

There are several situations in which the preceding morpheme does not determine the following morpheme-initial consonant. For one, there exists a large class of suffixes (in both languages) which occur in only one form. These may be with initial stops (e.g. the plural subject suffix on verbs, -ka in Chemeihuevi, -kka in Southern Paiute), an initial voiced continuant (e.g. the durative suffix -ya) or an initial nasal cluster (e.g. the indirective verbal suffix -yki).

There are several ways to handle these under each analysis. Nichols (and Sapir by implication) includes preceding "final features" on such forms in the lexicon (i.e. -'ka for the plural, -"kï for the indirective, and -ka for the durative), and writes a rule deleting the first in a series of two final features. For Chomsky and Halle the solutions would be more complex, however. If they were to include preceding segments in the lexical representations of these forms (i.e. -Tka plural, -Nkï indirective, but -ka durative), they would need a rule to delete any morpheme-final consonants in the preceding stems in all three cases. For the plural and indirective this could be done simply by a rule
deleting the first consonant in a series of three:
C → ∅ / ___ CC. However the durative suffix is not dis-
tinguishable from all the suffixes which do alternate; the
only way to get rid of preceding obstruents and nasals
would be by a rule feature of some sort on all suffixes
like [γa] which don’t alternate (triggering a rule of pre-
ceding consonant-deletion).

This approach has the disadvantage that the three types
of nonalternating morphemes are not treated in parallel fa-
shion. Furthermore, these underlying forms have conse-
quences for their morpheme structure rules in that they no
longer may prohibit morpheme- (and therefore word-) initial
clusters.

The alternative for Chomsky and Halle would be to set
up their normal underlying forms, /ka/ durative, /ka/ plu-
ral, and /ki/ indirective, and mark each one with rule fea-
tures. Such features must be able to handle all three pre-
ceding stem situations, namely preceding vowels, nasals, or
obstruents. Consequently, somewhere before their assimila-
tion and "spirantizing" rules the following governed rules
must apply:

(i) C → ∅ / ___ ka\text{dur}

(ii) \(\{N\} \rightarrow T / V \ ___ ka\text{pl}\)

(iii) \(\{T\} \rightarrow N / V \ ___ ki\text{ind}\)
In addition to these invariable suffixes, there are many instances of consonant alternation triggered by morphological factors. In Chemehuevi for example the form of the past tense suffix -\(\text{-wį́j} \sim \text{-mpį́j}\) is determined (for some verbs) by whether the verb is to be interpreted as inchoative or not. (In other cases the difference in form does not seem to be semantically determined.) A few postpositions in Southern Paiute vary their initial consonant according to whether the noun to which they are attached is animate or not, regardless of the "phonological shape" of the stem.

Reduplication processes in both languages further complicate the picture. Consider the forms given in (7) from Chemehuevi:

(7) a. kwį́hį́- catch
    kwį́ywį́- catch-iterative (for loss of \(\text{h}\), see P 14 in section 1.33)

b. kwipą́- beat
    kwikwpą́- beat-iterative

c. karį́- sit
    kakarį́- sit-momentaneous

Whether the reduplicated syllable "spirantizes" or not is unpredictable in the two languages. (Nasalization seems to be triggered only by the presence of a nasal in the stem, e.g. /tį́mpi/ rock, [tį́ntį́mp] rock-pl; /kani/ house, [kaŋkan] house-pl.) The consonant series is not entirely determined by the function of the reduplicated syllable; "iterative"
reduplication "spirantizes" the stem-initial consonant in (a) above, but not in (b). Nor does it reflect the second syllable consonant series; the medial consonant of the stem in (c) is a voiced continuant, but the first syllable does not "spirantize" itself upon reduplication.

All of the above problems require ad hoc rules of segment insertion and deletion, when in fact the overall picture begins to appear less and less phonological in nature.

I conclude that for Chemehuevi in particular, a segmental approach to consonant alternation is not warranted, especially since geminate consonants do not occur in any surface forms. A feature analysis better captures the morphological nature of these alternations. Encoding them in terms of features on morphemes, however, forces us to give up treating morpheme-initial and morpheme-internal occurrences of these series in the same way. The latter must simply be specified in the lexical representations as they appear on the surface. Although this entails adding four underlying segments to the analysis, it requires no new features to be added. Thus the cost is minimal.

The forms given in (6) above would, in this analysis, have lexical representations something like the following:

(8) na
    [+s]  self

píŋka
    [+g]  keep on

né
    [+n]  person
opi mesquite bean
tivaci wolf
timpi rock

The feature symbols used are keyed to Sapir for mnemonic purposes, even though his labels are not entirely appropriate. Sapir (1933) argues for the "psychological reality" of /-pa/ as the underlying form of a suffix which shows up as [-βa~mpa~ppa]. Given that such an alternation exists, it is difficult to dispute their unification. MM has observed that "some r's are really t's," yet note that only some are. Morpheme-internally, when no alternation exists, such a "psychological form" is questionable in the current state of the language.

The rules for consonant alternations in this analysis are assumed to be:

(9) i \[-son \rightarrow [\text{-cnt} / [+g] ____ \]

ii \[-son \rightarrow [+cnt / [+s] ____ \]

iii \[+nasal \rightarrow [\text{-cons} / [+s] ____ \]

\[+cor \rightarrow [\text{-nasal} / [+s] ____ \]

\[+ant \rightarrow [+ant / [+s] ____ \]

\[+hi / +back \]

\[m \rightarrow w / [+s] ____ \]

iv \[Ø \rightarrow N / [+n] ____ [\text{-son}] \]

[\text{-cnt}]

As in the segmental approach, there are basically two ways to handle nonalternating morphemes. The first is to
put their surface initial consonants in their underlying representations, and mark them in such a way that all the above rules in (9) are suspended. As with the segmental version of this method, morpheme structure rules may no longer be used to explain the nonappearance of "spirants" or nasal clusters in word-initial position. It has been pointed out\(^\text{13}\) that one might take advantage of this to describe the reduplication idiosyncracies. If any morpheme may begin with a cluster or spirant, whether or not it is marked "alternating" and whether or not it typically begins a word (e.g. stems), and if one assumes some sort of phonological rule which neutralizes spirants and clusters to stops when word-initial, one could handle the reduplication of the forms in (7) above by lexically representing catch as /\text{\textipa{y\textipa{w}\textipa{i}h\textipa{i}}}/, and beat as /\text{\textipa{k\textipa{w}i\textipa{p}a}/. No features need be added to the reduplicated syllable—-it simply "protects" the underlying stem-initial consonant. The rules in (9) above must then be rewritten as neutralization rules, i.e. must change stops, spirants, and nasal clusters to stops in (i), spirants in (ii) and nasal clusters in (iv).

There are two difficulties in implementing this method: (1) rewriting the rules is not simple—-since a segment must be deleted in the case of nasal clusters in (i) and (ii), (e.g. \text{mp} \rightarrow \text{p} alongside of \text{v} \rightarrow \text{p}), these subrules can't be collapsed with the existing ones (which could handle both stops and spirants). Also (iv) would have to be rewritten as something like:
(i.e. \{D\} \rightarrow mp, \{t\} \rightarrow nt, etc.). (2) Even when rewritten, the fact that \text{m} "spirantizes" to \text{w} poses a problem since there is also a normal underlying glide \text{w} which can occur word-initially, which doesn't partake in any of these alternations. Thus, one doesn't want to shift all morpheme-initial \text{w}'s to \text{m}'s after \{+g,n\} morphemes or word-boundaries, only those which actually alternate with \text{m}.

The second way to treat nonalternating morphemes, the way I will adopt, is to give them underlying forms as if they alternated, e.g. /ka/ durative, /ka/ plural, and /ki/ indirective, and mark them each as obligatorily undergoing the appropriate rule in (9 i, ii or iv) above (anything which is nonalternating initial \text{w} will be assumed to be from \text{w}, not \text{m}, since the only evidence to the contrary would be historical). Following Harms (1968), I will adopt the notation and convention that \{+SDRI\} means "meets the structural description of rule (i)" and therefore undergoes it, whether a \{+g\} actually precedes or not. This feature then will be in the lexical representation of /ka/ plural, and similar features will be associated with the other invariant morphemes. (Each will be redundantly specified with minus rule features for the other rules.)

Handling each of the other morphological problems mentioned will be done by adjusting these morphological
features, rather than the straight insertion or deletion of phonological segments.

Reduplication must unfortunately be handled by marking each stem for which type of reduplicating morpheme it takes (just as nouns must be marked for which plural suffix they take). Thus far these forms would be

\[
\begin{align*}
\text{CV-} & \quad \text{CV-} \\
[+\text{redup}] & \quad [+\text{redup}] \\
[+g] & \quad [+s] \\
& \quad [+\text{redup}] \\
\text{CV-} & \quad \text{CV-}^{14} \\
[+\text{redup}] & \quad [+\text{redup}] \\
[+n] & \quad
\end{align*}
\]

with the following phonological rule:

\[
(10) \quad C V \rightarrow C_1 V_1 / [+\text{redup}] \quad C_1 V_1
\]

(For more detailed discussion of reduplication, see rule P3, in section 1.33.)

1.32 Analysis of Vowels

Vowel length in Chemehuevi must be assumed to be distinctive in order to predict stress. The converse analysis would not be as simple; given the positions of primary and secondary stresses in a word, one could predict the lengths of the vowels, but the rule would be much more complex. In addition, diphthongs must be taken to be underlying, and since they always count as "long" vowels for the purposes of stress, redundancy rules would have to be included in the grammar, which would be unnecessary in a grammar predicting stress from vowel length.

Long vowels are analyzed as clusters (vowel sequences), rather than as single vowels with the feature [+long]. This
makes minor rules of lengthening and shortening a bit less simple, but the stress-assignment and vowel-deletion rules are then considerably easier to write.

1.33 Rules

None of the phonological rules for Chemehuevi require the assumption of a cycle. For most rules, extrinsic ordering is unnecessary (see discussion section 0.3). They are written with the understanding that to obtain the correct output they must be permitted to apply (and reapply) whenever they can. The few rules which pose problems for this approach are discussed in section 1.34.

The following phonological rules are used to derive phonetic forms in Chemehuevi. Explanation follows each rule:

P 1 \([+\text{voc}] \rightarrow \emptyset / ___ #\)

(All final vowel segments are deleted, one per word.\(^{15}\) Note that since phonetically long vowels are analyzed as clusters, they are merely shortened.) E.g. /moa/ \(\rightarrow\) mo father, /pac\(\s\)/ \(\rightarrow\) pac daughter, and /nukwi-vaa/ \(\rightarrow\) nukwiva run-fut.

Motivation for assuming all morphemes end in vowels at the underlying level is as follows:

(a) the vowels show up (fully voiced) whenever a suffix is attached or when the morpheme is itself a prefix, or first member of a compound. The nature of the vowel depends on the stem, not the
suffix, e.g. "my father", [moa-n] vs. "my
daughter", [pac-i-n].

(b) Unless we assume an underlying final vowel
segment, final syllable structure is unexplainably
different from internal syllables; no long vowels
appear in final, open syllables, though they're
obviously abundant in internal, open syllables.
Although final syllables may end in a consonant,
internal syllables may not (i.e. are always open).
If one counts internal syllables which are fol-
lowed by prenasalized consonants as "closed", one
still has to explain why any consonant can end
(close) a final syllable, though only nasals can
end an internal one.

(c) Historically, final vowels were not completely
dropped, but devoiced instead. This is the case
now in Southern Paiute, and was true in Chemehuevi
fifty years ago, in dialects which differ in lit-
tle else from present dialects.) (For ordering
problems involving this rule, see discussion
section 1.34.)

P2 $\emptyset \rightarrow \left[ \begin{array}{c} V \\ \alpha F \end{array} \right] / \# C \rightarrow \left[ \begin{array}{c} V \\ \alpha F \end{array} \right](C)$ #ftnt 16

(This rule lengthens (geminates) short monosyl-
lables, including those affected (or created) by
vowel deletion (rule 1). E.g. "father" is actual-
ly phonetically [moo] when unsuffixed, "daughter"
is [paac].)
(The reduplication morphemes copy all features of the first consonant and vowel of the stem. All stems are here analyzed as consonant-initial, though not all morphemes are, e.g. /-a/ oblique case. Forms like [ʔaipac] boy could have been analyzed as /aipaci/ with the word-initial glottal stop predictably inserted by a phonological rule. However, since I am treating reduplication as an underlying prefixed morpheme, there would be no elegant way of inserting the second ? in, e.g., [ʔaʔaipac] boy-pl. Indeed the problem is the same for a vowel-initial stem prefixed by any morpheme. If one were to posit such a rule, one would have to prevent it from inserting ? before the oblique case marker, e.g. in /ʔaipaci + a/ → [ʔaipaci] *[ʔaipaci?].)

(Primary stress is assigned to the second vowel segment in a word, e.g. puŋkuʔ-n dog-my "my dog".)

(Secondary stress is assigned to all even-numbered vowel segments in each word, starting with the fourth segment. Stress rules for Chemehuevi are somewhat simpler than for Southern Paiute. This
simplification is a result of the fact that Chemehuevi deletes final vowels and lengthens monosyllabics; Southern Paiute's not doing so results in complications in the rule of stress assignment. \( (C_0 \text{ stands for a string of any number of consonants or none.}) \) E.g.

\[
/na-ravasi-tu?i-vi\text{}/ \\
\text{reflex-dry-cause - past} \quad "dried-self" \\
\text{1 2 2} \\
\rightarrow \text{na-ravasi-tu?i-vi } \)
\]

P 6 \( V \rightarrow \left[ \text{n stress} \right] / \quad \left[ \text{n stress} \right] \quad (n = 1 \text{ or } 2) \)

(Any sequence of vowels in which the second vowel is stressed, becomes stressed throughout, i.e. the stress spreads backwards. This does not seem to be true in the opposite direction. E.g. kiaw, "yesterday", from /kiawi/, is stressed equally on the two vowels. Compare with urua-ya, "walking", where the second, but not the third vowel segment is stressed.)

P 7 \[
\begin{array}{c}
\left[ -\text{son} \right] \\
\left[ -\text{strid} \right] \\
\left[ -\text{voiced} \right]
\end{array} \rightarrow \begin{array}{c}
\left[ +\text{cnt} \right] \\
\left[ +\text{voiced} \right] \\
\left[ +\text{g} \right]
\end{array}
\]

(After "geminating" morphemes, the nonstrident obstruents are p t k and kw—see discussion, section 1.31.)

P 8 \[
\begin{array}{c}
\left[ -\text{son} \right] \\
\left[ -\text{strid} \right] \\
\left[ \text{cor} \right]
\end{array} \rightarrow \begin{array}{c}
\left[ +\text{cnt} \right] \\
\left[ +\text{voiced} \right] \\
\left[ \text{cor} \right] \\
\left[ -\text{son} \right]
\end{array}
\]

54
(After "spirantizing" morphemes, the nonstrident obstruents become voiced continuants, and in the case of /t/, vocalic and sonorant (i.e. r).)

\[
\begin{align*}
P 9 & \quad [+\text{nasal}] & \quad [\text{-cons}] \\
& \quad [-\text{cor}] & \quad [-\text{ant}] \\
& \quad [+\text{ant}] & \quad [+\text{hi}] \\
& \quad [+\text{back}] & \\
\end{align*}
\]

\(m \rightarrow w\) after "spirantizing" morphemes.)

\[
P 10 \quad \emptyset \rightarrow N / N \ V \quad [+\text{strid}] \\
\quad [\text{+s}] \quad [-\text{cnt}] \\
\]

(After "spirantizing" morphemes which end in a nasal plus vowel, c becomes nc. E.g. section 1.31 (4e).)

\[
P 11 \quad \emptyset \rightarrow N / [\text{+n}] \quad [-\text{son}] \\
\quad [-\text{cnt}] \\
\]

(p, t, k, kw, c become mp, nt, qk, qkw, ne respectively, after "nasalizing" morphemes.)

\[
P 12 \quad V \rightarrow [\text{-nasal}] / \quad [\text{-nasal}] \\
\quad [\text{-cons}] \\
\]

(Vowels which might have been nasalized by rule P 18 are denasalized in cases where \(m \rightarrow w\) by rule P 9. \([\text{-nasal}]/\text{-cons}\) includes both \(w\) and preceding vowels, to denasalize the whole preceding string.

With extrinsically ordered rules, this rule would be unnecessary.)

\[
P 13 \quad \{k\} \rightarrow k / [\text{-back}] \ (N) \\
\]

(k or q, preceded by \(\bar{q}\) or not, is fronted to \(\tilde{k}\) after i. E.g. /punika/ see [punik].)
(h is usually deleted after stressed syllables, as the following examples illustrate:

/puhagai/ \(\rightarrow\) puhága-nt  "doctor"
\(\text{have power}\) \(\rightarrow\) pu-vúaga-ntím  "doctors"
\(\rightarrow\) na-vúaga-nump  "medicine"

/kwíhi/ \(\rightarrow\) ní-ŋkwí-ści-tui-kat  "policeman"
\(\text{catch}\)

/waha/ + /hokonti/ \(\rightarrow\) wahá-okont  "very big")
\(\text{very}\) \(\text{big}\)

(For ordering of this rule, see section 1.34.)

P 15  ai \(\rightarrow\) aa / ___ [active ptc.]

(The diphthong ai becomes simply long a in several morphological environments in Chemehuevi, most notably before the "active" participle ending /-tʃ/ (\(\sim-ri-\sim-ntʃ-\sim-cʃ\)). This affects, for example, perfective -kai-, and remote past -pága-i-, which with the participle ending become -kaa-ntʃ and -pága-a-ntʃ respectively. The verb -gai- ("have, be", suffixed to noun stems) becomes -gaa-ntʃ with the participle ending, e.g. juhu-gai-, "fat" juhu-gaa-nt, "is fat".)

P 16  \(\{k\}\) \(\rightarrow\) q / [-high] (N) ___

(k or \(\tilde{k}\), whether preceded by \(\tilde{a}\) or not, are backed to q after the non-high vowels \(\tilde{a}\) and q,
regardless of what follows. Example: /tɪka-ŋu-aka/, eat-imp-that > tākaŋuaq.)

P 17  

\[
\begin{align*}
&[-\text{voc}] & \text{opt} & +\text{back} \\
& \rightarrow & +\text{round} & / u (N) ___ \\
\end{align*}
\]

(This changes k, ŋ, ŋk, and y to kʷ, ŋʷ, ŋkʷ and yʷ respectively, after u. This rule is optional—the same form uttered twice in succession will alternate between e.g. k and kʷ. Example: /uŋa-ja/, he-əb → uŋaj~uŋajʷaj.)

(For ordering problems see discussion, section 1.34.)

P 18  

\[
\begin{align*}
&[+\text{voc}] & -\text{cons} \\
& \rightarrow & +\text{nasal} & / ___ [+\text{nasal}] \\
\end{align*}
\]

(Vowels are nasalized before nasal consonants. E.g. hiimp → hǐimp what.)

P 19  

\[
\begin{align*}
&[-\text{voc}] & \text{opt} & +\text{nasal} \\
& \rightarrow & \emptyset & / [+\text{nasal}] ___ C \\
\end{align*}
\]

(This optionally deletes nasals in clusters, after vowel-nasalization has had an opportunity to apply. Whether the rule applies, and the degree to which it applies, depends on several things, including the nature of the vowel (i seems to trigger it more than a, for example), the position relative to stress (nasals are deleted less after stressed vowels than un-stressed ones), and whether the cluster is word-final or followed by a vowel (nasals seem to be...
retained more often when the cluster is word-final.) Example: hǐimp → hǐip what.)

P 20 \( a \rightarrow aw / \_\_ (N) kw \# \)

(See next rule.)

P 21 \( kw \rightarrow k / aw (N) \_\_ \# \)

(Final clusters of \( ŋk\) or \( kw\) optionally spread or shift their glide back to the preceding segment, if that segment is an \( a\). Example:
/kani-ipatɨ-manəŋkwə/ house-inside-from, →
kaniipatɨmanəkw ~ kaniipatɨmanaŋkw ~
kaniipatɨmanaŋk.)

P 22 \( y \rightarrow [\text{-voice}] / \_\_ \# \)

(This rule optionally devoices word-final \( y\).
See section 1.1 for examples.)

P 23 \( a \rightarrow [\text{-back}] / \_\_ [+voc] [\text{-back}] \_\_ \)

(This rule is to account for \( a \rightarrow æ\) in words like [tirawi?] < /tirawi?i/ dash off. (There are not enough examples of this to further specify the environment.))

P 24 \( i \rightarrow [\text{-i}] / q \_\_ \)

(After the backed velar, \( i\) is partially assimilated to \( ĩi\), i.e. given a back onglide. Example:
/jaaki/ (P 16) jaaqi- (P 24) jaaqìi- bring.)

P 25 \( i \rightarrow \{ e, ì \} / a \left[ -voc -cons -hi \right] \_\_ \)
(is partially lowered, and sometimes backed, after a plus one of the glides h and i. Examples:

\[ /pahi\tilde{u}/ \rightarrow \text{pahe}^i\text{j} \]

\[ \text{three} \]

\[ /ja?i-j\grave{a}/ \rightarrow ja?ai\text{j} \sim ja?e\text{i}j. \]

\[ \text{dead-pres} \]

P 26 \[ \text{Opt}^\text{+} \emptyset / V \longrightarrow V \]

(In rapid speech i is frequently dropped intervocally; e.g. \[ /t\text{i}ka-tu?i-\text{vii/} \rightarrow \text{cause to eat} \rightarrow [t\text{i}ka-tui-\text{vii}]. \] (For discussion of ordering this rule, see section 1.34 below.)

P 27 \[ V \quad \text{Opt}^\text{v} \emptyset / V \quad \rightleftharpoons \quad V \quad \text{[v stress]} \quad \left[ \text{2 stress} \right] \]

(When a long vowel does not contain primary stress, it is optionally shortened. (If the first vowel in the sequence wasn't assigned secondary stress by P 5, it was by P 6.) E.g. \[ \text{tika-vaa-nt} \rightarrow [t\text{i}ka-va-nt]. \]

\[ \text{eat-fut-pte} \]

1.34 Discussion

A few sets of rules pose problems if extrinsic rule ordering is dispensed with entirely. P 1 (final vowel deletion) must somehow be prevented from applying to its own output or to the output of P 2. With extrinsically ordered rules we can appeal to the "noniterative rule convention" to prevent P 1 from reapplying, however such a convention is
inconsistent with allowing the rules to apply "whenever they can." One alternative would be to mark forms in some ad hoc way, after P 1 has applied once. A second alternative would involve positing all underlying forms without their "final vowels", i.e. more or less as they appear phonetically in isolation. Instead of a rule deleting vowels, one would have a rule adding vowels when the morpheme is nonfinal, the nature of the vowel being determined by a morphological feature on the form. This approach is one I expect would be taken using a theoretical framework of Natural Generative Phonology. 21

The second ordering problem concerns the "persistent" MSR 26, which as a phonological rule assimilates certain vowels in vowel clusters. This rule interacts with rules P 14, P 17, and P 26, all of which should follow MSR 26. Nonpermissible vowel sequences which arise due to deletion of h or ? seem to be permissible, for example ao in the last example under rule P 14 above. The rounding of velars by P 17 applies only after a phonetic u; if u should assimilate to a preceding vowel, nonround velars are not rounded. (An original /kw/, however, remains round. This fact prohibits adding a rule of unrounding.)

Without recourse to ordering, there are two options. One could convince oneself that phonetically \( k^w \) from /k/ and \( k^w \) from /kw/ were distinct (perhaps in degree of rounding), and that underlying vowel sequences were phonetically
more diphthongized, for example, than sequences arising from deletion of ? or h. However, I'm not sure the facts support this. Alternatively one could again adopt a Natural Generative approach. In Natural Generative Phonology, all phonological rules must be exceptionless. Therefore, since there are phonetic occurrences of unassimilated vowel sequences, the vowel assimilation rule (MSR 26) could not be phonological, but instead must be a morphophonemic rule.

Aside from problems with rule ordering, the current analysis has one further drawback worth noting. A handful of segments seem to be prohibited from occurring word-initially, though they do show up morpheme-initially. These are the velar nasal \( \eta \) and the glottalized series \( w? \), \( j? \), \( m? \), etc. Morpheme structure rules do not include word-boundaries, and syllable structure constraints, if one chose to state them separately, could not exclude syllable-initial \( \$ \eta \), etc., since there are countless such examples.

To the extent that these are valid generalizations, and I believe they are, the theory must somehow be amended to account for them.
Footnotes

1 Non-native.

2 I'm attempting to follow Chomsky and Halle (1968) regarding the feature "delayed release", with some difficulty since their description is rather vague.

3 For a more complete survey of these analyses, see Nichols (1973). Others not mentioned there include Lovins (1970), Rogers (1967).

4 c → nc when "spirantized", only if the preceding syllable contains a nasal. (See rule P 10, section 1.33.)

5 Nichols does not intend "final features" be associated with, say, the preceding vowel.

6 No consonant ever occurs word-finally in Southern Paiute. No syllable or morpheme ends in a consonant other than a geminate segment or a homorganic nasal.

7 Namely omitting a few morpheme boundaries. There are a few minor omissions and mistakes in their rules as written, but most are easily remedied.

8 Upper case letters represent segments unspecified for point of articulation.

9 Nichols (p.c.) admits his "typologically anomalous" segments involve introducing a new theoretical device. We disagree only on whether this is desirable.

10 Even thus far, the data in Chemehuevi offers less phonological support than the data in Southern Paiute for Chomsky and Halle's approach; for example, there are no geminate consonants, making underlying obstruent clusters rather ad hoc.

11 It has been suggested (Fromkin p.c.; Schachter p.c.) that morphemes like the durative might begin with unspecified vowels, which are later deleted (after the rule which deletes any preceding morpheme-final unspecified consonant prevocally).

12 These homorganic nasals are not specified for point of articulation in the lexicon, since MSR 25 fills in the appropriate features.
Paul Schachter (personal communication).

The fact that the nasalizing form occurs only with stems containing nasals could be stated in a redundancy rule.

I know of no examples of non-bound morphemes with the underlying structure /CV/; if they occurred, Pl would have to be rewritten:

\[ [+\text{voc}] \rightarrow \emptyset / \text{C}_o \text{ V C}_o \quad # \]

to prevent deletion of the only vowel in a word. (If this generalization about stems is correct, somehow morpheme structure rules should state it.)

[αF] used to mean "agrees in all features".

A small number of stems when reduplicated have a long vowel in the first syllable, e.g.

/kaiva/ mountain /nainci/ young girl
[kaakaiv] mountain (pl) [naanainci-v] young girl (pl)

Since stems must be lexically marked for whether they take CV or CV anyway, (see discussion, section 1.31 above), I propose to add CVV to the list of re-

\[ [+\text{redup}] \quad [+\text{redup}] \quad [+\text{g}] \]

duplication morphemes (all examples I have seen do not alter following consonants), and mark the appropriate stems accordingly.

Suggested by P. Schachter.

As written for example in: Chomsky and Halle (1968), Harms (1968), and Lovins (1970).

For some morphemes this rule is optional, for others it is blocked; e.g. na-maṣa- self-give is not *na-waṣa-.* (There is a frozen form na-waṣa- which now means "cost; dole out". Historically from /na-maṣa/, it has now been lexicalized.) The form /na-mavo?a/ self-cover is optionally na-wavo?a-. Sapir concludes that spirantization is no longer a productive process. I propose that since many morphemes have to be marked as unaffected by consonant-alternation rules anyway, m → w can still be treated as an active phonological rule.

Hooper, op. cit.
2 SYNTAX
2.1 Phrase Structure Rules

1. \[ S \rightarrow \left\{ \begin{array}{l}
S \ S \ (S)^* \\
\text{(CONJ)} \ (NP) \ (SUBORD) \ VP \ (Q)
\end{array} \right\} \]

2. \[ \text{SUBORD} \rightarrow \ (NP) \ (VP) \]

3. \[ \begin{array}{l}
(D) \ (NUM) \ (N) \ (D) \ (PP) \ (PTC) \ (D)
\end{array} \]

\[ NP \rightarrow \left\{ \begin{array}{l}
(NP) \ \text{NOM} \\
\text{PRO}
\end{array} \right\} \]

4. \[ PP \rightarrow NP \ \text{POST} \]

5. \[ PTC \rightarrow S \]

6. \[ D \rightarrow \{ NP \} \]

7. \[ \text{POSS} \rightarrow NP \]

8. \[ \text{NOM} \rightarrow VP \]

9. \[ VP \rightarrow \left\{ \begin{array}{l}
(PP) \ (ADV)\}
\end{array} \right\}^* \left\{ \begin{array}{l}
(S) \ (NP)^* \ (V) \\
\text{PTC}
\end{array} \right\} \]

These rules will be discussed in the sections to follow.

I adopt the convention that when all symbols in an expansion are parenthesized, one or more must be included.

2.2 Simple Sentences

2.21 Noun Phrases

The phrase structure rule expanding noun phrases in Chemehuevi is as follows:

\[ (1) \quad NP \rightarrow \left\{ \begin{array}{l}
(NP) \ \text{NOM} \\
(D) \ (NUM) \ (N) \ (D) \ (PP) \ (PTC) \ (D) \\
\text{PRO}
\end{array} \right\} \]
The symbol D will be expanded to \( \text{POSS} \), where POSS is the source of possessive noun phrases (which are in the oblique case) modifying the head noun N in (1) above, and NP (from D) is the node to which third person pronouns attach when used as "demonstrative adjectives". Three nodes for D are provided because, although movement rules will allow still more orders, up to three can appear in a single NP. Since the actual form of demonstrative or possessive pronouns depends on whether they are prenominal or post-nominal, and since forms in both positions can occur at once (e.g. ni-\text{n}i moa-n my father-my), deriving the second occurrence by a copy-transformation would seem to necessitate a "second lexical look-up", a device I would like to avoid (in the interest of further constraining the model). By having the slots for D available in the Phrase Structure, copying transformations can be dispensed with. (See section 2.214 on possessives and demonstratives.)

NUM stands for numeral, which modifies the head N and agrees with it in case.

PP is postpositional phrase, and is among other things a source of NP conjunction (see sections 2.23 on postpositions, 2.31 on conjunction).

PTC will be expanded to S, the source of relative clauses (which are always participles in Chemehuevi—see section 2.33). Participles may be used without head nouns, thus the N in (1) above must be optional.
(NP) NOM is the source of all nominalizations, with or without "subjects". (See section 2.34.)

2.211 Derivation of nouns

Simple nouns consist of proper nouns, pronouns, or common nouns. Common nouns usually consist of just a noun stem, but often are derived from a root (nominal or otherwise) plus some sort of derivational affix. The most common of these affixes is the set of "absolutive" suffixes, found throughout the Uto-Aztecan family. Absolutives are peculiar in that they attach to roots which are already noun roots, and furthermore, most of them delete when the noun is compounded (as the first member) or possessed (whether the possessor is a postfix or not). Most absolutives have lost whatever semantic significance they once might have had. Since relatively few noun roots also function as verb roots, there is little if any functional load in absolutives' "marking" a word as a "noun".

In (2) below, examples are given of noun stems which appear to consist solely of a root, with no derivational affixes. In the nominative case nothing else is added to these to make them "words", and nothing is deleted when they're compounded or suffixed.

