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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 characteri-
zation 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·m 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 discus-
sion 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,

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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, irre-

gular and unproductive in the modern descendants of PIE and even in the

classic Indo-European languages, Latin, Greek, Sanskrit, etc. An exam-

ple of ablaut (or vowel gradation) is seen in the following Attic Greek

verb stem alternations:

<div align="center">

τρέπω   'I turn'

τροπ-ή   'rout'

ἐ-τράπ-ην   'I was put to flight' (Smyth 1920:16)

</div>

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.

<div align="center">43</div>

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.[2] 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.[3] 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 functionally and syntagmatically defined by an associated suffix class. The process of stem formation through root mutation (= ablaut) is completely 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 formation 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 derivational 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

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alternations which, taken together, constitute the covert categories of stem classes.) The <u>root</u> 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 √ notation), it has proved expedient to adopt a particular stem class (Stem IV as defined below) as a standard citation form for Patwin roots.

<u>Primary roots and lexical roots</u>: When it is necessary to distinguish <u>roots</u> in Patwin as just defined from the more standard sense of a root as a synchronically unanalyzable, minimal morphological unit, I reserve the term <u>primary root</u> for the latter sense of root. The unit which serves as input to ablaut in Patwin can then be termed, by contrast, a <u>lexical root</u>. 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, <u>tori'apirma</u>- 'to stick two things together along a flat surface' is a lexical root, but it can be broken down morphologically into the secondary theme <u>tori'a</u> 'stuck on' (itself a derived form in -'a 'to have' (verbalizer)) and the auxiliary bases -<u>pir</u> (reciprocal) and -<u>ma</u> (causative).

<u>Bases and themes</u>: Lexical roots in Patwin can be divided into two major types, distinguishable on phonological grounds. <u>Bases</u> 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. <u>Themes</u> 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,

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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 derivationally complex, involving various derivational processes, including suffixation, prefixation, compounding 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

