Ablaut in Hill Patwin

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This paper presents, in synoptic and somewhat preliminary form, a morphological analysis of the verbal ablaut system in Hill Patwin, a native language of Central California. Patwin constitutes the southern division of a small family of languages referred to as Wintun, and the Wintun family has, in turn, traditionally been affiliated with several other small language families in a linguistic (sub-)stock known as California Penutian.

The exposition in this paper is limited to the Rumsey dialect of Hill Patwin (WPCC), for which I have the most reliable grammatical data. WPCC constitutes just a single subdialect within the complex of dialects known collectively as "Hill Patwin". However, the characterization of ablaut in WPCC can be taken as representative of the system for the Cortina (WPC) and Tebti (WPT) subdialects of Hill Patwin as well. The Lodoga or kabalme'en dialect of Hill Patwin (WPK) and the River Patwin dialects (WPR) differ in some details of verbal ablaut, but not significantly in the overall structure of the system; however, a full characterization of the differences must await separate discussion elsewhere.

Ablaut: General Considerations

Ablaut, as first defined in the study of Indo-European languages, is a morphological process of root mutation, most often involving changes in the length and/or quality of vowels in a verb (or noun) root,
whereby a number of formally distinct stems are created. Ablaut differs from various types of reduplication and/or affixation, as well as from umlaut, which usually refers to more or less automatic phonological adjustments of a root conditioned by the phonetics of an affix, and harmony, which involves matching sets of vowels (or rarely consonants) between roots and affixes.¹ By contrast, ablaut in general refers to phonologically arbitrary root mutations (shortening, lengthening, zeroing, epenthesis, qualitative shifts, etc.) which are morphologically conditioned, and which often show up in parallel cycles for roots of different basic phonological shapes. In the Indo-European language family, ablaut came to be applied to a particular set of verbal (and nominal) root mutations, also called "vowel gradation", presumed to be relatively productive in Proto Indo-European but mostly archaic, irregular and unproductive in the modern descendants of PIE and even in the classic Indo-European languages, Latin, Greek, Sanskrit, etc. An example of ablaut (or vowel gradation) is seen in the following Attic Greek verb stem alternations:

\[
\begin{align*}
\tau\rho\varepsilon\nu\omega & \quad 'I turn' \\
\tau\rho\nu\varepsilon-\eta & \quad 'rout' \\
\varepsilon-\tau\rho\varepsilon-\nu & \quad 'I was put to flight' \quad (\text{Smyth 1920:16})
\end{align*}
\]

Modern German also shows ablaut in the conjugational patterns of irregular verbs. Thus, for instance, treffen 'to meet' has inflectional stems of the form triff-t, traf, getroffen, etc.

The Semitic language family also evinces a system of ablaut, genetically distinct from that of PIE, generally more exuberant in the types of root mutations involved, and still productive in most modern Semitic languages.
One of the striking typological characteristics of most of the California Penutian families is the presence of highly complex verb inflectional systems that each involves, to a lesser or greater degree, a system of verbal ablaut reminiscent of Indo-European or Semitic ablaut. Ablaut is most rigidly elaborated and formalized in the languages of the Yokutsan family, as described by Newman (1944); all of the languages of that family have complex formal patterns of ablaut bearing some resemblance to Semitic ablaut. The Maidun languages, on the other hand, have a much more limited kind of verb inflection, with minimal manifestation of root mutations. Miwok-Costanoan (or Utian) languages have a relatively complex system of quantitative ablaut of both root vowels and root consonants, with the unique characteristic of morphologically productive metathesis of root consonants in some contexts. As the analysis in this paper shows, Patwin has a system of verb stem ablauting which is structurally most analogous to that of Yokutsan languages, albeit somewhat less elaborate. This structural analogy in a complex morphological system suggests the possibility of a special affinity between Wintun and Yokuts within the California Penutian stock, an issue which I return to at the end of the paper. The grammatical analysis of Patwin ablaut presented here should help in the evaluation of any special Yokuts-Wintun connections.

The Ablaut System in Patwin Grammar

Verbal ablaut is here viewed as the morphological bridge between roots and stems in Patwin. While in a sense ablaut is only one part of the overall system of inflection of verbs in Patwin, its formalized and rather rigid structure makes it natural to consider ablaut separately
and somewhat independently of the inflection, through affixation and
other morphological processes, of stems proper (as constituted by
ablaut of the roots).

Viewed as an independent morphological process, ablaut in
Patwin takes as input a series of phonologically defined verbal root
classes and for each type of root produces a set of formal verb stems.
These stems are organized into stem classes, each of which is func-
tionally and syntagmatically defined by an associated suffix class.
The process of stem formation through root mutation (= ablaut) is com-
pletely mechanical and predictable, however, given the identity of the
root class of the verb involved.

This paper, then, aims at a sufficient characterization of root
types and of the ablaut patterning in Hill Patwin, so that stem forma-
tion in the language can be understood. Stem classes and suffix classes
are the two major types of covert grammatical category in Patwin verbal
morphology, and it is only by showing how ablaut in the language works
that those classes' categorial constitution and thus the principles of
stem formation become clear. Clarifying Patwin stem formation is, in
turn, the key to the historical reconstruction of Proto-Wintun verb
morphology, since it enables the sorting out of layers of old and new
morphology in the verbs and helps distinguish innovations from old,
well-entrenched patterns.

Some issues of Patwin verb morphology are not addressed here.
First, root-derivational processes are not covered, except marginally,
insofar as it is necessary to distinguish derived roots in the typology
of Patwin root classes. Second, the recursive application of deriva-
tional and/or inflectional processes at various levels of the verb is

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also not covered. Recursive derivation can lead to rather complex predicate words or phrases in Patwin, some of which involve more than one implicit application of ablaut. The principles regarding ablaut in such instances are relatively straightforward extensions of the basic ablaut pattern (in a somewhat degenerate form), but explaining them would require a full analysis of root derivation and of verb phrase structure.

The Patwin Morphological Analytic System

Overview and Definitions

The choice of analytic categories in Patwin verb morphology is made so as to maximize the comparability of terminology and categories with the Yokuts analyses of Stanley Newman and of Geoffrey Gamble. This choice seems only reasonable, since one of the purposes of the analysis is eventually to provide a basis for long-range historical comparisons with Yokuts. However, since Newman and Gamble employ the terms "base", "theme" and "root" in somewhat specialized senses peculiar to Yokuts, I will first go over these terms to make their meaning as used here for Patwin clear, before going on to the detailed typology of roots in the language.

Roots and stems: Roots are language-specifically defined in Patwin as verbal forms which have not yet "undergone" the effects of verbal ablaut, whereas stems are the various forms that a particular verb root takes after "application" of ablaut. (The quotation marks here are intended to indicate that in some sense ablaut is not a normal morphological process formalizable as a rule, but rather is the linguist's analytic summary of the entire pattern of automatic verb form
alternations which, taken together, constitute the covert categories of stem classes.) The root in Patwin is thus treated as a kind of abstract archiform. However, rather than to adopt a formally abstract representation of roots (e.g. with \( \sqrt{ } \) notation), it has proved expedient to adopt a particular stem class (Stem IV as defined below) as a standard citation form for Patwin roots.

**Primary roots and lexical roots:** When it is necessary to distinguish roots in Patwin as just defined from the more standard sense of a root as a synchronically unanalyzable, minimal morphological unit, I reserve the term primary root for the latter sense of root. The unit which serves as input to ablaut in Patwin can then be termed, by contrast, a lexical root. The lexical root in Patwin thus may or may not be derivationally complex—the criterion is not complexity per se but rather whether it serves as input to ablaut. Thus, for example, 'tori?apirma' 'to stick two things together along a flat surface' is a lexical root, but it can be broken down morphologically into the secondary theme tori?a 'stuck on' (itself a derived form in \(-\tau a\) 'to have' (verbalizer)) and the auxiliary bases \(-pir\) (reciprocal) and \(-ma\) (causative).

**Bases and themes:** Lexical roots in Patwin can be divided into two major types, distinguishable on phonological grounds. Bases are one- or two-syllable verb roots of certain canonical phonological forms (which are enumerated below). Bases comprise the majority of common Patwin verbs and collectively serve as the prototype forms for the patterning of ablaut. Themes are certain two-syllable verb roots whose phonological forms do not match the canons for bases, as well as all roots of three or more syllables. Themes, too, are subject to ablaut,
but their patterning can be seen as working on structural analogy to
the various base types. Note that this use of the term theme is non-
standard—it does not refer to a level of morphological structure above
the root or the base, but rather to a particular class of non-canonical
(i.e. non-base) roots.

**Primary, secondary and virtual bases:** Patwin bases, in turn, can
be seen as consisting of three distinct subtypes. **Primary bases** are
derivationally simplex (thus constituting a kind of primary root); both
one- and two-syllable forms occur. **Secondary bases** are morphologically
derivative forms which nevertheless conform to the phonological canon
for bases. **Virtual bases** are a special subclass of bisyllabic secondary
themes whose second syllable is a segmentable -CV and which mimic the
phonological canon for bases.\(^4\) Examples of each type of base are given
below.

**Primary and secondary themes:** **Primary themes**, like primary bases,
are synchronically unanalyzable roots. In Patwin many primary themes
fall into fairly regular trisyllabic patterns, some of which could be
considered thematic phonological canons. **Secondary themes** are deriva-
tionally complex, involving various derivational processes, including
suffixed, prefixed, compounded and reduplication of bases (and/or
primary themes). The forms of secondary themes can be rather complex,
and except for regular patterns of reduplication show no particular
phonological canons.

**Stem classes and suffix classes:** Whereas root classes (types of
base or theme) are defined in terms of formal phonological canons and
simplex vs. complex morphological status, stem and suffix classes are
co-defined covert categories based on syntagmatic and functional
criteria. Briefly, a stem class is that ablauted form of a verb root which co-occurs with a particular suffix class and which generally has a specifiable functional status as well, e.g. absolutive stem or imperative stem or subjunctive stem, etc. Conversely a suffix class is that set of inflectional (and occasionally derivational) suffixes which are used with a particular stem class and which generally are characterized by related grammatical functions, e.g. past tense suffixes (Stem II) or hortatory personal suffixes (Stem IVa), etc. A given stem of a verb root is appropriate only for the associated suffix class and vice versa. To add a suffix of a different suffix class, the root must change to exhibit the stem appropriate for that suffix. Such changes constitute the ablaut system itself. These relations will become clear below, once the full pattern of ablaut and of stem classes is laid out in tabular form.