(2) a. /paa/ water
    b. /tua/ son
    c. /kuna/ fire
    d. /naga/ mountain sheep
    e. /tomo/ winter
The underlying forms of absolutive suffixes are given in (3) below:

(3) -ci e.g. /puŋku-ci/ puŋkuc "dog"
    {nĩni puŋk} "my dog"
    /sĩgĩpi-ci/ sĩgĩpic "lizard"
    sĩgĩpi-rĩkaw?i-c "turning into a lizard"

(/-ci/ almost certainly originated from the diminutive suffix /-ci/, but as long as it behaves like an "absolutive" I will classify it as such.)

-ci e.g. /pavon?okwi-ci/ pavon?okwic "watermelon"
    pavon?okwi?-asiv "watermelon rind"

-pi e.g. /sĩ?i-pi/ sĩ?ip "flower"
    sĩ?i-rĩkaw?i-c "turning into a flower"
    /kukwa-pi/ kukwap "stick"
    kukwa-tapoka-ga "chopping wood"

-vi e.g. /sĩna?a-vi/ sĩna?av "coyote"
    sĩna?a-rĩkaw?i-c "turning into a coyote"
    /hawi-vi/ hawiv "corn"
    hawi-n "my corn"
    hawi?-iğa-ga "planting corn"

-mpi e.g. /nĩwĩ-mpi/ nĩwĩmp "liver"
    nĩwĩ-n "my liver"
-pî e.g. /sawa-pî/ sawap "arrow-weed"
    sawa-kan "arrow-weed house"
/tîvi-pî/ tîvip "earth, ground"
    tîvi-tîkaw?î-c "turning into dirt"
-vî e.g. /maha-vî/ mahav "tree"
    maha-?iga-n "my tree-plant"
/wana-vî/ wanav "web"
    wana-?uŋ "his web"
-mpî e.g. /aso-mpî/ asomp "salt, alkaline"
    aso-kama-ga "tasting salty"

The only semantic generalizations one might make on the basis of my data are that animate nouns tend to only take the absolutes /-ci/ and /-vi/; /-ci/ being apparently restricted to this class. 3

Absolutes on most nouns in the oblique case are followed by the normal oblique marker /-a~ja/, as in (4) below:

(4) puŋku-ci-a-n tâŋa-vî
dog-abs-ob-I kick-past "I kicked the dog"

Plurals of nouns with absolutes retain them when the plural suffix is added:

(5) sîna?av "coyote", sîna?avi-m "coyotes"
    sîgîpic "lizard", sîgîpic-i-w "lizards"

Absolutes seem to be retained when postpositions are added, even when the latter function as verbs (see section 2.23 on postpositions). Examples:
(6) oho-\(v\) "bone", oho-\(v\bar{i}-wa?"with a bone"
pu\(\bar{n}\)ku-\(c\) "dog", pu\(\bar{n}\)ku-ci-wa?"with a dog"
tusu-\(p\) "flour", tusu-t\(\bar{\i}\)kaw?i-\(c\) "turning into flour"
tusu-p\(\bar{i}\)-\(\bar{\i}\)-\(w\)\(a\)nt "part of (=post-position) the flour"
t\(i\)vi-\(p\) "earth", t\(i\)vi-p\(\bar{i}\)-\(v\)\(a\)n "on the ground"
pu\(\bar{n}\)ku-\(\bar{\i}\) "dog", pu\(\bar{n}\)ku-ci-\(ru\)-\(\eta\) "Give the dog!" （-\(t\)\(u\)a = towards）

Some derivational suffixes regularly cause deletion of the absolutive:

(7) tavu-\(c\) "hare", tavu-\(ru\)\(a\)c "bunny" (hare-offspring, diminutive suffix, probably from tua-, son, plus /-\(c\)i/-, dim.)

Some nouns occur with two absolutes in a row, as in:

(8) /mu\(h\)u-\(m\)\(p\)\(\bar{i}\)-\(c\)i/ muhump\(\bar{\i}\)c "owl"

\{muhu-\(m\)\(p\)\(\bar{i}\)-t\(\bar{\i}\)kaw?i-\(c\) \} "turning into an owl"
\{muhu-nt\(\bar{\i}\)kaw?i-\(c\) \}

The overall situation with absolutes is actually not quite as simple as the above examples suggest. Some nouns optionally appear without the absolute in non-compounded, nonpossessed environments. Others may include the absolute in compounds or possessed forms, e.g. /\(a\)\(\bar{n}\)aa-\(v\)i/ \(a\)\(\bar{n}\)aa "ant", \(a\)\(\bar{n}\)aa-\(\bar{\i}\)kaw?i-\(c\)\(\sim\) \(a\)\(\bar{n}\)aa-\(v\)i-\(\bar{\i}\)kaw?i-\(c\) "turning into an ant"; /ukwi-\(v\)i/ ukwiv "charcoal", ukwi-\(\bar{\i}\)kaw?i-\(c\) "turning into charcoal", but ukwi-\(v\)i-\(n\) "my charcoal". Some nouns have a choice of absolutes (usually only in the nominative—one seems preferred with the oblique case), e.g. kwihi-p-
kwihi-v "smoke", soo-g (\text{=absolutive?}) \sim soo-v "lungs". Other nouns have two different meanings in the nominative depending upon whether the absolutive is included or not. The oblique case of these nouns, however, does include the absolutive and can be translated both ways, e.g. /wici?aa/ "wing", /wici?aa-vi/ "feather", but /wici?aa-vi-a/ "wing, feather" in the oblique case. (Similarly, /tuku?aa/ "flesh", /tuku?aa-vi/ "edible meat", both /tuku?aa-vi-a/ in the oblique case.)

These facts strongly suggest that absolutives are extremely susceptible to relexicalization. For many nouns the absolutives are considered part of the stem in some environments, but not in others. (I am, for the sake of the discussion, calling a suffix an absolutive if it deletes in any environment and still allows the stem to be interpreted nominally—e.g. nominalizing suffixes which are retained in all the above environments but are deleted when the stem is verbal in meaning, do not count as absolutives. Obviously many historical cases of absolutives which now never delete will no longer be called absolutives here (although they are by Sapir, for example).) The system of absolutives itself does not seem to be in danger, since new suffixes seem to pile on as old ones meld into the stem. Rather, it is each particular instance of the absolutive, on a given noun stem, which is unstable and continuously in flux. The unique syntactic properties and the diffuse semantic classification (even historically) of these suffixes certainly
contribute to the explanation of their gradual fusion to the stem. (See Nichols (1973) for discussion.)

Under the present analysis, most absolutes might be handled (along with other derivational and inflectional processes) as a set of lexical redundancy rules. Nouns such as the examples in (3) will have three entries in the lexicon, as in the following example:

\[
\begin{align*}
&\text{(9) a. } [/\text{puŋku/}] \\
&\hspace{1cm} +N \\
&\hspace{1cm} -\text{Prefix} \\
&\hspace{1cm} \text{dog} \\
&\hspace{1cm} \text{POSSESSED} \\
&\text{b. } [/\text{puŋku+ci/}] \\
&\hspace{1cm} +_N [[N]+\text{abs}] \\
&\hspace{1cm} -\text{Prefix} \\
&\hspace{1cm} \text{dog} \\
&\hspace{1cm} \text{UNPOSSESSED} \\
&\text{c. } [/\text{puŋku/}] \\
&\hspace{1cm} +N \\
&\hspace{1cm} +\text{Prefix} \\
&\hspace{1cm} \text{dog}
\end{align*}
\]

The first line in each entry gives the underlying phonological representation, features such as \([+\text{Prefix}]\) (marking the form used as the first member of a compound) and \([+N]\) are syntactic; the feature \(_N [[N]+\text{abs}]\) is intended to show that in addition to the form being a N it has the internal structure  \[N \overset{\text{abs}}{\underset{N}{\rightarrow}}\]. The underlined glosses are to be taken as an informal representation of the semantic information the entry contains. I make no claims about the form such information should take, but include further aspects of the meaning (e.g. POSSESSED) any formalism must provide for.

(One could have handled the prefix form \(/	ext{puŋku/}\), which is unspecified for POSSESSION, via a phonological rule deleting absolutes before stems in the same word. However I am
avoiding such rules since by deleting morphemes they violate
the spirit of the constraint on transformational rules.
Ultimately a more comprehensive model would extend this con-
straint to phonological rules as well, certainly more so
than I have done.)

Since there are many triplets of entries which behave
in the same way, a lexical redundancy rule of the following
form can eliminate the cost of restating those features
each triplet has in common:

\[
(10) \text{a. } [\begin{array}{l}
/\text{x}/ \\
+\text{N} \\
-\text{Prefix} \\
\text{POSSESSED}
\end{array}] \quad \leftrightarrow \quad [\begin{array}{l}
/\text{x} + \text{abs}/ \\
+ \text{[N]+abs} \\
-\text{Prefix} \\
\text{UNPOSSESSED}
\end{array}] \quad \leftrightarrow \quad [\begin{array}{l}
/\text{x}/ \\
+\text{N} \\
+\text{Prefix}
\end{array}]
\]

(Following Jackendoff, \text{x} represents the phonological string
in common, and $\leftrightarrow$ means "implies the existence of".)

The cost of referring to the rule in (10) must of
course be added to the entries, and intuitively that cost
should be somewhat greater than referring to e.g. a rule
relating nominative forms of nouns to oblique forms (which
is exceptionless and therefore should be costless).
Jackendoff proposes quite reasonably that, for each set of
items which are relatable by a lexical rule R, the cost of
referring to R should somehow be proportional to the per-
centage of words which could "undergo" R but don't (i.e.
\[
\text{those that can but don't} \quad \text{those that can}
\] )
This makes lexical rules relating only a handful of items very costly to refer to. This also means that the more narrowly the group of words can be characterized in the rule, the more one decreases the cost (e.g. if the rule in (10) weren't restricted to nouns, the fact that no verbs are relatable by it would add to the rule's price. We could reduce the existing cost a bit more by restricting (10) to non-pronouns, since pronouns never have absolutes.)

All in all there will be four triads of rules like the one in (10), one for each absolutive suffix (/ci, c-i, pi, p-i/; the variants -mpi, -vi, etc. are predictable from the "spirantizing" and "nasalizing" features on the stem, see section 1.31). Whereas each triad actually represents three separate implicational rules (in (10) above, (a) \(\leftrightarrow\) (b), (b) \(\leftrightarrow\) (c), and (a) \(\leftrightarrow\) (c)), the "full entry theory", unlike the "impoverished entry theory", does not require that individual rules be "numbered" or specifically referenced in entries. Therefore I see no reason for not simply incorporating the subparts of (10) into a general noun-paradigm (formally similar to Shopen) where each cell implies the existence of the others. In proposing his formalism for lexical redundancy rules, Jackendoff argues that the semantic portions of each rule be removed from the morphological portions, into a separate rule. Dividing (10) into a Morphological rule and a Semantic rule, as in (11) and (12) below, allows some of the exceptions discussed earlier to be accommodated:
(11) M a. \([/x/ +N] -\text{Prefix}\)  \(\leftrightarrow\)  b. \([/x + ci/ +_N[([N])]+\text{abs}] -\text{Prefix}\)  \(\leftrightarrow\)  c. \([/x/ +N +\text{Prefix}]\)

(12) S a. \([+N \ \text{POSSESSED}]\)  \(\leftrightarrow\)  b. \([+_N[[N]]\text{abs}] \ \text{UNPOSSESSED}\)  \(\leftrightarrow\)  c. \([+N +\text{Prefix} *\text{POSSESSED}]\)

(There will be four such M-rules of course, but only one such S-rule, since only the former specifies the shape of the absolutive.\(^5\))

For example, /ukwi-\(\text{\textdagger}\)/ "charcoal" can now be viewed as a set with gaps as follows:

(13) a. \([/ukwi/ +N +\text{Prefix}]\)  \(\check{\text{charcoal}}\)

b. \([/ukwi-\text{\textdagger/} +_N[([N])]+\text{abs}] -\text{Prefix}]\)  \(\check{\text{charcoal}}\)

c. \([/ukwi/ +N +\text{Prefix} *\text{POSSESSED}]\)  (no entry for \(\check{(/ukwi/ -\text{Prefix})}\)).

(13a) and (b) are related by rule M(b-c) in (11) above, but by none of the three possible S-rule relations (a-b, b-c, or a-c) since prefixation, not possession, seems to be the only parameter for determining the form of charcoal.

**Other derivational suffixes**

In addition to the absolutives there are a few other derivational suffixes in Chemehuevi which add to noun stems to create other nouns. Following is a list of these suffixes, along with examples of each:
(14) a. /-ci/ "small" (diminutive, added to concrete nouns.)

   e.g. wihi-c "small knife" < /wihi/ "knife"
        puŋkucí-c "little dog" < /puŋkucí/ "dog"

b. /-pí/ "plant, bush" (added to stems denoting fruits of plants.)

   e.g. opi-mp "mesquite" < /opi/ "mesq. bean"
        ijaaví-mp "grapevine" < /ijaaví/ "grapes"
        huʔupí-v "sqawbush" < /huʔupí/ "sqawbush berry"

c. /-ví/ "language" (added to tribenames)

   e.g. ajata-v "Mojave lang." < /ajata/ "Mojave"
        haiku-ν "English" < /haiku/ "whiteman"

d. /-pí/ "old, abandoned"

   e.g. kani-p "abandoned house" < /kani/ "house"

e. /-ví/ "skin, material"

   e.g. puŋku-v "wool" < /puŋku/ "domesticated animal (sheep)"
        tíhija-v "deerhide" < /tíhija/ "deer"

A handful of suffixes which are associated in one way or another with "possession" but which otherwise seem to make no semantic contribution are given in (15). They are apparently restricted to nouns which are inalienably or inherently possessed.
(15) a. /-wa/ (added to many body parts and plant parts, though not to all of them.)

  e.g.  \{paš-wa-n \} "my blood" < /paš-pi/ "blood"  
        \{nšini paš-w \} blood-abs
        huuva-wa-uk "its sap" < /huva-a/ "sap"
        kuca-wa-uk "its ashes" < /kuca-pi/ "ashes"
        ashes-abs

(an example which is not a body part is:)

        tivi-wa-n "my land" < /tivi-pi/ "ground"  
        ground-abs

(To the extent that the last example in (a) is interpretable as "territory", one could still make the generalization that all the above noun stems are "normally" possessed, except when used with their absolutives.)

b. /-?aa/ (also added to body parts, with distribution distinct from -wa. There are still many body parts which take neither.)

  e.g.  sagwi-?aa-n "my guts" < /sagwi-vi/ "guts"  
        guts-abs
        pavon?okwič asi-?a "watermelon rind"  
        /asi-vi/ "skin"  
        skin-abs
        naŋka-?aa-ik "its leaf" < /naŋka-vi/  
        leaf-abs

        c.f. naŋka-vi-n "my leaf"  
               (not part of my body)

  c. /-akaa/ (added to body parts, kinship terms, objects which also normally have to "belong" to something or someone.)

  e.g.  ju?u-akaa-v "one's leg" < /ju?u/ "leg"
e.g. moa-akaa-v "someone's father" (< /moa/ "father"
         pipiso?o-akaa-m "their children"
         (< /pi-piso?o-ci/ "children"
         pl-child-abs

The suffix -akaa normally cooccurs with the suffix -vi
"someone's" (see (d) below), though a few examples exist
(e.g. "children") with a true possesive pronoun. All the
examples I have obtained with -akaa are in the nominative;
in oblique cases it deletes leaving only the -vi or posses-
sive suffix.

d. /-vi/  (unlike all the above, this is added to
       nouns normally possessed which don't
       have an overt possessor in the sentence.)

   e.g. ju?u-v "someone's leg" /ju?u/ "leg"
       ni?wi-?aa-v "someone's body" /ni?wi/  "body"

This suffix is difficult to distinguish from an absolutive
in many cases, since it can as easily be translated, e.g.
"a leg". It, too, would of course disappear when the noun
is possessed, and never shows up in compounds. It is the
only quasi-absolutive which can follow -akaa or -?aa, how-
ever. It differs from normal possessive pronouns in that it
is always a suffix and it is followed by the oblique marker
-a, whereas possessive pronouns are preceded by -a, e.g.
ju?u-vi /ju?u-vi-a/ "someone's leg (oblique)". (See section
2.214 on possessives.)

Lexical rules for the suffixes in (14) will vary in
generality. The suffix -ci seems to be the most productive;
I know of no noun that can't add it (though it is probably restricted to count nouns). Thus the lexical redundancy rules for -ci should be fairly straightforward:

\[
(16) M: \begin{bmatrix}
/x/ \\
+N \\
+Count \\
\end{bmatrix} \leftrightarrow \begin{bmatrix}
/x + ci/ \\
+_N[[N]+dim] \\
+Count \\
\end{bmatrix}
\]

\[
S: \begin{bmatrix}
+N \\
+Count \\
X \\
\end{bmatrix} \leftrightarrow \begin{bmatrix}
+_N[[N]+dim] \\
+Count \\
LITTLE X \\
\end{bmatrix}
\]

Since -ci appears to be the only suffix with this semantic relationship it would be tempting to collapse the above rules into one. It seems to me that aside from the convenience in sometimes separating morphological and semantic lexical rules, there is no formal reason why they must be separated. Jackendoff claims that the cost of "referring" to morphological and semantic lexical rules must be measured independently, i.e. added together. This seems reasonable for cases where the two do not exactly correlate, as in Jackendoff's examples in English and the absolutes above. However, (just as intuitively) rules such as the ones in (16) which do correlate exactly should not, it seems to me, contribute twice to the cost. (Recall, it is the number of rules involved, not the content of each, that potentially increases the amount of "new information" one learns for a new word. Thus the question is not a moot one.) Therefore, I would rewrite (16) as the combined rule in (17) below, and
would continue to do so whenever a single morpheme has a one-to-one relationship with a semantic contribution. 7

(17) \[
\begin{align*}
&/x/ \\
&+N \\
&+\text{Count} \\
&x
\end{align*}
\leftrightarrow
\begin{align*}
&/x + \text{ci}/ \\
&+_N[[N]+\text{dim}] \\
&+\text{Count} \\
&\text{LITTLE X}
\end{align*}
\]

The second suffix in (14) is restricted to a much smaller set of nouns, namely those denoting fruits of plants. Within this set the suffix -pi is fairly, though not completely, productive. Although there are existing gaps in the lexicon, in the data reported by Harrington recent borrowings into Chemehuevi utilized this suffix (e.g. /lemani/ "lemon", /lemani-wi/ "lemon tree"). The following lexical rule, then, will be somewhat costlier than the one in (17) not because the set of potential nouns is smaller, but because of the few gaps:

(18) \[
\begin{align*}
&/x/ \\
&+N \\
&x \text{ FRUIT}
\end{align*}
\leftrightarrow
\begin{align*}
&/x + \text{pi}/ \\
&+_N[[N]+\text{plnt}] \\
&x \text{ PLANT}
\end{align*}
\]

Similar rules can be written for the other suffixes in (14).

The suffixes associated with possession are somewhat more complicated semantically. I would propose the following rule (of which there are three, 8 for the "possessives" -wa, -akaa, and -?aa):
(19) \[
\begin{align*}
/\overline{x} (\text{+ abs})/ \\
+ N \\
\text{INHERENTLY POSSESSED} \\
\text{UNPOSSESSED}
\end{align*}
\]

\[
\begin{align*}
/\overline{x} + \text{wa}/ \\
+ N[[N] + \text{poss}] \\
\text{INHERENTLY POSSESSED} \\
\text{POSSESSED}
\end{align*}
\]

For those words which have absolutes (and for which the poss suffix is obligatory) the only occurrences of the stem alone will be in compounds. They will all have gaps in the paradigm much as charcoal did in (13) above. They will refer only to (i.e. have forms relatable to them by) rule M(b-c)\(^9\) in (11) and rule S(b-c) in (12) above.

I will use POSSESSED in the rules above to mean that the form cooccurs with an overt possessor in the sentence. INHERENTLY POSSESSED will be used to describe nouns that are expected to be possessed, though not always inalienably (e.g. "territory", "food-store"). When an overt possessor is available, these are the nouns which augment their stems with a poss suffix. When they lack a possessor (e.g. "I saw a head in the road") the tendency is to attach -vi "someone's" (as it is in English; "You're on the property"), but in most cases the absolutive form is permissible instead.

The presence of the poss suffix in effect demands an overt possessor, just as did the lack of absolutes on non-prefixed forms of absolutive-taking nouns. If the sentence should fail to provide one, interpretive rules will uncover the inconsistency and throw out the sentence as uninterpretable. (Number agreement will be handled the same way.)
The suffix -vi "someone's" is entirely productive and can be used on any noun which can be possessed, in lieu of a possessor. (For nonpossessable nouns, see section 2.214 on possessives.) To capture the semantics I will introduce a third semantic category\textsuperscript{10} POSSESSABLE, which redundantly includes anything which is INHERENTLY POSSESSED, but also includes such things as shirts and refrigerators as well. Since nouns with -vi may not be overtly further possessed at the same time, the following lexical rule will handle them:

\[
(20) \begin{array}{c}
\left[ /x + \text{abs}/ \right. \\
+ N \\
\left. \begin{array}{c}
\text{POSSESSEABLE}
\end{array} \right]
\end{array} \quad \leftrightarrow \quad \begin{array}{c}
\left[ /x + \text{vi}/ \right. \\
+ N \left[ [N] + \text{indef poss} \right.
\left. \begin{array}{c}
\text{UNPOSSESSEABLE}
\end{array} \right]
\end{array}
\]
\]

Nouns in Chemehuevi can also be derived from verb stems as well. Nominalizations formed with the suffix /-na/ have some noun-like properties, yet cooccur with tense suffixes. These will be treated separately in section 2.314. A second type of nominalization is formed with the suffix /-p\(\check{e}\)/, does not take normal tense elements and adds the case marker -a when in the oblique case. Whereas nominalizations with -na always have a consistent, predictable translation, nominalizations with -p\(\check{e}\) are somewhat more idiosyncratic and the suffix is not\textsuperscript{12} productive. Examples of verb + p\(\check{e}\) are given in (21):
(21) a. /pa-hoora-pâ/ "well" < /pa-hoora/ "dig a well"
   /tînia-pâ/ "story, news" < /tînia/ "tell, say"
   /suwa-pâ/ "breath" < /suwa/ "breathe"
   /tîga-pâ/ "picture, snapshot" < /tîga/ "take a picture"

b. /tîka-pâ/ "eating" < /tîka/ "eat"
   /navakî-pâ/ "swimming" < /navakî/ "swim"
   /ivani?i-pâ/ "being here" < /ivani?i/ "be here"

Most of the examples in (21a) can be viewed as the "result of" the respective verbs. The examples in (b) translate more as the activity itself in sentences such as "Eating makes me fat," or "Swimming is dangerous." As the complement to verbs like know, they usually translate as action completed prior to the tense of the main verb, as in (22):

(22) a. John Anni ivani?i-pâ-a-un putucuga-vi
   John Ann(ob) be here-nml-ob-her know-past
   "John knew Ann had been here."

b. John Anni ivani?i-pâ-a-un ha?isutu?i-vi
   John Ann(ob) be here-nml-ob-her like-past
   "John liked Ann(‘s) having been here."

(compare with the following example without an embedded "subject":)

c. nîi-k nukwi-pâ ha?isutu?i-c
   I run-nml(ob) like-habit
   "I like running."

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I propose these nominalizations all originate in the phrase structure as simple N, and in the case of (22a,b) as a possessed noun, D + N. The different types of -pá are morphologically the same, though their exact semantic contributions differ. (It may be that (22a,b) can also be interpreted as "result of VERBing" and differ from the examples in (21) in that the latter are "concrete", the former "abstract.") As a first approximation, one might envision the following lexical rules:

(23) M: \[
\begin{align*}
&/x + pá/ \\
&+N \\
\end{align*}\] \[\leftrightarrow\] \[
\begin{align*}
&/x/ \\
&+V \\
\end{align*}\]

(24) S: a. \[
\begin{align*}
&+[\text{D}[\text{NP}_1][\text{NP}_2]] \\
&\text{CONCRETE RESULT OF X-ING} \\
\end{align*}\] \[\leftrightarrow\] \[
\begin{align*}
&+[\text{NP}_1(\text{P})\text{NP}_2] \\
&\text{X} \\
\end{align*}\]

b. \[
\begin{align*}
&+[\text{D}[\text{NP}_1][\text{NP}_2]] \\
&\text{ABSTRACT RESULT OF X-ING} \\
\end{align*}\] \[\leftrightarrow\] \[
\begin{align*}
&+[\text{NP}_1(\text{P})\text{NP}_2] \\
&\text{X} \\
\end{align*}\]

c. \[
\begin{align*}
&+[\text{D}[\text{NP}_1][\text{NP}_2]] \\
&\text{ACT OF X-ING} \\
\end{align*}\] \[\leftrightarrow\] \[
\begin{align*}
&+[\text{NP}_1(\text{P})\text{NP}_2] \\
&\text{X} \\
\end{align*}\]

Other less productive nominalizing suffixes are listed in (25) below, along with examples of each.

(25) a. /-numpá/ "instrument" THING WITH WHICH ONE VERBS

  e.g. kusa?a-nump "frying pan"

  fry-instrum
tavi-nump "hammer"

hit-instrum

pa-jua-nump "bucket"

water-carry-instrum

(See section 2.224 on object-prefixation.)

b. /-tiia/ "place" PLACE FOR VERBING

   e.g. havi-tiia "bed"

lie-place

kari-tiia "chair"

sit-place

tiika-tiia "table, anyplace one eats"

eat-place

c. /-ci/ PERSON WHO (REGULARLY) VERBS

   e.g. tapica-c "lawman" (one who ties people up)

   tie-one

   tupunua-c "Negro"

   dark-one

ll

d. /-pi/

   e.g. tiika-p "foodstore, food"

   eat-suffix

   niiga-p "basket"

   basket-weave-suffix

The suffix in (d) seems to translate variously as "what one VERBS" and "result of VERBing", depending on the stem. A single morphological redundancy rule could take care of the form, namely:
(26) M: \[ \frac{[/x + \pi/]}{+N} \leftrightarrow \frac{[/x/]}{+V} \]

However I would not try to write a single corresponding semantic rule for this suffix. Instead the words could be related by the semantic rule (a) in (24) above in the case of nīqa-p, and by a separate, also generalizable rule for "objects of actions" in the case of tāka-p.

(For participles used as nouns, see section 2.33.)

**Compounds**

Compounding is very common in Chemehevi, some types being extremely productive. If compounds resulting in nouns are considered to be lexical entries, the most common types might be characterized by rules such as the following (most adapted from Jackendoff (to appear)):

(27) M: \[ \frac{[/x + y/]}{+N[[N]+[N]]} \leftrightarrow \frac{[/x/]}{+N} \]

\[ \frac{[/y/]}{+N} \]

S: a. \[ \frac{+N[[N_1]+[N_2]]}{X \text{ WHICH IS A } Y} \leftrightarrow \frac{+N_1}{X} \leftrightarrow \frac{+N_2}{Y} \]
b. \[
\begin{array}{c}
\left[ +_N[[N_1]+[N_2]] \right] \\
X \text{ WHICH BELONGS TO } Y \\
\end{array} \leftrightarrow \left[ +N_2 \right] \\
\left[ \begin{array}{c}
+_N \\
X \\
\end{array} \right] \\
\left[ \begin{array}{c}
Y \\
+N_1 \\
\end{array} \right]
\]

c. \[
\begin{array}{c}
\left[ +_N[[N_1]+[N_2]] \right] \\
X \text{ MADE OF } Y \\
\end{array} \leftrightarrow \left[ +N_2 \right] \\
\left[ \begin{array}{c}
+_N \\
X \\
\end{array} \right] \\
\left[ \begin{array}{c}
Y \\
+N_1 \\
\end{array} \right]
\]

d. \[
\begin{array}{c}
\left[ +_N[[N_1]+[N_2]] \right] \\
X \text{ PART OF A } Y \\
\end{array} \leftrightarrow \left[ +N_2 \right] \\
\left[ \begin{array}{c}
+_N \\
X \\
\end{array} \right] \\
\left[ \begin{array}{c}
Y \\
+N_1 \\
\end{array} \right]
\]

The rules in (28) could handle instances of verb + noun compounds:

(28) M: \[
\begin{array}{c}
\left[ /x + y/ \right] \\
+_N [[V]+[N]] \\
\end{array} \leftrightarrow \left[ /x/ \right] \\
\left[ \begin{array}{c}
+_V \\
+y \\
\end{array} \right]
\]

S: \[
\begin{array}{c}
+_N \\
X \text{ WHICH IS } Y \\
\end{array} \leftrightarrow \left[ +V \right] \\
\left[ \begin{array}{c}
Y \\\n+M \\
\end{array} \right] \\
\left[ \begin{array}{c}
X \\
\end{array} \right]
\]

Examples of each rule are given in (29):
(29) a. naga-wuŋkuc  "domesticated mountain sheep"
    mt. sheep-pet
    papawa-mpi  "she-bear"
    bear-female
b. wa?aro-mpagap  "horseshoe"
    horse-shoe
c. kukwa-tikatiŋ  "wooden table"
    wood/stick-table
    pa-riʔasi-tiwp  "window"
    water-freeze-closing (pa-riʔasi is used for "glass").
d. kaiva-kuvajʔa  "mountain top:
    mountain-top
e. (Rule (28) S:)
    ajka-gan  "red house"
    red-house
    ai-niŋ  "young person"
    new-person

Alternatively, one might abandon trying to state in
the grammar all possible semantic relationships the two
members of a compound could have. A single semantic rule
might simply associate the two members in an unspecified
way. The possibilities (and probabilities) of their rela-
tionship’s are perhaps more in the domain of "knowledge of
the real world".
2.212 Pronouns

The independent pronoun system in Chemehuevi can be described with the following features: person (I, II, III), number (singular, dual, several), exclusivity (vs. inclusivity of addressee), proximity (here, visible, invisible) and animateness. These combine to give the following independent personal pronouns (cited in underlying form):

(30) SING DUAL SEVERAL

<table>
<thead>
<tr>
<th></th>
<th>SING</th>
<th>DUAL</th>
<th>SEVERAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>níʔ/níʔíʔ</td>
<td>tami</td>
<td>tavi</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>II</td>
<td>ími</td>
<td>mímí</td>
<td></td>
</tr>
<tr>
<td>III</td>
<td>iŋa</td>
<td>imí</td>
<td>here</td>
</tr>
<tr>
<td></td>
<td>(anim) maŋa</td>
<td>mami</td>
<td>visible</td>
</tr>
<tr>
<td></td>
<td>ūŋa</td>
<td>umí</td>
<td>invisible</td>
</tr>
<tr>
<td></td>
<td>(inan)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>icí/i/kə/i-</td>
<td>here</td>
<td></td>
</tr>
<tr>
<td></td>
<td>māi/maka/ma-</td>
<td>visible</td>
<td></td>
</tr>
<tr>
<td></td>
<td>urí/uka/u-</td>
<td>invisible</td>
<td></td>
</tr>
</tbody>
</table>

The first person singular has two possible stems, the second being the suppletive form used in oblique cases (namely with the accusative/possessive -a~ja). Either stem can be used with postpositions, e.g. níʔ-waʔí- ~ níʔíʔ-waʔí- "with me"; níʔ-rua-~níʔí-cua- "give me". (For postpositions as verbs, see section 2.23.) The third person inanimate pronouns have three series of stems, and use the third series (i-, ma-, u-) only with postpositions. The second series are the suppletive forms used with the oblique suffix.
First person inclusive is the only category utilizing the dual-several contrast. If it weren't for the fact that the distinction occurs outside the pronoun system as well, one might be able to dispense with it here, breaking down tami and tawî as \([I\text{-sg } + II\text{-sg}] vs. [I\text{-sg } + \{II\text{-pl } + \text{III}\}]\), respectively. nîmi could be viewed as \([I\text{-sg } + \text{III}]\).