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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
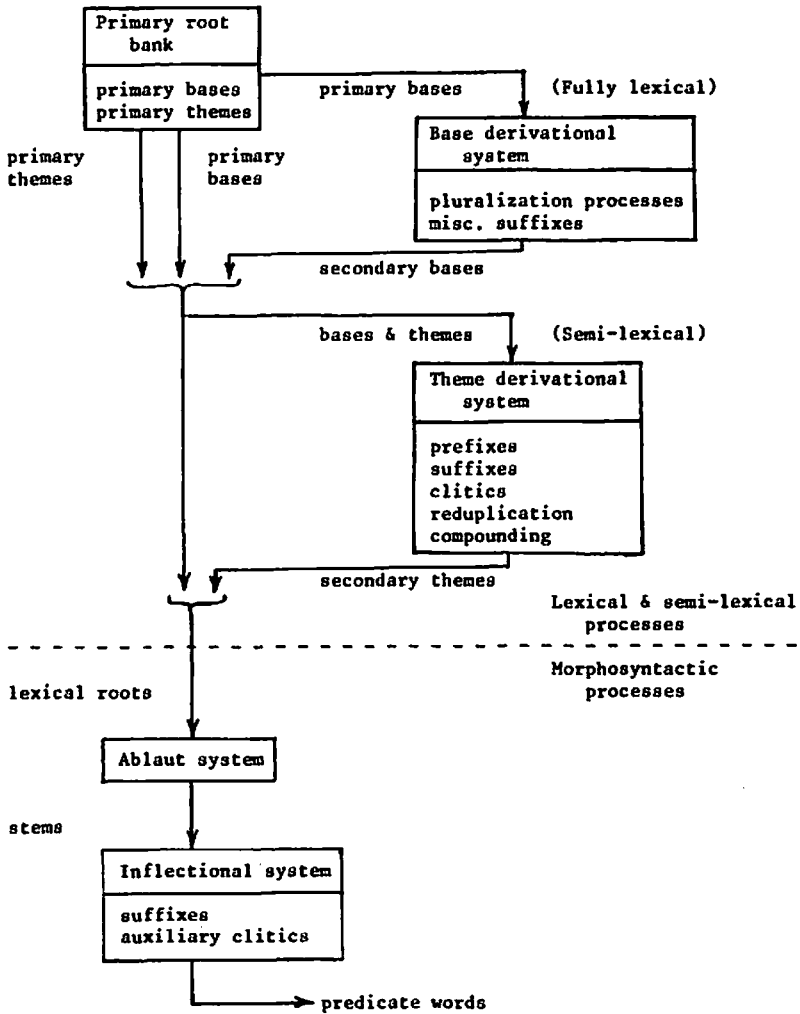
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┌─────────────────┐
│ Primary root    │
│     bank        │
├─────────────────┤
│ primary bases   │──────── primary bases ──────    (Fully lexical)
│ primary themes  │                            │
└─────────────────┘              ┌──────────────────────────┐
                                 │  Base derivational       │
  primary         primary        │      system              │
  themes          bases          ├──────────────────────────┤
                                 │  pluralization processes │
                                 │  misc. suffixes          │
                                 └──────────────────────────┘
         ↓       ↓    ↓ ──────── secondary bases
          ⎰‾‾‾‾‾⎱
             │
             │          bases & themes        (Semi-lexical)
             │                          │
             │            ┌──────────────────────────┐
             │            │  Theme derivational       │
             │            │      system               │
             │            ├──────────────────────────┤
             │            │  prefixes                 │
             │            │  suffixes                 │
             │            │  clitics                  │
             │            │  reduplication            │
             │            │  compounding              │
             │            └──────────────────────────┘
         ↓   ↓ ──────── secondary themes
          ⎰‾‾⎱
            │                            Lexical & semi-lexical
- - - - - - │- - - - - - - - - - - - - - - - - processes - - - -
            │                            Morphosyntactic
  lexical roots                                processes
            │
       ┌─────────────────┐
       │ Ablaut system   │
       └─────────────────┘
            │
  stems     │
            ↓
       ┌─────────────────┐
       │ Inflectional system │
       ├─────────────────┤
       │ suffixes        │
       │ auxiliary clitics │
       └─────────────────┘
            │
            └──────→ predicate words
```

Figure 1: Patwin Verb Morphology

base-derivational. This decision may have to be reconsidered eventually

if canonical themes of $CV_1CV_1 \cdot Co/u$ 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 histori-

cally 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) designa-

tions 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: IB1 derived plurals; IIA1 miscellaneous deriva-

tives; IIB1 miscellaneous derivatives; and IIB2 derived transitive

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	designation	canon	remarks
Consonant bases	IA	CVC	short root vowel
	IB1	CV·C	long root vowel
	IB2	CV_1CV_1C	bisyllabic with harmonic vowels
	IB3	-CVC	auxiliary, theme-deriving suffixes
Vowel bases	IIA1	CVCa·, CVCo·	short initial root vowel; final V qualitatively invariant
	IIA2	CVCu	short initial root vowel; final V shows qualitative ablaut
	IIA3	CV·	monosyllabic bases
	IIB1	CV·Ca, CV·Co	long initial root vowel; final V qualitatively invariant
	IIB2	CV·Cu	long initial root vowel; final V shows qualitative ablaut
	IIB3	-CV	auxiliary, theme-deriving or inflectional suffixes

Table 1: Summary of Primary Base Types

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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^{h}o· 'to name' (<*yet 'name' -ho {verbalizer})

IIB1   p^{h}o·ho 'to light a fire' (<*p^{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^{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 con-
siderably.

Primary Base Subtypes

Consonant bases: IA (canon: CVC)

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

ƛ̓am 'white'	ham 'to sit'	hap 'to gather up'
har 'to go' (irreg.)	k̓ap 'to be caught'	k̓ar 'to cut the ends
ƚal 'rotten; to rot'	t̓al 'to fall'	off, mow'
ʔaƚ 'to precipitate'	sat 'to grope for'	

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ben	'big'	čel	'to wander about'
deč	'to climb'	hen	'to arrive'
kʰer	'to scrape off; shave'	k̉et	'to rake'
ɬel	'to weave baskets'	ɬey	'to put'
ƛ̉ey	'to smile'	pʰem	'to hold, grasp'
tew	'to fly'	tʰep	'to hit'