Summary of Patwin Verb Morphological Analysis

Figure 1 gives, for reference, a chart summarizing the overall relation between Patwin root types and stems. The chart is simplified—recursive derivational processes are not represented in it, and the criteria for distinguishing bases and themes, for example, are not included. However, the chart should give a general sense of what the analysis intends. A full description of base- and theme-derivational processes is deferred to another paper, as is the justification for referring to theme-derivational processes as "semi-lexical".

The analysis differs in one important respect from that proposed by Newman (1944) for Yokuts. Reduplication is here treated tentatively as a theme-derivational process, whereas in Yokuts it is analyzed as
Figure 1: Patwin Verb Morphology
base-derivational. This decision may have to be reconsidered eventually if canonical themes of CV₁CV₁'Co/u form and base reduplications are to be analyzed as special kinds of multisyllabic bases in Patwin.

Hill Patwin Base Types

The verbal bases of Hill Patwin, as mentioned above, can be divided into primary, secondary (derived) and virtual base types. The primary bases comprise the largest class of verbal bases in Patwin; they have several distinct subtypes defined by simple phonological canons. The typology is presented here first in terms of the general canons and then exemplified extensively from the Patwin lexical files. Remember that the primary bases are morphologically simplex; that is, they are all synchronically unanalyzable minimal units, even though there is occasional internal or comparative evidence for the historically derivative status of some of the bisyllabic bases.

The designations given to primary base types are chosen to give a rough typology of bases, on analogy with Newman's (1944:38) designations for Yokuts base types. In the Patwin base designations, I vs. II indicates consonant vs. vowel bases (referring to the last segment of the base). A vs. B indicates a structural length distinction; A bases are structurally "short" and can take a long final stem vowel (for certain stems), whereas B bases are structurally "long" and take only short final stem vowels. For details, see Table 3 below, which shows the overall ablaut pattern for each base type.

The secondary bases are much more limited in variety. The attested types are: IBl derived plurals; IIA1 miscellaneous derivatives; IIB1 miscellaneous derivatives; and IIB2 derived transitive
<table>
<thead>
<tr>
<th>designation</th>
<th>canon</th>
<th>remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Consonant bases</td>
<td></td>
<td></td>
</tr>
<tr>
<td>IA</td>
<td>CVC</td>
<td>short root vowel</td>
</tr>
<tr>
<td>IB1</td>
<td>CV·C</td>
<td>long root vowel</td>
</tr>
<tr>
<td>IB2</td>
<td>CV₁CV₁C</td>
<td>bisyllabic with harmonic vowels</td>
</tr>
<tr>
<td>IB3</td>
<td>–CVC</td>
<td>auxiliary, theme-deriving suffixes</td>
</tr>
<tr>
<td>Vowel bases</td>
<td></td>
<td></td>
</tr>
<tr>
<td>IIA1</td>
<td>CVCa*, CVCo*</td>
<td>short initial root vowel; final V qualitatively invariant</td>
</tr>
<tr>
<td>IIA2</td>
<td>CVCu</td>
<td>short initial root vowel; final V shows qualitative ablaut</td>
</tr>
<tr>
<td>IIA3</td>
<td>CV·</td>
<td>monosyllabic bases</td>
</tr>
<tr>
<td>IIB1</td>
<td>CV·Ca, CV·Co</td>
<td>long initial root vowel; final V qualitatively invariant</td>
</tr>
<tr>
<td>IIB2</td>
<td>CV·Cu</td>
<td>long initial root vowel; final V shows qualitative ablaut</td>
</tr>
<tr>
<td>IIB3</td>
<td>–CV</td>
<td>auxiliary, theme-deriving or inflectional suffixes</td>
</tr>
</tbody>
</table>

Table 1: Summary of Primary Base Types
object plurals, the largest subclass of secondary bases. The IIA1 secondary bases are interesting in that in addition to CVCa- and CVCo- forms as attested for primary bases, there are also a few CVCe- and CVCi- forms which also show qualitatively invariant final vowels.

The virtual bases are few in number. Attested examples are:

IIA1 yet\textsuperscript{h}o· 'to name' (<<yet 'name' -ho (verbalizer))

IIB1 p\textsuperscript{h}o·ho 'to light a fire' (<<p\textsuperscript{h}o· 'fire' -ho)

ba·ma 'to feed' (<<ba· 'to eat' -ma (causative))

so·ma 'to make listen' (<<so· 'to listen' -ma)

IIB2 A number of themes of the form CV-t\textsuperscript{h}u (see listings under secondary themes below).

The following sections provide WPCC examples of each of the primary and secondary base types. The listing is fairly extensive, including most of the nonproblematical examples from my WPCC lexical file, so as to give an idea of the phonological character of bases and of the relative numerical representation of each type. Data from other Hill Patwin subdialects will eventually serve to extend these lists considerably.

Primary Base Subtypes

Consonant bases: IA (canon: CVC)

These are best divided into five groups, depending on the root vowel.

\begin{itemize}
\item \textit{\textsuperscript{qam}} 'white'
\item \textit{ham} 'to sit'
\item \textit{hap} 'to gather up'
\item \textit{har} 'to go' (irreg.)
\item \textit{kap} 'to be caught'
\item \textit{kar} 'to cut the ends'
\item \textit{\textsuperscript{tal}} 'rotten; to rot'
\item \textit{tal} 'to fall'
\item \textit{\textsuperscript{\textit{sat}}} 'off, mow'
\item \textit{\textsuperscript{\textit{sat}}} 'to precipitate'
\item \textit{\textsuperscript{\textit{sat}}} 'to grope for'
\end{itemize}
ben 'big'
deq 'to climb'
ke'k 'to scrape off; shave'
ke'k 'to weave baskets'
l 'to smile'
t'ew 'to fly'
t'ew 'to talk'
t'ey 'to bite'
bil 'to burn off, to fire'
hil 'to wear around the neck'
liw 'to fan'
win 'to see'
čok 'to drip (once)'
dor 'to put into the mouth'
'kok 'to cut meat'
noč 'to bark'
yoh 'to melt'
čur 'not to know how to'
hup 'to dive'
huy 'pretty'
'juk 'to gut'
m 'to hear'
yuy 'tall'
čel 'to wander about'
he'm 'to arrive'
'ket 'to rake'
'ley 'to put'
'hem 'to hold, grasp'
'thep 'to hit'
wer 'to come' (irregular)
dil 'to lose'
lip 'to fall off'
'tir 'to twist (in the fingers)'
'kir 'to move with hand by pulling'

(a bound form, requires prefix)
čop 'to chop'
k'on 'dry'
kom 'big'
'h'on 'to dance'
duh 'to carry on back'
hur 'to sew'
'tup 'to drink soup'
muč 'to bud out'
't'up 'to wade across'
'nuč 'to catch'

Consonant bases: IB (canon: CV·C)

These are likewise divided into five groups by the root vowel.
ha·k 'jealous'
ma·t 'to bake (acorn bread) in an earth oven'
he·r 'to reach'
pe·l 'fire glowing or dying back'
bi·r 'to wipe'
yi·r 'to slice into strips'
lo·r 'to hand to'
mo·n 'to recover, get back'
t'h·o·r 'fire to burn'
bu·y 'to wrap'
lʊ·m 'dead; to die'
hu·m 'fat'
mə·l 'to eat pinole (dry)'
pʊ·r 'to rest'
ku·k 'to be sunny'
he·r 'married'
' to steal from'
si·t 'cool (intr.)'
to·n 'to snore'
so·s 'icy, frosty'
to·n 'to snore'
so·s 'icy, frosty'

Consonant bases: IB2 (canon: CV₂CV₁C)
Divided into five groups by the root vowel.
čapay 'to flee'
halak 'to whisper'
šakal 'to play'
čežek 'thin (of liquid)'
hepek 'light (in weight)'
tipil 'to roast meat in an earth oven'
lewis 'to gig; to stab' (irreg., a virtual base)
winič 'to get up, wake up'
holow 'to spook; to haunt'
mołok 'to move, move around'
humuk 'warm'
yuduk 'to pity'

dalak 'thin, flat'
kʰaway 'to choke (intr.)'
somal 'to ring; reverberate'
hešek 'loose'

hopo·l 'to float' (length irreg.)
'tody 'short'
łupuk 'soft; limber'
Consonant bases: IB3 (canon: -CVC)

These are all theme-deriving voice suffixes.

- nan {reflexive}    - her {passive}
  - pir {reciprocal}

Vowel bases: IIAl (canon: CVCa', CVCo')

These bases are subdivided by the final vowel, and in the case of
- a- verbs, must be further subcategorized in terms of transitivity and
patterns of reduplication and plural formation.

1. - a- intransitives:
  ' čupa- 'to be ready; finished'    kana- 'to sleep'
  h'ola- 'to swell up'              pera- 'cold'
  poka- 'to pop; crackle'           t'ela- 'liquid to spread out'
  toba- 'to flake off; blister'     yoha- 'to be destroyed'

2. - a- transitives with normal reduplication (CVC-CVCa-):
  diña- 'to roll string'            huya- 'to store away'
  kopa- 'to cut or break in two'    t'ila- 'to shoot'
  t'iya- 'to call'                 tera- 'to be proud of'
  'apa- 'to carry a person on the back'

3. - a- transitives with irregular plural (CV·C):
  ' čura- 'to tear'

4. - a- transitives with CVCu plural affected object forms and CVCa-CVCa
   reduplication:
  bora- 'to break (tr.)'            k'heba- 'to knock a piece off'
  k'hoba- 'to cut off'              kača- 'to cut off'
  tupa- 'to prick'                 t'aba- 'to break (sg.) into pieces'
  'leba- 'to chip'                  'lera- 'to punch a hole in'

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mins 'to extinguish' ? p'íta 'to squash'
sobs 'to pull off' teba 'to nick'

5. -o- transitives and intransitives:
hero 'to help' kaho 'to hide (tr.)'
kawo 'to get together; gather' para 'full'
sewo 'to bury (a person)' t'ano 'to win'
t'io 'to measure' tio 'to put in a sack'
yaro 'to start'

Vowel bases: IIA2 (canon: CVCu)

These are the most common of all Patwin base types.