The number feature undergoes further syncretism in the set of inanimate pronouns, where no number distinction is marked overtly at all. Semantically, however, inanimate things may be understood to be singular or plural--when an inanimate subject or object is plural, the number suffixes on the verb reflect this.

The proximity features, relevant only to third-person pronouns, are not really three points in a distinct spectrum. "Here" means both visible and close to the speaker (within, say, arms' reach). "Visible" means some distance away (actually, any distance, beyond arms' reach, as long as it's within sight of the speaker) and "invisible" means out of sight, whatever the distance. There is no indefinite, unmarked pronoun as there is in Southern Paiute (aŋa, amâ, ara, "indefinite" third person sg, pl, inanimate, respectively (Sapir p. 177).)

All third person pronouns are in fact demonstrative pronouns and may also function as demonstrative adjectives (modifying nouns--see section 2.214). In addition, each form may occur with an optional prefix /hu-/ whose contribution to the meaning, if any, is not yet determined. hu-
may be prefixed whether the pronoun is used as a pronoun or modifier, whether it occurs alone or in a postpositional phrase (e.g. hu-?u-?va, there), and even with postpositional verbs (e.g. hu-?uva-ni?i-vi, "was being there"). Furthermore, hu- shows up (optionally) on words derived from third person pronoun roots, either transparently, as in the series i-cu?a, ma-ru?a, u-ru?a, "resembling this, that, that-invis", respectively, or not transparently, as in the verbs based on mai-, say, which historically seems to be derived from ma-. Thus, one finds hu-mai, alongside mai-, and hu-mai--ni, alongside mai--ni, think. Sapir makes no mention of such a prefix in Southern Paiute, though Harrington and Munro both find copious examples in their Chemehuevi dialects.

For oblique cases of independent pronouns, see discussion of noun inflection in general, section 2.213. (All forms take -a in the oblique case, except those whose final stem vowel is -a, which take -ja.)

Each of these pronoun forms will be entered in the lexicon with the feature [+pro]. In the case of 1st and 2nd person, a strict subcategorization feature, \[-[D[NP[\_
]]]], will prevent their insertion under a NP node directly dominated by a D node, since they cannot be used as demonstratives. As NPs all pronoun forms except the first two stem variants of the inanimate pronouns may be inserted immediately before a postposition. For the inanimates, ići-, marić-, urić-, ika-, maka-, and uka- will all be marked \[-[\_
]Post\]; the forms i-, ma-, and u- will be marked +[\_
]Post].
The forms with hu- will also be separate entries. Their cost can be reduced by the following lexical redundancy rule:

(31) \[
\begin{array}{c}
/x/ \\
+\text{pro} \\
\text{IIIpers}
\end{array} \\
\leftrightarrow \\
\begin{array}{c}
/hu + x/ \\
+\text{pro} \\
\text{IIIpers}
\end{array}
\]

**Postfix pronominal forms**

All personal pronouns have postfix forms which can be used in place of their independent forms (usually not in addition to them, but see section 2.4). The following table gives the underlying forms of each:

(32) | SING | DUAL | SEVERAL | INCLUSIVE |
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>-nv</td>
<td>-rami</td>
<td>-rawi</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>II</td>
<td>-ukV~</td>
<td>-wV</td>
<td>subject</td>
</tr>
<tr>
<td></td>
<td>/-mv</td>
<td>/</td>
<td>/object</td>
</tr>
<tr>
<td>III</td>
<td>-ina</td>
<td>-im‡</td>
<td></td>
</tr>
<tr>
<td>(anim)</td>
<td>-aŋa</td>
<td>-am‡</td>
<td></td>
</tr>
<tr>
<td></td>
<td>-uŋa</td>
<td>-um‡</td>
<td></td>
</tr>
<tr>
<td>(inan)</td>
<td>-ika</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>-aka</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>-uka</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

In general the choice of whether to use the independent forms or the postfix forms depends on what in the sentence is considered "new information" and what is "old information". The normal way to respond to the question, "Who ate?" would be maŋ tika-vi "He ate", for example, whereas a response to "What did he do?" would be tika-vi-ŋa, "He..."
ate". The emphasis is apparently rather mild; in isolation (out of discourse context) the two forms alternate freely for most elicited sentences. There are in addition two or three stronger devices for focusing and emphasizing constituents. In Southern Paiute (and for Pamela Munro's Cheme-huevi informant) some of the distinction in proximity is lost in the postfix forms (Sapir p. 183). If the theory here is correct, it is easy to see why—when the referent is understood, the demonstrative aspect of the pronoun is less needed. (When the pronoun is even more de-emphasized, it can be dropped altogether, though in isolation such sentences are re-judged "incomplete".)

The second person postfixes are somewhat irregular. In non-imperative sentences (for imperatives, see section 2.26) when "you [singular]" is the subject, it almost always uses -ukV for the postfix form. This morpheme may be historically from the third person inanimate invisible postfix (Sapir and Harrington both allude to it, but Sapir's examples don't include this particular usage; for other uses of this postfix, see section 2.225) however, since there is no synchronic motivation for calling it such, I will not. Due to various morpheme order constraints, no postfix or enclitic may ever follow -ukV in a word, therefore it is impossible to tell what the final vowel is (synchronously).
When "you [singular]" is the object, its postfix form is -mV (again, since nothing ever follows it, the vowel never shows up).

When "you [plural]" is the subject, the postfix form is -wV. When "you [plural]" is the object, no postfix form seems to exist. Apparently only the independent form is used. I have no explanation for this gap.

There is an alternate form for the subjective "you [singular]", namely -ʔ (glottal stop), which is used consistently in imperatives but also occasionally in non-imperatives as well. MM always seems to prefer -ukV in non-imperatives, but will often accept -ʔ, occasionally volunteering it (largely in interrogative sentences). In Harrington’s data the opposite was true—the subjective postfix usually being -ʔ and only occasionally -uką; hence I would assume the glottal stop to be the older form, now being replaced by -ukV.

No other pronominal postfixes reflect a case distinction.

The first person singular postfix also has an indeterminate vowel, since it too is last in any sequence of suffixes, enclitics, and postfixes. One might wonder how both first-person and second-person pronominal postfixes can be constrained to be last in a series, since postfixes may attach to each other. In fact, there is also a strong constraint in MM’s dialect of Chemehuevi which forbids first-
and second-person postfix pronouns from cooccurring in the same word. (For more on pronominal postfix sequences, see section 2.4.) Historically, the final vowel in -nV was i. All these final vowels are recoverable from Harrington's material, since his informant did not delete final vowels, but only devoiced them.

The inclusive first person forms both begin with r, or more accurately /t/. (The forms are marked for obligatorily undergoing the "spirantizing" rule--features on preceding morphemes are prevented from affecting it.)

These postfix forms are also separately listed in the lexicon. They are assumed to have the features [+pro +bnd -prefix]. (The full pronoun forms in the previous section are actually marked [*prefix] since all nouns and pronouns can appear prefixed to certain verbs.) The lexical rule in (33) specifies the redundancy between the independent and bound pronoun forms:

\[
(33) \quad \begin{align*}
\begin{array}{c}
[\text{+pro} \\
\text{+bnd} \\
\text{-prefix}]
\end{array}
\end{align*}
\leftrightarrow
\begin{align*}
\begin{array}{c}
[\text{+pro} \\
\text{+bnd} \\
\text{-prefix} \\
\text{NONFOCUSED}]
\end{array}
\end{align*}
\]

The correct positioning of these bound forms with respect to other words and morphemes will be handled in the transformational component and by output conditions.

In addition to personal pronouns, there are interrogative pronouns, treated in section 2.242; a relative pronoun, discussed in section 2.33; and a reflexive-reciprocal morpheme, discussed below.
Reflexive-reciprocal morpheme

In sentences where the verb can be interpreted either reflexively or reciprocally, a prefix /na-/ is added to the verb. (Derived from this is a non-bound morpheme na-hump which translates as "oneself" in such sentences as "I myself saw him" or "He did it himself", but this is generally emphatic rather than "reflexive". Examples of na- are given in (34) below:

(34) a. maŋ na-wavo?a-mpí
   he self-cover-past
   "He covered himself"

b. ni na-nukwi-tu?i-j
   I self-run-cause-pres
   "I am making myself run"

c. im na-ju?a-ka-vi?i-m
   these self-carry-ser-past-pl
   "They carried each other/themselves"

d. ni {pa?a-nti-m} na-mai-vi
   {pa?a-j} self-say-past
   "I said I was tall"

e. Ann Johni na-ha?isutu?i-ŋu-tu?i-vi
   Ann John(ob) self-like-mom-cause-past
   "Ann made John like her/himself"

Reflexivization seems to occur in a greater number of environments in Chemehuevi than in English, as shown in examples (34d) and (34e) (first meaning) above. I will return to these below.
Example (34c) illustrates the fact that sentences with plural subjects are ambiguous as to whether the action was reflexive or reciprocal. Frequently na- is reduplicated when the subject is plural, as in (35) below;

(35) na-na-goi-ka-viâ-im
    self-self-kill-sev-past-they
"They killed themselves/each other"

Even when reduplicated, the sentence is still ambiguous.

When the subject is a semantically "conjoined" noun phrase arising from a postpositional phrase using /-wai/ with (see section 2.31), the action is still ambiguous, as in (36):

(36) maŋ mambi-va na-na-goi-ka-viâ-m
    he _them-with _self-self-kill-sev-past-pl
"He and they killed themselves/each other"

However, semantically conjoined subjects which use /-gajaa/ (section 2.31) result in non-ambiguous sentences; nouns to which -gajaa has been added are translated more as "and noun, too" and are not thought of as accompanying the subject in the action. (In fact, in section 2.31 I will argue that the source of noun + gajaa is in a subordinate clause.) Therefore, verbs with na- translate only as reflexive. Example:

(37) John aipaci-gajaa na-gukwi-viâ-m
     John boy-too self-shoot-past-pl
"John and the boy each shot themselves/*shot each other"

Examples (34b) and (34e) both involve the causative
/-tu?i/, which in a normal transformational approach could be analysed either as a higher verb, or as a "transitivity" suffix attached in the lexicon. In the latter case, the "combined" verb in (34b) is transitive, and na- replaces the object just as in (34a). The ambiguity in (34e) however, means in a non-embedded clause approach one must interpret na- as replacing an object identical to another object in the same clause (for verbs suffixed with -tu?i), as well as one identical to the subject.

If we call -tu?i a higher verb, we can easily restrict na- to replacing objects under subject identity only. The two sources for the ambiguous readings in (34e) would then be as follows:

(38) a.  
```
(38) a.  
```  
```
NP      VP  
  Ann    V  
S       CAUSE 
NP      VP  
tu?i
  Ann ha?isutui-ν
John  

Cycle 1:
reflex

John  na- ha?isutui-ν

Cycle 2:
raising
Vb-incorporation

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On the other hand, there is some evidence that we may not want to restrict na- to situations of subject identity. The following sentence, although somewhat contrived, produced three interpretations, one involving object-object identity:

(39) ní±k mana-ja na-maga-mpré
\[ I-k \quad he-ob \quad self\text{-}give\text{-}past \]
'I gave \{ him to myself  \\
\quad myself to him  \\
\quad him to him\text{(self)} \}'

Using an interpretive approach to reflexivization, rather than a transformational one, na- could either be considered to be added in the lexicon (as an intransitivizing prefix) or be analysed as a simple pronoun, inserted into the tree like any other object and being prefixed to the verb by a general object-prefixation process (see section 2.224). Whatever the source, an interpretive rule would then interpret na- as referring to either the subject or an object in the sentence.
The example in (34d) above involves one of a small number of verbs which allow non-nominalized sentential clauses (see section 2.34). The embedded verb in such clauses is a finite one (or a participle used predicatively—see section 2.225), and the embedded subject is usually in the nominative case. A few examples have been obtained, however, where the subject is optionally in the oblique case (without changing the meaning) though the verb remains unnominalized.

(40) nii-k \( \{ \text{ma'ja-} \} \) pa'a-j mai-vi'i
I-k \( \{ \text{he-ob} \} \) tall-pres think-past

"I thought he was tall."

One way to view such sentences would be to say the embedded subject has (optionally) been "raised" to an object position in the main clause, with no change in the form of the embedded verb. The reflexivization in (34d) is also optional; the sentence is synonymous with:

(41) nii-k pa'a-ji-an mai-vi
I-k tall-pres-I say-past

"I said I was tall."

If (34d) is an example of raising, then na- reflects coreference between the subject and surface object in the main clause. Without assuming a raising rule, one could simply expand the interpretive rule regarding na- to include coreference between subject and object, object and object, or subject and (embedded) subject.
The evidence for determining whether na- is a pronoun or not is not overwhelming. Since na- is obligatorily prefixed even to verbs which normally don't allow object prefixation, we may suspect that it is not a pronoun. However, the fact that its source (or reference) can be either in the matrix sentence or in an embedded clause (from which it possibly has been "raised" (example (34d) above)) might be somewhat easier to account for if na- is treated as a pronoun. Furthermore, like nouns in general, na- can be found as the prefixed object of a postposition, as in:

(42) na-vin?apa-aka-aŋ juna-mpi
    self-behind-them-he put-past
    "He put them down behind himself."

(where na- is the object of behind).

Reciprocal na- is also found in the form na-ma-, "together", (lit. with each other) as in the following examples:

(43) a. na-ma-?im nukwi-viš-m
    recip-with-they run-past-pl
    "They ran together."

    b. ni na-ma-ntua-um co-kwipa-tu?i-vi
    I recip-with-toward-them head-hit-cause-past
    "I bashed them together."

    c. Ann Johni Margareti na-ma?a-k punikai-vi
    Ann John(ob) Margaret(ob) recip-with-ob
    "Ann saw John and Margaret together." see-past

Note that, in general, reciprocal interpretations with non-conjoined subjects are difficult to derive transformationally. It has been proposed that "A and B hit each
other" could derive from something like (44):

```
(44)