t̉ew	'to talk'	wer	'to come' (irregular)
ʔey	'to bite'		
bil	'to burn off, to fire'	dil	'to lose'
hiɬ	'to wear around the neck'	lip	'to fall off'
liw	'to fan'	t̉ir	'to twist (in the fingers)'
win	'to see'	-kir	'to move with hand by pulling'
			(a bound form, requires prefix)
čok	'to drip (once)'	č̉op	'to chop'
dor	'to put into the mouth'	kʰon	'dry'
k̉ok	'to cut meat'	k̉om	'big'
noɬ	'to bark'	tʰon	'to dance'
yoh	'to melt'		
čur	'not to know how to'	duh	'to carry on back'
hup	'to dive'	hur	'to sew'
huy	'pretty'	ɬup	'to drink soup'
ƛ̉uk	'to gut'	muč	'to bud out'
mut	'to hear'	tʰup	'to wade across'
yuy	'tall'	ʔuč	'to catch'

Consonant bases: IBⱵ (canon: CV·C)

These are likewise divided into five groups by the root vowel.

ha·k   'jealous'   t̓a·k   'to be sunny'

ma·ł   'to bake (acorn bread) in an earth oven'

he·r   'to reach'   he·r   'married'

pe·l   'fire glowing or dying back'   ʔe·č   'to steal from'

bi·r   'to wipe'   si·ł   'cool (intr.)'

yi·r   'to slice into strips'

lo·r   'to hand to'   .   ło·n   'to snore'

mo·n   'to recover, get back'   so·s   'icy, frosty'

tʰo·r   'fire to burn'

bu·y   'to wrap'   hu·m   'fat'

lu·m   'dead; to die'   mu·l   'to eat pinole (dry)'

pʰu·r   'to rest'   yu·r   'to rain' (irregular)

<u>Consonant bases</u>:   IB2 (canon: CV₁CV₁C)

     Divided into five groups by the root vowel.

čapay   'to flee'   dalak   'thin, flat'

halak   'to whisper'   kʰaway 'to choke (intr.)'

łakal   'to play'   samal   'to ring; reverberate'

čełek   'thin (of liquid)'   hełek   'loose'

hepek   'light (in weight)'

t̓ipil 'to roast meat in an   łewis   'to gig; to stab' (irreg.,
         earth oven'   a virtual base)

winič   'to get up, wake up'

holow   'to spook; to haunt'   hopo·l 'to float' (length irreg.)

mołok   'to move, move around'   t̓odoy 'short'

humuk   'warm'   łupuk   'soft; limber'

yuduk   'to pity'

<u>Consonant bases</u>: IB3 (canon: -CVC)

These are all theme-deriving voice suffixes.

-nan {reflexive}   -her {passive}

-pir {reciprocal}

<u>Vowel bases</u>: IIA1 (canon: CVCa·, CVCo·)

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

1. -<u>a·</u> intransitives:

čupa· 'to be ready; finished'   kana· 'to sleep'

p^hola· 'to swell up'   pera· 'cold'

poka· 'to pop; crackle'   t^hela· 'liquid to spread out'

toba· 'to flake off; blister'   yoha· 'to be destroyed'

2. -<u>a·</u> transitives with normal reduplication (CVC-CVCa·):

diła· 'to roll string'   huya· 'to store away'

kopa· 'to cut or break in two'   łila· 'to shoot'

t^hiya· 'to call'   tera· 'to be proud of'

ʔapa· 'to carry a person on the back'

3. -<u>a·</u> transitives with irregular plural (CV·C):

čura· 'to tear'

4. -<u>a·</u> 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'

łupa· 'to prick'   λaba· 'to break (sg.) into pieces'

λeba· 'to chip'   λera· 'to punch a hole in'

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mina·	'to extinguish' ?	pʰíta·	'to squash'
soba·	'to pull off'	tebá·	'to nick'

5. -o· transitives and intransitives:

hero·	'to help'	kaho·	'to hide (tr.)'
kawó·	'to get together; gather'	paro·	'full'
sewo·	'to bury (a person)'	tʰano·	'to win'
tʰičo·	'to measure'	tičó·	'to put in a sack'
yayo·	'to start'		

Vowel bases: IIA2 (canon: CVCu)

These are the most common of all Patwin base types.

boťu	'to smoke'	čeru	'to be gone'
čoyu	'to get sick; to ache'	čésu	'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'	kʰołu	'to scrape; to plane'
kayú	'to walk'	kayú	'to want'
kidu	'to forget'	koru	'to hollow out'
kuhu	'to cough'	lahu	'to cook'
lelu	'to make'	lomu	'happy; satisfied'
loru	'to grind sharp or smooth'	łahu	'to look for'
łomu	'to store; save'	łoru	'to poke; nudge'
łotu	'to storm; to be bad'	λoču	'to grab a hold of'

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malu	'to doctor'	moyu	'angry; indignant'
muhu	'to sing'	naru	'to scold'
niɫu	'to flush (an animal)'	noku	'ripe; cooked'
peru	'to swallow'	pilu	'to wrap around'
potu	'to boil (intr.)'	pučᵘ	'to be well; to get away'
pʰuku	'to sweat'	ꞌpisu	'to bother'
ꞌpuru	'to seep out'	sayu	'light to shine in dark'
siꞌču	'to drill'	sonu	'to shinny up'
sudu	'to smoke out'	suyu	'to suck'
tačᵘ	'to feed (an animal)'	tatu	'to braid hair'
tepu	'to come out; emerge'	toɫu	'to pound meat'
toyu	'to stop (intr.)'	tʰoɫu	'to knock'