botu 'to smoke' čeru 'to be gone'
čoyu 'to get sick; to ache' česu 'to sneeze'
čodu 'to walk upslope' doyu 'to give'
halu 'to think' hasu 'to cool off'
hinu 'reluctant; hesitant' hohu 'to pant'
holu 'to make a hole' horu 'to save'
hulu 'to block; to dam' hutu 'to get warm (from fire)'
huyu 'to shake (tr.)' kapu 'to dig'
ketu 'to stir' koru 'to grind'
kowu 'to swim; bathe' k'oošu 'to scrape; to plane'
kayu 'to walk' kayu 'to want'
kidu 'to forget' koru 'to hollow out'
kuhu 'to cough' lahu 'to cook'
lelu 'to make' lošu 'happy; satisfied'
loru 'to grind sharp or smooth' šahu 'to look for'
šomu 'to store; save' šoru 'to poke; nudge'
šotu 'to storm; to be bad' šošu 'to grab a hold of'

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<table>
<thead>
<tr>
<th>Word</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>malu</td>
<td>'to doctor'</td>
</tr>
<tr>
<td>muhu</td>
<td>'to sing'</td>
</tr>
<tr>
<td>niku</td>
<td>'to flush (an animal)'</td>
</tr>
<tr>
<td>peru</td>
<td>'to swallow'</td>
</tr>
<tr>
<td>potu</td>
<td>'to boil (intr.)'</td>
</tr>
<tr>
<td>p'uku</td>
<td>'to sweat'</td>
</tr>
<tr>
<td>puru</td>
<td>'to seep out'</td>
</tr>
<tr>
<td>siku</td>
<td>'to drill'</td>
</tr>
<tr>
<td>sudu</td>
<td>'to smoke out'</td>
</tr>
<tr>
<td>tatu</td>
<td>'to feed (an animal)'</td>
</tr>
<tr>
<td>tepu</td>
<td>'to come out; emerge'</td>
</tr>
<tr>
<td>toyu</td>
<td>'to stop (intr.)'</td>
</tr>
<tr>
<td>t'ulu</td>
<td>'to swim'</td>
</tr>
<tr>
<td>tatu</td>
<td>'to dawn; to clear and brighten'</td>
</tr>
<tr>
<td>t'udu</td>
<td>'to squirt'</td>
</tr>
<tr>
<td>tumu</td>
<td>'to drizzle'</td>
</tr>
<tr>
<td>yalu</td>
<td>'to leave'</td>
</tr>
<tr>
<td>yuku</td>
<td>'to leave (tr.)'</td>
</tr>
<tr>
<td>?odu</td>
<td>'to scratch with hand'</td>
</tr>
<tr>
<td>moyu</td>
<td>'angry; indignant'</td>
</tr>
<tr>
<td>naru</td>
<td>'to scold'</td>
</tr>
<tr>
<td>noku</td>
<td>'ripe; cooked'</td>
</tr>
<tr>
<td>pilu</td>
<td>'to wrap around'</td>
</tr>
<tr>
<td>pu'cu</td>
<td>'to be well; to get away'</td>
</tr>
<tr>
<td>pipu</td>
<td>'to bother'</td>
</tr>
<tr>
<td>sayu</td>
<td>'light to shine in dark'</td>
</tr>
<tr>
<td>sonu</td>
<td>'to shinny up'</td>
</tr>
<tr>
<td>suyu</td>
<td>'to suck'</td>
</tr>
<tr>
<td>tatu</td>
<td>'to braid hair'</td>
</tr>
<tr>
<td>to'k</td>
<td>'to pound meat'</td>
</tr>
<tr>
<td>t'oku</td>
<td>'to knock'</td>
</tr>
<tr>
<td>taku</td>
<td>'to pound acorns'</td>
</tr>
<tr>
<td>teru</td>
<td>'to leach'</td>
</tr>
<tr>
<td>ti'cu</td>
<td>'to cover with dirt'</td>
</tr>
<tr>
<td>toku</td>
<td>'to lean against (tr.)'</td>
</tr>
<tr>
<td>wotu</td>
<td>'to twirl (tr.)'</td>
</tr>
<tr>
<td>yoru</td>
<td>'to tell to; to direct one to'</td>
</tr>
<tr>
<td>?emu</td>
<td>'to hug'</td>
</tr>
</tbody>
</table>

Vowel bases: IIA3 (canon: CV-)

These are very few in number and mostly irregular in one way or another.

ba-    'to eat'  (regular)
be-    'to be (inanimate locational)'  (irregular, <beh)
bo-    'to be (animate locational)'   (irregular, <boh)
so' ru 'to listen' (irregular; cf. so'ru 'to listen' under IIB2 bases)

'i- 'to do; to use' (irregular, *i*y)

**Vowel bases: IIB1 (canon: CV·Ca, CV·Co)**

si·da 'to clear off with hands'  su·ya 'to spread out over (tr.)'
yi·la 'to send'  'a·wa 'to behave as a spoiled child'
bo·lo 'to soak'  ha·yo 'to reply to a call'
ka·do 'to rake up'  la·ho 'to touch'
'ta·yo 'to light a fire'

**Vowel bases: IIB2 (canon: CV·Cu)**

či·du 'to stretch out (tr.)'  ču·ru 'to lie on one's side'
čo·du 'to crawl; to climb'  čo·wu 'to watch' (irregular)
di·hu 'to be awake'  he·du 'to stand tiptoe'
ho·lu 'to ride'  ka·ku 'to refuse'
ku·lu 'to pull ends of branches down'  ṭa·ru 'to parch (seed)'
ťu·pu 'to put feather rods in headdress'  ti·ču 'to cave in'
li·ku 'pain to diminish'  mu·ku 'to lie prone'
ne·yu 'to avoid; shy away'  se·du 'to stoop'
sa·ku 'to wash (tr.)'  so·ru 'to listen' (irregular)
te·ku 'to shine; sunshine'  to·lu 'to poke head out'
tu·bu 'to smell; stink'  tu·du 'wind to blow'
wu·wu 'mouth to gape open'  wu·ku 'to nod head forward'
yo·wu 'to be missing; to lose'

**Vowel bases: IIB3 (canon: −CV)**

These all consist of auxiliary suffixes. They can be divided into two types: theme-deriving and inflectional. Many of the theme-deriving
suffixes are represented among the various secondary themes listed in
the following section.

Theme-deriving:

-\( ^{-}\text{ma} \) (causative)  
  -\( ^{-}\text{pa} \) (benefactive)

-\( ^{-}\text{a} \) 'to have' (verbalizer)

-\( ^{-}\text{me} \) (comitative)

-\( ^{-}\text{ho} \) (---so ---o) (verbalizer)  
  -\( ^{-}\text{ho}; ^{-}\text{to}; ^{-}\text{ko} \) (plurality and
temporality "distributives")

-\( ^{-}\text{t}^{h}\text{u} \) (semelfactive)  
  -\( ^{-}\text{c}^{u} \) (resultative stative)

-\( ^{-}\text{u} \) 'to do' (verbalizer) (irregular invariant vowel)

Inflectional:

-\( ^{-}\text{be} \) 'to be (inanimate)'  
  -\( ^{-}\text{bo} \) 'to be (animate)'

-\( ^{-}\text{i} \) 'to be' (copula)

Secondary Base Subtypes

**Consonant bases:** IBI (canon: CV-C)

This is a small class of derived plural bases, all involving
iterated actions or states.

\( ^{-}\text{ke}^{-}\text{l} \) 'to fold' (plural of \( ^{-}\text{ke}^{-}\text{lt}^{h}\text{u} \))

\( ^{-}\text{t}^{h}\text{e}^{-}\text{p} \) 'to hit many times; to whip' (plural of \( ^{-}\text{t}^{h}\text{ap} \))

\( ^{-}\text{k}^{h}\text{o}^{-}\text{n} \) 'dry weather' (plural (?) of \( ^{-}\text{k}^{h}\text{on} \) 'dry')

\( ^{-}\text{lo}^{-}\text{p} \) 'to fill' (plural of \( ^{-}\text{lopt}^{h}\text{u} \) 'to put in')

\( ^{-}\text{cu}^{-}\text{r} \) 'to tear' (plural of \( ^{-}\text{cura}^{-}\text{r} \))

\( ^{-}\text{p}^{h}\text{u}^{-}\text{t} \) 'to whistle; blow into' (plural of \( ^{-}\text{p}^{h}\text{ut}^{h}\text{u} \))

**Vowel bases:** IIAI (canon: CVGa-)

A small class of derived plural bases.
\textbf{\textit{\^ieya}}: 'to put' (plural of \textit{\^iey})

\textbf{\textit{\^iela}}: 'to make' (plural of \textit{\^ielu})

\textbf{\textit{puta}}: 'to jump up and down' (plural of \textit{put\textsuperscript{\textbf{h}}} 'to jump')

\textbf{\textit{p\textsuperscript{\textbf{h}}oka}}: 'to clap' (plural of \textit{p\textsuperscript{\textbf{o}}-kt\textsuperscript{\textbf{h}}} 'to clap')

\textbf{Vowel bases: IIA\textsuperscript{\textbf{1}}} (canon: \textit{CVC\textsuperscript{\textbf{e}}})

A small class, mostly involving inanimate possession or comitation.

\textbf{\textit{\^eme}}: 'to get; to own'

\textbf{\textit{\^ko\textbf{\textit{\_}}e}}: 'to borrow'

\textbf{\textit{\_were}}: 'to bring (in ane.); to bring back' (cf. \textit{wer} 'to come')

\textbf{\textit{\_ele}}: 'not to have'

\textbf{Vowel bases: IIA\textsuperscript{\textbf{1}}} (canon: \textit{CVC\textsuperscript{i}})

A small class, mostly involving animate possession or comitation.

\textbf{\textit{\^celi}}: 'to get; to own (animate?)'

\textbf{\textit{hari}}: 'to take along (animate)' (cf. \textit{har} 'to go')

\textbf{\textit{weri}}: 'to bring along (animate)' (cf. \textit{wer} 'to come')

\textbf{Vowel bases: IIA\textsuperscript{\textbf{1}}} (canon: \textit{CV\textsuperscript{\textbf{a}}-\textsuperscript{\textbf{c}}V\textsuperscript{\textbf{a}}})

A small class of miscellaneous derived forms with obvious derivations from simple CVC nouns.

\textbf{\textit{maya}}: 'to track' (\textless \textless \textit{may} 'foot')

\textbf{\textit{nuno}}: 'to draw back a bow' (\textless \textless \textit{nun} 'bow')

\textbf{\textit{\textbf{t}u\textbf{p}o}}: 'to sharpen to a point' (\textless \textless \textit{tup} 'awl')

\textbf{Vowel bases: IIB\textsuperscript{\textbf{1}}} (canon: \textit{CV\textsuperscript{\textbf{c}}\textsuperscript{\textbf{a}}})

Rare, derived plural bases.