S

and

S

A hit B

B hit A
```

However this is impossible for a sentence like "They hit each other" or "The boys hit each other". Generating only the latter sentences directly would miss obvious generalizations. Therefore one could argue for deriving both types (conjoined or non-conjoined subjects) as directly generated by phrase structure rules, leaving to interpretive rules the task of stating that A and B, "the boys", etc. are reciprocal objects of the actions as well as subjects.

In Chemehuevi one could extend the argument to the reflexive use of na- as well; i.e., if the sentences in (43a-c) should be generated directly, then perhaps the sentences in (34) should be, too. This would support the interpretive approach outlined above (following example (39)).

In conclusion, then, I would tentatively propose that na- be analysed as a pronoun (with the features [+pro, +reflex]). All pronouns are insertable under any NP node; na-, however, must be restricted from insertion under a D since it cannot modify another noun, either as a possessor or as a demonstrative. Nor can it ever function as the subject of the main clause (such a reading will be excluded by the interpretive rule).
When the subject (or whatever na- is coreferential with) is semantically plural, na- is interpreted either reflexively or reciprocally (i.e. two readings are assigned it). Sentences with singular subjects "conjoined" with the suffix -gajaa will be given only a reflexive reading.

**The reflexive possessor -vî**

Any object noun which is possessed by a third person subject of the sentence is postfixed by a reflexive possessor pronoun morpheme, -vî, as in:

(45) maŋ kani-a-v punikai-vî
    he house-ob-own see-past
    "He saw his (own) house."

I will assume -vî is marked in the lexicon as:

\[
\begin{array}{c}
+\text{pro} \\
+\text{reflex} \\
+\text{Poss[–]} \\
\end{array}
\]

(i.e. it can only be inserted as a possessive).

**2.213 Inflection of Nouns**

**Case**

The nominative case in Chemehuevi is unmarked; i.e. represented by the noun stem, including any absolutive suffixes on the root. This case is used for the (non-conjoined) subjects of matrix sentences, the subjects of embedded clauses with a small number of embedding verbs (see section 2.34), the (non-conjoined) objects of imperatives (both direct and indirect objects), and nouns given in isolation.
The oblique case suffix is /-a/, for most nouns ending in vowels other than -a. The latter take the suffix /-ja/ in the oblique case. There is a borderline area of nouns ending in -ι which varies—some always take \(-a\), some always take \(-ja\), and a few can take either. In addition there are one or two non-productive oblique case suffixes; the small number of nouns which take them must be lexically marked. The only one of these suffixes which MM has given is /-na/ (exemplified below), though Harrington lists a couple others. The oblique case is used for all objects in non-imperative sentences (both direct and indirect, as long as no postposition is adjoined), for objects of postpositions when the latter are suffixed to a modifier of the noun rather than the noun itself, for possessor nouns ("genitive" case), and for subjects of embedded clauses.

Examples of oblique case endings are given in (46):

(46) a. /sapι/ saap belly(nom)
   /sapι+a/ sapι belly(ob)

b. /huna/ huun badger(nom)
   /huna+ja/ huna-ι badger-ob

c. /tawa-/ taaw tooth(nom)
   /tawa+{ja}/ tawa-n ~ tawa-ι tooth-ob

As suggested in section 0.3, all oblique forms of nouns will constitute separate lexical entries, with the following completely general lexical redundancy rule:
(47) \[
\begin{align*}
/\text{x}/ & \quad \leftrightarrow \quad /\text{x} + a/ \\
+ N & \quad \leftrightarrow \quad + N[[N]+ob] \\
- \text{Prefix} & \quad \leftrightarrow \quad - \text{Prefix}
\end{align*}
\]

(The nouns which can take -na are probably too few to warrant a lexical rule. These forms as entries will have to be learned as 'new' unpredictable information.) A phonological rule will change -a to -ja after a. 

The bare noun stem (with no case marking) is used when prefixed to verbs, when the first member of a compound, or when postpositions are directly attached; however, if the postposition of which it's an object is attached instead to an accompanying demonstrative, the noun takes an oblique ending. (For behavior of absolutes, see section 2.211.)

**Number**

There are three productive plural markers in Chemehuevi; the suffixes /-wâ/ and /-mâ/ (limited to animate nouns), and reduplication. Some animate nouns use both reduplication and a suffix to form the plural. A few differentiate between dual and several by adding a suffix for two or more, and reduplicating in addition for three or more. In general, though, the plural markers do not differentiate dual from several. (Number agreement on verbs, however, does.)

Inanimate nouns, when they have plural forms at all, use reduplication. At this point, whether an inanimate noun pluralizes or not, seems to be idiosyncratic.
Examples of plural nouns are given in (48) below:

(48) a. tivac wolf tivaci-w wolves
/tivaci/ /tivaci-wi/

b. poo?av flea poo?avi-m fleas
/poo?avi/ /poo?avi-mi/

c. mo?ov hand mo-mo?ov hands
/mo?ovi/ /CV-mo?ovi/

d. maap?ic old ma-maap?ici-w old ladies
/masp?ic/ /CV-maap?ici-wi/

e. tuuk mountain tuku-w mountain lions
/tuku/ /tuku-wi/

f. wii knife wii knives
/wihi/ /wihi-∅/.

g. aipac boy aipaci-w (two) boys
/aipac/ a-ʔaipaci-w (sev) boys .
/CV-aipaci-wi/

Some nouns lose an absolutive suffix before adding the plural suffix, as in (49) below:

(49) a. taw?a-c man tawa-m men
/taw?a-ci/ /tawa-mi/

(Note that man idiosyncratically loses its medial consonant glottalization as well. This simply has to be lexically marked.)

b. aiva-c youth aiva-w (two) youths
/aiva-ci/ a-ʔaiva-w (sev) youths
/VC-aiva-wi/
For idiosyncracies in reduplication, see section 1.33. Note that all vowel-initial nouns are assumed to begin with glottal stop (or have one added) before reduplication.

Plural nouns in the oblique case add the suffix -a after the plural suffix. Examples:

(50) a. tịvaci-wị  wolves (oblique)
/tịvaci-wị-a/

b. poo?avi-mị  fleas (oblique)
/poo?avi-mị-a/

Again, plural forms in the lexicon will not contribute much new information as independent entries—most of their specifications will be redundantly given in the rules below:

(51) M: a. \[/x/ \]
\[+N \]
\[+anim \]
\[\overset{+}{\leftrightarrow} \]
\[/x + wị/ \]
\[=[[[N] + pl]] \]
\[+anim \]

b. \[/x/ \]
\[+N \]
\[+anim \]
\[\overset{+}{\leftrightarrow} \]
\[/x + mị/ \]
\[=[[[N] + pl]] \]
\[+anim \]

c. \[/x/ \]
\[+N \]
\[\overset{+}{\leftrightarrow} \]
\[/x/ \]
\[=[[[N] + pl]] \]

d. \[/x/ \]
\[+N \]
\[\overset{+[\text{redup}]}{\leftrightarrow} \]
\[/CV + \overset{+}{x}/ \]
\[=[[[N] + pl]] \]

(52) S: a. \[+N \]
\[+sing \]
\[\overset{+}{\leftrightarrow} \]
\[+[N] + pl \]
\[+sing \]

b. \[+N \]
\[+sing \]
\[\overset{+}{\leftrightarrow} \]
\[+[N] + pl \]
\[+serv \]
(See section 0.4 for explanation of the features [sing] and [sev].)

2.214 Modifiers

Demonstratives

As stated in section 2.212 above all third-person personal pronouns are also demonstratives, and may be used as modifiers of other (nonpronoun) nouns. As such they either precede or follow the noun they modify, or both for added emphasis. Examples:

\[(53) \quad \{iŋ \quad aipac \} \]
\[
\{aipac \quad iŋ \}
\]
\[
iŋ \quad aipac \quad iŋ\]

"This boy"

Demonstratives agree with their head nouns in case as well as number and animacy:

\[(54) \quad a. \quad mänja-ŋ \quad aipaci \quad \text{that-ob} \quad \text{boy(ob)} \quad "\text{That boy}" \]

\[b. \quad īc \quad wii \quad \text{this knife} \quad \{\text{This knife} \} \quad "\]

\[c. \quad ūmā \quad puusi-wi \quad \text{those(ob)} \quad \text{cat-pl(ob)} \quad "\text{Those cats}" \]

Demonstratives as modifiers can never postfix to anything. In post-nominal position they have certain peculiarities, however they behave as separate words in two crucial tests: (1) enclitics, which are absolutely constrained to appear on the first "word" in the sentence, always precede post-nominal demonstratives, i.e. attach to the head noun. In general enclitics come last in a series of affixes.
and postfixes. (2) Phonological rules, the most manifest
being final vowel deletion, treat demonstratives as separate
words—e.g. the final vowel in aipaci-, boy, is protected by
any affix, postfix, or enclitic, but not by a demonstrative:
aipac aŋ, "that boy". Two things however make demonstratives
appear unusually affix-like: (1) When post-nominal, and
never when pre-nominal, these forms lose their initial con-
sonants (most notably, m):

(55) ?iŋ aipac "this boy" but aipac iŋ "this boy"
    maŋ aipac "that boy" aipac {aŋ} "that boy"

(Word-initial ? before vowel is ignored everywhere else in
this paper.) Confusion with bound pronoun forms is elimi-
nated in the inanimate series:

(56) full pro: ic post-nom dem: N ic postfix-pro: -ik
    mar N ar -ak
    ur N ur -uk

Whereas m → Ø is not an unknown process in Chemehuevi, else-
where in the language it is sporadic and frozen. (2) Noun +
demonstrative is the only exception to a word order con-
straint requiring subject postfix pronouns to attach to the
first word in the sentence (see section 2.4). Bound subjects
attach to a post-nominal demonstrative rather than to the
noun itself, e.g.

(57) a. aipaci aŋa-ja-n kwipa-vz
    boy(obj) that-obl-I hit-past "I hit that boy."

b. *aipaci-a-n aŋa-j kwipa-vz
Nonetheless, since I consider the vowel-deletion rule the most crucial argument I choose to call post-nominal demonstratives separate words, making the appropriate modifications on the subject constraint, instead.

**Adjectives**

Adjectives are essentially equivalent to verbs; as modifiers they, like all other verbs can appear in participle form. They precede or follow the head noun, with which they agree in case and number:

(58) a. \{pa?a-ntí-m aipac\} nukwi-j
   \{tall-ptic-anim boy\} run-pres
   "The tall boy is running."

b. aipaci-w pa?a-ka-rí-m nukwi-ka-jí-?ím
   boy-pl tall-sev-ptic-anim run-sev-pres-pl
   "The tall boys are running."

c. ná ankaga-rí wihi puni-ví
   I red-ptic(ob) knife(ob) look-past
   "I looked at the red knife."

Adjectives differ from nonadjective verbs in several respects:

(i) The verb suffix /-?umí/ (which loses its ? after the participle ending, allowing the u to assimilate and thus delete) is primarily a [+anim] agreement marker. For non-adjective verbs [+V -,Adj], whether finite or participles, the suffix is added only if the subject (or head noun) is in addition [-sing]. For adjectives [+V +Adj], the same is true when
they're used as finite verbs. However when adjectives are in participle form they add -?umã for any animate noun, whether singular or plural:

(59) a. man {tîka-r} aŋ saaronci

he {eat-ptc} that one beer(ob)

{eat-ptc-anim}

hivi-sua-ŋ

drink-finish-mom

"The eating one drank up the beer."

(tîka- = [-Adj])

b. man {pa?a-nti-m} aŋ saaronci

he {tall-ptc-anim} that one beer(ob)

{tall-ptc}

hivi-sua-ŋ

drink-finish-mom

"The tall one drank up the beer."

(pa?a- = [+Adj])

c. man {pa?a-j} {pa?a-ŋi-m}

he {tall-pres} [that one] is tall.

{tall-pres-anim}

(For further examples of -?umã on finite verbs, see section 2.226 on verb agreement.) The above holds as well for participles used predicatively--see section 2.225.

(ii) Nonadjective verbs must cooccur with a demonstrative when modifying a noun; adjectives need not:

(60) {nukwi-c} aipac pa?a-j

{run-ptc that} boy tall-pres "That running boy is tall."

{run-ptc-anim}
(iii) When used predicatively (see section 2.225), participialized nonadjectives require the enclitic K in the sentence, participialized adjectives do not.

Participle forms may be used as nouns themselves, nonadjectives however require a cooccurring demonstrative:

(61) a. \{ *nukwi-c \} \{ nukwi-c an \} wıʔiku-vı
   \{ *run-pty \} \{ run-pty that \} fall-past  "The running one fell."

b. paʔa-naʔi-m wıʔiku-vı
   tall-pty-anim fall-past  "The tall one fell."

(For ordering of demonstratives with respect to participles, see section 2.4 on Word Order.)

Possessives

Possessive modifiers are always in the oblique case and are unaffected by the case of the possessed noun. These modifiers may be common nouns (which can themselves be modified), proper nouns or pronouns. In the first two instances the possessor must precede the head noun, as well as any adjectives (particiles) modifying the head. If the possessor is a pronoun it has two possible positions: in full form it precedes the head and all other modifiers, in postfix form it attaches directly to the head (never to another modifier). Pronouns may occur concurrently in both positions (if coreferential) and postfix pronouns may cooccur with common and proper noun possessors (if coreferential). Examples:
(62) a. \{ni\-ni tua-n \} i\-va-ni?i\-j
   {ni\-ni tua-n}
   "my son-my here-contin-pres"
   "My son is here."

b. owasiaka-r pamp\-n\-i\-ųj kac i\-va-\-wa?
   yellow-\text{ptc} pot - his not here-neg
   i\-ja-j owasiaka-r pamp\-n\-į kac i\-va-\-wa?
   his-ob yellow-\text{ptc} pot not here-neg
   "His yellow pot is gone."

c. mar pamp\-n\-į\-n h\-įp\-įki-j
   that pot-my holey-pres
   "That pot of mine has a hole."

d. pavi-a-\-\-n nar\-o\-o\-\-ų n\-ę\-k\-ąga-j
   brother-ob-my \text{shirt\-his} red-pres
   "My brother's shirt is red."

e. ni\-\-k \{wi\-hi-a\-\-ų\ \{u\-ja\-j wi\-hi\} puni-k\-ai\-\-\-vi
   \text{I-}\text{K}\{\text{knife\-ob-his}
   \{his-ob knife(ob)\}\text{ see-result-past}
   "I saw his knife."

f. ni\-\-k ma\-n\-a-j piso\-oci puni-k\-ai\-\-\-vi
   \text{I-}\text{K} \{his-ob child(ob)\text{ see-result-past}
   "I saw \{his child\ \{that child\}."
node under the D node. Demonstratives in contrast will originate as NPs under the D node. The relevant Phrase Structure rule is given in (63), with structures for demonstratives and possession given in (64):

\[
(63) \quad D \rightarrow \{ \text{NP} \} \\
(64) \quad \begin{array}{cc}
\text{a.} & \text{b.} \\
\text{NP} & \text{NP} \\
\text{D} & \text{D} \\
| & | \\
\text{NP} & \text{Poss} \\
| & | \\
\text{wii} & \text{knife} \\
| & | \\
\text{Pro} & \text{Pro} \\
| & | \\
\text{ic} & \text{mana-j} \\
| & | \\
\text{this one} & \text{that one-ob} \\
\end{array}
\]

"this knife" "his knife"

As in other Uto-Aztecan languages there are certain restrictions on what kinds of common nouns may be possessed. In section 2.211 nouns which normally must be possessed were discussed, such as body parts and kin-terms. Animals cannot be directly possessed without first being compounded with /-puŋku/ pet. With the verb /-gai/ have (which is bound), pet is attached as a verb prefix. Examples:

\[
(65) \quad \begin{array}{ccc}
\text{a. } & \text{niši tuku-puŋku-n} \\
\text{niši} & \text{tuku} & \text{puŋku-n} \\
\text{my} & \text{mountain} & \text{lion-pet-my} \\
\text{"my } & \{ \text{mountain lion} \} & \text{"} \\
\text{cat} & \end{array}
\]

b. \quad \text{niš-k waha-ku-mi waʔarovi-mi} \\
\text{1-K two-ob-anim(ob) horse-pl(ob)} \\
\text{puŋku-wi-ga-nt pet-pl-have-pte} \\
\text{"I have two horses."}

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Plants are generally not possessable unless compounded with /-gap/ plant (cultivated, not wild). An exception is /hawi/ corn, perhaps because it is understood to be "cultivated".

In contrast to English, which uses possessive constructions for a large variety of things other than ownership, Chemehuevi seems to use these constructions more restrictively. For example possessor nouns are not used with bare nouns to mean the "maker" of the object, thus to say "Her coffee is always bitter" one must say:

\[(66) \{kuupi-cu-na-aj\} utusamp mohara-t\]
\[\{\text{coffee-make-ptc-she}\} \text{ always bitter-pty}\]
"The coffee she makes is always bitter."

2.22 Verb Phrases

2.221 Derivation of Verbs

Verb stems in Chemehuevi can either be monomorphemic or derived from other lexical categories by the addition of various suffixes. Most of the former are roots which are exclusively verbal, though there are a few sets of roots which have more than one lexical category assigned to them, most notably the post-positions (which with tense-aspect markers are verbs, as bare stems are postpositions). A small number of verb roots are also noun roots, e.g. taña knee, [N]

\[\text{taña kick; similarly a number of adverbs when suffixed with [+V]}\]
\[\text{tense-aspect markers become verbs: kwai} \text{ away, kwai go away. [+Adv] [+V]}\]
Verb stems derived in part from nouns include various productive types of compounds (for example, most verbs allow their object to be prefixed—see section 2.2.4 below). They also include nouns suffixed with bound morphemes, which on the basis of their semantics could be viewed as compounds too. (Synchronically the question of whether a morpheme is a stem or affix is probably not entirely decidable, especially for those cases where diachronically something is changing from one to the other. In my analysis I simply use [+bnā] for anything which cannot appear alone in a word. The features [prefix] and [suffix] only describe the nature of the junctures and are not intended to imply that a morpheme is not a "stem".)

Examples of verb stems formed by compounding to nouns are given in (67) below:

(67) a. kwipa- "hit"; puŋku-kwipa- "hit a dog"  
    dog-hit  (= puŋkucī kwipa-)

b. punikai- "see"; nīwī-punikai- "see a person"  
    person-see  (= nīwī punikai-)

There is a small class of nouns which are frequently used in capacities other than (or in addition to) direct object, which have special shortened forms for these prefixes (in some cases the forms are suppletive, e.g. /nampa/ foot; /ta-/ foot-(prefix)). Obviously some of these are or will become candidates for relexicalization as alternations without the prefix drop out. Examples of this class:
(68) a. pa-hoora- "dig a well" < /paa/ "water" /hoora-/ "dig" 
b. ma-nujukwa- "shove" < /mo?ovâ/ "hand" /nujukwa-/ "move" 
c. ni-mpo?o-tui "teach school" < /nâvâ/ "person" /po?o-tui-/ "cause to write"

The regular long prefix forms may be used productively with verbs with which these nouns are not frequently associated, compare (68c) with (67b) above.

The quasi-compound suffixes (bound verbs) are illustrated in (69):

(69) a. /-gai/ be, have (= -gaa before a small number of suffixes, e.g. -tâ ptc. See P Rule 15 in section 1.33.)
   e.g. kani-gai- "have a house"
        house-have
        ha?âtâ-na?incici-gai- "be a good girl"
        good -girl -be

b. /-tu~-tu?i/ make (These may be two separate suffixes, though they vary freely when suffixed to nouns. /tu?i/ is used as a causative suffix with verb stems and then does not alternate with /-tu/.)
   e.g. wihi-{cu-i-}15 "make a knife"
        knife-make

c. /-tu?a/ become (Also used with verb (adjective) stems to mean turn X.)
   e.g. wa?aro-vi-cu?a- "become a horse"
        horse -become

By and large adjectives are equivalent to verbs in Chemehuevi, i.e. their stems take normal tense-aspect
suffixes. The subclass of adjective stems comprising color
terms\textsuperscript{16} is somewhat of an exception in that they must be
first suffixed either with -tu?a become or a special stative
suffix -ka, used only with this class apparently. When aug-
mented in this manner the resulting stem behaves like any
other verb with respect to tense-aspect markers. Color
roots appear without these suffixes when used in compounds,
e.g. aşka-gan red-house.

2.222 Features on Stems

Verb stems in Chemehuevi are inherently marked in the
lexicon for transitivity (cooccurrence with NP arguments
other than the subject) and aspect ("momentaneousness"). The
former is incorporated in the overall syntactic cooccurrence
feature assigned to the verb, e.g. $+_{VP}[\{\{PP\}\}^* \_\_]$ for
intransitive verbs (e.g. nukwi- run) and $+_{VP}[\{\{PP\}\}^*NP\_]$
or $+_{VP}[\{\{PP\}\}^* NP \_\_]$ for transitive verbs with one and
two objects respectively (e.g. parigi- wash, and maga-
give). Verbs which allow elliptical objects, such as tikaka-
ceed, will simply have those NPs in parentheses. In contrast,
there are a small number of verbs with both transitive and
intransitive meanings where the latter is not ellipsis of the
former, e.g. kwipa- which means to hit when with an object
but fall when without. For these two separate lexical
entries will be given, as in (70):

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(70) a. \[
\begin{array}{l}
/\text{kwipa/} \\
+ \text{VP}[(\{PP\})* \text{NP} ---] \\
\text{hit}
\end{array}
\] 

b. \[
\begin{array}{l}
/\text{kwipa/} \\
+ \text{VP}[(\{PP\})* ---] \\
\text{fall}
\end{array}
\]

(Since both the meanings and the syntactic environments differ, they may as well be treated as separate (though homophonous) verbs.)

The aspect "momentaneous" is a feature on each verb stem which essentially dictates what other tense-aspect markers the verb may cooccur with. (Also which subordinating suffixes they take.) Semantically "momentaneous" verbs are usually inceptive or are accomplished instantaneously. A few stems may be used with either aspektual meaning, and will be specified \([\text{+mom}]\).

Examples of these specifications:

(71) a. \text{tìka-} \quad \text{eat} \\
\quad \text{[+-mom]}

b. \text{tìrawiʔi-} \quad \text{dash off} \\
\quad \text{[+mom]}

c. \text{kwìhì-} \quad \text{catch} \\
\quad \text{[*mom]}

Portions of the paradigms which are affected by the \([\text{mom}]\) feature are as follows (the suffixes referred to will be discussed in turn below):

A. \([\text{+mom}]\) verbs cannot take the present tense suffix, \(-\text{jì}/\). Instead \([\text{+mom}]\) verbs may take a zero present tense suffix which \([\text{-mom}]\) (or "durative") verbs may not take. (This results phonetically in the loss of the stem-final vowel; see section 1.33 on phonology.) E.g.:
(72) a. \( \text{marij} \ \{ \text{tërawi?} \} \)  
\( \text{he} \ \{ \text{dash off} \ -\emptyset \} \)  
"He \{ \text{dashes off.} \} "
\( \text{\( \text{*tërawi?i-j} \} \) \)

b. \( \text{marij} \ \{ \text{*nukw} \)  
\( \text{he} \ \{ \text{*run} \ -\emptyset \} \)  
"He runs/is running."  
\( \text{\( \text{nukwi-j} \} \) \)

B. [+mom] verbs cannot take the aspect (or quasi-aspect) markers \(/-n\?i/\) (continuous activity), or \(/-kari/, sit (while Vb-ing).  E.g.:

(73) \( \text{marij} \ \{ \text{tërawi?i-n\?i-vi} \} \)
\( \text{he} \ \{ \text{dash off} \ -\text{contin} \ -\text{past} \} \)
"He \{ \text{*was dashing off.} \} "
\( \text{\( \text{nukvi-n\?i-vi} \} \) \)

C. [+mom] verb stems take a zero suffix in the imperative (with same phonetic results as above).  [-mom] verb stems add \(/-\etau/\) in the imperative (see section 2.26 on imperatives).  E.g.:

(74) a. \( \{ \text{tërawi?i-}\} \)
\( \{ \text{tërawi?i-\etau-}\} \)
\( \text{\( \text{dash off} \ -\text{you} \} \)
\( \{ \text{dash off} \ -\text{imp} \ -\text{you} \} \)  
"Dash off!"

b. \( \{ \text{*nukwi-}\} \)
\( \{ \text{nukwi-\etau-}\} \)
\( \{ \text{*run} \ -\text{you} \)  
\( \{ \text{run} \ -\text{imp} \ -\text{you} \} \)  
"Run!"

D. [-mom] verbs form subordinate gerunds in \(/-gai/\); [+mom] verbs in \(/-ci/\).  E.g.:

(75) a. \( \{ \text{tërawi?i-c} \)  
\( \{ \text{tërawi?i-ga} \)  
"dashing off(?)\)/having dashed off"
b. \{\*nukwi-c \}
\{ nukwi-ga \}
"running"

2.223 Verb Suffixes

Suffixes may be added to verb stems to accomplish the following:

a) change the inherent specification (transitivity, etc.)
b) mark aspects, tenses, voice and "mood"
c) mark number agreement

The inherent specification of a verb stem may be switched by adding suffixes like /-ŋki/ (transitivizer or benefactive) or /-tu?i/, cause, both of which allow the addition of one object (oblique case with no post-positions) to whatever number already may cooccur with the verb. (The passive suffix /-ti?/ could be included here as an intransitivizer, but is discussed separately in section 2.25.)

Examples:

(76) ŋki:  a. nii-k mavacigi-vi
I -K clap-past
"I clapped."

nii-k maña-j mavaciки-ŋki-vi
I-K him-ob slap - tran - past
"I slapped him."

(k/g alternation has to do with change in momentaneoussness.)

b. maŋ puusi-cu kijasui-ka
he cat-at smile-result
"He's smiling at/toward the cat."

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maŋ puusi kijasui-ŋki-ka
he cat (ob) smile-tran-result
"He's smiling at the cat."

-tu?i: c. nĩš-k nukwi-vɔ
I-K run-past
"I ran."

nĩš-k maŋa-j nukwi-tu?i-vɔ
I-K he-ob run-cause-past
"I made him run."

d. nĩš-k Johni tukuavi maga-vɔ
I-K John(ob) meat(ob) give-past
"I gave John meat."

nĩš-k Johni puusi tukuavi
I-K John(ob) cat(ob) meat(ob)
maga-tu?i-vɔ
give-cause-past
"I made John give the cat meat."

The feature [+/- momentaneous] may be changed by modifying the stem in the following ways:

(77) 1) internal stem change:

Some verbs "spirantize" some of their internal consonants to form the durative ([+mom]) counterpart of their stem.

Examples:
[-mom] [+mom]
a. mavika- mapika-
    feel   touch
b. ijavaga- ijapaka-
    be afraid get a scare

2) reduplication:

Verbs such as karŋ- sit; wínī- stand; havi- lie; (as well as the suppletive forms for plural subject) form the [+mom] counterparts by reduplicating the first syllable:
<table>
<thead>
<tr>
<th>[-mom]</th>
<th>[+mom]</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. karš-</td>
<td>ka-karš</td>
</tr>
<tr>
<td>sit [sing]</td>
<td>sit down [sing]</td>
</tr>
<tr>
<td>b. jšwi</td>
<td>jš-jšwi</td>
</tr>
<tr>
<td>sit [pl]</td>
<td>sit down [pl]</td>
</tr>
</tbody>
</table>

3) **suffix /-ŋu/:**

A large number of verbs regularly form their momentaneous counterparts by adding the suffix -ŋu:

| a. taviʔi-j | taviʔi-ŋu- |
| hit-pres | "start to hit" |

| b. mucu-j | mucu-ŋu- |
| be strong-pres | "get strong" |

4) **suffix /-ku/:**

Several verbs become momentaneous by suffixing -ku:

| a. wíʔi-vš | wíʔi-ku-vš |
| fall-past | fall-mom-past |
| "was falling" | "fell" |

| b. puca-ka | puca-ku-ka |
| be full- | "has filled-result" |

result(ative)

Verb stems which are related by one of the above suffixes will be separate lexical entries, their redundancy being stated in lexical rules such as the one below (for -ŋu):

\[
\begin{align*}
(78) & \quad \begin{bmatrix} /x/ \\ +V \end{bmatrix} \quad \longleftrightarrow \quad \begin{bmatrix} /x + ŋu/ \\ +V[[V] + mom] \end{bmatrix} \\
& \quad \begin{bmatrix} -mom \end{bmatrix} \quad \longleftrightarrow \quad \begin{bmatrix} +mom \end{bmatrix}
\end{align*}
\]

All the constraints on momentaneous verbs noted above apply to verbs with momentaneous suffixes.

In addition to momentaneousness, verbs can be marked for several other aspects. Some verb-verb compounds will be included in this category when the second member has aspectual
rather than coordinate significance. The following list gives examples and illustrations of the various aspectual suffixes, and tenses with which they cooccur:

(79) a. (continuative) /-ni?i/ (cooccurs with past -vi?, pres -jê, fut -vaa; results in durative verb)

   e.g.

   tîka- tîka-ni?i-
eat       "be eating while doing something else"

   jawi- jawi-ni?i-
carry     "hold"

   uni-
   be (e.g. uni-ni?i-
   location)"belong (somewhere)"

b. (iterative) reduplication of first syllable, together with glottalization of second syllable; i.e. formation of the iterative could be viewed as: CV₁CV₂ → CV₁- CV₁CV₂-?V₂. (cooccurs with whatever tenses the stem does, i.e. does not affect [mom] feature)

   e.g.

   puni- pu-mpunî?i-
   look      "look repeatedly"

   ukwi- u-?ukwi?i-
   smell     "sniff around"

c. (perfective) /-ma?aku/ finish (cooccurs with past -vi?, perfect (enclitic) -caa. Changes aspect to [+mom]; can't take pres -jê or imp -gù.)

   e.g.

   ni?î-ca tîka-ma?ak
   I-perf eat-finish    "I have finished eating."

   ni tîka-ma?aku-vi
   I eat-finish-past    "I finished eating."

d. (perfective) /-ma?/ finish (cooccurs with past -vi?)

   e.g.

   ni tîka-ma?-gi-ga
   I eat-finish- come-pres    "I came to finish eating."
ni kac tik-a-mai-vii-wa
I not eat-finish-past-neg "I didn't finish eating."

(e. (perfective) /-kai~ -kwai~ -ŋkwa/ have -en
(cooccurs with pres -jī, past -vii, pres ∅)

e.g.

mava-aka-aŋ wacį-ŋkwa
there-it-he put-perf "He has put it there."

(f. (resultative) /-kai/ (cooccurs with ∅ pres, past vį, pres -jį, past -mpį, fut -vaa, -mpaa)

e.g.

ni puni-vį
I look-past "I looked."
ni puni-kai-vį
I look-result-past "I saw."

(g. (cessative) /-maupa/ stop (does not take -ŋu in
imper; makes verb [+mom])

e.g.

kac tik-a-mau-pa-ʔap
not eat-stop-neg "Don't stop eating!"

tik-a-mau-pa-ka-ʃ
eat-stop-pl-you[pl imp] "Stop eating (to several)!"

(h. (usitative) /-mī/ used to (cooccurs with pres -jį, past -mpį, can't be
used in future)

e.g.

utusampa-n tik-a-mi-mpį
always -I eat-used to-past "I always used to eat."

(i. (continuative) /-kari/ sit (with durative verbs
only)

e.g.

ni puni-karį-j aipaci
I look-sit-pres boy(ob) "I watch the boy."
(Similarly with verbs to stand, lie.)
j. (motionals) /-gi/ come to (-gi-voro for plural subject); /-wa?i/ go to (-voro for plural subject).

e.g.

hivi-gi-mpaa-n
drink-come to-fut-I "I will come to drink."

k. (others) /-maga/ try to

/-suawagai/ want to

/-musu/ be unable to; try in vain to

/-tɪtu?ani/ seem to

/-təvicu/ ask to; want to

e.g.

nî tɪka-suawagai-vî
I eat-want - past "I wanted to eat."

"Tenses" are temporal suffixes (or enclitics) which can cooccur with other suffixes but not with each other. They in general follow aspect suffixes and precede postfix pronouns, nominal and participle suffixes, etc. The following list includes all such suffixes in Chemehuevi:

(80) /-jî/ present

/-vîi/ past

/-mpiî/ past

/-vaa/ future

/-mpaa/ future

/-ka/ present/past

/-caa/ perfect (enclitic)

/-pî-gai/ remote past

∅ present
Which of these suffixes a verb can take is by and large determined by the momentaneous feature on the stem. E.g. /-jɨ/ present does not attach to [+mom] stems. In the case of the two past suffixes /-vɨʃ/ and /-mpɨʃ/, the determination is partly phonological and partly semantic. Some morphemes require one or the other—a stem's requirement may be overridden by what an intervening suffix allows. In other cases, e.g. for the entire class of adjectives, the choice of past tense reflects a meaning change: Adj-vɨ means "was Adj", Adj-mpɨ means "got Adj".

The following suffixes could be classified as "modals", signifying unreal action, or action contrary to fact:

(81) a. /-guu/ would
   e.g. nɨ tɨka-gu
        I eat-would    "I would eat."
   e.g. tɨrawiʔi-guu-n ɨmi-gai-j
        dash off-would-I you-be-subord
        "If I were you I would run."

b. /-guu-pɨ/ should
   e.g. nɨ tɨka-guup
        I eat-should  "I should eat."

c. /-ŋkuu/ could
   e.g. nɨ tɨka-ŋku
        I eat-could    "I could eat."
   e.g. paa-gaa-ku-n  navakî-ŋku
        water-be-subord-I swim-could
        "If there were water I could swim."
d. /ŋkuu-pì/ could

  e.g. navakì-ŋkupì-gaisapa-taŋ, kak uni-suawaga
  swim—could—though—he not do—want
  "He could swim but he doesn't want to."

These suffixes occur with no tenses.

As suggested earlier, entire verb paradigms for each verb stem will be entered in the lexicon. By "paradigm" I intend to include the various combinations of tenses and aspects listed above; this of course makes each paradigm somewhat larger than paradigms for English, for example; nevertheless the suffixes above form a closed set and are still quite manageable. As usual, lexical rules will capture the generalizations that [+mod] verbs do not have forms with -ŋu, -jì, etc.

If one were to try to include forms with prefixed objects in the paradigm, I feel the result would be unmanageable, mainly because the set of nouns which may be prefixed is open, and for each possible object one would have to in theory re-list the entire paradigm for that verb. Jackendoff suggests listing compounds in the lexicon for English, and for the less productive types of compounds I would agree for Cheme-huevi. Object-prefixation however strikes me as somewhat of a different phenomenon, and in the section below I will discuss an alternative to lexicalizing this process.

2.224 Object Prefixation

As illustrated in (67) above, most verbs may optionally prefix their object. The fact that a noun is prefixed is
evidenced by shifting of stress on the verb, by mutation of the verb-initial consonant (with some nouns), by changes in the position of postfixed subject (see section 2.4 on Word Order) and for most nouns, loss of the absolutive suffix.

For verbs which are normally non-bound (i.e. which don't require object-prefixation) inflectional markers, such as plural suffixes or oblique case endings, are omitted from the noun. If an object is plural, the tendency is not to prefix it unless the fact that it's plural is otherwise overtly shown in the sentence (independent modifiers exhibiting plural agreement for example, or the inclusion of the plural-object suffix /-tu/ on the verb—see section 2.226 on agreement).

Verbs which require object-prefixation, e.g. postpositions and the quasi-compounds in (69) above, do cooccur with plural suffixes on the noun (though oblique markers are still omitted):

\[(82)\] a. níi-k waha-ku-mi puŋku-wi-gaa-nt
    I -K two-ob-pl(ob) dog-pl-have-habit
    "I have two dogs."

c.f. níi-k waha-ku-mi \{ puŋku-ci-wi kwipa-vi
    \{ puŋku-\(ci\)-wə kwipa-vi
    I -K two-ob-pl(ob) dog-abs-pl(ob) hit-past
    "I hit two dogs."

Some verb-object combinations do not occur in prefixed form, e.g.

\[(83)\] maŋ puŋku-ci kí?i-vi
    he dog-abs(ob) bite-past "He bit the dog."

    *maŋ puŋku-kí?i-vi
It may be that possible combinations (with prefixed objects) are determined by such things as the frequency or plausibility of the semantic association (as is true for compounds in general).

There are two alternatives to listing each potential object-verb compounds in the lexicon. Jackendoff actually suggests that for productive types of compounds his redundancy rules might be given generative power. Thus one could derive verbs with prefixed objects by a rule something like the following:

\[(84) \left[ \begin{array}{c} /x/ \\ +N \end{array} \right] + \left[ \begin{array}{c} /y/ \\ +V \end{array} \right] \rightarrow \left[ \begin{array}{c} /x + y/ \\ +V[[N] + [V]] \end{array} \right] \]

However, instances where the object is itself modified by a separate word in the sentence, as in (82a) above, would be awkward to handle if the object is attached in the lexicon (generatively or not). The second alternative is simply to list every noun in the lexicon in both prefix and non-prefix form, as was suggested for nouns with absolutives in section 2.211. Again, the cost can be minimized by a lexical redundancy rule such as:

\[(85) \left[ \begin{array}{c} /x/ \\ +N \end{array} \right] \rightarrow \left[ \begin{array}{c} /x/ \\ +N[[N] + ob] \end{array} \right] \]

Prefix forms are always interpreted as oblique (e.g. for the purposes of modifier agreement), though they never occur with an overt oblique case marker.

Either form of a noun can be inserted under any N node. (The two forms of the same noun will not cooccur in a verb

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phrase.) If a [+prefix] noun is positioned immediately before the verb originally or by a permutation transformation (see section 2.4) a compound is created. If a [+prefix] noun is left stranded in the sentence, or a verb requiring object-prefixedation ends up with no [+prefix] object to its left, the sentence will be discarded.

2.225 The Enclitic "K" and the Habitual

Semantically there is one other aspect which shows up frequently in Chemehuevi, namely the "habitual" which behaves however quite differently syntactically from the suffixes discussed in 2.223. The habitual suffix is actually the active participle ending /-tí/, described in section 2.33 below.\textsuperscript{17} Examples of -tí (\sim -rí\sim -cí\sim -ntí) with various tenses are given in (86); with no tense suffix the verb translates in the present:

(86) a. níí-k nukwi-c
\[ I-K \quad \text{run- ptc}\]
"I run."

b. Johni-k utusamp mucu-ntí-m, aívi-a\j
\[ John-K \quad \text{always strong- ptc- anim, now-he}\]
\[ \text{jumpiga-j weak-pres}\]
"John is always strong, (but) right now he's weak."

c. tíka-vaa-ntí-k ní
\[ \text{eat- fut- ptc-K I}\]
"I will eat."

d. níí-k utusamp tíka-mi-nt
\[ I-K \quad \text{always eat-usit- ptc}\]
"I used to eat all the time."

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e. nī́-k pawa-pigaa-nt
    I-K swell-rem past-ptc
"I used to swell (e.g. from liver disease)."

The habitual (participle) suffix differs from true tense-aspect suffixes in that it requires, for nonadjective verbs, the enclitic -uk to appear in the sentence, as in the following example:

\[(87) \{nī́-k\} \text{ tīka-r} \]
\[
I-K \text{ eat-ptc} \quad "I eat." \]

With adjective-verbs -uk is optional:

\[(88) \{\text{aipac} \{\text{aipaci-k} \text{ pa?a-nti-m} \]
\[
\{\text{bov} \{\text{bov-K} \text{ tall-ptc-anim} \}
\]

For this reason -uk (which Harrington associated with the third-person inanimate invisible postfix pronoun, but which I will refer to simply as "K" for these usages) might be related to some kind of copular verb. Indeed it replaces the verb be in predicate nominative constructions such as:

\[(89) \{nī́-k\} \text{ nainc} \]
\[
I-K \text{ girl} \quad "I am a girl." \]

K also seems to be used in focusing the subject of the sentence, such as in cleft constructions (involving the subject: "It was John who cut the wood") or in responses to questions like "Who caught the fish?" (For further discussion of K see section 2.4.) However K also cooccurs with normal finite verbs. In such cases it generally seems to contribute very little semantically; the subject may be
somewhat focused, but not as strongly as in the cleft sentences:

\[(90) \begin{align*}
&\{\text{nį́-} \backslash \text{nį́-K}\} \text{nukwi-}j \\
&\text{I-} (K) \text{ run-pres} \quad \text{"I am running."}\end{align*}\]

With K attached to the first word in the sentence, the participle verb form is the only type of predicate which permits the subject to occur in non-initial position (first in the sentence, or postfixed to the first word; see section 2.4 on word order). It is also the only verb form which, like predicate nominatives, does not allow its subject to postfix to it, thus:

\[(91) \begin{align*}
a. & \text{nukwi-}j\text{-aŋ} \\
&\text{run-pres-he} \quad \text{"He is running."} \\
b. & \text{pągįci-}ja-uk \text{ maŋ tįka-r} \\
&\text{fish-ob-K he eat- ptc} \quad \text{"He eats fish."} \quad \text{but}

c. & *\text{pągįci-}ja-uk \text{ tįka-rį-aŋ} \\
&\text{fish-ob-K eat- ptc-he} \end{align*}\]

As I will suggest in section 2.33 these verbs might simply be thought of as somewhat like headless relatives (though not entirely equivalent to them—see footnote 19 above, noting that as main predicates, even nonadjective participles do not cooccur with demonstrative pronouns). I will still call them participles then, allowing participles to be inserted directly under the VP node. Participles of nonadjective verbs are lexically marked as requiring cooccurrence with K (which I will generate optionally in the VP) when they
are used predicatively (i.e. when directly dominated by a VP node).

2.226 Verb Agreement

Verbs in Chemehuevi agree in number with their subjects, and optionally with their objects. There are two suffixes which refer to the number of the subject. /-?um$i/20 is added to the verb for two or more (only if animate), and follows tense suffixes. It is omitted however if any postfixed pronouns are attached as well. Thus, for the nonsingular subjects in (b), (c) and (d) below, /-?um$i/ is added only in (b):

(92) a. maŋ nukwi-ʃ

he run-pres

"He is running."

b. mam nukwi-ʃ-ʔim

they run-pres-pl

"They [two] are running."

c. nukwi-ʃ-ʔam

run-pres-they

"They [two] are running."

d. vii hononoʔo-ʃ(ʔ-ʔim)

knives fall-pres(-Craig) "The knives [two] are falling."

(-?um$i/ is used for both singular and plural animate subjects if the verb is an adjective; see section 2.214.)

For three or more (i.e. [+several] as opposed to just [-sing]) the suffix /-ka/ is added to the verb, whether the subject is animate or not. This suffix precedes tenses. Examples:

(93) a. man nukwi-ka-ʃ-ʔim

they run-sev-pres-pl "They [all] are running."
b. wii hononoʔo-ka-j
   knives fall-sev-pres "The knives [all] are falling."

When the verb is suffixed with -ka, the [-sing] marker -ʔumí is optional, e.g. (93a) could have been just mam mukwi-ka-j. When the object of the verb is three or more (i.e. [+several]) a suffix /-tu/ is added, preceding tenses (ordered optionally before or after -ka, if there is one).

Example:

(94) nǐ mamí puni-tu-kai-ví
I them see-plob-result-past "I saw them."

A small number of verbs have suppletive stems for marking plurality. These stems are used with non-singular subjects if the verb is intransitive, or with non-singular objects if the verb is transitive:

(95) a. maŋ kari-j
   he sit-pres "He is sitting."
b. mam jíwi-jí-ʔim
   they sit-pres-pl "They [two] are sitting."
c. mam jíwi-ka-jí-ʔim
   they sit-sev-pres-pl "They [all] are sitting."

(96) a. nǐ maka-j wací-mpí
I that-ob put-past "I placed that."
b. nǐ maka-j juna-mpí
I those-ob put-past "I placed those [two]."
c. nǐ maka-j juna-tu-mpí
   I those-ob put-plob-past "I placed those [all]."

In imperative sentences, -ka is added to the verb only if the second-person subject (whether overt or not) is three or
more. The suffix -tu is added only if the object is [+sev],
despite the fact the latter is in the nominative case.
-?umí is not used at all.

In sentences with "passive" participles (actually object-
relativizations), -ka reflects the number of the subject of
the relative clause--what on the surface looks like an
"agent" (see section 2.33):

(97) puusi-k ními jakí-ka-kai-n
    cat-K us(ob) bring-sev-perf-ptc
    {"The cat was brought by us [all]."}
    {"The cat was what we [all] brought."}

(-?umí again, does not occur.) Similarly if the subject of
the above sentence (the understood object of the relative) is
plural, the plural stem of (transitive) bring is used:

(98) puusi-wá-k ními ju?aki-ka-kai-n
    cat-pl-K us(ob) bring-sev-perf-ptc
    "The cats were brought by us [all]."

When the causative suffix /-tu?i/ is added to a verb,
-ka is suffixed if either the subject is [+sev] or the seman-
tic subject of the "embedded" verb is.

(99) níi-k mãmí tîka-ka-tu?i-ví
    I-K them(ob) eat-sev-cause-past
    "I made them [all] eat."

This is the only set of cases where the number-agreement suf-
fixes do not reflect the syntactic notions "subject" and
"object" in the present analysis (that is, if the "passives"
above are viewed as headless relatives instead). One could
argue on the basis of (99) that -tu?i is actually a higher
verb, with the clause "they eat" embedded below it.
Alternatively, one could derive causatives in the lexicon along with the other verb suffixes, and add a complication to the output constraints on number agreement. The lexical redundancy rule relating causatives might be something like:

\[
\begin{align*}
(100) & \quad \left[ /x/ \right] \quad \left[ /x + tu?i/ \right] \\
& \quad +V \quad +V[ [V]+caus ] \\
& \quad +S[ NP \quad VP[ X ] ] \quad +S[ NP \quad VP[ X \quad NP \quad X ] ]
\end{align*}
\]

Indices on the NPs in the syntactic environments are used to indicate that whatever semantic function is assigned to NP\(_1\) on the left side of the rule will also be assigned to the NP in the NP\(_1\) position on the right side. The semantic functions are determined by the individual lexical entries for each verb. (See Shopen, op. cit.)

For normal verbs suffixed with -ka interpretive rules will assign a reading that the subject of the verb is plural. (If a singular subject is present consistency rules will throw out the sentence. If no subject is present the understood subject will be assumed to be plural.) For verbs with -tu?i one of three readings may be assigned. Either the subject of CAUSE, or the (semantic) subject of the verb stem (NP\(_1\) in the rule above), or both, will be plural.

2.227 **Semantic Imperatives**

The suffix -via (normally "past tense"; see section 2.223) may be used with a future, semantically imperative meaning if the subject is second person. Syntactically or morphologically, sentences with -via have nothing in common
with imperatives (see section 2.26) though they can translate as "you must (verb)" or even "(verb)!" Objects are in the oblique case, and the plural subject enclitic is /wĩ/ (used in indicative sentences), not */-ja/ (used in syntactic imperative sentences—section 2.26). Such sentences are ambiguous (or homophonous) with the normal past tense interpretation.

(101) a. kaniʔi-waʔi-vĩĩ-w
    visit-go-past-you(pl)
    
    
    
    
    
    
    
    "You went and visited."
    
    "You must go and visit."

b. kacu-k aipaci puni-vĩĩ-wa
    not-you boy(ob) see-past-neg
    
    
    
    "You didn't see the boy."
    
    "You are not to see the boy."

c. ĩim oranei tika-vĩ
    you orane(ob) eat-past
    
    
    "You ate an orange."
    
    "You're to eat the orange."

MM suggests these differ from true imperatives in that the latter are more immediate, whereas examples with the past-tense suffix are somewhat more "future" in intent, commanding something to be done after the speaker leaves, for example.

The future tense suffix -vaŋ may also be used with somewhat of an imperative meaning. Again, such sentences translate more as "you're to (eat)." However this usage is not restricted to second-person if the habitual (participle—see section 2.225) ending is added:

(102) nĩĩ-k uni-va-nt
    I-K do-fut-pte
    
    "I'm going to do it!"
    
    "I'm to do it!"
Pamela Munro's informant (1974a) gives normal, full imperative translations for this suffix (-vaa) in such sentences (second person).\textsuperscript{21} She points out that the objects are in the accusative case, by contrast with true imperative constructions, and that the negative suffix after -vaa is the -wa? used with indicative verbs. As for the subjects, her sentences are of two types: those with -k on the first word (negative kacu- in her examples), which she analyses as subject-less, and those with -? on the first word (e.g. the object) which is, in fact, a second-person singular (nominative) pronoun enclitic.

For MM, -k replaces second-person subjects in any kind of sentence \textit{except} true imperatives (see section 2.212). Therefore these sentences are not structurally different from normal futures, and are ambiguous for her. The enclitic -? is normal for MM in true imperatives, and is rare in other kinds of constructions. The examples Munro gives with -? and -vaa cooccurring are ungrammatical for MM.

2.23 Postpositional Phrases

There are two kinds of postpositions in Chemehuevi: those which can be used as verbs and those which can’t. The former may be optionally suffixed with normal tense-aspect markers and be interpreted as verbs of location or motion (depending on the postposition stem). Without tense-aspect markers these same postpositions cooccur with normal verbs of location or motion and behave more adverbially in the
sentence. In either case their objects (or appositive pronouns) are always prefixed to the postposition stem.

Stems of this first type (all, including the compound stems, optionally verbs) are given in (103) below, with examples of each:

(103) a. /-vaa/ at/on (location)
    tìmp i-vaa-ni?i-j rock this-at-cont-pres
    "The rock is {here \{on this\}."

b. /-vaa-ntua/ onto (motion)/at
    haga-vaa-ntua-ca-uŋ tìravi?i-kwa? what-at-toward-perf-he dash-away
    "Where did he run off to?"

c. /-upa?a/ in (location)
    pagi?c paa-upa? uni-kai-vi? fish water-in be-result-past
    "The fish was in the water."

d. /-upa?a-tua/ into (motion)
    kani-a-n ma-upa?a-tu nukwi-vi? house-ob-I that-in-to run-past
    "I ran into that house."

e. /-va?a-na/ on top of (location)
    ma-va?ana-vi?-iŋk that-on-past-it
    "It was on that."

f. /-va?a-ntua/ onto/on top of (motion)²²
    mahavi? ma-va?a-ntua-ŋ tree(ob) that-on-to-imp
    "Get on top of that tree!"
g. /*-ruka/  under (location)
    wii pagâci  uŋa-ruk  uni-ka
    knife fish(ob) that-under be-result
"The knife is under the fish."

h. /*-ruka-tua/  under (motion)
    tįkatìaa-ruka-tua-ŋu-?
    table-under-to-imp-you
"Go under the table!"

i. /*-vin?apa/  behind (location)
    i-vin?apa-uk  uni-kai-vi
    this-behind-it be-result-past
"It was behind this."

j. /*-vin?apa-cua/  behind (motion)
    ma-havi  ma-vin?apa-cu tįrawi?
    tree(ob) that-behind-to dash
"Run behind that tree!"

k. /*-tua/  towards (motion)
    ni-rua-ŋ  kijasui-ka
    I-toward-he smile-result
"He's smiling at me."

        maŋa-rua-ŋu-ik
        he-toward-imp-it
"Give him this!"

(Note that for location, using the postposition as verb, or
using the verb be instead, seems to make little difference in
the meaning, cf. (103e) and (103i) above.)

All the above stems will be listed in the lexicon as

    [+post]  to allow insertion under either node. Furthermore,
    [+V]  they are all [+bnd] since they require objects to be attached.
Most non-compound stems are marked [-motion], whereas those compounded with -tua (and -tua itself) are [+motion]. A few postpositions do not compound at all and may be used with both verbs of motion and location, e.g. /-vajewi/ beside, which is also [-v] (cannot be a verb—I know of no examples of non-verb postpositions which can compound with -tua), and /-wa?i/ with (accompaniment), which can be a verb. The lexical rule in (104) below relates these motional and non-motional postpositions.

\[
(104) \quad \left[ \begin{array}{c}
 /x + tua/
 \\
 +[[\text{post}] + [\text{post}]}
 \\
 +\text{mot}
 \end{array} \right] \rightarrow \left[ \begin{array}{c}
 /x/
 \\
 +\text{post}
 \\
 -\text{mot}
 \end{array} \right]
\]

\[
\rightarrow \left[ \begin{array}{c}
 /-tua/
 \\
 +\text{post}
 \\
 +\text{mot}
 \end{array} \right]
\]

The presence of the feature [+motion] essentially dictates what type of verb the postpositional phrase cooccurs with, [+mot] postpositions mark the GOAL for most verbs involving CHANGE (see Shopen 1972, Jackendoff 1972, and Gruber 1967, for discussion). The exceptional postpositions mentioned above will be lexically marked [*motion]. Corresponding forms with -tua will simply be omitted from the lexicon.

Postpositions which cannot be used as verbs are marked \[
\left[ \begin{array}{c}
 +\text{post}
 \\
 -v
 \end{array} \right].
\] They share however the rest of their syntactic behavior with the stems in (103), e.g. they append their objects (or appositives). These stems are listed and exemplified in (105):
(105) a. /-vajíw/  beside
    huu wihi-vajíw  uni-kai-ví/*wihi-vajíw-ví
    arrow knife-beside be-result-past
    "The arrow was beside the knife."
    mahaví ma-vajíw  kwai-ŋ
    tree(ob) that-beside go-imp
    "Go beside the tree!"

b. /-wa/  with (instrument)
    uŋ wihi-w  tukuavi cikwí-ví
    he knife-with meat(ob) cut-past
    "He cut the meat with a knife."

c. /-waŋku/  from
    John aipaci-waŋk pagíci šjíŋ-ŋkwa
    John boy-from fish(ob) steal-perf
    "John stole the fish from the boy."

d. /-mantía/~-/wantía/  some of/part of
    puusi-wí-a-n  umí-wantí  puni-kai-ví
    cat-pl-ob-I  those-some see-result-past
    "I saw some of those cats."

e. /-vací/  about
    himpi-wací-auk nonosi-ga
    what-about-you dream-pres
    "What were you dreaming about?"

f. /-manąŋkwá/  from
    maŋ ja?i-ŋucík tígíi-manąŋkwá
    he die-about to hunger-from
    "He is dying of hunger."
    kani-ipa?a-ti-manąŋkwa-ca-n táravi?
    house-in-ptc-from -perf-I dash
    "I ran (out) from inside the house."

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Note that objects of postpositions do not take the oblique marker /-a/ if they are prefixed to the postposition. This could suggest the alternative of analyzing postpositions as case suffixes, as has been done for other languages. However for Chemehuevi I reject this alternative since (a) postpositions are often equivalent to verb stems; (b) modifiers do not "agree" in case/postposition with the noun (e.g. maka-j that-ob paa-upa? "in that water"); and (c) with an appositive water-in prefixed to the postposition the noun is in the normal oblique case (as are all modifiers).

2.24 Interrogatives

2.241 Yes-No and Alternative Questions

Yes-No questions in Chemehuevi are formed by the addition of the enclitic /-raa/ to the first word in the sentence. Examples in (106) below demonstrate that this can be verb, noun, or adverb. (Since I'm using '?' as "glottal stop", question marks will be "??", representing intonation contours associated with questions.)

(106) a. Anni-ra ñi pagïci maga-j ??
   Ann-Q you(ob) fish(ob) give-pres
   "Did Ann give you a fish?"

   b. tïka-jí-ra-?aŋ aipac aŋ ??
   eat-pres-Q-he boy that
   "Is the boy eating?"

   c. utusampa-ra-?uŋ maŋ navaki-r ??
   always-Q-K he swim-habit
   "Does he swim all the time?"
d. kacu-ra-! tika-vaa-wa ??
   not-Q-you eat-fut-neg
   "Aren't you going to eat?"

In Yes-No questions, the present and past tenses fall together, present tense -jį being used for both. Past -vįį is prohibited in questions, though frequent use of the preterite enclitic -ca is made.

The enclitic -ra co-occurs with other tense suffixes, and precedes suffixed pronouns.

I have been unable to obtain any obvious alternative questions in Chemehuevi (or alternative statements for that matter, see section 2.31). In order to ask something like "Is he here or there?" in Chemehuevi, one simply asks two Yes-No questions in succession, as in (107):

(107) ivani-įį-ra?-uŋ ??   uvani-įį-ra?-uŋ ??
    here-pres-Q-he           there-pres-Q-he
    "Is he here?"            "Is he there?"

Another question type involves a final glottal stop suffix which, when suffixed onto single-word utterances, has the effect of questioning just that constituent, as though raising it as a possible answer to a previous question. Again, one can approximate an alternative question by questioning two such constituents, though the meaning is still not exclusively disjunctive. Examples: (The -? not only protects the stem-final vowel, it phonetically lengthens it.)

(108) a. haŋ tika-į ??   Anni-? ??
     who eat-pres       Ann-Q
     "Who's eating?"   {"Ann?"}
     {"Is it Ann?"}
b. haŋ uni-vaa-nt ?? ŋmii-? ?? nįʔiʔ ??
    who do-fut-hab you-Q I-Q
    "Who's to do it?" "You?" "I?"

c. haŋaka-ja-? iva-ntí-n   haʔisutui-j ??
    which-ob-you at here-ptc-nml like-pres
    "Which one do you like?"
    ika-ja-? ?? maką-ja-? ??
    this one-ob-Q that one-ob-Q
    This one? That one?"

Pamela Munro (p.c.) and Harrington both report similar uses of the suffix /-ʔ/ (for example, Harrington cites in isolation niʔiʔiʔ, "Who--me?", and tįmpii?, "Is it a rock?").

Although in many languages there is strong motivation for deriving Yes-No questions from alternative questions, the absence of any clear-cut disjunctive coordination in Cheme-huevi argues against such an analysis in this case, even if deletion were allowable.

There is one other type of interrogative that semantically functions as a Yes-No question, namely the predicate urįį, which translates something like "is it still the case that...". This either precedes or follows a clause consisting of a subject in the oblique case and a nominalized verb. The verb must contain the suffix /-su/, meaning "still" or "too". Due perhaps to the semantics of the "higher" verb the clause cannot be in the past tense. Examples:

(109) a. urįί ŋmí nukwi-na-s ??
    Q you(ob) run-nml-still
    "Are you still running?"
b. uriʔ tik-a-niʔi-va-na-suʔum ??
    Q eat-contin-fut-nml-still-you(ob)
    "Will you still be eating?"

c. tik-a-na-suʔum uriʔ ??
    eat-nml-still-him Q
    "Is he still eating?"

For these I would propose a tree like the following; uriʔ could have a lexical entry as in (111):

(110)
   S
   /NP VP
   /NP NOM
    urʔiʔ

(111)
    [/urʔiʔ/ 
    +V 
    [NP[NP NOM]___] 
    IS IT STILL THE CASE THAT]

(For the frequent shifting of clauses after the verb, see section 2.4.)

2.242 Information Questions

Information questions are full sentences in which one constituent is being questioned. Unlike English, Chemehuevi has the same word order in declarative and interrogative sentences. There is a somewhat greater tendency to front the questioned constituent, but all order constraints are strictly adhered to (see section 2.4). The following is a list of interrogative forms (given in underlying form) in Chemehuevi:
(112) himp'i what [-anim] [*concrete]
    haŋa who [+human]
    hini who/what [+anim] [*human]
    hanoko when
    haga-ka-ja which
    haga-vaa where (loc)
    haga-rua whither
    (similarly for other postpositions)
    hanopai how many
    haga-ru'a how
    haga-ru'a-gai why
    haga-ni why/how
    haga-ni-gai why

The following are WH-verb forms (discussed below):
    hania say what/say how
    haga-ni do what

(As with Yes-No questions, the past tense suffix -vii is prohibited.) Examples:

(113) a. himp'i-a-uŋ po'o-j
    what-ob-he write-pres
    "What did he write?"

b. ỉim haŋ
    you who
    "Who are you?"

c. hanoko-ca-uŋ tirawi?i-kwa
    when-past-he dash-away
    "When did he run off?"
d. haga-vaa-ntua-ca-uŋ tırawiʔí-kwa
   where-at-towards-past-he dash-away
   "Where did he run off to?"

e. hagarua-jiʔ?
   how -pres-you
   "How are you?"

f. ŋɨm hagaruaga kac tîka-wa-t
   you why not eat-neg-ptc
   "Why aren't you eating?"

g. hagan mai-ka-t
   how say-p/p-pass
   "How is it said? (How do you say...?)"

h. tugump ar hagan maʔaka-t
   sky that how paint-pass
   "What color is the sky?"

i. haganigai-ŋ Ann nukwi-va
   why -she Ann run-fut
   "Why is Ann going to run?"

j. hagani-ŋu-ca-uŋ
   do what-mom-past-he
   "What did he do?"

k. hania-ka-uŋ = hania-uŋ mai-k
   say what-pres/past-he = say what-he say-pres/past
   "What did he say?"

l. himp hania-tí-j
   what say what-pass-pres
   "What was said?"

m. hani tânia-tí-j
   how tell-pass-pres
   "How was it told (what manner, speaking, writing, etc.)?"
The last few examples illustrate some of the peculiarities of the questioned verb forms. hania- can take normal verb suffixes and behave exactly as the main verb in the question, or unsuffixed it can function as the object of the verb mai-, to say, (but not of tšnia-, to tell) of nija-, to name, and according to Pamela Munro (p.c.) of hear, mean, cry about, and dream. As a verb, note that hania- itself can take an object, himpš (1131). Elsewhere it is used adverbially, e.g. in (113m) above.

The verb "do what" could be identical to, or the source of, the adverb haga-ni-(gai). The suffix -gai is a common subordinator (like-subjects, concurrent time), and the adverb could be translated as "doing what,..." e.g. "What did he do to cut it?" for "How did he cut it?". In other instances where it appears with tenses (with the "main" verb subordinate), one could think of the translation as "What was he doing cutting it?" for "Why did he cut it?"

Morphologically, one might add that the suffix -ni in haga-ni is most certainly relatable to uni-, to do (cf. Sapir, p. 209). (It also occurs to me that the -ru?a in haga-ru?a-gai is the stem to be, and that this adverb, too, probably comes from a verb, being how.)

Indirect questions may be formed using the same forms.

Example:
(114) kacu-uka-n putucuga-wa Annî mami
not-it-I know-neg Ann(ob) them(ob)
himpĩ maga-tu-kai-n
what(ob) give-plob-perf-ptic
"I don't know what Ann gave them."

2.243 Tag Questions

Tag questions are very straightforward in Chemehuevi. Any sentence (except another question) may end in a tag, which is always /hînâa/. Examples:

(115) a. iva-nî-i-jî-aŋ, hînâa ??
here-contin-pres-he, tag
"He's here, isn't he?"

b. ic kac ha?i-ju-wa, hînâa ??
this not good-pres-neg, tag
"This isn't good, is it?"

(For intonation, see footnote 24, this section.) /hînâa/ may also be added to imperatives:

(116) huvitu-ŋu-?, hînâa ??
sing-imp-you, tag
"Sing, {huh?} {won't you?}"

2.244 Analysis

In the PS rule expanding S, I have allowed an optional Q. In the lexicon the following entries may be attached to this node:
Each is marked to trigger a given intonation contour. In
general I am not treating intonation in this work, but assume
intonation contour "3" to be something like \( + \) length on
the last vowel; intonation contour "2" to be \( -- \), and "1"
on declaratives) to be \( --\). (These ignore the contrib-

Since \(-ra\) is an enclitic, a transformational rule will
attach it to the first word in the sentence after all other
permutation rules have established what that word is.

The WH forms will also constitute lexical entries, with
ha\(\_\)a etc. marked \([+\text{pro}]\), hanoko etc. marked \([+\text{Adv}]\), and hania
and hagani marked \([+V]\). The form hania is also entered as a
\([+\text{Adv}]\) and \([+\text{pro}]\). The fact that these words are questioned
constituents will be included in the semantic portion of each
entry.

2.25 Passives

There are two kinds of constructions in Chemehuevi which
can translate as passives in English. Transitive verbs to
which a suffix \(-t\_\_\_\_\) has been added become passive in mean-
ing but may not co-occur with an overt agent. These are dis-
cussed below. To express an agent in a sentence where the
"object" is in the nominative, one must use a participial construction with the agent in the accusative, the verb being participialized by the addition of the suffix -na. Strictly speaking, these latter constructions may be related to headless object relative clauses, and are discussed in section 2.33 below.

The suffix -tii might be viewed simply as an intransitivizer. Verbs with -tii take a full range of tenses, as illustrated in (118) below. All such examples are judged ungrammatical if an agent noun is introduced.

(118) a. tukuav cikwi-tii-j
    meat      cut-pass-pres
    "The meat is being cut."

    b. samita?ap tik-a-tii-vi
    bread      eat-pass-past
    "The bread was eaten."

    c. pagic tik-a-tii-va
    fish       eat-pass-future
    "The fish will be eaten."

The only surface expression of an implied agent shows up in the number agreement marking on the verb. Recall that when the underlying subject of a verb is three or more in number -ka is suffixed to the verb stem (see section 2.226). In a passive sentence in which the implied agent is plural, whether or not the surface subject is, -ka shows up on the verb, as in (119):

(119) tukuav tik-a-tii-ka-j
    meat      eat-pass-pl-pres
    "The meat is being eaten by many."
Aside from this, there is no further evidence in Cheme-huevi to support the derivation of these passives from corresponding active sentences. Instead of invoking an obligatory deletion rule to obtain these sentences I would propose they be derived directly, with the verb form lexically assembled.

The following represents the deep structure, then, for agentless passives as in (118a) above:

(120) $S$