tʰulu	'to swim'	ꞌtaku	'to pound acorns'
ꞌtatu	'to dawn; to clear and	ꞌteru	'to leach'
	brighten'	ꞌtiču	'to cover with dirt'
ꞌtidu	'to squirt'	ꞌtoku	'to lean against (tr.)'
ꞌtumu	'to drizzle'	wotu	'to twirl (tr.)'
yalu	'to leave'	yoru	'to tell to; to direct one to'
yuku	'to wake up (tr.)'	ʔemu	'to hug'
ʔodu	'to scratch with hand'		

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)

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so·   'to listen'   (irregular; cf. so·ru 'to listen' under IIB2 bases)

ʔi·   'to do; to use'   (irregular, *ʔiy)

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

si·da   'to clear off with hands'   su·ła   'to spread out over (tr.)'

yi·la   'to send'   ʔa·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·łu   'to ride'   ka·ku   'to refuse'

ku·lu   'to pull ends of branches   ła·ru   'to parch (seed)'

        down'   łi·ču   'to cave in'

łu·pu   'to put feather rods in   λi·ku   'pain to diminish'

        headdress'   .   mu·ku   'to lie prone'

ne·yu   'to avoid; shy away'   se·du   'to stoop'

so·ku   'to wash (tr.)'   so·ru   'to listen' (irregular)

te·ku   'to shine; sunshine'   to·lu   'to poke head out'

tʰu·bu 'to smell; stink'   tu·du   'wind to blow'

wa·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:

—ma	{causative}	-pa	{benefactive}
-ʔa	'to have' {verbalizer}		
—me	{comitative}		
-ho	(~-so ~-o) {verbalizer}	-ho; -to; -ko	(plurality and temporality "distributives")
-tʰu	{semelfactive}	-ču	{resultative stative}
-ʔu	'to do' {verbalizer} (irregular invariant vowel)		

Inflectional:

-be	'to be (inanimate)'	-bo	'to be (animate)'
-ʔi	'to be' {copula}		

Secondary Base Subtypes

Consonant bases: IB1 (canon: CV·C)

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

ke·l 'to fold' (plural of ke·ltʰu)

tʰe·p 'to hit many times; to whip' (plural of tʰep)

kʰo·n 'dry weather' (plural (?) of kʰon 'dry')

λo·p 'to fill' (plural of λoptʰu 'to put in')

ču·r 'to tear' (plural of čura·)

pʰu·ł 'to whistle; blow into' (plural of pʰułtʰu)

Vowel bases: IIA1 (canon: CVCa·)

A small class of derived plural bases.

łeya· 'to put' (plural of łey)

lela· 'to make' (plural of lelu)

puta· 'to jump up and down' (plural of puttʰu 'to jump')

pʰoka· 'to clap' (plural of pʰo·ktʰu)

Vowel bases: IIAⁱ (canon: CVCe·)

    A small class, mostly involving inanimate possession or comitation.

čeme· 'to get; to own'

ko̓łe· 'to borrow'

were· 'to bring (inan.); to bring back' (cf. wer 'to come')

ʔele· 'not to have'

Vowel bases: IIAⁱ (canon: CVCi·)

    A small class, mostly involving animate possession or comitation.

čeli· 'to get; to own (animate?)'

hari· 'to take along (animate)' (cf. har 'to go')

weri· 'to bring along (animate)' (cf. wer 'to come')

Vowel bases: IIAⁱ (canon: CVCa· ~ CVCo·)

    A small class of miscellaneous derived forms with obvious deriva-
tions from simple CVC nouns.

maya· 'to track' (<*may 'foot')

nuno· 'to draw back a bow' (<*nun 'bow')

tu̓po· 'to sharpen to a point' (<*tu̓p 'awl')

Vowel bases: IIBⁱ (canon: CV·Ca)

    Rare, derived plural bases.

ti̓·ba 'to sweep' (plural of ti̓·btʰu 'to brush off')

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<u>Vowel bases</u>: IIB1 (canon: CV·Co)

A few miscellaneous derivatives.

phí·to   'to press hard on' (cf. phíta· '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·.)

<u>Vowel bases</u>: 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.)'	čáku	'to split (pl.)'
čébu	'to chip pieces off'	číhu	'to cut slices off'
dobu	'to cut a row of notches in'	kʰobu	'to cut off (pl.)'
		kačú	'to cut up (pl.)'
łupu	'to prick (pl.)'	ƛabu	'to break (pl.) into pieces'
ƛébu	'to chip (pl.)'	ƛeru	'to punch holes in'
minu	'to extinguish (pl.)'	pʰítu	'to squash (pl.)'
sobu	'to pull off (pl.)'	tału	'to knock off (pl.)'
tʰełu	'to shave off (pl.)'		

<center>Hill Patwin Theme Types</center>

The typology of Patwin verb themes is complex, and a full exposi-
tion 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 desig-
nations indicated the significant base class distinctions for the pur-
poses 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 com-
plete 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. -ma {causative}) derived vowel themes of three syl-