\textbf{\textit{\textbf{t}i\textbf{-}ba}}: 'to sweep' (plural of \textit{\textbf{t}i\textbf{-}bt\textsuperscript{\textbf{h}}} 'to brush off')

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Vowel bases: IIB1 (canon: CV·Co)

A few miscellaneous derivatives.

phi'to 'to press hard on' (cf. phita 'to squash')

tu·so 'to go first' (<*tu· 'first' + -ho verbalizer)

bako 'to count' (This form is unusual, with an initial short vowel.

It is apparently derived from *pak 'bead' (?)< 'bone' + -ho.

In some dialects of Patwin, 'to count' is regularized to a IIA1 base: bako·).

Vowel bases: IIB2 (canon: CVCu)

These are the plural affected object counterparts of the IIA1 (CVCa·) transitive primary vowel bases listed above. Some are attested in WPCC only in the plural.

boru 'to break (pl.)'
čaku 'to split (pl.)'
čebu 'to chip pieces off'
čihu 'to cut slices off'
dobu 'to cut a row of notches in'

k'obu 'to cut off (pl.)'
kaču 'to cut up (pl.)'

łupu 'to prick (pl.)'
labu 'to break (pl.) into pieces'

lebu 'to chip (pl.)'
leru 'to punch holes in'

minu 'to extinguish (pl.)'

p'itu 'to squash (pl.)'
sobu 'to pull off (pl.)'

tažu 'to knock off (pl.)'
t'etu 'to shave off (pl.)'

Hill Patwin Theme Types

The typology of Patwin verb themes is complex, and a full exposition is beyond the scope of this paper. However, presenting at least the two- and three-syllable types will provide some perspective on the base types already listed. The types and subtypes are organized under
the same general designations as for bases (see Table 2). These designations indicated the significant base class distinctions for the purposes of ablaut. (For the stem classes themselves see Table 3 below.) Themes form their stems analogously to bases, and the designations of theme types show which base type to look under for the ablaut pattern appropriate to a particular type of theme. Reduplicated bases or themes pose a separate set of problems which are covered only very briefly following the exposition of primary and secondary theme types.

The following sections provide WPCC examples for all the theme types and subtypes summarized in Table 2. The listing is fairly complete for the primary themes. However, for secondary themes I have limited the selection somewhat. Omitted are prefixed themes, all themes of four or more syllables, consonant themes of three syllables, voice suffix (e.g. -\textit{ma} (causative)) derived vowel themes of three syllables, and some types of compound forms. The emphasis is on complete coverage of bisyllabic forms, so that the contrast with bisyllabic bases is clear, on forms derived in -\textit{a} 'to have' (verbalizer), which may have some bearing on the historical development of bases from themes, and on the trisyllabic primary themes, which have a flavor all their own in Patwin and which are involved in some unique patterns of plural theme-formative processes.

Primary Theme Subtypes

\textbf{Vowel themes:} IIB1 (canon: CV_{1}\textit{CV}_{1}\textit{Co})

These are "canonical" themes; they bear some resemblance to CV_{1}\textit{CV}_{1}\textit{C} bisyllabic consonantal bases (q.v. above), in that they show harmonic vowels. They fall into at least two subclasses. The first
<table>
<thead>
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<tr>
<td>IIB1</td>
<td>CV_CV_Co</td>
<td>harmonic, with final vowel invariant; a &quot;canonical&quot; theme</td>
</tr>
<tr>
<td>IIB2</td>
<td>CV_CV_Cu</td>
<td>harmonic, with qualitative ablaut in final V; a &quot;canonical&quot; theme</td>
</tr>
<tr>
<td>IIB1</td>
<td>CVCV_Co</td>
<td>nonharmonic</td>
</tr>
<tr>
<td>CVCCu</td>
<td></td>
<td>irregular form with invariant final V</td>
</tr>
<tr>
<td>IIB2</td>
<td>CVCV_Cu</td>
<td>nonharmonic, with qualitative ablaut in final V</td>
</tr>
<tr>
<td>CV(C)_Cu</td>
<td></td>
<td>harmonic, but with second V short; qualitative ablaut in final V</td>
</tr>
<tr>
<td>CV(_)CCu</td>
<td></td>
<td>regular form with qualitative ablaut in final V</td>
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Table 2A: Summary of Primary Theme Types
<table>
<thead>
<tr>
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<tr>
<td>Consonant themes</td>
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<td></td>
<td>CVC-nan</td>
<td>reflexives</td>
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<td></td>
<td>CVC+CVC</td>
<td>prefixed directional compounds</td>
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<td>CV(·)C-CVC</td>
<td>suffixed compounds of iterative motion</td>
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<td></td>
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<td>misc. compounds</td>
</tr>
<tr>
<td>Vowel themes</td>
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<tr>
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<td>(CV)CV(·)(C)-CV</td>
<td>misc. suffixally derived forms</td>
</tr>
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<td>misc. compounds</td>
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<tr>
<td></td>
<td>IIB2</td>
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<td>CV(·)(C)-h₄u</td>
<td>semelfactives</td>
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<td>CV(·)C-ču</td>
<td>resultative statives</td>
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<td></td>
<td>CVC-CV·Cu</td>
<td>suffixed compounds of motion and emotion</td>
</tr>
<tr>
<td></td>
<td>various</td>
<td>misc. compounds</td>
</tr>
</tbody>
</table>

Table 2B: Summary of Secondary Theme Types
consists of forms in -ko or -to which all have plurals of the form

CV-C-ko:

liwi-ko 'to beckon (sg.)'  
\(\lambda_{\text{iti-ko}}\) 'to squeeze (sg.)'
\(\lambda_{\text{utu-ko}}\) 'to scratch (sg.)'  
nala-ko 'to take a taste of'
\(\text{sutu-ko} \) 'to inhale (sg.); to cure by sucking'
\(\text{hele-to} \) 'to slice off (sg.)'  
\(p_{\text{hele-to}}\) 'to spread on (sg.)'

The second subclass is more miscellaneous; it contains both descriptive statives and various active predicates:

\(\text{dala-to} \) 'flat (surface)'
\(\text{hasa-ko} \) 'draft to be blowing;
\(\text{loto-ro} \) 'bumpy'
\(\text{drafty'}\)
\(\text{iki-to} \) 'skinny'
\(\lambda_{\text{ere-to}} \) 'to shout (sg.)'
\(\text{koyo-wo} \) 'to carry in both arms'
\(\text{suyu-to} \) 'to slide'
\(\text{tele-wo} \) 'to encircle'
\(\text{witi-lo} \) 'to run' (In some dialects this appears as witi-lu, a IIB2 theme.)

Vowel themes: IIB2 (canon: CV,CV,Cu)

These themes comprise the other "canonical" theme type.

hiri-ku 'dizzy'
\(\text{kobo-lu} \) 'to pay'
\(\text{\_ubu-ku} \) 'to gulp down' (cf. \_up mana-yu 'to miss'
\(\text{\_to drink soup'}\)
\(\text{polo-ku} \) 'to knot on tightly'
\(t_{\text{ici-mu}} 'to pinch'
\(\text{tihi-tu} \) 'to ask'
\(\text{wiici-su} \) 'to pull'
\(t_{\text{ubu-thu}} \) 'to pull out' (This form is unusual in having two aspirated consonants; the final \(t_{\text{h}}\) may be segmentable. Cf. the IIB2 semelfactives under secondary themes below.)
Vowel themes: IIB1 (canon: CVCV·Co)

Only one example; possibly derivative or borrowed.
'lu·pa·ko  'angry'

Vowel themes: IIB1 (canon: CVCCu)

Another very unusual verb, with the final -u invariant. This is almost unheard of in Patwin verbs other than derivatives in -ʔu 'to do'.
muylu  'to injure'

Vowel themes: IIB2 (canon: CVCV·Cu)

These are rare, but the single exemplar adduced here is of undoubted Proto-Wintun pedigree. (Cf. Wintu hika·ya 'to stand'.)
h·eča·yu  'to stand up' (plural: h·etp·eča·ya)

Vowel themes: IIB2 (canon: CV1CV1·Cu)

čililu  'healthy'  karasu  'to scratch'

Vowel themes: IIB2 (canon: CV(·)CCu)

likku  'to hurry'  mo·mhu  'to tell'

Secondary Theme Subtypes

Consonant themes: IB (canon: CVC-nan)

These are all more or less lexicalized reflexive derivatives.
k·er·nan  'to shave'  koknan  'to cut oneself'
li·wan  'to fan oneself'  moknan  'to fix oneself up, dress
ti·wan  'to buy'  up'
t·a·kan  'to get dressed up'

There is also an irregular, lexicalized formation based on the reflexive of ćo·wu 'to watch': ćo·nan  'to be careful'

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Consonant themes: IB (canon: CVCa-1)

These are derived intransitives. They are related to the IIA1 (CVCa-) transitive bases which take CVCu plural affected object forms (see above).

sobal 'to come off'          total 'to bump against'

Consonant themes: IB (canon: CVC+CVC)

These are prefixed directional compounds, which are relatively numerous in Patwin. A few examples:
h'alley 'to throw away' (cf. 'ley 'to put; to throw')
'elhar 'to go in' (cf. har 'to go')
'olkir 'to pick up with the hand' (cf. -kir 'to move with hand by pulling')

Consonant themes: IB (canon: CV(·)C-CVC)

Suffixed compounds of iterative motion or appearance.
hoybok 'to bob up and down'  pe·lbok 'to glance at intermittently'
wa·lbok 'lightning to flash'  to·lbak 'to limp'
limbak 'to flash at intervals; to blink (pl.) at intervals'
huylak 'to sway'             wudbay 'to nod head forward and back'

Consonant themes: IB (canon: CVCi(·)l)

These are miscellaneous, rather ill-defined compounds and/or derivatives.
bohil 'to retain; keep'       tok'hila 'to gather firewood'

Vowel themes: IIB1 (canon: CV·Cko)

These are the theme plurals of IIB1 canonical themes (q.v. above).
liwko 'to wave at (pl.)'
'li-tko 'to squeeze (pl.)'
'lu-tko 'to scratch (pl.)'
su-tko 'to inhale; puff (pl.)'
he·lko 'to slice off (pl.)'
p'e·lko 'to spread on (pl.)'

Vowel themes: IIB1 (canon: CVCV·Co)

These themes all involve circular motion or curves. The exact sense of plurality varies by subclass.