```
 NP          VP
|           |
N           V
|           |
tukuav     cikwi+ti:ci+ja
meat       cut-pass-pres
```

Passive verbs then constitute part of the verb paradigm in the lexicon. A lexical redundancy rule relating cikwi-ti:ci-to cikwi, etc. is given in (121):

(121) $\left[ \frac{\text{}/x/}{+V} \left[ \frac{\text{[NP } VP[X NP_1 X]}{X} \right] \right] \leftrightarrow \left[ \frac{\text{}/x + ti:ci/}{+V} \left[ \frac{\text{[NP_1 VP[X...X]]}}{BE X-EN} \right] \right]$

Whatever the verb, rule (121) states that the form suffixed with -ti:ci cooccurs with one less NP than the form without -ti:ci, and that selectional restrictions and semantic functions associated with the object in the latter case are the same as for the subject in the former case. (See p. 137 for discussion of NP indices.)
2.26 Imperatives

The following surface features signal syntactic imperatives\(^\text{26}\) in Chehemuevi:

A. Verbs which are inherently durative add /-ŋu/ to the stem (or stem + any affixes except tense). Verbs which are inherently momentaneous add nothing. Verb stems which can be used either momentaneously or duratively add Ø or -ŋu respectively (depending on the meaning assigned to the stem).

Examples: (For /-ʔ/ see D below.)

(122) a. nukwi-, run, [\(-\text{mom}\)]: nukwi-ŋu-, run!

b. tərawiʔi-, dash off, [+mom]: tərawiʔiʔ-,
   dash off!

c. suwaka-, breathe, [\(^*\text{mom}\)]:

\[
\begin{align*}
\{ & \text{suwaka}-ŋu-?, \text{breathe!} \\
\{ & \text{suwaka-?}, \text{take a breath!} \\
\end{align*}
\]

No tense suffixes occur in (syntactic) imperatives.

B. Objects of the verb which are normally marked oblique are in the nominative case in imperatives. This includes "direct" as well as "indirect" objects, but does not include objects of postpositions. (For postpositions as verbs, see section 2.23.) Examples:

(123) a. aipac wampakwic punikai-tuʔi-ŋ
   boy scorpion see-cause-imp
   "Show the boy the scorpion!"

b. mahavụ mawa-ntua-ŋ
   tree(ob) on there-toward-imp
   "Get onto the tree!"
C. Word order constraints on surface subjects seem to apply to the nominative objects of imperatives. Either the object occurs sentence-initially, or it (or a copy pronoun) is attached as an enclitic to the first word.\(^{27}\) For double-object verbs the two (nominative) objects occur in first and second position. The suffix -k (see section 2.225) cannot occur in an imperative sentence. Examples:

\[(124)\]

a. tika-ŋu-ja-an pagic an
eat-imp-pl-him fish that
"Eat (dual) that fish!"

b. kacu-an tawî-wai-tu?i-?ap
not-him us-with-cause-neg
"Don't let him [come] with us!"

D. In singular imperatives the subject "you" shows up either in full form /âmi/, as a postfix /-ʔ/ (second person singular nominative), as both, or not at all. The full form apparently is added to the sentence only for emphasis. For all imperatives, whether the postfix -ʔ occurs (or nothing does) depends strictly on the word-order in the sentence. First, -ʔ (like normal subject postfixes; see section 2.4) must attach to the first word in the sentence. However (in MM's dialect) -ʔ can only attach to verbs. Furthermore, it cannot cooccur with other postfix pronouns on the same word. Therefore, in a sentence with an object, which must also occur first in the sentence, -ʔ is destined not to show up. In any sentence in which it can occur, it must.

Examples of singular imperatives:
(125) a. țiim nukwi-ŋ (*țiim nukwi-ŋu-?)
    you run-imp
    \{"Run!"
    \{"You run!"

b. nukwi-ŋu-? (*nukwi-ŋ)
    run-imp-you(sg)
    "Run!"

c. ic hivi-ŋ (*ic hivi-ŋu-?) (*icu-? hivi-ŋ)
    this drink-imp
    "Drink this!"

d. tıkka-ŋu-? țiim
    eat-imp-you(sg) you
    "Eat!"

E. For plural imperatives (dual or more) the enclitic form of the subject is /-ja/. This, too, is constrained to suffixation on the first word, but that word may be a verb, noun, or adverb. -ja may cooccur with enclitic pronouns on the same word. Plural imperative sentences may also use the full pronoun form, in this case mıım. As in the case of the singular, the two forms of "you" may cooccur if the full form is not sentence-initial, since -ja cannot attach to mıım.²³

(126) a. mıım man tıkka-ŋ
    you(pl) all eat-pl-imp
    "All of you, eat!"

b. mano-j tıkka-ŋ
    all-you(pl) eat-pl-imp
    "All of you, eat!"

c. icu-j huvitu-ŋ (compared with
    this-you(pl) sing-imp
    ic huvitu-ŋ for singular)
    "Sing (dual) this!"
d. huvitu-ka-ŋu-ja-ik
   sing-pl-imp-you(pl)-this
   "Sing (pl) this!"

e. āivi-j navakī-ka-ŋ
   now-you(pl) swim-pl-imp
   "Swim (pl) now!"

F. Negative imperatives are formed by the inclusion of the negative adverb kac in the sentence, and the suffixation of -?ap directly onto the verb stem. No -ŋu appears in negative imperative sentences. Examples:

(127) a. kac huvitu-?ap
   not sing-neg
   "Don't sing!"

b. kacu-j huvitu-ka-?ap
   not-you(pl) sing-pl-neg
   "Don't sing (pl)!"

G. Imperatives of passive verbs are formed just as in declaratives, with the suffix -tāi and no agent. Examples with agents (i.e. participial constructions, see section 2.33) have not been obtained in imperatives, perhaps due to problems with the semantics. Examples:

(128) kac kwikwipa-tāi-?ap
   not beat-pass-neg
   "Don't be beaten!"

Analysis

The lexical entries for all the second person pronouns are as follows:
(129) a. \[ /\text{imi}/ \]  
\[
\begin{array}{l}
+\text{pro} \\
+\text{sg} \\
\text{II pers} \\
\alpha\text{bnd} \\
\alpha\text{prefix} \\
\end{array}
\] 

b. \[ /\text{mimi}/ \]  
\[
\begin{array}{l}
+\text{pro} \\
-\text{sg} \\
\text{II pers} \\
\alpha\text{bnd} \\
\alpha\text{prefix} \\
\end{array}
\]

c. \[ /\text{imi} + a/ \]  
\[
\begin{array}{l}
+\text{pro} \\
+\text{sg} \\
\text{II pers} \\
-\text{bnd} \\
-\text{prefix} \\
\end{array}
\]

d. \[ /\text{mimi} + a/ \]  
\[
\begin{array}{l}
+\text{pro} \\
-\text{sg} \\
\text{II pers} \\
-\text{bnd} \\
=\text{prefix} \\
\end{array}
\]

e. \[ /\text{-ukV}/ \]  
\[
\begin{array}{l}
+\text{pro} \\
+\text{sg} \\
\text{II pers} \\
-\text{imp} \\
+\text{bnd} \\
-\text{prefix} \\
-\text{suffix} \\
\end{array}
\]

f. \[ /\text{-wV}/ \]  
\[
\begin{array}{l}
+\text{pro} \\
-\text{sg} \\
\text{II pers} \\
-\text{imp} \\
+\text{bnd} \\
-\text{prefix} \\
-\text{suffix} \\
\end{array}
\]

g. \[ /\text{-mV}/ \]  
\[
\begin{array}{l}
+\text{pro} \\
+\text{sg} \\
\text{II pers} \\
-\text{imp} \\
+\text{bnd} \\
-\text{prefix} \\
-\text{suffix} \\
+_{N}[\text{N+ob}] \\
\end{array}
\]

(gap, for plural form in oblique case. I- and III-person postfixes will all be $^*_{N}[\text{N+ob}]$; II person postfixes will not.)

h. \[ /\text{-?}/ \]  
\[
\begin{array}{l}
+\text{pro} \\
+\text{sg} \\
\text{II pers} \\
+\text{imp} \\
+\text{bnd} \\
-\text{prefix} \\
-\text{suffix} \\
\end{array}
\]

i. \[ /\text{-ja}/ \]  
\[
\begin{array}{l}
+\text{pro} \\
-\text{sg} \\
\text{II pers} \\
+\text{imp} \\
+\text{bnd} \\
-\text{prefix} \\
-\text{suffix} \\
\end{array}
\]

(The cooccurrence feature [+imp] is used to mark those forms which appear as subjects of imperative verbs. For discussion
of the other features, see section 0.4 and section 2.212.)

Any of these forms may be freely inserted under any NP node. Output conditions and interpretive rules will throw out sentences with improper case marking on any NP, sentences which violate number agreement, and sentences which have imperative verbs but [-imp] subject pronominal forms, or non-imperative verbs with [+imp] pronominal forms. Output constraints must also insure that /-ʔ/ and /-ja/ are attached to the first word in the sentence (see section 2.4), and that in the case of the former the first word is a verb.

Imperative sentences in which full and bound subject forms cooccur will be handled in section 2.4 on word order.

2.3 Complex Sentences

2.31 Conjunction, Coordination

Conjunction in Chemehuevi is very limited. Two clauses may be coordinated by juxtaposition under a single sentence-intonation curve. There is no "deletion" of common constituents and there is no word for "and". If the subjects of the clauses are identical and the actions are not concurrent, a clausal connector /haita-/ may be used, with the meaning "then" or "after that". Single sentences may contain haita-but presuppose prior discussion of the subject. The subject in fact must be postfixed to the adverb, indicating that presupposition and focus play a role in determining whether a pronoun is to be free or bound. (Of course the use of a pronoun at all presupposes the hearer knows the referent. The
point is, a clause or sentence with haita- (or perhaps any clause with a postfix pronoun) cannot use the subject contrastively). Attaching the object pronoun to haita- does not satisfy the requirement; the subject must be attached as well:

(130) a. haita-uka-aŋ tiška-mpį
    then-it-he eat-past
    "He ate it then."

b. *maŋ haita-uk tiška-mpį
    he then-it eat-past

There is some indication that haita- requires momentaneous action in the past rather than durative. Verbs which can take either the -mpį or -vį past tense endings (see section 2.223) must use -mpį when introduced by haita-.

Examples of haita-:

(131) a. navakį-jį-aŋ haita-uŋ tiška-jį-s
    swim-pres-he then-he eat-pres-too
    "He is swimming and eating, too."

b. nįš-k samita?a-tiška-vį haita-n wainí
    I-K bread-eat-past then-I wine(ob)
    hivi-vį-s
    drink-past-too
    "I ate bread and then drank wine, too."

c. haita-uŋ tiška-{ *vį }
    then-he eat-past
    "He ate, then."

Note that though the subjects are identical, no deletion is allowed in the second clause. (I don't know why the pronouns
disagree in (131a); there seems to be a preference for an invisible subject after haita-.

A second way to semantically conjoin verb-phrases is to subordinate one, using one of four subordinating suffixes (see section 2.32). To indicate the simultaneity of two actions, /-gai/ is used (for like subjects). (Here the "second" subject is "deleted" under identity.) E.g.:

(132) Ann ijavi tīka-ga pihivovi hivi-vi-s
Ann grapes(obl) eat-while milk(obl) drink-pass-too
"Ann ate grapes and drank milk."

(Note the frequent use of /-su/, meaning "too" in the examples above; with haita- this may cement closer together two otherwise independent clauses, with -gai it may help balance the subordinateness to imply more coordinateness.)

I propose listing haita- as a conjunction in the lexicon (the only one to my knowledge) even though it doesn't require two overt clauses (the fact that it presupposes some prior related discourse will be part of its interpretation).

One might be inclined to call haita- a sentence adverb, since it occurs in simple sentences on the surface. However, because semantically it involves two clauses, and because it can only appear clause-initially (no other adverb is so constrained), I am inclined to reject this alternative.

The PS rule expanding S then is as follows:

(133) $S \rightarrow \{S \ S \ (S)^* \ (Conj) \ (NP) \ (SUBORD) \ VP \ (Q)\}$
The first line is used for generating two or more juxtaposed clauses (under the same intonation contour). The Conj in the second line is included within the clause to make certain permutation constraints somewhat more general (namely that a postfixed subject must be attached to the "first word in the sentence").

Subordination originates in the second line of the expansion. SUBORD can be expanded simply to a VP. Since some of the subordinating suffixes have other uses, I include them in the lexical paradigm of each verb (with the appropriate redundancy rules). Verbs with -gai, interpreted subordinately or coordinately, are inserted in the context \( \text{SUBORD}[\text{VP}[X_{__}]] \).

There are two ways of semantically conjoining NPs. The first is a suffix /-gajaa/, comparable to the verb suffix /-su/, also meaning "too", which is attached to nouns. (Like -su, it apparently can attach to verbs as well but not in the presence of a second verb.) It can occur in a non-coordinate NP, as in (134a) below, but is frequently used with two overt NPs. Examples:

(134) a. ãmi-gaja nukwi-ŋu-s
    you-too run-imp-too
    "You run, too!"

b. Ann Johni nśni-a-gaja punikai-vi
    Ann John(ob) I-ob-too see-past
    "Ann saw John and me."

c. Ann Margaret uja-gaja Johni punikai-vi-(-?i-m)
    Ann Margaret she-too John(ob) see-past-(pl)
    "Ann and Margaret saw John."

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(In (134c) the verb is optionally marked "dual-subj"). -gaja is not a postposition, since case is marked on the noun stem to which it is attached (cf. section 2.23). This particular NP conjunction may be the Chemehuevi construction closest to syntactic coordination.

Since -gajaa can occur on a non-conjoined noun, I will treat it simply as a noun suffix (resulting in a noun). N + gajaa can be inserted in the matrix sentence under any NP, or under the SUBORD node, which expands to: SUBORD \rightarrow (NP) (VP). Examples (134b) and (134c) above both use this source. Nouns with either case suffixed with -gaja can be inserted freely under the SUBORD node; when an oblique noun appears, interpretive rules will translate it as "conjoined" with the object, when a nominative noun appears it is interpreted as conjoined with the subject. (In a transformational account involving deletion, these nouns would have originated in full clauses in which all other constituents were identical (and consequently deleted) with the corresponding constituents in the main clause).

The suffix -gajaa can never imply the NPs were "together" in the action, as shown in the following examples:

(135) a. John Ann \{ -wa (see below) \} na-gumaru-mpi-?im
   -gaja
   John Ann- \{ with \top \} recip/reflex-marry-past-pl
   "John and Ann married."

b. John aipaci-gaja na-gukwi-vi-?im
   John boy-tooo recip/reflex-shoot-past-pl
   "John and the boy shot \{ themselves\} \*each other."
The second method of combining NPs is to use the postposition /-wai/ (\sim -waʔa-, see section 1.33), meaning "with (accompaniment)". This can be used either for subject NPs or object NPs; but since postpositions do not allow oblique case markers on the noun stem, -wai itself has a special oblique case form, -waʔa-ku.\(^\text{29}\) (-ku is used as an oblique case marker for such things as numerals as well.) Without this, all such NPs would be ambiguous. Examples of this type of "conjunction" follow in (136) below:

(Semantically, the difference between (136c) and (134b) is that -wai implies the objects were together, -gaja does not.)

(136) a. puŋkuc an pusi-wa nukwi-jiʔ-ʔim
   dog that cat-with run-pres[-sing] (=dual)
   "The dog and the cat are running."

b. puŋkuc ohovi-wa tirawiʔi-kwai-vi
   dog bone-with dash-away-past (= sing)
   "The dog ran away with a bone."

c. Ann Johni nini-waʔa-k punikai-vi
   Ann John(ob) I-with-ob see-past
   "Ann saw John and me."

Note that the verb is dual in (136a), probably to emphasize that semantically the subject is coordinate, cf. (136b) where the verb is singular, perhaps because the object of "with" is not willingly partaking in the action. Scattered examples occur where sentences with conjoined animate subjects show up with a singular verb. Perhaps these, too, are interpreted less like conjuncts. It may be there are two sources for the nominative instances of N+wai, as shown in (137):
(137) a. 