lables, 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 -?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.

<div align="center">Primary Theme Subtypes</div>

<u>Vowel themes</u>: IIBl (canon: $CV_1CV_1 \cdot Co$)

These are "canonical" themes; they bear some resemblance to
CV_1CV_1C bisyllabic consonantal bases (q.v. above), in that they show
harmonic vowels. They fall into at least two subclasses. The first

	designation	canon	remarks
Consonant themes			none attested
Vowel themes	IIB1	$CV_1CV_1 \cdot Co$	harmonic, with final vowel invariant; a "canonical" theme
	IIB2	$CV_1CV_1 \cdot Cu$	harmonic, with qualitative ablaut in final V; a "canonical" theme
	IIB1	$CVCV \cdot Co$	nonharmonic
		$CVCCu$	irregular form with invariant final V
	IIB2	$CVCV \cdot Cu$	nonharmonic, with qualitative ablaut in final V
	.	CV_1CV_1Cu	harmonic, but with second V short; qualitative ablaut in final V
		$CV(\cdot)CCu$	regular form with qualitative ablaut in final V

.

Table 2A: Summary of Primary Theme Types

	designation	canon	remarks
Consonant themes	IB	CVC–nan	reflexives
		CVCa-1	derived intransitives
		CVC+CVC	prefixed directional compouns
		CV(·)C–CVC	suffixed compounds of iterative motion
		CVCi(·)1	misc. compounds
Vowel themes	IIB1	CV·Cko	theme plurals
		CVCV·Co	theme plurals
		(CV)CV(·)(C)–ʔa	'to have' verbalizations
		(CV)CV(·)(C)–CV	misc. suffixally derived forms
		various	misc. compounds
	IIB2	CV(·)(C)–tʰu	semelfactives
		CV(·)C–ču	resultative statives
		CVC–CV·Cu	suffixed compounds of motion and emotion
		various	misc. compounds

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.)'	λiti·ko	'to squeeze (sg.)'
λutu·ko	'to scratch (sg.)'	nala·ko	'to take a taste of'
sutu·ko	'to inhale (sg.); to cure by sucking'		
hele·to	'to slice off (sg.)'	pʰele·to	'to spread on (sg.)'

The second subclass is more miscellaneous; it contains both descriptive

statives and various active predicates:

dala·to	'flat (surface)'	hasa·ko	'draft to be blowing;
λoto·ro	'bumpy'		drafty'
siki·to	'skinny'		
λere·to	'to shout (sg.)'	koyo·wo	'to carry in both arms'
suyu·to	'to slide'	tele·wo	'to encircle'
witi·lo	'to run'	(In some dialects this appears as witi·lu, a IIB2	
	theme.)		

Vowel themes: IIB2 (canon: $CV_1CV_1 \cdot Cu$)

These themes comprise the other "canonical" theme type.

hiri·ku	'dizzy'	kobo·lu	'to pay'
łubu·ku	'to gulp down' (cf. łup	mana·yu	'to miss'
	'to drink soup')	polo·ku	'to knot on tightly'
tiči·mu	'to pinch'	tihi·tu	'to ask'
wiči·su	'to pull'		

tʰubu·tʰu 'to pull out' (This form is unusual in having two aspirated

consonants; the final -tʰu may be segmentable. Cf. the IIB2

semelfactives under secondary themes below.)

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<u>Vowel themes</u>: IIB1 (canon: CVCV·Co)

Only one example; possibly derivative or borrowed.

ƛupa·ko   'angry'

<u>Vowel themes</u>: IIB1 (canon: CVCCu)

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

muylu   'to injure'

<u>Vowel themes</u>: IIB2 (canon: CVCV·Cu)

These are rare, but the single exemplar adduced here is of undoubted Proto-Wintun pedigree. (Cf. Wintu <u>hika·ya</u> 'to stand'.)

pʰeča·yu   'to stand up' (plural: pʰetpʰeča·ya)

<u>Vowel themes</u>: IIB2 (canon: CV₁CV₁Cu)

čililu   'healthy'   karasu   'to scratch'

<u>Vowel themes</u>: IIB2 (canon: CV(·)CCu)

likku   'to hurry'   mo·mhu   'to tell'

<p align="center">Secondary Theme Subtypes</p>

<u>Consonant themes</u>: IB (canon: CVC-nan)

These are all more or less lexicalized reflexive derivatives.

kʰernan   'to shave'   koknan   'to cut oneself'

liwnan   'to fan oneself'   moknan   'to fix oneself up, dress

tiwnan   'to buy'   up'

tʰaknan   'to get dressed up'

There is also an irregular, lexicalized formation based on the reflexive of <u>čo·wu</u> 'to watch':   čo·nan   'to be careful'

<u>Consonant themes</u>: 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'   toɫal   'to bump against'

<u>Consonant themes</u>: IB (canon: CVC+CVC)

These are prefixed directional compounds, which are relatively numerous in Patwin.[5] A few examples:

k^{h}alɫey 'to throw away' (cf. ɫey 'to put; to throw')

ʔelhar   'to go in' (cf. har 'to go')

ʔolkir   'to pick up with the hand' (cf. -kir 'to move with hand by
           pulling)

<u>Consonant themes</u>: 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'   toɫbak   'to limp'