1. Active plurals of singular themes in -to:
dapi·ro 'to twist (pl.)'
sibi·ro 'to spin (pl.)'

2. Active forms which imply relatively slow motion; compare the fast motion counterparts in -ho below.
hela·yo 'to swing the arms'
siwa·yo 'to swing slowly'

3. Statives:
sopi·ro 'round'
čuwi·lo 'crooked (pl.)' (cf. čuwi·l?a 'bent; curved')

Vowel themes: IIB1 (canon: CVCVC-to)

These themes are all singulars.
dapirto 'to twist (sg.)'
sibirto 'to turn around (sg.)'
topelto 'to raise oneself up'

Vowel themes: IIB1 (canon: (CV)CV(·)(C)·-?-a)

These are derivatives in -?-a 'to have' {verbalizer}. -?-a can be suffixed to virtually any shape of root—including nouns and various kinds of imitatives. Its use constituted the most productive source of new verbs in Patwin.

1. Bisyllabic themes of the shape CV-?-a:
te·-?-a 'to give birth'
wi·-?-a 'to have a husband'

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2. Bisyllabic themes of the shape CV(·)C-ʔa:

balʔa 'to lie'  dukʔa 'bad' (<ʔukʔ-ʔa)
huːʔa 'to howl'  kʰosʔa 'foggy'
kiːrʔa 'cloudy'  kotʔa 'dirty'
kuːʔa 'widowed; orphaned'  kunʔa 'muddy; roiled'
laːʔa 'weak'  monʔa 'to be like'
pakʔa 'hard'  pʰurʔa 'stingy'
sekʔa 'green'  thiča 'to know' (<ʔthič-ʔa ?)
waiʔa 'to flame'  yelʔa 'late; last'

3. Bisyllabic plural themes:
sulʔa 'to kill (pl.)'  (cf. sultʰu 'to kill (sg.)')
teʔa 'many to come out'  (cf. tepu 'to come out')

4. Trisyllabic themes of the shape CV(·)CV-ʔa:

holeʔa 'dried out'  husaʔa 'ripples'
kʰuːseʔa 'blind'  lopaʔa 'muddy'
saniʔa 'daytime'  selʔaʔa 'afraid; scared'
toriʔa 'stuck on'  tukeʔa 'strong; brave'
yoriʔa 'to work'  ?oliʔa 'deaf'

5. Harmonic trisyllabic themes of the shape CV,CV(·)C-ʔa:

honoka 'lonesome'  hopomʔa 'rough; dry rotted'
taːʔa kiʔa 'bald'  tulukʔa 'red'
witiʔa 'to be fast'  ?onokʔa 'to have a wife'

6. Nonharmonic trisyllabic themes of the shape CVCV(·)C-ʔa:

čuːʔa 1 'bent; curved (sg.)'  heričʔa 'sharp'
kʰaːsiʔa 'cross-eyed'  ?oleʔa 'to be way up high'

7. Imitative trisyllabic themes of the shape CV(·)Ckʰ-aʔa:

čiːtkʰaʔa 'to squeak'  žerkʰaʔa 'to groan'
8. Miscellaneous trisyllabic themes of the shape CV(·)CCV-?a:

hayba?a 'to have a pain'
λepta?a 'to shout (pl.)'
so·rto?a 'deaf'
ta·pse?a 'to clap the hands'
yelti?a 'late'

together (pl.)

Vowel themes: IIBI (canon: CV(·)(C)-ma)

1. Bisyllabic causatives of the shape CV(·)-ma. These constitute virtual bases. (Cf. the section above re base types.)

ba·ma 'to feed'
so·ma 'to listen to'

?uma 'to quit' (In some dialects this is regularized to a IIA1 base: ?uma·.)

2. Bisyllabic derivatives of the shape CV(·)C-ma. These are of two semantic subtypes. First, there are true, transitive causatives:

hi·ma 'to put on around'
kapma 'to trap'
the neck'
šalma 'to spoil (tr.)'

št'o·rma 'to set fire to'
šalma 'to drop (tr.)'

Second, there is a class of stative verbs which imply personal impact, i.e. a caused sensation, feeling or judgement in one:

huyma 'pretty'

kakma 'hot'

porma 'bad'

yišma 'heavy'

Vowel themes: IIBI (canon: CV(·)(C)-me)

1. Derivative themes of clear comitative force:

bome 'to keep'
harme 'to take (inanimate)'
hemme 'to bring (inan.)'

2. Obscure derivatives:

p'hume 'to roast meat over fire' (cf. p'hо 'fire')
tewme 'to roll around in pain' (cf. tew 'to fly')
ha'sme 'to yawn'

**Vowel themes: IIB1 (canon: CV(·)(C)-pa)**

These themes all show either full benefactive force or action directed toward a goal:

- bopa 'to wait for'
- hampa 'to sit on'
- henpa 'to discover'
- kʰadpa 'to uncover'
- ɬepa 'to throw at'
- ʔe'tpa 'to heat up'
- detpa 'to climb for'
- harpa 'to go after'
- he'rpapa 'to reach out for'
- ɬelpa 'to weave for'
- ʔonpa 'to kick; stomp'

**Vowel themes: IIB1 (canon: CV(·)(C)-ho - CVVCV-ho)**

1. Bisyllabic themes of the shape CV(·)(C)-ho. These seem mostly to be verbalized nouns, and some of them comprise virtual bases.
   - pʰo-ho 'to build a fire' (cf. pʰo 'fire')
   - bako 'to count' (cf. discussion above under IIB1 secondary vowel bases.)
   - yetʰo 'to name' (cf. discussion of virtual bases above.)

2. Trisyllabic themes of the shape CVVCV-ho. Some of these are the fast action counterparts of CVCV-Co themes:
   - helayho 'arms pumping fast'
   - aiwayho 'to swing fast'

Others are sound or movement imitative verbalizations:

- ɬonirho 'to waddle'
- dibilho 'to roll around'
- havirho 'to hurry up'
- sawarho 'to be rattling'
- soholho 'waterfall'
- thʰetʰurho 'to stagger'
- tʰuburho 'to snort (of horses)'
- yedilho 'to totter'
3. Miscellaneous derived trisyllabic themes in -ho - o:

hačiho 'to winnow' (<hači 'sieve')
kobaho 'to paint' (<koba 'paint')
ti·maho 'to faint' (<ti·ma ?)
leliho 'to do slowly' (<leli·'slowly')
sikaho 'to paint black' (<sika 'black paint')
tine·lo 'sound of drumming' (<tine·l 'drum')
'uselo 'to poison' (<'usel 'poison'; attested in WPK)

Vowel themes: IIB1

Miscellaneous compound themes:

subto·ko 'to happen by accident'
lubčupa· 'to fall into a deadfall'

Vowel themes: IIB2 (canon: CV(·)(C)-\text{h}u)

This is a very large class of themes in Patwin. They are often marked singulars and seem to show an orientation towards an action itself rather than its result. However, many seem to be neutral in orientation, and there are quite a few statives represented as well.

The term semelfactive is intended as merely a tentative catch-all label to refer collectively to -\text{h}u derived themes.

1. Bisyllabic semelfactives of the shape CV-\text{h}u. These seem to oscillate somewhat in usage between acting as IIA2 or IIB2 virtual bases.

pat\text{h}u 'viscous; thick'
pet\text{h}u 'to hunt (game)'
tet\text{h}u 'to drink'
tot\text{h}u 'to be short of; poor'
wat\text{h}u 'to cry'

2. Bisyllabic semelfactives of the shape CV-.\text{h}u. These act as IIB2 virtual bases.
ka·tʰu  'to hide (intr.)'
lo·tʰu  'to hang (intr.)'
yo·tʰu  'to move; change residence'

3. Bisyllabic semelfactives of the shape CV(·)C-tʰu:
diktʰu  'burned up'
dirtʰu  'to rub'
dörtʰu  'to push'
duytʰu  'to press hard on'
hattʰu  'to pick (plants)'
kattʰu  'to open'
kurtʰu  'to break up'
kʰaptʰu  'to be half'
ke·ltʰu  'to fold (sg.)'
kohtʰu  'to scrape up'
koptʰu  'cut off; broken off'
kortʰu  'to grab up; gather'
lartʰu  'to tie up'
lektʰu  'tired'
libtʰu  'to sink (intr.)'
liartʰu  'to rub on'
ţantʰu  'to blister'
ţartʰu  'to tie a knot'
ţoptʰu  'to join'
lapţʰu  'wet'
ţoptʰu  'to put in (sg.)'
maktʰu  'quiet'
mintʰu  'dark; fire to go out'
puttʰu  'to jump down (sg.)'
pʰoktʰu  'to swell up'
pʰo·ktʰu  'to clap (sg.)'
pʰoltʰu  'to swell up'
pʰuţʰu  'to blow on (sg.)'
pɨtʰu  'to skin; peel'
siltʰu  'black'
siptʰu  'stiff'
sobtʰu  'to come off'
soytʰu  'to lie down'
sultʰu  'to kill (sg.)'
tortʰu  'cramped up and stiff'
tʰebtʰu  'streams to flow together'
tʰoptʰu  'tight; stuck'
thurtʰu  'thick'
tɨ·btʰu  'to brush off (sg.)'
yuktʰu  'to pat off; to shake'
yurtʰu  'lined up'
 yuktʰu  'clean'
ʔo·ktʰu  'to vomit'

Vowel themes: IIB2 (canon: CV(·)C-ču)

This is another large class of themes. Nearly all of these are
resultative statives, clearly related to semelfactive forms and/or to IIA1 (CVCA·) transitive bases.

<table>
<thead>
<tr>
<th>Borču</th>
<th>'to be broken'</th>
<th>Kokču</th>
<th>'skinny'</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kurču</td>
<td>'fragile; friable'</td>
<td>K'ebču</td>
<td>'to be shattered'</td>
</tr>
<tr>
<td>K'obču</td>
<td>'to be cut off'</td>
<td>K'uwču</td>
<td>'sated; tired of'</td>
</tr>
<tr>
<td>L'abču</td>
<td>'broken into pieces'</td>
<td>L'ebču</td>
<td>'chipped'</td>
</tr>
<tr>
<td>L'isču</td>
<td>'bent'</td>
<td>P'o'kču</td>
<td>'sound of clap'</td>
</tr>
<tr>
<td>Sikču</td>
<td>'to have had too much</td>
<td>Sوبču</td>
<td>'to have come off'</td>
</tr>
<tr>
<td>Of'</td>
<td></td>
<td>Tirču</td>
<td>'tight-fitting'</td>
</tr>
<tr>
<td>Točču</td>
<td>'to get bumped'</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Vowel themes: IIB2 (canon: CVC-CV·Cu)

These are compound themes which all seem to have something to do with sudden or unexpected action and/or emotions.