```
S
 /\  
NP VP
 /\   
N PP V
   /\ 
pukiuc N Post
    /\ 
pusi -wai
```

**dog** **cat** **with**

b. 

```
S
 /\  
NP VP
 /\   
N PP V
   /\ 
pukiuc N Post
    /\ 
ohov -wai
```

**dog** **bone** **with**

(137a) represents NPs semantically conjoined, both "acting together". (For direct objects, PP is embedded under the NP in the VP.) (137b) represents instead an adverbial use of N+wai (though it still means "accompaniment" as opposed to "instrument", a separate suffix). This then is not properly conjunction at all, either syntactically or semantically.

When number agreement is checked on the verb it will have to count singular nouns modified by -wai phrases as plural (dual or several).

The coordinateness of two noun phrases may further be stressed by using "both", as in the following example:

(138) wahajugaisu-?um Ann Johni-wa nukwi-vi]-m

**both-they** **Ann John-with run-past-[-sing]**

"Both Ann and John were running."
Disjunctive coordination is even more restricted in Cheme-
huevi. The following examples illustrate available ways to
get around the lack of any syntactic or morphological "or":

(139) a. tami-want tīgu?uni-va
    we(inclus)-some(of) cook-fut
    \{"Either you or I will cook."\}
    \{"One of us will cook."\}

b. Oder, suuv Ann, pipicī-va
    Oder, maybe Ann, arrive-fut
    \{"Oder or Ann will come."\}
    \{"Oder, maybe Ann, will come."\}

(For discussion of disjunction in questions, see section
2.241.)

There is no exact equivalent of the clausal connector
"but" in Chemehuevi, although there is a suffix /-gaisapa/
which added to verbs means something like "(even) though".
I'm not yet sure where -gaisap comes from, but my feeling is
that the result is a non-finite verb, perhaps a subordinate
clause. In (140) below are given examples of -gaisap
(\sim -kaisap) with and without a second clause. In the latter
case the translation is more "contrary to what you might
think". (Bear in mind that other non-finite verbs can show
up as main verbs, see section 2.225.)

(140) a. nī-k nukwi-gaisap
    I-K run-though
    "I'm running (, I'm just resting a second!)

b. naŋka-kaisapaʔa-n
    hear-though-I
    "I hear (though he may not think so)."
c. puni-karí-gaisapa?a-n kac humpait himpí
    see-sit-though-I      not any      what
    puni-vi-wa
    see-past-neg

"I watched, but I didn't see anything."
("Though watching, I didn't see anything."

d. paa-ga-ku-n navakí-ŋku hu?urma-gaisapa-n
    water-being-would-I swim-could be-though-I
    kacu-gu
    not-would

"If there were water I could swim, but
I wouldn't."

2.32 Subordination

There seem to be four major types of adverbial clauses in
Chemehuevi, depending on whether the subject and tense match
those of the main clause. For each possible situation there
is a separate subordinating suffix on the embedded verb.
These are given in (141) below, with examples of each in
(142):

(141) a. -gai like-subjects contemporaneous (dura-
      tive) action

b. -gu unlike-subjects contemporaneous (dura-
      tive) action (~ -ku)

c. -ci like-subjects momentaneous action

d. -ka unlike-subjects momentaneous action

(There is a suppletive form for -gai, which is -ju after any
sequence -ai-.) The suffixes -ci and -ka by themselves refer
to antecedent actions, but may occur with future -vaa to
indicate "being about to".

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(142) a. John huvitu-ni?i-ga wáními-j
   John sing-contin-subord dance-pres
   "John is singing and dancing."
   "...dancing while singing."

b. puŋkuci huvitu-g, aŋac aŋ tika-ví
dog(ob) sing-subord boy that eat-past
   "While the dog sang the boy ate."

c. Ann ijàpaka-c tárawi?i-kwai-ví
   Ann be scared-subord dash-away-past
   "Ann got scared and ran away,"
   "...ran off because she got scared."

d. níím jaga-ka-ví?i-m naga-vuŋkuci-wí
   we cry-pl-past-[sg] mountain sheep-pet-pl(ob)
   kogo?i-tí-ka-k
   kill-pass-pl-subord
   "We cried because the sheep were killed."

(For -gai → -ju:)

e. ja?i-ví-n navakí-kai-kái-j
   be tired-past-I swim-result-perf-subord
   "I was tired because I swam."

These clauses can be translated often as "if" or "because" as well as simply "while" (for the contemporaneous suffixes), "when" or "in order to" (for the non-contemporaneous momentaneous suffixes). When an antecedent durative clause is subordinated, there seems to be a tendency to add the resultative (or perfective and resultative) suffix and thereby use the contemporaneous suffixes. In all cases the tense of the clause is relative to that of the main verb—e.g. -gai is interpreted as past tense if the main verb is also past.
On the surface, subjects in subordinate clauses which are
coreferential with subjects in the main clause are obligator-
ily omitted. Instead of "deleting under identity" I propose
generating these clauses with optional subjects in the
deep structure; verbs suffixed with -gu and -ka being marked
for insertion in [ NP [ X__ ]], those with -gai and
SUBORD VP
-ci marked for [ [ X__ ]].
SUBORD VP
The suffixes -gai and -gu are predictably part of the
paradigms of durative verb stems; -ci and -ka of momentaneous
verb stems. (For verb tense see section 2.223.)

2.33 Participles (Relativization)

Relative clauses in Chemehuevi are equivalent to partici-
pial phrases. There are two participle endings, the active
/-tâ/ (with the usual variants -ntâ, -râ, -câ), and what
might be called the passive /-na/. The former is always used
in subject-relativization, the latter in object relativiza-
tion. Sentences which on the surface translate as passive
sentences with overt agents could be taken to be derived
from sentences with headless relatives; relativization and
agent-passivization therefore are not independent processes
in Chemehuevi.

In a standard transformational analysis, subject rela-
tivization would involve deletion under identity of the em-
bedded subject, and participle formation of the embedded verb.
For some tenses -tâ is simply suffixed, e.g. future -vaa
becomes -vaa-nti. Others, like the present tense, delete: -ji-ti > -ti. Participles may not be formed from simple past -vii; perfective -kai-ti > -ka-nti or remote past -pi-gai-ti > -pi-ga-nti are used instead. (For ai → a, see section 1.33 under Phonology.) Subject relativization is illustrated in (143) below.

(143) a. tiemp ar wi?iku-ka-t pi?ijant uru?a-j
   rock that fall-pres/past-ptc heavy be-pres
   "That rock which fell was/is heavy."

b. puusi-a-n sija?i-ci mavo?a-mpi
   cat-ob-I cold-ptc(ob) cover-past
   "I covered the cat which was cold."

Note in (143b) that the verb, having become a participle, agrees in case with the noun it modifies. All active participles take /-a/ in the oblique case, which deletes word-finally.

Participles do not always appear with a head noun on the surface. There are two situations where they show up without a head: (1) when the relative clause is the predicate nominative of an understood BE, resulting in the surface "habitual" aspect, and (2) when, for some verbs, the relative clause (in a transformational account) would be headless or modifying some sort of indefinite third-person pronoun ("one who"). The latter act like ordinary nouns and could be treated as such. In many cases the participles have probably been lexicalized (see words e.g. for teacher, doctor, police-man).

Examples of the "habitual" aspect:
(144) a. níi-k utsampa tîka-r
    I-K always eat-ptc
    "I always eat."

    b. aipac pa?a-ntâ-m
        boy tall-ptc-anim
        "The boy is tall."

(See section on Adjectives, 2.214 for discussion of the animate suffix on verbs.)

Examples of headless subject relatives:

(145) a. pa?a-ntî-m nukwi-j
    tall-ptc-anim run-pres
    "The tall one is running."

    b. níi-k hoko-ntî-mâ kwîhi-vî
        I-K large-ptc-anim(ob) catch-past
        "I caught a large one."

In a standard transformational analysis object-relativization would involve deletion under identity of the embedded object. The subject of the clause appears in the oblique case and could be considered to be either agentive or possessive on the surface. (For arguments against the latter see section 2.3b under nominals.) The verb forms a participle by adding /-na/ with tense restrictions very much like -tî. These, too, can appear without heads. When embedded under the predicate nominative of a missing BE they may be optionally translated either as passives with agents ("X was VERBED by Y") or as headless relatives ("X is what Y VERBED").
Examples of object-relativization are given below:

(146) a. puusi-a-n punikai-vi mavo?a-kai-na-n
    cat-ob-I see-past cover-perf-pty-I
    "I saw the cat which I had covered."

    b. waampakwic nini paka-mpa-n aipaci kwipa-vi
    scorpion I(ob) kill-fut-pty boy(ob) sting-past
    "The scorpion I'm going to kill stung the boy."

The participle -na takes a zero accusative ending. Headless object-relatives are shown in (147):

(147) a. tukuavi-k Anni cikwia-mpa-n
    meat-K Ann(ob) cut-fut-pty-
    {"The meat is what Ann is going to cut."}
    {"The meat will be cut by Ann."

    b. mar-k huvav tika-kai-na-n
    that-K soup eat-perf-pty-I
    {"That soup is what I ate."}
    {"That soup was eaten by me."

    c. ici-k tika-na-7i7
    this-K eat-pty-he
    {"This is what he's eating."}
    {"This is being eaten by him."}

(The enclitic -K (\-ukV) is very common with participles; see section 2.225.)

In the present analysis where deletion rules are avoided, participles will be generated only with as much structure as actually surfaces. Participles will be analyzed as senten-
tial, however the S-node may optionally expand to a VP with-
out a subject. (In main clauses this is needed as the source of, e.g., many imperatives.) The following structures, gener-
ated by the Phrase Structure rules in section 2.1, are taken
to be the sources of all participle constructions discussed above:

(148) a. "Subject-relatives"

\[
\begin{array}{c}
\text{NP} \\
\text{N} & \text{PTC} \\
\text{S} \\
\text{VP} \\
\text{NP} & \text{V}
\end{array}
\]

e.g. aipac puŋkuci tavi-ka-t

\text{boy} \quad \text{dog(o)b) hit-perf-ptc}

"The boy who hit the dog."

b. "Headless subject relatives"

\[
\begin{array}{c}
\text{NP} \\
\text{PTC} \\
\text{S} \\
\text{VP} \\
\text{V}
\end{array}
\]

e.g. pa?a-nt

\text{tall-ptc}

"The tall one (anin.)."

c. "Habitual aspect"

\[
\begin{array}{c}
\text{S} \\
\text{NP} & \text{VP} \\
\text{N} & \text{PTC} \\
\text{S} \\
\text{VP} \\
\text{NP} & \text{V}
\end{array}
\]
e.g. nǐi-k pagići tīka-va-nt
       I-K fish(ob) eat-fut-ptc
       "I will eat fish (generally)."

d. "Object relatives"

```
NP
  N  PTC
     S
    NP  VP
         V
```

e.g. puus nǐini mavo?a-kai-n
cat I(ob) cover-perf-ptc
"The cat which I covered."

e. "Passive with Agent"

```
S
  NP  VP
     PTC
      S
        NP  VP
             V
```

e.g. ići-k nǐini tīka-kai-n
      this-K I(ob) eat-perf-ptc
      "This {is what I ate.}"
      {was eaten by me."

Postpositioned relativization

When the head noun is coreferential with the object of a
postposition in the relative clause, the latter surfaces in
the form of a special relative pronoun, /pā-/. In a trans-
formational account the embedded noun is thus pronominalized
rather than deleted.
Verbs in postpositional relative clauses take the participle ending -na, as in object relative clauses, since in both cases there is an embedded subject of the verb (distinct from the head noun). Examples:

(149) a. wii tukuavi-a-n pi-w cikwi-kai-n
    knife meat-ob-I Rel-with cut-perf-ptc
    kiwa-ga
    edge-have
    "The knife I cut the meat with is sharp."

b. John kahoni nopavi pi-ia?a-tu-kai-n
    John box(ob) eggs(ob) Rel-in-plob-perf-ptc
    tan?a-va
    kick-fut
    "John will kick the box the eggs are in."

c. tikatia puusi pi-vaan kar?i-kai-n jokoki-vi
    table cat(ob) Rel-on sit-perf-ptc collapse-past
    "The table the cat sat on collapsed."

/pi-/ refers both to animate and inanimate nouns, and is oblivious to the function (in the main clause) of the noun phrase in which it's embedded.

Note the use of the postposition as verb, in (149b) (see section 2.23).

2.3b Nominalization

In section 2.211 I discussed one form of nominalization which, though fairly productive, was somewhat idiosyncratic. The /-pi/ forms given there seem to parallel the set of deverbal nouns which for English Chomsky (1970) advocated
storing in the lexicon (amusement, theft, etc.). Chemehuevi has an entirely productive nominalizing suffix /-na/ as well, corresponding more to the English -ing forms (amusing, stealing, etc.) which Jackendoff has recently suggested also be in the lexicon (to appear). Likewise I will propose that -na forms constitute part of the paradigm of each verb in the lexicon. Unlike for -pə, lexical redundancy rules involving -na will be completely general and virtually costless.

Examples of nominalizations with -na, in subject and object positions, are given below:

(150) a.  nïî-k  nukwï-na-aŋ  putucuga-vi
   I-K run-nml-he know-past
   "I knew he ran."

b.  Anni-a-n  tičia-vi  pipiči-va-na-un
    Ann-ob-I  tell-past  arrive-future-nml-he
    "I told Ann he would come."

c.  John Ann  karita-a-j  kiaw  tanu-kai-n
    John Ann(ob) chair-ob  yesterday  kick-perf-nml
    putucuga-j
    know-pres
    "John knows Ann kicked the chair yesterday."

d.  kacu-an  sumai-vi-wa  tika-va-na-n
    not-I remember-past-neg  eat-fut-nml-I
    "I didn't remember to eat."

e.  kani-pi-wa?i-na-n  ha?isuntui-j
    visit-go-nml-I  like-pres
    "I like going to visit."
f. kacu-auk    tīvisampa-tī-ap    Johni 
    not-it (? ) true-habit(ptc)-neg John(ob) 
puusi    puni-kai-n 
cat(ob) see-result-nml

"It's not true that John saw the cat."

Verbs with the suffix -na translate in the present tense 
(relative to the tense of the main clause) if they have no 
tense suffix (-ji is prohibited with -na). -na cooccurs with 
future -vaa and perfect -kai (but not -viš); it follows 
tense-aspect markers and precedes postfix pronouns. Semantic 
subjects of these embedded verbs are in the oblique case. 
If coreferential with the subject of the main verb they are 
omitted (though for some verbs the omission is optional).

In many cases the difference in meaning between -pi forms 
and -na forms is not obvious. Compare for example (150e) 
above with (22 c) in section 2.211; also (150c) above with 
(22 a). Syntactically they differ in several respects, how- 
ever. Forms with -pi do not contain tense suffixes, and 
they take the oblique ending -a when used as verb complements. 
Forms with -na have no "oblique case". -pi forms seem quite 
noun-like in that their "subjects" behave like possessors, 
optionally appearing in full and postfix form simultaneously 
(e.g. (22 a,b) in section 2.211). This is true of all nor- 
mal possessive constructions (see section 2.214), (e.g. 
niini moa ~ moa-n ~ niini moa-n "my father"). Forms with 
-na however do not allow this dual occurrence of their sub- 
ject, as exemplified in (151) below. Neither do finite verbs
in main clauses (unless the word order is changed—see section 2.4).

(151) John putucuga-j \{ ni\text{\text{"i}}ni t\text{\text{"i}}ka-va-n \}
\{ t\text{\text{"i}}ka-va-na-n \}
\{*ni\text{\text{"i}}ni t\text{\text{"i}}ka-va-na-n \}

John know-pres \{(I\text{\text{(ob)}) eat-fut-nml}\-(I)\}
"John knows I will eat."

Forms in -na therefore will be treated as originating in
the deep structure as VPs, embedded under a NOM node. The
NOM itself, together with an optional "subject" is an NP.
Structures for NOMs in subject and object position are given
in (152a) and (152b) respectively:

(152) a.

```
S
/   \\   \\
NP  VP
    /   \\
   (NP) NOM
      /   \\
     VP
```

b.