limbak   'to flash at intervals; to blink (pl.) at intervals'

huylak   'to sway'   wudbay   'to nod head forward and
                                             back'

<u>Consonant themes</u>: IB (canon: CVCi(·)1)

These are miscellaneous, rather ill-defined compounds and/or derivatives.

bohil   'to retain; keep'   tok^{h}i·l 'to gather firewood'

<u>Vowel themes</u>: IIB1 (canon: CV·Cko)

These are the theme plurals of IIB1 canonical themes (q.v. above).

liẃko   'to wave at (pl.)'   λi·tko   'to squeeze (pl.)'

λu·tko   'to scratch (pl.)'   su·tko   'to inhale; puff (pl.)'

he·lko   'to slice off (pl.)'   pʰe·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'	dúka	'bad' (<*duk-ʔa)
hu·lʔa	'to howl'	kʰosʔa	'foggy'
kí·rʔa	'cloudy'	kótʔa	'dirty'
kúlʔa	'widowed; orphaned'	kúnʔa	'muddy; roiled'
la·wʔa	'weak'	monʔa	'to be like'
pakʔa	'hard'	pʰurʔa	'stingy'
sekʔa	'green'	thíča	'to know' (<*thič-ʔa ?)
walʔa	'to flame'	yelʔa	'late; last'

3. Bisyllabic plural themes:

sulʔa   'to kill (pl.)'   (cf. sultʰu 'to kill (sg.)')

te·pʔa   'many to come out' (cf. tepu 'to come out')

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

holeʔa	'dried out'	husaʔa	'ripples'
kʰu·seʔa	'blind'	λópaʔa	'muddy'
saniʔa	'daytime'	selaʔa	'afraid; scared'
tóriʔa	'stuck on'	tukéʔa	'strong; brave'
yoriʔa	'to work'	ʔoliʔa	'deaf'

5. Harmonic trisyllabic themes of the shape $CV_1CV_1(\cdot)C$-ʔa:

honóka	'lonesome'	hopomʔa	'rough; dry rotted'
tała·kʔa	'bald'	tulukʔa	'red'
witilʔa	'to be fast'	ʔonokʔa	'to have a wife'

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

čuwi·lʔa	'bent; curved (sg.)'	heričʔa	'sharp'
kʰasi·lʔa	'cross-eyed'	ʔole·lʔa	'to be way up high'

7. Imitative trisyllabic themes of the shape CV(·)Ckʰa-ʔa:

či·tkʰaʔa	'to squeak'	łerkʰaʔa	'to groan'

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8. Miscellaneous trisyllabic themes of the shape CV(·)CCV-ʔa:

hayba²a   'to have a pain'   ́λerta²a   'to shout (pl.)'

so·rto²a   'deaf'   ta·pse²a   'to clap the hands

yelti²a   'late'   together (pl.)'

Vowel themes: IIBl (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'

²uma   'to quit' (In some dialects this is regularized to a IIAl

          base: ²uma·.)

2. Bisyllabic derivatives of the shape CV(·)C-ma. These are of two

semantic subtypes. First, there are true, transitive causatives:

hiłma   'to put on around   kapma   'to trap'

          the neck'   łalma   'to spoil (tr.)'

tʰo·rma   'to set fire to'   talma   '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'   yiłma   'heavy'

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

1. Derivative themes of clear comitative force:

bome   'to keep'   harme   'to take (inanimate)'

henme   'to bring (inan.)'

2. Obscure derivatives:

pʰume   'to roast meat over fire' (cf. pʰo· 'fire')

tewme   'to roll around in pain' (cf. tew 'to fly')

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ha·sme   'to yawn'

<u>Vowel themes</u>: IIBI (canon: CV(·)(C)-pa)

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

bopa	'to wait for'	detpa	'to climb for'
hampa	'to sit on'	harpa	'to go after'
henpa	'to discover'	he·rpa	'to reach out for'
k^{h}adpa	'to uncover'	łelpa	'to weave for'
łeypa	'to throw at'	t^{h}onpa	'to kick; stomp'
ʔe·łpa	'to heat up'		

<u>Vowel themes</u>: IIBI (canon: CV(·)(C)-ho ~ CVCVC-ho)

1. Bisyllabic themes of the shape CV(·)(C)-ho. These seem mostly to be
verbalized nouns, and some of them comprise virtual bases.

p^{h}o·ho   'to build a fire' (<☆p^{h}o· 'fire')

bako   'to count' (cf. discussion above under IIBI secondary
           vowel bases.)

yet^{h}o·   'to name' (cf. discussion of virtual bases above.)

2. Trisyllabic themes of the shape CVCVC-ho. Some of these are the
fast action counterparts of CVCV·Co themes:

helayho   'arms pumping fast'   siwayho 'to swing fast'

Others are sound or movement imitative verbalizations:

čonirho	'to waddle'	dibilho	'to roll around'
hawirho	'to hurry up'	sawarho	'to be rattling'
soholho	'waterfall'	t^{h}et^{h}urho	'to stagger'
t^{h}uburho	'to snort (of horses)'	yedilho	'to totter'

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3. Miscellaneous derived trisyllabic themes in -ho ~ -o:

hačiho   'to winnow'   (<hači 'sieve')