Čiplo'ku 'to pull up when released (as a snare); to whip back'
Hetba'ku 'startled; surprised'
Limba'ku 'to blink (sg.)' (cf. limbak 'to flash; blink (pl.) at intervals')
Tirbiču 'to wink'
Tirla'ku 'to splash; splatter'
Yerba'ku 'excited'
?Alba'ku 'to strain a muscle'

Reduplicated Theme Structures

The semantic analysis of verb reduplication in Patwin is rather complex, involving an interplay of transitivity vs. intransitivity and activity vs. stativity of the predicate, plurality of participants vs.
plurality of actions, and for certain transitive predicates, a distinction between unaffected, affected and effected patients. Some of the details remain to be worked out.

However, the formal patterns of base and theme reduplication are rather clear and predictable, mostly involving a straightforward and regular initial CV(·)C reduplication (sometimes with minor morphophonemic adjustments), so here I list just the formal patterns without exact syntactic functions. To avoid cumbersome numbering of segments, I adopt the following conventions: In the unreduplicated canons below, the segments which are reduplicated are underlined; the same segments as reduplicated are set off with a hyphen in the reduplicated theme forms.

<table>
<thead>
<tr>
<th>base/theme designation</th>
<th>unreduplicated</th>
<th>reduplicated</th>
<th>example</th>
</tr>
</thead>
<tbody>
<tr>
<td>IA</td>
<td>CVC</td>
<td>CVC-CVC</td>
<td>hamham 'many to be sitting'</td>
</tr>
<tr>
<td>I31</td>
<td>CV·C</td>
<td>CV(·)C-CV·C</td>
<td>t'he(·)pt'h·p 'to whip many'</td>
</tr>
<tr>
<td>IB2</td>
<td>CVCVV</td>
<td>CVC-CVCVC</td>
<td>zewe·wisa 'to keep poking'</td>
</tr>
<tr>
<td>IIA1</td>
<td>CVCVV·</td>
<td>CVC-CVCV(·)</td>
<td>kankana(·) 'many to sleep'</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>lawlawo 'devouring'</td>
</tr>
<tr>
<td>IIA2</td>
<td>CVCu</td>
<td>CVC-CV·Cu</td>
<td>'il'i·lu 'to be dazzled'</td>
</tr>
<tr>
<td>IIB1</td>
<td>CV·CV</td>
<td>(CV·C-CVCV)</td>
<td>---</td>
</tr>
<tr>
<td></td>
<td>CVCho</td>
<td>CVC-CVCho</td>
<td>yoryorho 'to teach'</td>
</tr>
<tr>
<td></td>
<td>CV·Cpa</td>
<td>CVC-CV·Cpa</td>
<td>herhe·rpa 'to reach repeatedly for'</td>
</tr>
<tr>
<td>IIB2</td>
<td>CV·Cu</td>
<td>CVC-CV·Cu</td>
<td>sedae·du 'to be stooped over'</td>
</tr>
<tr>
<td></td>
<td>CVCVV·Cu</td>
<td>CVC-CVCV·Cu</td>
<td>witwiči·su 'to pull many'</td>
</tr>
</tbody>
</table>

Note that for reduplicated IIA1 bases such as kankana(·) 'many to sleep' kana· 'to sleep', there is a tendency to shorten the final
vowel, which tendency is consistent with the general rarity of trisyl-
labic or longer themes with final long vowels. On the other hand, when
IIA2 bases are reduplicated, the second of the three vowels in the
reduplicated form is lengthened, whereas IIB2 bases shorten the initial
vowel of the reduplicated form. These patterns then fit the vowel length
frame of Patwin canonical themes: -V-V-V-.

Some IIA1 transitive primary bases show a special, rather poorly
attested reduplicative pattern which seems to indicate a plural resulta-
tive stative sense. Typically these involve transitive change-of-
stative predicates of the 'cut, slice, break, prick, punch holes in'
variety which affect a patient by effecting its change into smaller
pieces (or by leaving marks, holes, cuts, etc. in it). The IIA2 plural
secondary bases of these IIA1 primary bases generally indicate plurality
of action (either numerous objects affected or numerous pieces effected),
whereas the reduplicated bases express the plural resultative stative.
The formal pattern is:

IIA1  CVCa :  CVCa-CVCa
  soba: 'to pull off' sobasoba: 'many to come off'
  laba: 'to break (sg.)' labalaba: '(all) broken up'
    into pieces'
  teba: 'to nick' tebateba: 'chips to come off'
  kopa: 'to cut or break in two' kopakopa: '(all) broke off'

The Ablaut System

Now that I have discussed and exemplified the root types, it is a
relatively simple task to describe the ablaut patterns proper. The
various base and theme types fit into six general ablaut categories, defensible by the changes in (or lack of) the final vowel of the stems, before addition of suffixes. All but a very few irregular roots in Patwin fit exactly into one of these six patterns of quantitative and/or qualitative ablaut of stem vowels.

Table 3 shows these six patterns in columns, with the nine stem classes defined by crossmatching stem form and function with the suffix classes. The suffixes associated with each stem are listed in Table 5 below.

The use of -y or -Y* in columns 1 and 2 of Table 3 indicates that for consonant bases in stems I and II a harmonic (or copy) vowel is inserted before addition of the appropriate suffixes. For stems III to V no vowel is added; the suffixes appear directly after the final consonant of the root.

In column 3, -a* is chosen merely as the most representative vowel for IIA1 bases. For IIA1 bases ending in vowels other than -a* (e.g. CVCo*, CVCe*, or CVCi*), the final vowel behaves analogously to bases of the form CVCa*, staying qualitatively invariant and long for all but stem III. The same observation holds, mutatis mutandis, for IIB1 bases in column 5, except that for those the final root vowel is completely invariant in length for all stems.

Regular IIA3 monosyllabic bases (actually only ba* 'to eat') pattern like IIA1 bases. Most of the IIA3 bases are irregular, and their stem formation is covered in Table 4 below.

IIB3 auxiliary base suffixes (cf. list above under primary base subtypes) are all length-invariant. -tN (semelfactive) and -kN (resultative stative) form stems on the pattern of IIB2 bases; all the
<table>
<thead>
<tr>
<th>Stem Classes</th>
<th>IA</th>
<th>IB</th>
<th>IIA1</th>
<th>IIA2</th>
<th>IIB1</th>
<th>IIB2</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>CVC</td>
<td>CV·C</td>
<td>CVCa</td>
<td>CVCu §</td>
<td>CV·Ca</td>
<td>CV·Cu</td>
</tr>
<tr>
<td></td>
<td>-CVC</td>
<td>etc.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ia. Absolutive</td>
<td>-V·</td>
<td>-V</td>
<td>-a·</td>
<td>-i</td>
<td>-a</td>
<td>-i</td>
</tr>
<tr>
<td>Ib. Future</td>
<td>-V·</td>
<td>-V</td>
<td>-a·</td>
<td>-i</td>
<td>-a</td>
<td>-i</td>
</tr>
<tr>
<td>Ic. -s stem</td>
<td>-V</td>
<td>-V</td>
<td>-a·</td>
<td>-i</td>
<td>-a</td>
<td>-i</td>
</tr>
<tr>
<td>II. -sa stem</td>
<td>-V</td>
<td>-V</td>
<td>-a·</td>
<td>-u</td>
<td>-a</td>
<td>-u</td>
</tr>
<tr>
<td>III. Imperative</td>
<td>-</td>
<td>-</td>
<td>-a</td>
<td>-u</td>
<td>-a</td>
<td>-u</td>
</tr>
<tr>
<td>IVa. Hortatory</td>
<td>- * *</td>
<td>-</td>
<td>-a·</td>
<td>-u</td>
<td>-a</td>
<td>-u</td>
</tr>
<tr>
<td>IVb. Modal</td>
<td>- *</td>
<td>*</td>
<td>-a·</td>
<td>-u</td>
<td>-a</td>
<td>-u</td>
</tr>
<tr>
<td>IVc. Subjunctive</td>
<td>-</td>
<td>-</td>
<td>-a·</td>
<td>-u</td>
<td>-a</td>
<td>-u</td>
</tr>
<tr>
<td>V. Participial</td>
<td>- *</td>
<td>- *</td>
<td>-a·</td>
<td>-u·</td>
<td>-a</td>
<td>-u</td>
</tr>
</tbody>
</table>

§ Primary bases

§§ Plural secondary bases

* Bases ending in coronal consonants are subject to various morpho-
phonemic changes before suffixes beginning in r.

** har 'to go' and wer 'to come' drop their r before all hortatory
personal suffixes and the irrealis mode clitic -ka.

Table 3: Stem Classes in Hill Patwin
other vowel-final auxiliary base suffixes pattern as IIB1 bases.

Note that only stem V shows distinct forms for column 4 (IIA2 bases) and column 6 (IIB2 bases). Stem V forms are thus diagnostic of whether a verb root of the basic shape CVCu is a primary base (IIA2) or a secondary, plural base.

In a more general vein, from the overall structure of Table 3 it would seem that there is an overdifferentiation of stem distinctions made, and that several of the stem subclasses could be lumped together (e.g. Ia and b, or IVa, b and c). The reason for not doing so is two-fold. First, there are comparative considerations not entirely obvious from the WPCC data alone. The stems are divided so as to give a maximally differentiated framework appropriate for the analysis of ablaut in all Patwin dialects. Second, some stem subclasses are kept apart on functional grounds. Thus, for example, the subjunctive stem (IVc) is functionally distinct enough to warrant consideration independent of the more miscellaneous suffixes and functions of the modal stem (IVb).

The formation of stem classes in Patwin bears some general resemblance to ablaut in classical Indo-European languages. The vowels in the stem class table are the structural equivalents of the "theme vowel" of the Indo-European verb stem. (This use of the term "theme" is distinct, of course, from that applied in the Patwin analysis to certain types of verb roots.) Furthermore, it is even meaningful to talk about vowel grades of the stem. For CVC bases in Patwin, stems Ia and Ib represent the "long-grade" theme vowel, stems Ic and II the "short-grade", and stems III, IV and V the "zero-grade". For vowel bases, however, a separate set of grades emerges; for primary vowel bases in -u particularly, we could say that stems Ia-c constitute an i-grade.
stems II, III, and IV an u-grade and stem V an u'-grade of the base. 7

The following examples show the concrete operation of ablaut in actual bases with various suffixes added.