```
S
/   \\   \\
NP  VP
    /   \\
   NP  V
      /   \\
     (NP) NOM
        /   \\
       VP
```

There are two verbs which are exceptions to the above
generalizations on complements, namely, \underline{think}, mai--nii,
and \underline{say}, mai (which are related to each other). The clauses
of these two verbs may be nominalized, but they may also con-
tain normal finite verbs and nominative subjects instead.
Examples illustrate this in (153) below:
(153) a. paʔa-ji-ŋ aipac aŋ mai-ka-n
tall-pres-he boy that say-pres/past-I
"I say the boy is tall."

b. nii kac mai-waʔi-ŋ John puusí puni-ka
I not think-neg John cat(ob) see-result
"I don't think John saw the cat."

c. nii-k {punkuc
{punkuci} ontokwa-ri-m mai-vi
I-K {dog
dog(ob)} brown-hab(ptic)-anim say-past
"I said the dog was brown."

d. nii-k paʔa-niʔi-m na-mai-ka-ni
I-K tall-hab(ptic)-anim reflex-think-pres/past
"I thought I was tall."

e. haŋ punkuc ontokwa-ri-m mai-k ??
who dog brown-hab(ptic)-anim say-pres/past
"Who said the dog is brown?"

These are not instances of direct quotation, since coreference in the embedded subject does not result in a first person pronoun (unless the main subject was first-person). They also do not look like likely candidates for parenthetical verbs since they are not restricted to present tense and first-person.

I will handle these verbs simply by marking them as optionally being inserted in: $VP[X S X_\_X]$. Most other verbs are negatively marked for this environment.

2.4 Word Order

Sentence word order in Chemehuevi enjoys a fairly high degree of freedom. Many constituents of a sentence may be
fronted, extravposed, or internally scrambled with no apparent change in meaning, or even focus, necessarily. However, word order is not totally free—Chehahwii has only two syntactic cases, and numerous order constraints help keep ambiguity within tolerable limits.

In (154) below examples are given of simple sentences which demonstrate the range of word order possibilities. (For clarity I will use lower case terms in the schemata in (154) to indicate constituents which are post-fixes.) Some general constraints are given in (155):

(154) a. SUBJ VB
    niš nukwi-vi
    I run-past
    "I ran"

b. VB-subj
    nukwi-viš-n
    run-past-I
    "I ran"

c. SUBJ OBJ VB
    niš puusi maga-vi
    I cat(ob) give-past
    "I gave a cat."

d. OBJ-subj VB
    puusi-a-n maga-vi
    cat-ob-I give-past
    "I gave a cat."

e. SUBJ VB OBJ
    niš maga-vi puusi
    I give-past cat(ob)
    "I gave a cat."

f. VB-subj OBJ
    maga-viš-n puusi
    give-past-I cat(ob)
    "I gave a cat."
g. SU OB OB ADV VB  
níi mami maka-j kiaw  
I them(ob) it-ob yesterday
maga-vi

give-past
"I gave it to them yesterday."

h. SU OB OB ADV VB  
níi maka-j mami kiaw maga-vi  
"I gave it to them yesterday."

i. SU ADV OB VB OB  
níi kiaw maka-j maga-vi Johni  
"I gave it to John yesterday."

j. SU OB OB VB ADV  
níi Johni maka-j maga-vi kiaw  
"I gave it to John yesterday."

k. SU OB ADV OB VB  
níi maka-j kiaw Johni maga-vi  
"I gave it to John yesterday."

l. SU ADV OB OB VB  
níi kiaw mami maka-j maga-vi  
"I gave it to them yesterday."

m. SU OB ADV VB OB  
níi maka-j kiaw maga-vi mami  
"I gave it to them yesterday."

n. OB-su OB ADV VB  
mami-a-n maka-j kiaw  
them-ob-I it-ob yesterday
maga-vi

give-past
"I gave it to them yesterday."

o. ADV-su OB VB OB  
kiawi-n maka-j maga-vi  
yesterday-I it-ob give-past
mami
them
"I gave it to them yesterday."
p. ADV-ob-su OB VB  kiawi-ika-n  maña-j
    yesterday-this-I him-ob
    maga-vi
    give-past

"I gave this to him yesterday."

q. SU VB-ob-ob ADV  nía maga-vi-wa?i-ika-iŋ
    I  give-past-neg-it-him
    kac
    not

"I didn't give it to him."

(155) Constraints:

a. SUBJECT, when free (i.e. unbound) must be first in the sentence. Putting it anywhere else in the above sentences results in an ungrammatical string.

b. SUBJECT, when bound (i.e. postfixed), must be attached to the first word in the sentence. Attaching anywhere else makes it ungrammatical.

c. VERB is either last in the sentence or next to the last. Only one full word may follow it, though there may be postfixed pronouns on the verb as well.

d. Except for constraint (b), pronoun postfixes may appear anywhere in the sentence, on any lexical category, up to two in a row. (Three pronominal postfixes in a row, or two attached to a pronoun, are not allowed.) The one exception is that no pronominal postfixes may attach to the SUBJECT (free). Any personal pronoun may appear in either full or postfixed form.

Sentences which are slightly less simple exhibit somewhat different constraints, largely with respect to the subject.

One set of such sentences involves the use of a "copy" pronominal postfix, co-occurring (and agreeing) with the subject
of the sentence. Any full (non-bound) subject, including proper nouns, common nouns and pronouns, may co-occur with a copy postfix with no change in meaning. This postfix may attach to any type of constituent except the subject itself, which prohibits pronominal postfixes. Examples in (156) illustrate the use of this postfix.

(156) a. nukwi-vi/n nii = nii nukwi-vi
   run-past-I I I run-past "I ran."

b. kacu-aŋ aipac aŋ nukwi-vi-wa
   not-he boy that run-past-neg
   = aipac aŋ kac nukwi-vi-wa
   "That boy didn't run."

c. wihi-a-ŋ niiŋi maga-vi John ŋ
   knife-ob-he me give-past John that
   = niiŋi wihi maga-vi
   "John gave me a knife."

d. pagici-a-ŋa-ŋ maga-vi Ann ŋ
   fish-ob-she-me give-past Ann that
   = Ann ŋ pagici niiŋi maga-vi
   "Ann (that one) gave me a fish."

The constraints in (155) must now be amended as follows:

(157) a. When the subject occurs in both full and bound form (both representing the same subject) in a sentence, the latter (i.e. postfix) obeys constraint (155b). The full subject form is free to appear anywhere in the sentence except sentence-initially. Constraint (155c) still holds—i.e. the subject (full) may come after the verb if no other full words do.

b. The subject may not appear twice as a postfix or twice as a full noun.
It is not obvious how the subject "copy-pro" should be handled in the grammar. Since it is not phonologically the same as the full subject, proposing a transformational rule to "create" the copy would, it seems to me, entail a second lexical look-up. I would prefer to generate it originally in the deep structure, perhaps by modifying Phrase Structure Rule 3 in section 2.1 by adding the expansion

$$NP \rightarrow NF \, NP,$$

where one of the NPs has a postfixed pronoun inserted under it. (In a grammar with no deletion, one might want to use such an expansion for appositive nouns as well, e.g. for "John, my brother").

The next series of complications arises when modified nouns are considered. Expanded noun phrases enjoy some degree of freedom, e.g. adjectives (participles) and demonstratives may precede or follow the noun they modify, with no difference in meaning. However constituents within a noun phrase may not be separated. With the exception of bound (postfix) pronouns and other affixes, nothing intrudes between modifier and noun. Examples with expanded NPs are given in (158) and (159), and constraints thereby entailed are listed in (160). (Demonstratives, which are equivalent to third-person pronouns (see section 2.214) have certain peculiarities of their own.)

(158) Expanded NPs (nominative case):

a. nǐni moa-n = moa-n = nǐni moo
   my father-my
   "my father"

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b. iŋ aipac = aipac iŋ
   this boy

c. mar hokont karitša = hokont ar karitša
   that big chair big that chair

d. aipaci aŋa-ŋ wii
   boy(ob) that-ob knife
   = aipaci aŋa-ŋ wihi-aŋ
   boy(ob) that-ob knife-his

"that boy's knife"

e. maŋa-ŋ juhuganti-mi nainci nagap
   that-ob fat-anim(ob) girl(ob) shawl

"that fat girl's shawl"

f. owasiakar pampin?i-n = ni.ini owasiakar pampin?
   gold pot-my
   "my gold pot"

(159) a. wahaku-a-n totoci-vi punikai-vi
    two-ob-I head-pl(ob) see-past

   "I saw two heads."

b. puusi aŋa-ja-n maga-vi
    cat(ob) that-ob-I give-past

   "I fed that cat."

c. nukwi-ka-aŋ aipac aŋ pa?anti-m aŋ
    run-pres-he boy that tall-anim that

   "That tall boy is running."

(160) Constraints

a. Only affixes or postfixes may intervene between a modifier and head noun.

b. If a noun is followed by a demonstrative, any adjective modifying it is also followed by an identical demonstrative.32
c. The constraint regarding pronominal postfixes on subjects is relaxed to allow possessive postfixes.

d. Within a NP, a full possessive cannot immediately precede a demonstrative which is not its own, nor can it precede a noun immediately followed by a demonstrative, i.e. "his knife" cannot be *iŋa-j wii ic, or *iŋa-j ic wii, only iŋa-j wii his-ob knife.

e. A possessive suffix attaches only to the head noun, never the modifying adjective or demonstrative.

f. A full possessive must be first in the NP, i.e. unless it's a postfix it precedes all other modifiers as well as the head.

g. A bound subject or subject copy-pro in a sentence beginning with an (object) noun followed by its own demonstrative, attaches to the demonstrative, not the noun. In all other cases it attaches to the first phonological word of the sentence.

h. The one-post-verbal word constraint must be relaxed to allow NPs with modified nouns, i.e. changed to allow one post-verbal constituent.

Postpositional phrases in Chemehuevi, like NPs, have fairly rigid internal structure, though like NPs and Advs they may scramble around in the sentence. Within the phrase the postposition is always attached either to the head noun itself or to an appositive pronoun stem (see section 2.23). The choice is optional, does not seem to reflect a meaning difference, and is independent of whether the head noun is modified or not. Examples of postpositional phrases follow in (161); the constraints are listed in (162) below:

(161) a. kupi-ja-iŋ tąkata-va waci-mpa
coffee-ob-he table-at put-fut
"He will put the coffee on the table."
b. mí-rua-aŋ kijasui-ka  
   I-at-he smile-pres  
   "He's smiling at me."

c. wii pagi-ci uŋa-ruk unika  
   knife fish(ob) he-under is  
   "The knife is under that fish."

d. pagi-ci maka-j pa-upa unika  
   fish that-ob water-in is  
   "The fish is in that water."

(162) a. Nothing may intervene between the NP (object of the postposition) and postposition, or NP and pronoun plus postposition, except affixes (postfixes, or enclitics).

b. The postposition must be attached to the head noun or to an appositive pronoun stem (which agrees with the head noun and which, in the case of inanimates, is a special supplettive stem—see section 2.212).

c. Nothing in the NP follows the postposition.

c. All case suffixes are "deleted" from anything to which a postposition is affixes.

Interrogatives do not complicate matters at all. Yes-No questions are all formed by the enclitic -ra, which attached to any first word (co-occurring optionally with K, which it precedes). WH-questions substitute different interrogative pronouns for various constituents, including two different VP interrogative forms. They are frequently fronted, but so are the constituents they replace. In both kinds of interrogatives all the normal word-order constraints are neatly adhered to. Tag questions always consist simply of ending the sentence with hinaa (roughly equivalent to n'est-ce pas). (See section 2.21.)
One more set of complications arises in simple sentences when the special enclitic marker, which is referred to here as K (phonologically -ukV; final vowel undeterminable), is introduced. K can optionally appear in almost any sentence, provided the word order is such that K's own constraints can be met. I am not certain exactly what K is; it is prohibited in imperatives, required in certain kinds of cleft sentences, obligatory in predicate nominative constructions with no overt copula, and obligatory with at least one aspect (which without K in the sentence is interpreted as an active participle). (See section 2.225.)

In this work I have somewhat arbitrarily assigned K to the verb-phrase. Its Deep Structure position (linear) is unimportant since a late transformation must move it (and all other enclitics) to a position immediately after the first "word" (or alternatively an output constraint must determine that that's where it is). Use of K is illustrated in (163), and constraints pertinent to it are given in (164):

(163) a. ni-K nukwi-vi
I-K run-past
"I ran."

b. ic-i-k wi
this-K knife
"This is a knife."

c. pa?ant-i-mi-k aipac nukwi-j
tall-anim-K boy run-pres
"The tall boy is running."
d. kacu-k nukwi-vi-wa
   not-K run-past-neg
   "You didn't run."

e. tikar-i-k ni-thread
   eat-habit-K I
   "I eat."

f. pagici-ja-uk maŋ tikami-nt
   fish-ob-K be eat-past-habit
   "He used to eat fish."

(164) a. If the main verb is HABITUAL (present, past, or future), or if the subject is second-person (which is often deleted in a sentence with K), then any word may appear first in the sentence with K attached to it. The subject NP is then free to (though not required to) move anywhere in the sentence.

b. In all other sentences with K, it must be attached to the first word of the subject NP (which therefore must be sentence-initial). (I.e. K does not appear in the same sentence as a subject copy-pro or bound subject.)

Complex sentences complicate the constraints on word-order in two ways: (1) "embedded clauses" (including S, PTC, NOM, or SUBORD) may appear at the end of a sentence after the verb. (2) Some clauses show up at the beginning of a sentence in violation of the subject constraints. Most examples of this consist of complements of the two (related) verbs think and say, which may optionally appear in non-nominalized form. Whereas all other verb complements have subjects in the oblique case and verbs with nominalizing suffixes, the clauses of say and think can contain normal finite verbs and nominative subjects (as stated in section 2.34
above). These clauses (which I analyze as S, not NOM) may appear as a unit anywhere in the main sentence (except in the middle of another NP). Other than these, examples which violate subject constraints are extremely rare.\textsuperscript{35} By and large, such violations are judged ungrammatical. Therefore the original constraints (155a) and (155b) are amended as follows:

(165) In a sentence with no K and no copy-pro, the subject is either first in the sentence or attached to the first word (plus postnominal Dem). The only exception in either case is that clauses dominated by S (or SUBORD---see footnote 35), may precede in the sentence.

Other embedded clauses (namely NOMs, PTCs and SUBORDs) behave somewhat like NPs---the subject (non-nominative) remains contiguous to the (nominalized or participialized) verb, nothing intervening except the bound subject of the matrix sentence. Sentences in (166) demonstrate possible ordering in complex sentences:

(166) a. nį́-k Anni pipici-n putucuga-ʋį
    I-K Ann(ob) come-nml know-past
    "I knew Ann came."

b. Anni-a-n pipici-va-n putucuga-į
    Ann-ob-I come-fut-nml know-pres
    "I know Ann will come."

c. Anni-a-n tį́nia-ʋį pipici-va-na-ų
    Ann-ob-I tell-past come-fut-nml-him
    "I told Ann he would come."

d. paʔa-ji-aŋ aipac aŋ maika-n
    tall-pres-he boy that say-I
    "I say that boy is tall."
e. pipici-va-na-n sumai-vi
   come-fut-nml-I remember-past
   "I remembered to come."

f. puusi-a-n sija?i-ci mavo?a-mpi
   cat-ob-I cold-pty(ob) cover-past
   = puusi-a-n mavo?a-mpi sija?i-ci
   "I covered the cat which was cold."

g. puusi-a-n punikai-vi mavo?a-kai-na-n
   cat-ob-I see-past cover-result-pty-c-I
   "I saw the cat (which) I covered."

h. tikatia puusi pi-vaan kari-kai-n
   table cat(ob) which-on sit-result-pty
   jokoki-vi
   collapse-past
   "The table the cat sat on collapsed."

Summary of constraints

1. In a sentence with no K and no copy-pro of the subject, the SUBJECT is first in the sentence, except that it may be preceded by clauses dominated by S or SUBORD.36

2. In a sentence with no K, a bound SUBJECT (whether it's a copy-pro or not) must be attached to the first word unless the sentence begins with noun plus demonstrative, in which case the bound subject is postfixed to the demonstrative. (Clauses dominated by S or SUBORD may precede the "first" word.)

3. The VERB, in addition to any affixes it may have, may be followed in the sentence by one and only one constituent, e.g. a NP, S, or Adv.

4. No more than two pronouns may appear together in a word, (as postfixes on another word or as a single postfix plus independent pronoun). (See end of this section for constraints on the order of these postfixes.)

5. No pronominal postfix (copy or otherwise) may attach to the (full) subject except for possessive pronouns modifying the subject.
6. Only one K can occur in a sentence, and it cannot co-occur with a bound subject in the main clause, whether copy-pro or not.

7. The same subject cannot occur bound twice in the same sentence; i.e. if there's a copy-pro, the subject itself must be full (unbound).

8. Nothing may intervene between a noun and its modifiers except enclitics and pronominal postfixes arising from other NPs.

9. If a noun is followed by a demonstrative, any adjective (participle) modifying it must also be followed by an identical demonstrative.

10. A full (unbound) possessive cannot immediately precede a demonstrative which is not its own (i.e. does not modify the possessive), nor can it immediately precede a noun which itself immediately precedes a demonstrative, within the same NP.

11. A possessive postsuffix attaches only to the head noun, never the modifying adjective or demonstrative.

12. A full possessive must be first in the NP; i.e. unless it's a postfix, it precedes all other modifiers as well as the head.

13. A postposition is affixed either to the head noun of its object, or to a pronominal stem agreeing with the head. In either case nothing intervenes between the object NP of the PP and the postposition (or pro plus postposition).

14. A postposition always follows its entire object NP.

15. In a sentence with K, if the main verb is HABITUAL or if the subject is second person the subject is not required to be sentence-initial.

16. K, like all enclitics, must be on the first phonological word of the sentence, with no exceptions.

Analysis

The following transformational rules introduce limited freedom in sentence order; output constraints will restrict the permissible orderings:
(167) **Permutation rules**

1. \((NP)^* (SUBORD) \{PP_{Adv}\}^* (S) (NP)^* (V)\)

   **SD:**
   **SC:**

   (Notation used to indicate optional scrambling of all named constituents, with respect to each other. This rule scrambles everything between, but not including, Conj (=haita-) and Q. Ordering within each constituent is not affected.)

2. \([+/pro\ +/bnd\ [-/prefix] : PTC_{N\ Num\ D}\]  \[SD: 1\ 2\]

   **SC:** 2 + 1

   **Cond:** optional

   (This rule allows postfix pronouns to intrude into NP constituents.) (May reapply, moving postfix anywhere in NP.)

3. \(NP[ X - N - Y - PTC (D) - ]\)

   **SD:** 1 2 3 4 5

   **SC:** 1 4 2 3 5

   (Optionally reorders participle (plus demonstrative) to prenominal position.)

4. \([\{+/N\ +/V\ +/Adv\ +/Num\} [(+/bnd\ [-/prefix])^* - X - [+/bnd\ -/pro\ -/prefix\ -/suffix] - Y]\]

   **SD:** 1 2 3 4

   **SC:** 1 + 3 2 4

   **Cond:** obligatory

   (Obligatorily moves all enclitics to position immediately after first word.)
The constraints listed on p.192 can now be implemented fairly easily by the output conditions in (168) below, stated in the form of "templates" or matching filters. I am assuming a model of output conditions in which both positive and negative templates are employed (i.e. some templates must be matched and others, if matched, result in the sentence being discarded). Presumably a grammar could be constrained to include only one or the other by somewhat increasing the complexity and number of the statements. I am allowing both positive and negative at this point for the sake of simplicity and transparency. (See p.199 below for further discussion of templates.)

Positive templates of the sort used here will be written somewhat like transformations in that they may contain a "structural description" as well as a "structural constraint". In order for example to force all sentences with subjects to obey the subject constraints and still allow intransitive imperatives without subjects, the conditions are written to include a statement to the effect that "if a sentence contains a [+nom] (S ⊇ [+nom]), then it must be analyzable as X". The only other way to write positive templates to handle this would be to bracket two or more--"either an S must be \{X, or Y (Y \not\in [+nom])\}". Negative templates apply to all sentences (note that elements in parentheses in negative templates mean the sentence is bad with or without the contents).
Output Conditions

A. No S may contain:

\[ *[+\text{pro}] [+\text{pro}] [+\text{pro}] [+\text{bnd}] [+\text{bnd}] [-\text{prefix}] \]  

(Constraint #4)

B. Any S with \([+\text{nom}]\) and no \(-K\) must be:

\[
S \left[ \{ \begin{array}{l} \text{NP} \\ \text{VP} \end{array} \right] \} \left( \left\{ \begin{array}{l} [+\text{NP}] \\
                          [+\text{nom}] \\
                          [-\text{bnd}] \\
                          \{ \begin{array}{l} [-\text{nom}] \\
                                 \text{PTC} \end{array} \right\} \left( \left\{ \begin{array}{l} [+\text{bnd}] \\
                                      [+\text{nom}] \\
                                      [+\text{bnd}] \end{array} \right\} \right\} X \right) \\
\right) \]

(Constraints #1,2)

C. Any S which is \(S[X \text{ VP} [X \text{ V} X] X]\) must be:

\[
S[X \text{ V} ( \{ K \} [+\text{bnd}]*) ( \{ S \text{ NP} \text{ Adv} \} ) ] \\
\]

(Constraint #3)

D. If there exists \([+\text{nom}] [+\text{pro}] [+\text{bnd}] [-\text{prefix}] \), then it must be:

\[
[+\text{N}] [+\text{nom}] [+\text{bnd}] [-\text{prefix}] D [NP [+\text{bnd} [-\text{prefix}]]] \\
\]

(Constraint #5)

E. No S may contain:

\[
\{ K [+\text{nom}] \} X \{ K [+\text{nom}] \} \\
\{ K [+\text{bnd}] \} X \{ K [+\text{bnd}] \} \\
\]

(Constraints #6,7)
F. No S may contain:

\[
\{ NP[X \ \text{N} \ D[\text{Pro}] \ \text{PTC}] \}
\{
NP[X \ \text{PTC} \ \text{N} \ D[\text{Pro}]]
\}
\]

(Constraint #9)

G. No S may contain:

* \( NP[X \ D[ NP[\alpha F] ] X \ D[ NP[-\alpha F] ] X ] \)

where \( F = [\text{vis}], [\text{sing}], [\text{anim}] \) or \( [\text{nom}] \)

(Constraint #9)

H. No S may contain:

* \( NP[ D[\text{NP}] \ \text{N} \ D[\text{Pro}] X ] \)

(Constraint #10)

I. Any S which contains [+post] must be (for every post):

\[
S[ X \ PP[ X \left[ +N \right. \left. \text{+prefix} \right] [+\text{post}] ] X ]
\]

(Constraints #13,14)

J. No S may contain:

* \( S[ \left[ +\text{bnd} \right. \left. -\text{prefix} \right] X ] \)

K. No S may contain:

* [+imp]...K

L. Any S with K must be:

\[
\{ S[X \left[ +\text{nom} \right. \left. -K \ X \right] ] \\
S[X \left\{ \left[ VP[X \left[ +V \right. \left. +\text{HABIT} \right] X] \right] X \right\] ] \}
\]

(Constraint #15)
M. Any NP containing $\text{Poss} \left[ \begin{array}{c} \text{NP} \\ -\text{bnd} \end{array} \right]$ must be:

$$\text{NP}[D[\text{Poss}\left[ \begin{array}{c} \text{NP} \\ -\text{bnd} \end{array} \right]] X]$$

(Constraint #12)

N. Any NP containing $\text{Poss} \left[ \begin{array}{c} \text{NP} \\ +\text{bnd} \end{array} \right]$ must be:

$$\text{NP}[X \left[ \begin{array}{c} N \\ -\text{bnd} \end{array} \right] D[\text{Poss}\left[ \begin{array}{c} \text{NP} \\ +\text{bnd} \end{array} \right]] X]$$

(Constraint #11)

O. No NP may contain:

$$\ast \text{NP}[X D[\text{Poss} \left[ \begin{array}{c} \text{NP} \\ \alpha\text{bnd} \end{array} \right]] X D[\text{Poss} \left[ \begin{array}{c} \text{NP} \\ \beta\text{F} \end{array} \right]] X]$$

where $F = [\text{vis}], [\text{sing}], [\text{anim}]$ or $[\text{pers}]$.

(Constraint #8 is met in the permutation rules 1, 2 and 4 in (167) above; rule 4 also takes care of constraint #16.)

**Postfix pronoun order**

In the first part of this section it was observed that postfix forms of personal pronouns in Chemehuevi may attach to any word in the sentence (subject to various word-order constraints). When two such postfixes are found on a single word a rigid order is maintained between them—that order being determined not by function (subject vs. object) but by such features as person, animacy, etc.

The following orderings and cooccurrence restrictions apply to such sequences of postfixes:
1. The maximum length of such a sequence is two, unless the word they're "attached" to (i.e. the first non-bound morpheme to the left) is a pronoun, in which case the sequence is limited to one.

2. First- and second-person pronouns may not co-occur:
   \*\{I\}\{II\}\{II\}\{I\} (with each other or with themselves).

3. A third-person pronoun may not follow a first- or second-person pronoun: \*\{I\}\{II\}\{III\}

4. An inanimate pronoun may not follow an animate one:
   \*an in

5. A 3rd-person animate plural pronoun may not precede another 3rd-person pronoun (plural or singular). In the case of pl-pl sequences, I see no evidence of "number-dissimilation" in Chemehuevi\textsuperscript{38}--they're simply blocked. The constraint is not applicable to inanimate pronouns, apparently since they never overtly reflect number. (However there have to be number features on them since they trigger number-agreement rules on verbs.)

6. Two 3rd-person pronouns may not differ in "visibility" (or "proximity"), which is actually a trinary feature.

Perlmutter\textsuperscript{39} has proposed that a notation he uses in describing enclitic order in Spanish is universally applicable. He hypothesizes that in any language which allows enclisis there will be constraints on the relative order in a sequence of clitics, which are statable only as surface structure constraints. (He demonstrates why this must be so in Spanish and French.) Furthermore, he claims that such surface structure constraints must always be stated as a positive matching filter consisting of a strictly ordered string of "slots", each slot representing some set of morphemes. A sentence may contain a sequence of these morphemes only if (a) no more than one is taken from each slot, and (b) the order matches
the slot order in the template, or a subset of those slots. Any or all slot(s) may be left out of a sentence. Since the domain of the template (any continuous sequences of clitics) is completely specified (no Xs or Ys) sentences with the wrong order of morphemes will not be able to slip through via the slot-optionality condition.

Applying Perlmutter's chart notation to Chemehuevi gives the following template for order of person:

(169) III \{II\}
      \{I\}

Unlike Spanish, Chemehuevi allows a sequence of two third person postfixes, however the first must be singular (if animate), the two may not differ in "proximity", and if the second is animate the first must be too. The template given below seems the simplest way to handle the III person constraints:

(170) III III III
     in \{sing\} an
     in

This allows in-in, in-an, or an-an (providing the first animate is also singular).

Adding the proximity constraint and the other persons gives:

(171) III III III \{II\}
     \{I\}
     \{vis\} \{vis\} \{vis\}
     in \{sing\} an
     \{ in \}
In addition to this template there must be an output condition limiting the size of the sequence to two (or one, after a full pronoun), namely:

\[
* \text{pro pro pro} \quad \text{(Output Condition A, in (168)).}
\]

\[
[+\text{bnd}] \quad [+\text{bnd} \quad [-\text{prefix}]}
\]

This says a string of three pronouns is prohibited (whether or not the first is bound) provided they're all in the same word; i.e. if the last pro were a prefix attached to some following stem and was preceded by a word-boundary we would not want the sequence to be thrown out.
Footnotes

1 In some cases absolutes drop from the second member of a compound if the first member "possesses" the second; e.g. \textipa{/wanaa-vi/} "web", but hokoso\textipa{a-wana} "spider-web".

2 At least synchronically.

3 This does not include the purely semantic use of diminutive -ci, which definitely adds the meaning of "little" to the noun, unlike the more formal, absolute -ci. The diminutive suffix is freely added to inanimate nouns, e.g. \textipa{wih-i-ci} "little knife", but is syntactically different in that it does not delete in the environments absolutes do, e.g. \textipa{nini pu\textipa{\textit{\textsc{\textipa{ku-ci-n}}} is acceptable only if translated "my little dog".}

4 Others do optionally: \textipa{pu\textipa{\textit{\textsc{\textipa{\textipa{ku-ci-gai-ga}}} having/being a dog" (with verbalizing suffix -gai), \textipa{\sim pu\textipa{\textit{\textsc{\textipa{\textipa{ku}}-gai-ga.}}}

5 Some of the semantic rules may not look strictly "semantic", but I'm not convinced the distinction is critical. See also discussion, p. 79.

6 My only examples are all "nasalized" or "spirantized", though Harrington (1969) gives examples with -p$\ddot{\iota}$ as well.

7 The suffix -ci is still morphologically distinct from the phonologically identical absolute -ci, since the latter deletes when possessed, the former does not (see example (3) above, and footnote 3).

8 As far as I can tell, the choice of the suffix for a given noun is idiosyncratic.

9 Actually, the appropriate M rule for their particular absolute suffix.
Again, I'm not concerned with efficiency or elegance in semantic features here, only that these categories are distinct, and must be accounted for somehow.

Adjectives are all verbs in Chemehuevi.

A separate feature will be used for suffixes—both are needed for the three-way distinction "prefix", "suffix", and "postfix" (see section 0.4 for discussion of terms).

Think is derived from mai- say, using an aspect-like (post-tense) morpheme -ni, (possible historically related to the continuative -ni?i (see section 2.223)). A few other verbs are derived with this morpheme, e.g. *vi...ni bad.

See Munro (1974a) for a suggestion of why imperatives take nominative objects. Compare with section 2.26 in this paper.

Several morphemes with initial t- (e.g. the participle suffix /-tə/ undergo a rule changing t → c after i. This rule does not apply to all morphemes (e.g. /-tu/, plural object marker on verbs, never changes), and for some the rule does not hold in all situations. For example the "causative" /-tu?i/ has the form -cu?i after nouns ending in i (as in (69b) above), but not after verbs, e.g. nukwi-tu?i (not *nukwi-cu?i) "make run".

Color terms and a handful of others; e.g. thick tunku-ka.

Sapir notes in So. Paiute a similar use of participles "in lieu of finite verbs", though in that language no K shows up.

Final vowel undeterminable; also, the u assimilates to any preceding vowel but a (see section 1.33 on Phonology).

Compare this with the further observation that while nonadjective participles used attributively or nominally must cooccur with a demonstrative pronoun, adjective participles need not—see e.g. (143a) vs. (143b) in section 2.33 below. Also, paʔa-ntə-m alone can mean "the tall one", but "the
running one" must be nukwi-c aŋ. (For distribution of the -m (/tumz/) suffix, see section 2.214 on Adjectives.)

20 Despite the glottal stop (which has peculiarities of its own) the u in this suffix assimilates to any preceding vowel but a. See section 1.33 on Phonology.

21 She was only able to obtain examples with -vaa used as an imperative in negative sentences. MM has no such restriction, with the qualification that all her examples were felt to be less truly imperative in meaning.

22 There is no compound form */vaʔa-na-tuə/,, though the na always occurs in the locational (noncompound) */vaʔa-na/,. I have no explanation for this.