ꞌkobaho   'to paint'   (<ꞌkoba 'paint')

ɬiˑmaho   'to faint'   (<ɬiˑma ?)

leliho   'to do slowly'   (<leliˑ'slowly')

sikaho   'to paint black'   (<sika 'black paint')

tineˑlo   'sound of drumming'   (<tineˑl 'drum')

ꞌuselo   'to poison'   (<ꞌusel 'poison'; attested in WPK)

Vowel themes: IIBⁱ

    Miscellaneous compound themes:

subtoˑko   'to happen by accident'

lubčupaˑ   'to fall into a deadfall'

Vowel themes: IIB2 (canon: CV(ˑ)(C)-tʰu)

    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 -tʰu derived themes.[6]

1. Bisyllabic semelfactives of the shape CV-tʰu. These seem to oscillate somewhat in usage between acting as IIA2 or IIB2 virtual bases.

patʰu   'viscous; thick'   petʰu   'to hunt (game)'

tetʰu   'to drink'   totʰu   'to be short of; poor'

watʰu   'to cry'

2. Bisyllabic semelfactives of the shape CVˑ-tʰu. These act as IIB2 virtual bases.

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ka·t^hu	'to hide (intr.)'	lo·t^hu	'to hang (intr.)'

ka·t^hu   'to hide (intr.)'   lo·t^hu   'to hang (intr.)'

yo·t^hu   'to move; change residence'

3. Bisyllabic semelfactives of the shape CV(·)C-t^hu:

dikt^hu   'burned up'   dirt^hu   'to rub'

dort^hu   'to push'   duyt^hu   'to press hard on'

hatt^hu   'to pick (plants)'   katt^hu   'to open'

kurt^hu   'to break up'   k^hapt^hu   'to be half'

ke·1t^hu   'to fold (sg.)'   koht^hu   'to scrape up'

kopt^hu   'cut off; broken off'   kort^hu   'to grab up; gather'

lart^hu   'to tie up'   lekt^hu   'tired'

libt^hu   'to sink (intr.)'   lirt^hu   'to rub on'

ɬant^hu   'to blister'   ɬart^hu   'to tie a knot'

ɬopt^hu   'to join'   λapt^hu   'wet'

λopt^hu   'to put in (sg.)'   makt^hu   'quiet'

mint^hu   'dark; fire to go out'   putt^hu   'to jump down (sg.)'

p^hokt^hu   'to swell up'   p^ho·kt^hu   'to clap (sg.)'

p^holt^hu   'to swell up'   p^huɬt^hu   'to blow on (sg.)'

piɬt^hu   'to skin; peel'   silt^hu   'black'

sipt^hu   'stiff'   sobt^hu   'to come off'

soyt^hu   'to lie down'   sult^hu   'to kill (sg.)'

tort^hu   'cramped up and stiff'   t^hebt^hu   'streams to flow together'

t^hopt^hu   'tight; stuck'   t^hurt^hu   'thick'

ti·bt^hu   'to brush off (sg.)'   yukt^hu   'to pat off; to shake

yurt^hu   'lined up'   clean'

ʔo·kt^hu   '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.

borču	'to be broken'	kokču	'skinny'
kurču	'fragile; friable'	kʰebču	'to be shattered'
kʰobču	'to be cut off'	kʰuwču	'sated; tired of'
λabču	'broken into pieces'	λebču	'chipped'
λisču	'bent'	pʰo·kču	'sound of clap'
sikču	'to have had too much	sobču	'to have come off'
	of'	tirču	'tight-fitting'
tołču	'to get bumped'		

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')

tirbi·ču 'to wink'

tirla·ku 'to splash; splatter'

yerbe·ku 'excited'

ʔalba·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 distinc-
tion 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 morpho-
phonemic 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.

base/theme designation	unredupli- cated	reduplicated	example
IA	CVC	CVC-CVC	hamham 'many to be sitting'
I31	CV·C	CV(·)C-CV·C	$t^he(·)pt^he·p$ 'to whip many'
IB2	CVCVC	CVC-CVCVC	łewłevis 'to keep poking'
IIA1	CVCV·	CVC-CVCV(·)	kánkaná(·) 'many to sleep'
			λáwλáwo 'devouring'
IIA2	CVCu	CVC-CV·Cu	ʔilʔi·lu 'to be dazzled'
IIB1	CV·CV	(CV·C~CVCV) ?	---
	CVCho	CVC-CVCho	yoryorho 'to teach'
	CV·Cpa	CVC-CV·Cpa	herhe·rpa 'to reach repeatedly for'
IIB2	CV·Cu	CVC-CV·Cu	sedse·du 'to be stooped over'
	CVCV·Cu	CVC-CVCV·Cu	witwiči·su 'to pull many'

Note that for reduplicated IIA1 bases such as $\underline{kánkaná(·)}$ 'many to
sleep' $\underline{kaná·}$ '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 <u>affect</u> a patient by <u>effecting</u> 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   <u>CVCa·</u>   CVCa-CVCa

        soba· 'to pull off'   sobasoba   'many to come off'

        ʼλaba· 'to break (sg.)   ʼλabaλ́aba   '(all) broken up'
               into pieces'

        ʼteba· 'to nick'   ʼtebat́eba   'chips to come off'

        ʼkopa· 'to cut or   ʼkopaḱopa   '(all) broke off'
               break in two'

                        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,
definable 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 $-\underline{V}$ or $-\underline{V}\cdot$ 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 con-