IA base
ham 'to sit'
Ia ham-ːta
'when he sat'

IIA1 base
hila- 'to shoot'
IIA2 base
muhu 'to sing'

Ib hamaːta
'the when he shot'

Ic hamaːs
'the he will sit'

III hamaːsay
'the he is sitting'

III ham
'the he is sitting?'

IVa hamse
'the he is sitting?'

IVb hamaː
'the did he sit?'

IVc hammuʔu
'the he didn't sit'

V hamtaro
'the sitting and...'

" -ta- (past interrogative), the only common suffix in WPCC with an inherently long vowel, tends to trigger secondary shortening of a preceding long vowel, especially in rapid speech.

A few highly irregular verbs remain unaccounted for. The most
important of these are shown in Table 4 on the next page.

The first column in Table 4 shows the stem formation for bo- 'to be (animate locative)' and be- 'to be (inanimate locative)'. The pattern for be- is exactly like that for bo-, with a substituted everywhere for o. The irregularities in the stem formation for those bases derive from two sources. First, bo- and be- are historically descendant from forms of the shape *boh and *beh (and possibly also *boy and *boy). They thus show some remnant traits of consonant-final bases in their stem-formation. Second, they are very commonly used in auxiliary formations, where they are subject to vowel-shortening processes.

The same general considerations apply to 'i- 'to do, to use', which is even more irregular. ?u 'to do, to say', however, shows a totally invariant final u vowel. muylu 'to injure' follows this same invariant pattern.

so'ru 'to listen' and so'wu 'to watch' are very irregular. Some confusion of singular and derived plural bases may be involved here, but even that would not explain all of the observed variations.

Suffix Classes

Table 5 (immediately following Table 4) gives a brief summary of the suffixes which are associated with each stem class. With the addition of a few morphophonemic rules and some information on semantic cooccurrence constraints, this completes all of the apparatus needed for stem formation in Hill Patwin.

The suffixes of Table 5 fall into two major subtypes. Some are themselves auxiliary bases which undergo regular ablaut processes. Of these auxiliary bases, the voice suffixes (stem IVb) and -mut 'to feel'
### Irregular Bases

<table>
<thead>
<tr>
<th>Stem Classes</th>
<th>'be'</th>
<th>'do, use'</th>
<th>'do, say'</th>
<th>'listen'</th>
<th>'watch'</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ia. Absolutive</td>
<td>-o·</td>
<td>?i·</td>
<td>?u</td>
<td>so·ru</td>
<td>ṭo·wu</td>
</tr>
<tr>
<td></td>
<td>-ο/ V</td>
<td>?i·</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ib. Future</td>
<td>-o·</td>
<td>?i·</td>
<td>?u</td>
<td>so·ri</td>
<td>ṭo·wi</td>
</tr>
<tr>
<td>Ic. -s stem</td>
<td>-o·</td>
<td>?i·</td>
<td>?u</td>
<td>so·ri</td>
<td>ṭo·wi</td>
</tr>
<tr>
<td>II. -sa stem</td>
<td>-ο·-o·</td>
<td>?i·</td>
<td>?u</td>
<td>?</td>
<td>ṭo·wu</td>
</tr>
<tr>
<td>III. Imperative</td>
<td>-o·</td>
<td>?iwe</td>
<td>?u</td>
<td>so·-</td>
<td>ṭo·wu (sg.)</td>
</tr>
<tr>
<td>IVa. Hortatory</td>
<td>-ο·</td>
<td>?i·</td>
<td>?u</td>
<td>so·</td>
<td>ṭo·w</td>
</tr>
<tr>
<td>IVb. Modal</td>
<td>-ο·</td>
<td>?i·-?i·l</td>
<td>?u</td>
<td>so·</td>
<td>?</td>
</tr>
<tr>
<td>IVc. Subjunctive</td>
<td>-ο·</td>
<td>?i·</td>
<td>?u</td>
<td>so·</td>
<td>ṭo·</td>
</tr>
<tr>
<td>V. Participial</td>
<td>-ο·</td>
<td>?</td>
<td>?u</td>
<td>?</td>
<td>ṭo·wu (sg.)</td>
</tr>
</tbody>
</table>

* These shortened forms appear in use as auxiliaries.

---

Table 4: Stem Classes in Hill Patwin (Irregular Forms)
<table>
<thead>
<tr>
<th>Stem class</th>
<th>Suffixes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ia Absolutive</td>
<td>1. -Ø generic nominalization</td>
</tr>
<tr>
<td></td>
<td>2. auxiliary bases:</td>
</tr>
<tr>
<td></td>
<td>a. -bo/-be 'to be' auxiliary (functions to mark: imperfective aspect; evidential (± other suffixes), 'should', 'might', 'could' modal; attributive relativizer 'who/which is'; and in WPR only, interrogative)</td>
</tr>
<tr>
<td></td>
<td>b. -koyu 'to want, to be about to, to start to' auxiliary base</td>
</tr>
<tr>
<td></td>
<td>c. -mut 'to feel', auxiliary base of personal affect</td>
</tr>
<tr>
<td></td>
<td>3. -ma animate objective case (embedded object clause)</td>
</tr>
<tr>
<td></td>
<td>4. -ta locative case (conditional and temporal clause)</td>
</tr>
<tr>
<td></td>
<td>5. -(h)vm relativizer</td>
</tr>
<tr>
<td>Ib Future</td>
<td>1. -to (functions to mark: definite future tense; non-first person intentional; inceptive 'to be about to'; subordinate purposive)</td>
</tr>
<tr>
<td></td>
<td>2. -ti (&lt;=-to?i) definite future tense auxiliary (can be followed by auxiliaries or other tense suffixes)</td>
</tr>
<tr>
<td>Ic -a stem</td>
<td>1. -g ongoing or completive aspect (i.e. non-inceptive aspect; neutral with respect to tense)</td>
</tr>
<tr>
<td></td>
<td>2. nominalizers:</td>
</tr>
<tr>
<td></td>
<td>a. -a, -(a)tu (?)</td>
</tr>
<tr>
<td></td>
<td>b. -ak instrumental, locative</td>
</tr>
<tr>
<td></td>
<td>c. -men 'thing'</td>
</tr>
<tr>
<td></td>
<td>d. -vir 'person'</td>
</tr>
</tbody>
</table>

Table 5 (part 1): WPCC Verbal Suffix Classes
II -sä stem
1. -sä definite past tense
2. -say present (or unmarked tense) interrogative

III Imperative
1. -Ø imperative
2. -t emphatic imperative

IVa Hortatory
1. hortatory personal suffixes:
   a. -le(da) 1 sg. 'I'll...'
   b. -se 1 du. incl. 'let's...'
   c. -bu(da) 1 pl. incl. 'let's all...'
   d. -hi 2 du./pl. 'you all...!
   e. -di 3 sg./du./pl. 'let him/them...'
2. -ka irrealis mode clitic

IVb Modal
1. theme-deriving auxiliary bases of voice (valence-changing):
   a. -mm causative
   b. -pa benefactive
   c. -me comitative
   d. -man reflexive
   e. -pir reciprocal
   f. -hen passive
2. modal suffixes:
   a. -les 'can' (used also as a 'come and... go and...' imperative)
   b. -len 'should'
   c. -tin 'might; lest'
3. past tense suffixes:
   a. -ta- definite past interrogative
   b. -nisa remote past
   c. -nita- remote past interrogative

IVc Subjunctive
1. -m (v)/-mu (-C) (functions to mark: purposive; negative (+ aux. -?), evidentials (+ auxiliaries))

Table 5 (part 2): WPCC Verbal Suffix Classes
V Participial

1. \(-ro\) (\_v)/\(-taro\) (\_c) (a auxiliary \(-bo/-be\))
   (functions to indicate related predicates sequential in time, or simultaneous predicates where one
   is background to the other)
2. \(-t\) subordinate object form of \(-ro\) (?)
3. \(-n\) (\_v)/\(-ni\) (\_c) (functions to mark: adverbials;
   imperfectives (a auxiliary \?-i))
4. \(-nol\) 'to be always doing' (?)

Table 5 (part 3): WPCC Verbal Suffix Classes

[text continues from page preceding Table 4]

(stem 1a) are theme-derivational, whereas the various other auxiliary
bases listed under stems 1a and 1b are mostly inflectional—not forming
lexicalized units. The rest of the suffixes, whether inflectional or
derivational (e.g. nominalizers), do not constitute verb roots and
therefore do not feed back into ablaut as do the auxiliary suffixes.
The full elaboration of cooccurrence constraints on inflectional suf-
fixes is complex, however, and cannot be covered here.

Towards Deep Comparison with Yokuts

It remains to point out the structural analogies between Yokuts and
Wintun verbal ablaut. Of course, in the absence of a reconstruction of
the full ablaut system for Proto-Wintun and for Proto-Yokuts, such com-
parisons are somewhat premature. However, by at least beginning the
matching up of root type categories in both families it should be pos-
sible to see the most promising areas for future exploration, comparison
and reconstruction.
Table 6 lists the Yokuts base types:

<table>
<thead>
<tr>
<th>I. biliteral bases</th>
<th>II. triliteral bases</th>
</tr>
</thead>
<tbody>
<tr>
<td>A.1 CWCW</td>
<td>A.1 CWCW</td>
</tr>
<tr>
<td>A.2 CSCW</td>
<td>A.2 CSCWC</td>
</tr>
<tr>
<td>B CWCS</td>
<td>B CWCSC</td>
</tr>
</tbody>
</table>

Table 6: Yokuts Base Types [Gamble (1978:33)]

In Yokuts bases, S and W refer to the "strong" and "weak" members respectively of harmonic vowel series. In Yawelmani Yokuts there are four harmonic vowel series (Newman 1944:38):

<table>
<thead>
<tr>
<th>series</th>
<th>weak</th>
<th>strong</th>
</tr>
</thead>
<tbody>
<tr>
<td>a</td>
<td>a</td>
<td>a'</td>
</tr>
<tr>
<td>i</td>
<td>i</td>
<td>e</td>
</tr>
<tr>
<td>o</td>
<td>o</td>
<td>o'</td>
</tr>
<tr>
<td>u</td>
<td>u</td>
<td>/o' /=</td>
</tr>
</tbody>
</table>

Wikchamni (Gamble 1978:16) adds a fifth series: weak [i] vs. strong [i'] (= /u' /). Both vowels in a given Yokuts verb base must be from the same series.