23 For Yes-No and Information questions the sentence ends at about the same level as it begins. For declaratives it ends somewhat lower.

24 The final, lengthened syllable also ends on a lower level--giving an exaggerated falling intonation contour. This same contour is given the tag-question morpheme (see section 2.243) as well.

25 I.e. redundantly [-prefix] [-sufffix] [-pro]; see section 0.4 and section 2.212.

26 By "syntactic" imperatives I mean sentences which not only translate as imperatives but also employ syntactic devices whose combination is unique to imperatives. For the use of particular tense suffixes as "semantic" imperatives, see section 2.227.

27 The only exception is if the sentence contains the full subject pronoun "you" for emphasis (see D. below), it has priority over first position: e.g. mǐm ic tik-a-ŋ you(pl) this eat-pl-imp "Eat this!"

28 For two reasons: (a) mǐm is in the nominative—postfix pronouns (except possessors) are never allowed on nominative nouns, and (b) mǐm and -ja are coreferential, and nouns may not be suffixed by coreferential postfixes.
Pamela Munro (1974a) observes that objects of imperatives use the -wa?aku form when conjoined, despite the fact that the first NP is in the nominative. Whatever one decides about the derivation, the reason this is so is obvious; using the nominative form results in the interpretation, "You, along with X, hit John!" (or whatever), rather than "Hit John and X!"

These embedded subjects are in the oblique case.

If one analyzed demonstrative modifiers as appositive pronouns then the constraint on the double appearance of full subjects would have to be restated (as it should be to include other instances of appositive nouns). One might simply say that two full (unbound) coreferential pronouns do not cooccur in the same clause.

P. Schachter (p.c.) has pointed out this might argue for treating postnominal demonstratives as affixes since this looks very much like "agreement".

I.e. a participle; see section 2.33.

Or "replaced" by it--K is identical to one of the lexical entries for postfixed (nom) "you-sg." (see section 2.212).

The other notable exceptions seem to be SUBORD clauses, moved to the front of the sentence:

puŋkuci huvitu-g aipac uŋ tīka-vi

dog(ob) sing-SUBORD boy that eat-past

"While the dog sang, the boy ate."

Actually only if SUBORD = NP VP. NP alone (N-gajaa) or VP alone (V-ga etc. for "like"-subjects) may not precede the (full) subject, etc.

In general I am following conventions in Stockwell, Schachter and Partee (1973) for transformational rule notation, e.g. $X[Y]$ will mean "Y immediately dominated by X," whereas $X[Y]$ means only "Y dominated by X."
38 Sapir claims this for So. Paiute.

REFERENCES


Harrington, John P. Unpublished field notes.


Munro, Pamela. 1974a. Imperative objects in Chemehuevi. Ms.

Munro, Pamela. 1974b. On the morphology of Shoshonean negatives. Ms.


APPENDIX:
Lists of Words and Morphemes

The following word lists are intended to be practical only. They are included here to provide a key to words and morphemes cited thus far, to give a comprehensive list of all words and morphemes I have come across in my fieldwork for the purposes of those interested in comparative Uto-Aztecan etc., and (in the feature listings) to give whatever information I have about each word, particularly with regard to regularities and idiosyncrasies of their paradigms. The Chemehuevi forms themselves provide more extensive exemplification of morpheme structure conditions, morphophonemic alternations, word derivation, etc.

These lists are not intended to illustrate the theoretical "lexicon" assumed in the grammar and sketched in section 0.3. The features used here often bear little relation to features discussed in the text, and the level of phonological representation these forms are given in is not the underlying level proposed in section 1. In particular, primary stress is marked on these forms although entirely predictable. Consonant mutation across morpheme boundaries is assumed to have applied, as is nasal assimilation, h-deletion, and various rules of neutralization. Low-level rules such as vowel-nasalization are not presumed to have applied. All morpheme-final vowels are preserved in these forms, but are given in
parentheses if they are ever actually deleted (i.e. if the morpheme can show up word-finally). Forms are given with the underlying vowel lengths marked; thus a word like ['kaam] jack-rabbit is given as KA'M(E).

The first listing is alphabetized by Chemehuevi forms, given in the second column. Symbols in the third column indicate whether the form is a noun, verb, adverb, postposition or interjection. Each Chemehuevi form is assigned an entry number, shown in the fourth column and keyed to the listing of feature matrices, beginning on page 260. (Items in the fifth column are to be ignored.)

The second listing is identical to the first, but alphabetized by English gloss.

The third listing contains only the feature matrices for each entry, and is in numerical order by entry number.

Key to Symbols and Features (see also section 0.4)

Chemehuevi forms:

E = ɨ
NG = ɳ
NK = ɳk
X--Y = discontinuous verb stem which inserts tenses and/or aspect markers between X and Y.

Borrowings from English which are pronounced as in English are written in English orthography, with the exception of the addition of a final (deletable) vowel. Such words will have "-ENG" in their feature matrix.
Features:

<table>
<thead>
<tr>
<th>Feature</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>/XXX/YYY</td>
<td>XXX and YYY are variant forms of this entry.</td>
</tr>
<tr>
<td>/12/34/56/</td>
<td>(references to original field-note pages or other sources)</td>
</tr>
<tr>
<td>SEE 1234,5678,</td>
<td>entry numbers 1234 and 5678 are related to this form</td>
</tr>
<tr>
<td>&lt; SPAN</td>
<td>word borrowed from Spanish</td>
</tr>
<tr>
<td>--N</td>
<td>stem is &quot;nasalizing&quot;</td>
</tr>
<tr>
<td>--S</td>
<td>stem is &quot;spirantizing&quot;</td>
</tr>
<tr>
<td>--G</td>
<td>stem is &quot;geminating&quot;</td>
</tr>
<tr>
<td>+V</td>
<td>stem is also a verb stem (used on postpositions and adverbs)</td>
</tr>
<tr>
<td>+TRAN</td>
<td>verb may take at least one argument in the oblique case, without a postposition</td>
</tr>
<tr>
<td>+S</td>
<td>verb may take a NOM as one of its NP arguments</td>
</tr>
<tr>
<td>-S-INC</td>
<td>verb may cooccur with S in the VP</td>
</tr>
<tr>
<td>+S-SUBJ</td>
<td>verb takes a NOM as its subject</td>
</tr>
<tr>
<td>+V-PREF</td>
<td>verb or suffix must have a verb prefixed to it</td>
</tr>
<tr>
<td>+OBJ-PREF</td>
<td>verb must have one of its objects prefixed to it</td>
</tr>
<tr>
<td>2-OBJ</td>
<td>verb may take two NP arguments in the oblique case (without postpositions), or one in the oblique case and one NOM</td>
</tr>
<tr>
<td>+ANIM-SUBJ</td>
<td>requires an animate subject</td>
</tr>
<tr>
<td>+MOT</td>
<td>is a verb of motion</td>
</tr>
<tr>
<td>+VMOT</td>
<td>cooccurs with (requires) a verb of motion</td>
</tr>
<tr>
<td>+RESULT</td>
<td>verb form is in the &quot;resultative&quot;; i.e. includes the suffix /-kai/</td>
</tr>
<tr>
<td>1419=RESULT</td>
<td>entry number 1419 is the nonresultative form of this stem</td>
</tr>
<tr>
<td>Symbol</td>
<td>Description</td>
</tr>
<tr>
<td>---------</td>
<td>-----------------------------------------------------------------------------</td>
</tr>
<tr>
<td>+MOM</td>
<td>verb form is &quot;momentaneous&quot;, either inherently or by some suffix</td>
</tr>
<tr>
<td>NGU=MOM</td>
<td>verb becomes momentaneous by the addition of /-ŋu/</td>
</tr>
<tr>
<td>1482=MOM</td>
<td>entry number 1482 is the momentaneous form of this (durative) stem</td>
</tr>
<tr>
<td>GA=DUR</td>
<td>verb becomes durative (i.e. [-mom]) by the addition of /-ga/</td>
</tr>
<tr>
<td>+CONT</td>
<td>verb may take the continuative suffix /-niʔi/</td>
</tr>
<tr>
<td>GA=GER</td>
<td>verb is subordinated by the /-gai/ suffix (i.e. is [-mom])</td>
</tr>
<tr>
<td>C=GER</td>
<td>verb is subordinated by the /-ci/ suffix (i.e. is [+mom])</td>
</tr>
<tr>
<td>NGU=IMP</td>
<td>verb forms the imperative by adding /-ŋu/</td>
</tr>
<tr>
<td>O=IMP</td>
<td>verb forms the imperative by adding a zero suffix</td>
</tr>
<tr>
<td>J=PRES</td>
<td>verb can take the present tense /-jɪ/</td>
</tr>
<tr>
<td>V=PAST</td>
<td>verb can take the /-viʃ/ past tense suffix</td>
</tr>
<tr>
<td>V/M=PAST</td>
<td>verb can take either the /-viʃ/ or the /-mpiʃ/ past tense suffixes</td>
</tr>
<tr>
<td>KA=P/P</td>
<td>verb can take the present-past suffix /-ka/</td>
</tr>
<tr>
<td>T=HAB</td>
<td>verb forms participle in -tɪ (as opposed to -ɾɪ, -cɪ, or -ntɪ)</td>
</tr>
<tr>
<td>V=PROX</td>
<td>form is specified as &quot;visible&quot; for the visibility feature (as opposed to &quot;here&quot; or &quot;invisible&quot;)</td>
</tr>
<tr>
<td>W=PL</td>
<td>noun forms plural (two or more) by adding /-wɪ/</td>
</tr>
<tr>
<td>A'→SEV</td>
<td>noun (beginning with ?a-) forms several (three or more) by reduplicating first syllable. Reduplicated syllable is short and unstressed.</td>
</tr>
</tbody>
</table>
E'--W=PL = noun forms plural by reduplicating first syllable and adding suffix /-wų/

'NAA--PL = noun (beginning with na-) forms plural by reduplicating first syllable (first consonant and vowel); reduplicated syllable is long, however, and stressed
CHEMehuevi-English Word List
<table>
<thead>
<tr>
<th>CHEMENUEVI-ENGLISH WORD LIST</th>
</tr>
</thead>
<tbody>
<tr>
<td>QUIETLY/STILL.</td>
</tr>
<tr>
<td>STILL/QUIETLY</td>
</tr>
<tr>
<td>SECRETLY/STEALTHY</td>
</tr>
<tr>
<td>STEALTHY/SECRETLY/SNEAKILY</td>
</tr>
<tr>
<td>WING</td>
</tr>
<tr>
<td>WINE</td>
</tr>
<tr>
<td>TURTLE</td>
</tr>
<tr>
<td>TURTLE#SHELL</td>
</tr>
<tr>
<td>HORN</td>
</tr>
<tr>
<td>APPLE</td>
</tr>
<tr>
<td>I THINK</td>
</tr>
<tr>
<td>GUN/BOW</td>
</tr>
<tr>
<td>GUN/GUN</td>
</tr>
<tr>
<td>WHEAT</td>
</tr>
<tr>
<td>NEW/YOUNG</td>
</tr>
<tr>
<td>YOUNG PERSON</td>
</tr>
<tr>
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<tr>
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<td>TONIGHT</td>
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</tr>
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<tr>
<td>YOUNG BOY</td>
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<td>LOVE/RESPECT/ADMIRE</td>
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<td>GROW/KILLER (WHITE)</td>
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SLEEP
OLD MAN
BAD
ILL/RAD
RAD/ILL
DESTROY
BAD
RAD
WATE
RAIN
RAINS
LONG TIME
OVER
MORE THAN
HAVE
WAVE
WHILE (SUBORDINATOR)
NEED/HAVE
FORMER
THROUGH
COME TO=SG
COME TO=PL
WHILE (SUBORDINATOR)
WOULD
SHOULD
MEXICAN
GOOD/FINE
GOOD
GOOD/FINE
GOOD/WEIL
WELL/GOOD
GOOD/NICE/FUN
LIKE
GOOD
FIX/CLEAN
CLEAN/FIX
WHICH
I WISH
HOW/WHY
WHY/HOW
NO WHAT
WHERE (MOTION)
WHY
WHERE (MOTION)
WHERE (LOC)
LIE (COWN)=SG
WHITE=MAN/ENGLISH
ENGLISH/WHITE=MAN
HECK
THEN (AND)
THEN/AND THEN
WHO
SOMEONE
WHAT/WHEN
HOW MANY
RED
SNEEZE
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223
<p>| TURN/SPIN | KWINU?INGU |
| HIT/FALL/STING (SCORPION) | KWIIPA |
| FALL/STUMBLE/FALL | KWIIPA |
| WHIP/HIT/FALL | KWIIPA |
| STING (SCORPION)/HIT | KWIIPA |
| LIPS/FO | KWI{TU}=RENIA |
| RUTTOCKO | KWI{TU}=-MUKU(W) |
| ANUS | KWI{TU} |
| HAND= | MA= |
| THAT/THOSE (VIS) | MA= |
| PAINT/MARK/COLOUR | MA= |
| SU/LIKE THAT | MA= |
| COLOR/MARK/PAINT | MA= |
| FINISH | MA=AK(n) |
| OLD LADY/OLD WOMAN | MA=APEC(i) |
| OLD WOMAN/OLD LADY | MA=APEC(i) |
| REAR/RAISE | MA=AYA(A) |
| TAKE CARE OF | MA=AYA(A) |
| RAISE/REAR | MA=AYA(A) |
| FINISH | MA=E |
| MAKE | MA=E |
| GIVE | MA=G |
| TRY | MA=G |
| POINT AT | MA=GUGIKAI |
| LAUNDER | MA=H |
| PLANT/TREE | MA=HAY(E) |
| TREE/PLANT | MA=HAY(E) |
| FIND | MA=H |
| SAY | MA=H |
| THINK | MA=H |
| EXPLAIN/TEACH | MA=H |
| TEACH/EXPLAIN | MA=H |
| NUDE | MA=JEMPUGI |
| KILL/PiëOBJ | MA=JUMA |
| THAT/THOSE (VIS) | MA=K |
| THAT/THOSE (VIS) | MA=K |
| GATHER | MA=MA=SUMPAU(I) |
| WOMAN | MA=MA=U(C) |
| THEY (VIS) | MA=ME |
| REAR | MA=MA=NEK |
| FROM/BECAUSE OF | MA=MA=ANKW(A) |
| BECAUSE OF/FROM | MA=MA=ANKW(A) |
| TOWARDS THAT WAY (DIRECTION) | MA=MA=ANKW=TA(A) |
| SQUEEZE | MA=NCI |
| FIVE | MA=NE |
| MEGSHE (VIS) | MA=NGA |
| ON | MA=KU |
| EVERY/ALL | MA=O |
| CHASE | MA=O |
| ALL/EVERY | MA=O |
| OLD | MA=O |
| CHASE | MA=O |
| PART OF/SOME OF | MA=TE |
| SAME/PART | MA=TE |
| SHOVEL/MOVE | MA=NUJKUK=NEK |
| MOVE/SHOVEL | MA=NUJKUK=NEK |
| RUN WITH HAND | MA=NURA |
| TOUCH | MA=PIK(A) |
| THAT/THOSE (VIS) | MA=RE |
| HELP | MA=REGA |
| PUSH | MAINEKIPA | V | 1496 | MAINEKIPA |
| WALKABLE (SOMETHING VIS) | MA=RUKA | V | 1094 | MARIJA |
| WALK THAT WAY | MA=ROJA | V | 1268 | MARIJA |
| CLIMB ON THAT | MA=RUKA=W| V | 1256 | MAUJAKA |
| WAKE | MA=UKIN=MAKKE | V | 1477 | MAUJAKIN |
| FUNK/ FINGERED THING | MA=SEAGANT(E) | N | 7551 | MASEAGANT |
| FINGER | MA=SE(E) | N | 2063 | MASEE |
| TEND | MA=SEWA | A | 0510 | MASEW |
| CLOTH | MAI=KIRIP(1) | N | 2529 | MAIKIRI |
| FINGER=NAIL | MAI=KII(?)(?) | N | 2646 | MAIKICO |
| GLOVE | MAI=KII=KU | N | 2546 | MAIKIKU |
| FINISH (CONSUME) | MAI=TOG(?) | V | 1365 | MAISA |
| THUMB | MAI=UNI=NI?I | V | 2079 | MAINTO |
| HANDLE | MAI=VA | V | 1558 | MAUNII |
| STOP | MAI=WA | V | 1916 | MAUPA |
| THERE (VIS) | MAI=WA | A | 0226 | MAVA |
| COLD (ILL) | MAI=VAKI | N | 2035 | MAVAVI |
| SLAP | MAI=VAKIKI | V | 1441 | MAVAKIKI |
| SLAP | MAI=VAKIKINKE | V | 1502 | MAVAKIKIN |
| CLAP HANDS | MAI=VAKICI | V | 1321 | MAVAKICI |
| HAVE A COLD | MAI=VAKI=MAI(?) | V | 81046 | MAVAKI |
| PET | MAI=VAKI=K | V | 1412 | MAVAKI |
| FEEL/TOUCH | MAI=VAKI A | V | 1165 | MAVAKA |
| TOUCH/FEEL | MAI=VAKI | V | 1165 | MAVAKA |
| COVER | MAI=VAKI=MA | V | 1330 | MAVATA |
| EXPENSIVE/COSTLY | MAI=VAGA | V | 1085 | MAVAGA |
| CREEP | MAI=VAGA | V | 1333 | MAVAGA |
| LAZY/TIRE OF | MAI=VEA | V | 1059 | MAVEA |
| AUNT (MA OLD SJ) | MAI=VEA | N | 2041 | MAVEA |
| NEPHEW | MAI=VEAKEC( ) | N | 2042 | MAVEEK |
| (SG ANIM SUBJ) | MAICEGAI(I) | A | 5150 | ME |
| VERY | MAIMEGAI | N | 0302 | MEIGAI |
| GOPHER | MAMIL(I) | N | 2263 | MEJE |
| YOU=PL | MAINESI | N | 2006 | MELI |
| RETURN=PL | MAINESI | V | 1266 | MENSIS |
| EAGLE | MAINGIMPEC(I) | N | 2252 | MENGIMPEC |
| VIGILATIVE | MAI | V | 5111 | MI |
| SMALL | MAI=MAI=NUC | V | 1028 | MAIUNCI |
| LESS | MAI=MAC=N | A | 0306 | MAIUNCI |
| SMALL ONE | MAI=MACN=ACIC(E) | N | 2126 | MAIUNCE |
| MOON | MAI=MIAROGOPIC(I) | V | 2576 | MIAROGOP |
| FAR | MAIJO | V | 1020 | MIJO |
| FAR | MAIJO (0) | A | 0228 | MIJOTO |
| FATHER | MAIJOA | N | 2030 | MIA |
| BITER | MAIJOHARA | V | 1071 | MIBARAH |
| BITTER THING | MAIJOHARA=T(?)E | N | 2645 | MIBARATE |
| LEAD | MAIJOJE | V | 1390 | MIBI |
| HAND | MAIJOVE=VE | N | 2069 | MIBOVE |
| FUTURE | MAIJOVE=E | T | 5103 | MIBAA |
| ( ABSOLUTE) | MAIJOVE=E | N | 5201 | MIBAA |
| PASS (MOM) | MAIJOVE=E | T | 5105 | MIBEE |
| (ABSOLUTE) | MAIJOVE=P | N | 5202 | MIBI |
| STRONG | MAIJOVE= | V | 1051 | MIBU |
| BRAINLESS | MAIJOVA | V | 9002 | MIBU |
| THINK | MAIJOVA=UNI?I | V | 1443 | MIBU=UNI |
| THINK | MAIJOVARA | V | 81463 | MIBUARA |
| OWL | MAIJOVAREBI | N | 2239 | MIBUAP |
| STRAIGHT | MAIJOVAREBI | N | 1542 | MIBUAR |
| SEVEN | MAIJOVARUKA | A | 0507 | MUKIS |
| ROUND | MAIJOVARUKA | V | 1034 | MUNUKI |</p>
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ENGLISH-CHEMENUEVI WORD LIST
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<td>VACE</td>
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<tr>
<td>Act</td>
<td>TEGAI</td>
<td>1469 TEGAI</td>
</tr>
<tr>
<td>Actually/through</td>
<td>SAPA</td>
<td>0405 SAPA</td>
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<tr>
<td>Afraid</td>
<td>IJAVAGA</td>
<td>1041 IJAVAGA</td>
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<tr>
<td>After (subordinator)</td>
<td>CI</td>
<td>5132 CI</td>
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<tr>
<td>After (subordinator)</td>
<td>KA</td>
<td>5133 KA</td>
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<tr>
<td>Aging</td>
<td>HEGAC</td>
<td>5255 HEGAC</td>
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<tr>
<td>Again/in (time)/away</td>
<td>KWAEG</td>
<td>0251 KWAEG</td>
</tr>
<tr>
<td>Airplane/flying object</td>
<td>WPICNUNPE</td>
<td>2645 WPICNUNPE</td>
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<tr>
<td>All day</td>
<td>NEGARE</td>
<td>2619 NEGARE</td>
</tr>
<tr>
<td>All the time/always</td>
<td>SUUTAVAJ</td>
<td>0252 SUUTAVAJ</td>
</tr>
<tr>
<td>All/Every</td>
<td>UTSAMPAG</td>
<td>0253 UTSAMPAG</td>
</tr>
<tr>
<td>Almost (verb)/very (adj)</td>
<td>EESU</td>
<td>0601 EESU</td>
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<tr>
<td>Already/long ago</td>
<td>GHAHA</td>
<td>0254 GHAHA</td>
</tr>
<tr>
<td>Also/too/still</td>
<td>SU</td>
<td>0401 SU</td>
</tr>
<tr>
<td>Angry</td>
<td>NANGAJAI</td>
<td>1042 NANGAJAI</td>
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<td>Ant</td>
<td>ANGAAVI</td>
<td>2201 ANGAAVI</td>
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<td>2258 NAISAAVAGI</td>
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<td>NANGANCY</td>
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<td>Anus</td>
<td>KUSHU</td>
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<tr>
<td>Any</td>
<td>HUMPAYA</td>
<td>0605 HUMPAYA</td>
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<tr>
<td>Apart/separately</td>
<td>NANGIS</td>
<td>0333 NANGIS</td>
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<tr>
<td>Appear/show up</td>
<td>NAWAITE</td>
<td>1251 NAWAITE</td>
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<tr>
<td>Appar/show up</td>
<td>TOSKWAHE</td>
<td>1252 TOSKWAHE</td>
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<tr>
<td>Apple</td>
<td>AAPOROSI</td>
<td>2401 AAPOROSI</td>
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<tr>
<td>Arm</td>
<td>ANGAVE</td>
<td>2052 ANGAVE</td>
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<tr>
<td>Around/moving around</td>
<td>VORDO</td>
<td>1915 VORDO</td>
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<tr>
<td>Arrive</td>
<td>PIPICE</td>
<td>1253 PIPICE</td>
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<tr>
<td>Arrive (bullet)</td>
<td>HUJU</td>
<td>2501 HUJU</td>
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<td>Arrow/Weed</td>
<td>SAHAPA</td>
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<td>2624 KUCA</td>
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<td>Ask</td>
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<td>1201 TEOINGI</td>
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<td>Ask for</td>
<td>NARE</td>
<td>1301 NARE</td>
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<tr>
<td>At/on (loc)</td>
<td>VAA</td>
<td>0122 VAA</td>
</tr>
<tr>
<td>At/toward/to (motion)</td>
<td>TUA</td>
<td>0150 TUA</td>
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<td>Aunt (ma old SI)</td>
<td>MAHEGA</td>
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<td>PAHRA</td>
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<td>VAA=NE=MANANKWAGA</td>
<td>0123 VAA=NE=MANANKWAGA</td>
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<td>ENGAPICI</td>
<td>2161 ENGAPICI</td>
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<td>Rack</td>
<td>HOA</td>
<td>2053 HOA</td>
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BAKON/PIC/PORK
RAD
BAD
BAD
BAD/GR
BAD/LL
BAKE
BANK
BARK
BARK/SKIN/HIDE/FUR
BARREL+CACTUS
BARREL
BASKET
BASKET
BAT
BE
BE LIKE (SOMETHING INVIS)
BEADS
BEANS (MESQUITE)
BEAR
BEAUTIFUL/DELICIOUS
BEAVER
BECAUSE OF/FROM
RECOME/GET/TURN
RECOME (A NOUN)/TURN (ADJ)
BED
BEEF
BEEF/BUDS/FOAM
BEEF/EHAND
BEND
BELLY/STOMACH
BELT
BEND
BE/DO
BE/HAVE
BESIDE
BIG
BIG/TOE
BIRD
BIT
BITTER
BITTER THING
BLACKBIRD
BLACK/DARK
BLANKET=CAST AWAY
BLANKET
BLOOD
BLOOD
B audit
BLUE/GREEN
BUDD
BOUTH
BOther/BE/WORRIED
BOW/GUN
BOX

TAPANG(A)
E'VE=U
E'VE=N1
E'VE+PE=WE=N1
HUN(A)
E'VE+JU=N1
TE'MA
WA'I=TA
AIS'I=TA
'PAAVIV(E)
'MO'ReR(I)
'KDI(C(I)
NE'NGA=P=IE(V)=E'
NE'NGA=p(i)
'PAAC=AC(I)
'UUNI=KA(I)
U'RU'TA
SUUKUR(I)
Q'I(I)
'PAAP(A)
'AJAI=AM'I
'IPI=NA(A)
'MANANK(A)
'KWA(?I)
'MAII=TEA(A)
WA'CAV(I)
'SARONCI(I)
E'I
'Vin?APA(A)
'Vin?APA=CU(A)
TAP(E)
NAAPAGAPE(E)
NO'KOMA
'UUNII
'GA(I)
'VAK'JEW(I)
NO'KO
TA='TODGOD
MI'CICIC(I)
KE'I(I)
MO'HARA
MOTHARA=T(E)
PA'GACUKWITTA(A)
TUPA+GA
MUTU=GAIP(E)
MURUZ(I)
IPAE=p(I)
IPAE=p(A)
PUI'KWI
SAWA=GA
UUUTU(I)
NEWE=TA=MV
NQO'JGA
Q'HOVE(E)
TATU=KUSA+PAGAPE
WA'MA
KAC HAI'EC PIJUWA?
AIC(E)
KATHON(I)

N 2203 TAPANGA
1 9001 EVEJ
V 51043 EYNI
V 1044 EVEPEKNI
N 2204 HUNA
V 1043 EVEJUNI
V 1502 TEMA
V 1520 WAAM
N 72054 ASIA
N 2403 PAVIIVE
N 2502 VARIRI
N 2638 KODI
N 2503 NENAPIVE
N 2504 NENAPI
N 2205 PAAACAI
V 1001 UUNIKAI
V 1004 URUA
V 2505 SUUKUR
V 2404 CPI
N 2206 PAPAWA
V 1056 AJAAMPI
V 2504 IPINAA
N 0120 MANANKWA
V 1901 KWA
V 1902 TUA
N 2506 HAVITEAA
N 2207 WACAVI
N 2642 SARONCI
N 0256 E'I
P 0110 VINAPA
P 0111 VINAPACUA
N 2081 SAPI
N 2507 NAAAPAGAPE
V 1303 NOKDHA
V 1000 UUNII
V 1120 GAI
P 0112 VAJEWI
V 1021 HOKO
N 2055 TATGDO
N 2208 MIGICICI
V 1304 KE'I
V 1071 MOHARA
N 2643 MOHARE
N 2209 PAGACUKWI
V 1055 TUPAGA
N 92008 MOKUUGAI
N 2508 MURUI
N 2082 PAPEI
N 82082 PAEHA
V 1483 PUKWI
V 1006 SAWAGA
N 2509 VUU'TI
N 2056 NNEWAV
V 1306 NOJOGA
N 2957 CHOVE
N 2510 TATUKUSAP
A 0020 WAMA
V 8101 KACHAEPCI
N 2511 ACE
N 2512 KAHONI

239
<p>| CHEMEL VALLEY | SIWA?AVAAC | 2528 | SIWA?AVAAC |
| CHEST | NEINGAP | 2092 | NENGAPI |
| CHICKEN | KWAINQAW | 2215 | KWAINQAW |
| CHILD | PISO?OC | 2104 | PISOOC |
| CHIPMUNK | TAIVA?AC | 2251 | TAIVAAC |
| CHORL | WJUTAMPE | 2462 | WJUTAMPE |
| CHOP | TAPOKA | 1320 | TAPOKA |
| CICADA | USIWANAVI | 2216 | USIWANAVI |
| CLAP HANDS | MA?VACIGI | 1321 | MA?VACIGI |
| CLAW/TOE=WAIL | TAISICO?O | 2853 | TAISICO |
| CLEAN/FIX | MA?=TE=MAE | 1322 | MA?=TE=MAE |
| CLIMB ON THAT | MA=RUKAN?A | 1256 | MA=RUKAN?A |
| CLOSE/NEAR | CAIGIP | 0240 | CAIGIP |
| CLOTH | TEWA | 1323 | TEWA |
| CLOTH | MASIKWARIN | 2529 | MASIKWARIN |
| CLOUD | PAGENAVE | 2530 | PAGENAVE |
| COFFEE | KUUPII | 2531 | KUUPII |
| COLOM | MIVA | 2835 | MAVA |
| COL | SIEWAJI | 1721 | SIEWAJI |
| COL | SETUJI | 1073 | SETUJI |
| COLLAPSE (OPEN STRUCTURE) | JEPIAKI | 1320 | JEPIAKI |
| COLLAPSE (ENCLOSED STRUCTURE) | JOJOKOKI | 1325 | JOJOKOKI |
| COLORS/PAINT | MA?A | 1326 | MA?A |
| COME OUT=SG | CTIP | 1260 | CTIP |
| COME OUT=PL | CTUNGA | 1260 | CTUNGA |
| COME TO=SG | GI | 1911 | GI |
| COME TO=PL | GI=VORDO | 1912 | GI=VORDO |
| COME WHERE | HEVE | 9004 | HEVE |
| COME BACK | PAIJE=KII | 1267 | PAIJE=KII |
| COME DOWN/FR NORTH | PAINANKWA | 1257 | PAINANKWA |
| COME UP/FR SOUTH | TINANKWA | 1258 | TINANKWA |
| COME FROM EAST/WEST | WAIKI | 1259 | WAIKI |
| CONTAINER/CAN/METAL | MA=NKWARU?U | 2519 | MA=NKWARU?U |
| CONTINUATIVE | NII | 5112 | NII |
| CORK | TEQUUUNI | 1327 | TEQUUUNI |
| CORK/RIPED | KWASE | 1328 | KWASE |
| COPY CAT/CYDOTE | SEINA?AVI | 2220 | SEINA?AVI |
| CORN | HAWIVI | 2407 | HAWIVI |
| CORNER | KOIMWA | 2625 | KOIMWA |
| COST | MA=WAGA=KA | 9141 | MA=WAGA=KA |
| COTTON | KAAANIVE | 2408 | KAAANIVE |
| COW | NUKU(U) | 5117 | NUKU |
| COW | NUKUP=PE | 5118 | NUKUP |
| COUNCIL | AMPAGATUNIKA=H(E) | 2135 | AMPAGATU |
| COUNT/READ | NIINGA | 2135 | NIINGA |
| COUNTRY/LAND | TEVIKWA | 2532 | TEVIKWA |
| COVER | MA?VODA | 1330 | MA?VODA |
| COW | MA=KAGIPIC | 2217 | MA=KAGIPIC |
| COW/KILLER | HUHUAVICONOC | 2218 | HUHUAVICONOC |
| COYOTE | SEINA?AVI | 2220 | SEINA?AVI |
| CRACK OPEN | NAGEGI | 1521 | NAGEGI |
| CRADLE | KOOMO | 2533 | KOOMO |
| CRAMP/SHRINK | CONOKA | 1314 | CONOKA |
| CRAWL | MA?AVA | 1332 | MA?AVA |
| CREEP | MA?AVA | 1333 | MA?AVA |
| CRY | JAICA | 1334 | JAICA |
| CRYING SONG | JAGAHUUVIA | 2840 | JAGAHUUVIA |
| CUCUMBER | KWIJKWIMI | 2409 | KWIJKWIMI |
| CULT | CIKWE | 1335 | CIKWE |</p>
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<td>CIKAIPIBA</td>
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<tr>
<td>CUT/OFF</td>
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<td>V</td>
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<tr>
<td>CUT/VICE</td>
<td>CIKAVIUA</td>
<td>V</td>
<td>1336 CIKAVIUA</td>
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<td>CUT/NICK</td>
<td>I'KN(A)</td>
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<td>1337 KNA</td>
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<td>CUT/SLICE</td>
<td>CIKAVIUA</td>
<td>V</td>
<td>1338 CIKAINA</td>
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<td>DAM</td>
<td>PAI'REMWAPE</td>
<td>V</td>
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<td>V</td>
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<td>V</td>
<td>1008 TURIPUNIMA</td>
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<td>TUIRIPAGA</td>
<td>V</td>
<td>1005 TURIPAGA</td>
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<td>PAI'C(E)</td>
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<td>2033 PACE</td>
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<td>DAY</td>
<td>TAISET(E)</td>
<td>N</td>
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<td>=V(T)</td>
<td>N</td>
<td>5202 VI</td>
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<tr>
<td>(ACTIVE PARTICIPLE)</td>
<td>=T(F)</td>
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<td>(~SG +ANIM SUBJ)</td>
<td>=M(F)</td>
<td>N</td>
<td>5150 ME</td>
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<td>(YES=NO Q)</td>
<td>=RA(A)</td>
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<td>5160 RAA</td>
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<td>(+SEV SUBJ)</td>
<td>=KA</td>
<td>N</td>
<td>5152 KA</td>
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<tr>
<td>(+SEV OBJ)</td>
<td>=TU</td>
<td>N</td>
<td>5153 TU</td>
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<td>=EP</td>
<td>=KAT(E)</td>
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<td>5213 KATE</td>
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<td>=ING (NOMINAL)</td>
<td>=N(A)</td>
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<td>5126 NA</td>
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<tr>
<td>=LIKE (SENS VR COMP)</td>
<td>=NI(I)</td>
<td>N</td>
<td>5145 NII</td>
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LIST OF FEATURE MATRICES
LIST OF FEATURE MATRICES

AV, +MOT, =N, /=WA(A)/, /91/258/, SEE 0225.
AV, +MOT, /=WAA=NTU(A)/, /37/91/258/, SEE 0102,0150.
AV, +MOT, /=IPA?(A)/, /31/122/.
AV, +MOT, /=IPA?A=NU(A)/, SEE 0104,0150.
AV, +MOT, /=198/258/, SEE 0106,0150.
AV, +MOT, /=57/32/199/162/, SEE 1256,0109.
AV, +MOT, /=1096/, SEE 0108,0150.
AV, +MOT, /=33/129/.
AV, +MOT, /=1096/, SEE 0110,0150.
AV, +MOT, /=35/36/1097/.
V, /=1063/.
AV, +MOT, NGU=IMP, /1097/1098/.
AV, +MOT, /=1096/.
V, +MOT, /=1096/.
V, /=1019/.
AV, +MOT, SEE 0120,0150.
V, +MOT, /=1069/, SEE 0123,0125.
AV, +MOT, /=VAA=CE=HANA(=A)/, /231/, SEE 0102,0120.
AV, +MOT, /=IPA?=?/=/36/53/, SEE 0104,0120.
AV, +MOT, +MOT, NGU=IMP, V=M=PAST, /=RU(A)/=CU(A)/, /37/255/258/1044/.
SEE 1291.
AV, /=80/297/1009/.
AV, /=1031/.
V, /=1019/.
V, +MOT, ANIM=OBJ, /=230/.
AV, /=70/240/1077/.
V, /=1079/, SEE 0116.
V, /=1079/, SEE 0108.

+O, +AND.

*TRAN, +V, +PRO
*ANIM,
*ANIM,
*TRAN, +V, /=176/1086/.

+V, +MOT.

0200

0209

0210

0211

0212

0233

260
+V, *HOT, +TIME, +PLACE, NGU=IMP,

+V, *HOT, +TIME, +PLACE, NGU=IMP,

+V, *HOT, +TIME, +PLACE, NGU=IMP,

+V, *HOT, +TIME, +PLACE, NGU=IMP,

+V, *HOT, +TIME, +PLACE, NGU=IMP,

+V, *HOT, +TIME, +PLACE, NGU=IMP,

+V, *HOT, +TIME, +PLACE, NGU=IMP,
TRAN. NGU=IMP, V=INST.
TRAN. NGU=IMP (TO A FRUIT),
TRAN. NGU=IMP, O=IMP, V=INST,
TRAN. V=INST, NGU=IMP, O=IMP, GA=GER,
     /61/,  
TRAN. G=IMP, V=INST, NGU=IMP, /61/, C=GER, /117a/,  
TRAN. R=HAB, NGU=IMP, V=INST, /139/, SEE 1333, O=IMP,  
TRAN. ARCHAIK., SEE 1332,  
TRAN. R=HAB, NGU=IMP, M/V=INST, 1462=ACM,  
TRAN. O/NGU=IMP, V=INST, J=PREP,  
TRAN. /53/,  
TRAN. V=INST, O/J=PREP, /257/,  
TRAN.  
TRAN. GA=GER,  
TRAN. V=INST,  
TRAN. /116/, SEE 1057, 2823,  
TRAN. O/NGU=IMP, V=INST,  
TRAN. V=INST, /1027/, SEE 9001, 1000,  
TRAN. V=INST, O=PREP,  
TRAN. G/NGU=IMP, V=INST, J=PREP, SEE 1308,  
TRAN. V=INST, /1030/,  
TRAN. V=INST, /1030/, SEE 1347, 2617,  
TRAN. J=PREP, V=INST,  
TRAN. NGU=IMP, V=INST,  
TRAN. G=GER, C=GER, 91351=ACM,  
TRAN. J=PREP, G=GER, 91351=ACM, /267/,  
TRAN. H=V=PREP, 91352=ACM,  
TRAN. G=GER, J=PREP, 91352=ACM,  
TRAN.  
TRAN.  
TRAN. SEE 2617, 1346,  
TRAN.  
TRAN. SEE 1359,  
TRAN. R=HAB, V=INST, NGU=IMP, O=OBJ=PREP, C=GER, J=PREP, NGU=IMP,  
TRAN. V=INST, O/NGU=IMP, GA=GER,  
TRAN. O=OBJ=PREP,  
TRAN.  
TRAN. V=INST,  
TRAN. V=INST,  
TRAN.  
TRAN. O=PREP, /1057/, V=INST,  
TRAN.  
TRAN. V=INST, GA=GER,  
TRAN. R=HAB, V=INST, GA=GER, NGU=IMP,  
TRAN. V=INST, GA=GER,  
TRAN. J=PREP,  
TRAN. V=INST,  
TRAN. V=INST, NGU=IMP, SEE 1381,  
TRAN. M=INST,  
TRAN. X, V=PREP, V=INST, J=PREP, /103/1113/164/,  
TRAN. J=PREP, V=INST, SEE 0331,  
TRAN. J=PREP, V=INST, SEE 0331, 1421,  
TRAN. C=IMP,  
TRAN. C=HAB, O/TMP, V=INST,  
TRAN. V=INST, O=OBJ=PREP,  
TRAN. V=INST, /114/,  
TRAN. O=OBJ=PREP, V=INST, J=PREP, /106/238/,  
TRAN.  
TRAN.  
TRAN.  
TRAN.  
TRAN.  
TRAN.  
TRAN. 825
+ANIM, =RAWIK=PL, SEE 2114, 2545,
+ANIM, H=PL,
+ANIM, TAA=SP=PL,
+ANIM, rai=PL,
+ANIM, w=PL, rai=PL,
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ANIM, +N=ABS; 1096/1113/
ANIM, +N=ABS; 1096/1113/
ANIM, +N=ABS; 1045/
ANIM, NA!=PL; +N=ABS;
ANIM, <ENG; 1129/
ANIM, <SPAN; 1166/
ANIM, <MOJAVE; 1166/
ANIM, /1139/.

ANIM, 0=PL;
ANIM, <ENG; 1480, 2504;
ANIM, +N=ABS; 1016/ SEE 1480, 2503;
ANIM, 1096/ SEE 1480, 2503;
ANIM, SEE 1275;
ANIM, MU!=PL;
ANIM, MU!=PL;
ANIM, <ENG;
ANIM, <SPAN; 2582, 2600;
ANIM, 0=PL; +N=ABS; 1074/
ANIM, 1096/ SEE 2603, 2556;
ANIM, SEE 2617, 1318;
ANIM, +N=ABS; 1096/ SEE 2563;
ANIM, +N=ABS; 1096/ SEE 2402, 2543;
ANIM, +N=ABS; 1096/ SEE 2563, 2536;
ANIM, STRESS RULE, <MOJAVE;
ANIM, <ENG; 2534;
ANIM, +N=POS3; 2534, 2532/
ANIM, 0=PL; 2534;
ANIM, 0=PL; +N=ABS; 2533, 2532; (SOLID, NOT SURFACE);
ANIM, <SPAN; 2536/
ANIM, SEE 1323;
ANIM, SEE 2563, 2536;
ANIM, <SPAN;
ANIM, SEE 1323;
ANIM, <SPAN; 2537;
ANIM, 0=PL; +N=ABS; 2536/
ANIM, +N=ABS; 1022;
ANIM, WI!=PL; +N=ABS;
| ANIM, SEE 1355, | SEE 2617,1368, |
| ANIM, SEE 1010,2062, | 1066/ |
| ANIM, +N-ABS, | SEE 1379, |
| ANIM, KAI-GAI=PL, | SEE 1023, |
| ANIM, SEE 2560,1023, | SEE 2560,1023, |
| ANIM, 0=PL, | /DIV/ |
| ANIM, SEE 2617,1277, | SEE 1489, |
| ANIM, /DIV/, | SEE 1349, |
| ANIM, SEE 1349, | SEE 1349, |
| ANIM, =SPAN, | /1052/1074/ |
| ANIM, +N-ABS, | SEE 2105, |
| ANIM, SEE 2059, | SEE 290/ |
| ANIM, 0=PL, +PREFIX, /290/ |
| ANIM, KAI=GAI=PL, 'KA=PL, | /6/ |
| ANIM, SEE 2577, | SEE 2577,2593, |
| ANIM, SA1=PL, | SEE 2577,2593, |
| ANIM, <SPAN, | SEE 2583, |
| ANIM, KAI=PL, | /1042/ |
| ANIM, /1017/ |
| ANIM, /1017/ |
| ANIM, +BND, +PREFIX, |
| ANIM, SEE 1440, | SEE 1425, |
| ANIM, SEE 2617, | /256/ |
| ANIM, /256/ |
| ANIM, /72/74/ |
| ANIM, SEE 1277, |
| ANIM, +N-ABS, | SEE 1514, |
| ANIM, NA1=PL, | /1090/ |
| ANIM, +N-ABS, |
| ANIM, +N-ABS, |
| ANIM, +N-ABS, |
| ANIM, SEE 2514, | POSSESSABLE, |

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- CONCRETE, SFE 1310,
- CONCRETE, + Near ABS, SFE 1053,
- CONCRETE, + Near, /DIV/1019/, SFE 1053, 1125,
- CONCRETE, SEE 1204,
- CONCRETE,
- CONCRETE, SFE 1449,
- CONCRETE,
- CONCRETE, SFE 1449,
- CONCRETE, SEE 1045,
- CONCRETE, SEE 1378,
- CONCRETE, /1092/, SEE 1459,
- CONCRETE, /243/, /1092/, 2835
- CONCRETE, + PREFIX, /1101/, SEE 1334, 2826,
- CONCRETE,

/=KWA(?)/=NKAC(I),
+ ENC,
/=NI,

/=RE(E)/=CE(E)/=NT(E), SOURCE OF HAB TNS/ATTRIB ADJ/SUBJ REL,
+ MOM, (BECAUSE), /J(U) AFTER /AI/, (LIKE SUBJ),
+ MOM, (BECAUSE/IF), /133/, (UNLIKE SUBJ),
+ MOM, (HAVING V=ED) (VAA=CSC)=BEING ABOUT TO), /1040/, (LIKE SUBJ),
+ MOM, (UNLIKE SUBJ), /1112/, 2826

+ ENC, /O,
+ ADJ=PREP, +N-PREP,
+ANIM, +KA=RE=M( )=PL

+ANIM, +ADJ-PREF, (=CI= PROBABLY DIMINUATIVE), (// TO =NTE=M(E)), 5230
+ANIM, 281/1052/1092/.

/=N?UMP(E),

LIT=NOT HAVE GOOD HEART, 296/, 5281
LIT=NOT HAVE THERE, 1117/265/296/, 5281
/134/, 5281
/58/, 5281
+Q, +T, 35/139/268/, 5281
/KWATIJA UK=AJ, 111/262/, 5281

6101
6103
6120
6130
6135
6140
6150
9013