Note that Patwin (and Wintun in general) departs from Yokuts in having a large number of vowel-final bisyllabic bases with non-harmonic vowels. The patterning of these non-harmonic bases in Patwin suggests, however, that while synchronically unanalyzable, most of these are historically secondary--derived from older roots of the form CVC ~ CV.C and base-formative suffixes *-a'~a, *-o'~o. Even the very large class of verb bases of the form CVCu could conceivably be similarly analyzable in terms of a base-formative suffix *-u.

*-a'~a would presumably be historically related to the auxiliary
base *-ʔa 'to have', which functions quite productively in Patwin as a theme-derivational suffix.

*-ʔo-ʔo would presumably be historically related to the auxiliary base -ho, which functions, considerably less productively than *-ʔa, as a theme-derivational suffix.

*-ʔu may be historically related to the auxiliary base *-ʔu 'to do, to say', which shows up in a few instances as a theme-derivational clitic, but this historical equation is much shakier than the previous two.

Each of the four harmonic vowel series for Yokuts verb bases (five for Wikchamni) undergoes a set of complex, morphologically conditioned quantitative and qualitative mutations which constitute a formal system of verbal ablaut. As Silverstein (1979:664) summarizes it, "Each combination of [Yokuts] root-plus-suffix uses one from among a set of 'dynamic vowel formulas' (Newman 1944:38-53) which specifies the quantity and (partly by automatic phonological rules) the quality of the resulting vowels of the derived inflectional stem."

In order to get an idea of how Yokuts verbal ablaut compares with that of Patwin, I have reorganized the Yokuts 'dynamic vowel formulas' as analyzed for Wikchamni by Gamble (1978:28-29, 33-38) into a tabular format showing stem classes for each base type. Instead of using the Yokuts S vs. W notational convention, I list the ablauted forms with underlying long or short vowel, so that the comparability of the forms with Patwin stems stands out. (Recall that any two V symbols in a single Yokuts stem must represent harmonic vowels.) Yokuts stem classes are traditionally labeled according to formal characteristics of their mutation, since most have no obvious functional content, but each stem
class is firmly associated with a definite list of grammatical suffixes, just as in Patwin.

<table>
<thead>
<tr>
<th>Yokuts Base Type</th>
<th>IA1</th>
<th>IA2</th>
<th>IB</th>
<th>IIA1</th>
<th>IIA2</th>
<th>IIB</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stem Class</td>
<td>CW CW</td>
<td>CSCW</td>
<td>CW CS</td>
<td>CW CW</td>
<td>CSCW</td>
<td>CW CSC</td>
</tr>
<tr>
<td>Reduced</td>
<td>CVC-</td>
<td>CV·C-</td>
<td>CV C'</td>
<td>CV CC-</td>
<td>CV·C</td>
<td>CV CV·C-</td>
</tr>
<tr>
<td>Strong Reduced</td>
<td>---</td>
<td>---</td>
<td>CVC-</td>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>A-induced</td>
<td>CV Ca-</td>
<td>CV Ca-</td>
<td>CV Ca-</td>
<td>CV Ca-</td>
<td>CV Ca-</td>
<td>CV Ca-</td>
</tr>
<tr>
<td>Strong A-induced</td>
<td>---</td>
<td>CV Ca'</td>
<td>---</td>
<td>CV Ca'</td>
<td>CV Ca-</td>
<td>CV Ca</td>
</tr>
<tr>
<td>Zero</td>
<td>CVC-</td>
<td>CVC-</td>
<td>---</td>
<td>CV·C C-</td>
<td>CV·C</td>
<td>---</td>
</tr>
<tr>
<td>Strong Zero</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>CV·C C-</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>Strong</td>
<td>CVC V·</td>
<td>CVC V·</td>
<td>CVC V·</td>
<td>CVC V·</td>
<td>CVC V·</td>
<td>CVC V·</td>
</tr>
<tr>
<td>Strong-Glottal</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>CV CV·C</td>
<td>CV CV·C</td>
<td>CV CV·C</td>
</tr>
<tr>
<td>(Causative)</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
</tbody>
</table>

Table 7: Stem Classes in Wikchamni Yokuts

In Table 7 we can see that certain of the Wikchamni base types show structural parallels in their mutation to Hill Patwin base types. Tentatively I suggest that the association of Yokuts base types with Hill Patwin base (or theme) types as listed below may reflect significant historical connections between these types.

<table>
<thead>
<tr>
<th>Yokuts Base Type</th>
<th>Hill Patwin Base (or Theme) Types</th>
</tr>
</thead>
<tbody>
<tr>
<td>IA1 CW CW</td>
<td>IA consonant bases CVC</td>
</tr>
<tr>
<td></td>
<td>IIA1,2 vowel bases CV C' / o·; CV Cu (in part)</td>
</tr>
<tr>
<td>IA2 CSCW</td>
<td>IB1 consonant bases CV C</td>
</tr>
<tr>
<td></td>
<td>IB1,2 vowel bases CV Ca/o; CV Cu (in part)</td>
</tr>
<tr>
<td>IB CW CS</td>
<td>no association proposed</td>
</tr>
</tbody>
</table>

89
IIA1 CWWC

\{ IIa1 vowel bases CVCa; (in part--mostly trans.)
IIb2 vowel themes CVC-t\textsuperscript{h}u; CVC-ču (in part) \}

IIA2 CSCWC

\{ IIa1 vowel bases CV-Ča (in part--mostly trans.)
IIb2 vowel themes CV-C-t\textsuperscript{h}u; CV-C-ču (in part) \}

IIB CWSCC

IIB1,2 trisyllabic canonical themes CV\textsubscript{1}CV\textsubscript{2}Co/u

The formal similarity of Patwin and Yokuts verb base types, including harmonic constraints on vowels (rigid in Yokuts, an archaic tendency in Wintun); the participation of base (and theme) classes in both languages in complex vocalic mutations (expressed in stem class tables in my analysis of Patwin, and as 'dynamic vowel formulas' in Newman's or Gamble's treatments of Yokuts); and the codefinition of covert inflectional stem and suffix classes--each of these characteristics suggests the kind of detailed structural parallel between Yokuts and Wintun which presumably results from deep genetic connection between the families, rather than diffusion or chance resemblance.

Proving this connection would require systematic reconstruction of the ablaut system in Proto-Wintun and in Proto-Yokuts, as well as a search for formally cognate bases, rather than just structurally analogous base types. The prospects for Proto-Wintun at least look good; preliminary work makes it apparent that a system of verbal ablaut is reconstructible for Proto-Wintun, although difficulties abound in the detailed reconstruction.

If a demonstration of cognacy between the verbal ablaut systems of Wintun and of Yokuts is forthcoming, then the attested patterns of Yokuts and Patwin (and Wintu) ablaut could be accounted for in terms of divergent development of roots in each family, speculatively as follows. Yokuts has presumably rigidified an original system of harmonic vowel
verb bases and extended ablaut formulas originally traceable to rhythm
ic alternations in stems. Wintun, on the other hand, by adopting produc-
tive verbalizing strategies that produced themes which tended to mor-
phologically merge (first as virtual bases, then as regularized true
bases) with the bases, gradually relaxed restrictions against non-
harmonic vowels in bases; this development seems to have contributed as
well to simplification of the system of verbal ablaut in Wintun. In
Wintu proper the simplification has proceeded further than in Patwin,
and the pattern is obscured by the innovative development in Wintu of a
kind of umlaut which raised mid vowels in roots (PW *e > WW i; PW *o >
WW u) before certain suffixes.

The similarity of the verbal ablaut systems in Wintun and Yokuts,
when added to the evidence of similarity of reconstructed pronominal
systems and of reconstructed nominal case systems, of certain suggestive
deep morphological connections between reconstructed kinterms in both
language families, and of scattered lexical resemblances noted by early
comparativists, makes a reasonably good though not yet proven case for
Wintun genetic affiliation with Yokuts. The Wintun-Yokuts connection,
in my opinion, certainly looks better in detail than Wintun connections
to either the Haidun or the Utian language families.

Acknowledgements

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at the Department of Anthropology, Smithsonian Institution. I am
especially grateful to Rev. Harry Lorenzo of Brooks, California, who
provided the information about his language on which this description
is based.

Footnotes

1Harmony is also often applied to root canons involving identical vowels; in this sense harmony is also a prominent characteristic of Patwin verb roots, as it is of the verb roots of many "Penutian" languages. Cf. Sapir (1921).

2Silverstein (1979:663-667) discusses at some length the "many types of inner stem change" that Sapir (1929[1949]:175) noted as a typological characteristic of languages of his proposed Penutian superstock. The types of stem processes involved go beyond those charac-
terizable as ablaut. Thus, for example, in Takelma, "the verb stem alternations are fairly independent of the suffixal apparatus..., having inherent grammatical value in and of themselves." (Silverstein 1979:663). However, most of the California Penutian families do show formal ablaut systems, with stem alternations closely tied to suffixal sets.

3Eastern Miwok has also elaborated a system of synthetic person-
number desinences on the verb which uncannily resemble Indo-European person-number paradigms (Callaghan 1980); such endings are, however, uncharacteristic of the other California Penutian languages and have little bearing on ablaut per se.


5Typical directional prefixes attested in Patwin compound verbs are: ʔel- 'in'; ʔat- 'out'; ʔol- 'up'; ʔen- 'down'; ʔum- 'here, hither'; ʔkal- 'away'; ʔau- 'out, in front'; ʔel- 'back, behind'; ʔer- 'across'. Other Patwin directionals do not generally occur as verb
prefixes.

6 The Patwin -tʰu (semelfactive) is cognate with the Wintu suffix -č, which Pitkin analyzes as a transitive root-derived suffix, occasionally with medio-passive force. Note the following cognate sets, for example: Wintu            Hill Patwin
   pʰutča 'to blow away'     pʰutʰu 'to blow on (sg.)'
   minču-na- 'a close relative minhú 'dark; fire to go out'
   to die'
   daqča 'scorched; hot'     diktʰu 'burned up'
   -sopča 'to slip off     sobtʰu 'to come off'
   (clothes)'
   pʰovča 'to blister; swell' pʰoltʰu; pʰokʰu 'to swell up'

7 Of course, such general structural comparisons between Indo-
European and Patwin ablaut are intended only as typological observations
and should not be taken as supporting any of the various claims of
genetic connection between Wintun and one or another Eurasian language
family. The comparison with Yokuts ablaut developed below does, how-
ever, support an hypothesis of distant genetic connection within
California Penutian, since the structures of the systems match in
rather extensive detail, rather than just in general type.

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