sonant of the root.

In column 3, $-\underline{a}\cdot$ is chosen merely as the most representative vowel
for IIA1 bases. For IIA1 bases ending in vowels other than $-\underline{a}\cdot$ (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 $\underline{ba}\cdot$ 'to eat') pat-
tern 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. $-\underline{t}^{h}\underline{u}$ (semelfactive) and $-\underline{\check{c}u}$
(resultative stative) form stems on the pattern of IIB2 bases; all the

Stem Classes		IA	IB	IIA1	IIA2	IIB1	IIB2
		CVC	CV·C CVCVC ~CVC	CVCa· CVCo· etc.	CVCu §	CV·Ca CV·Co	CV·Cu CVCu §§ -tʰu, -ču
Ia.	Absolutive	-V·	-V	-a·	-i	-a	-i
Ib.	Future	-V·	-V	-a·	-i	-a	-i
Ic.	-s stem	-V	-V	-a·	-i	-a	-i
II.	-sa stem	-V	-V	-a·	-u	-a	-u
III.	Imperative	-	-	-a	-u	-a	-u
IVa.	Hortatory	- **	-	-a·	-u	-a	-u
IVb.	Modal	- *	- *	-a·	-u	-a	-u
IVc.	Subjunctive	-	-	-a·	-u	-a	-u
V.	Participial	- *	- *	-a·	-u·	-a	-u

§   Primary bases

§§   Plural secondary bases

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

** 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 maxi-mally 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 resem-blance 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 dis-tinct, 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>u</u>-grade and stem V an <u>u·</u>-grade of the base.[7]

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

	IA base	IIA1 base	IIA2 base
	ham 'to sit'	ɬila· 'to shoot'	muhu 'to sing'
Ia	hama·ɬa	ɬila·ɬa	muhiɬa
	'when he sat'	'when he shot'	'when he sang'
Ib	hama·tis	ɬila·tis	muhitis
	'he will sit'	'he will shoot'	'he will sing'
Ic	hamas	ɬila·s	muhis
	'he is sitting'	'he is shooting'	'he is singing'
II	hamasay	ɬila·say	muhusay
	'is he sitting?'	'is he shooting?'	'is he singing?'
III	ham	ɬila	muhu
	'sit down!'	'shoot!'	'sing!'
IVa	hamse	ɬila·se	muhuse
	'let's 2 sit'	'let's 2 shoot'	'let's 2 sing'
IVb	hamta·	ɬila(·)ta· *	muhuta·
	'did he sit?'	'did he shoot?'	'did he sing?'
IVc	hammu²u	ɬila·m²u	muhum²u
	'he didn't sit'	'he didn't shoot'	'he didn't sing'
V	hamtaro	ɬila·ro	muhu·ro
	'sitting and...'	'shooting and...'	'singing and...'

* -<u>ta·</u> (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

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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 e 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 *bey). 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 ʔi· 'to do, to use', which is even more irregular. ʔu '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 c̓o·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'

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Stem Classes	bo·/be· 'be'	ʔi· 'do, use'	ʔu 'do, say'	so·ru 'listen'	čo·wu 'watch'
Ia. Absolutive	-o· ~ -oh/_V	ʔi· ~ ʔi ☆	ʔu	so·ri	čo·wi
Ib. Future	-o·	ʔi·	ʔu	so·ri	čo·wi
Ic. -s stem	-o·	ʔi	ʔu	so·ri	čo·wi
II. -sa stem	-o ~ -o·	ʔi	ʔu	?	čo·wu
III. Imperative	-o	ʔiwe	ʔu	so·	čo·wu ~ čo·w (sg.)
IVa. Hortatory	-o·	ʔi	ʔu	so· ~ so·ru	čo·w
IVb. Modal	-o	ʔi ~ ʔil	ʔu	so·	?
IVc. Subjunctive	-o· ~ -o ☆	ʔi	ʔu	so·	čo·
V. Participial	-o	?	ʔu	?	čo·wu ~ čo·w (sg.)

☆ These shortened forms appear in use as auxiliaries.

Table 4: Stem Classes in Hill Patwin (Irregular Forms)

Stem class	Suffixes

Ia Absolutive

1. -∅ generic nominalization

2. auxiliary bases:

    a. -<u>bo</u>/-<u>be</u> '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)

    b. -<u>kayu</u> 'to want, to be about to, to start to' auxiliary base

    c. -<u>mut</u> 'to feel', auxiliary base of personal affect

3. -<u>ma</u> animate objective case (embedded object clause)

4. -<u>ła</u> locative case (conditional and temporal clause)

5. -<u>(h)Vm</u> relativizer

Ib Future

1. -<u>to</u> (functions to mark: definite future tense; non-first person intentional; inceptive 'to be about to'; subordinate purposive)

2. -<u>ti</u> (<*-<u>to</u>ʔi) definite future tense auxiliary (can be followed by auxiliaries or other tense suffixes)

Ic -<u>a</u> stem

1. -<u>a</u> ongoing or completive aspect (i.e. non-inceptive aspect; neutral with respect to tense)

2. nominalizers:

    a. -<u>a</u>, -<u>(s)tu</u> (?)   b. -<u>aok</u> instrumental, locative

    c. -<u>men</u> 'thing'   d. -<u>vin</u> 'person'

Table 5 (part 1): WPCC Verbal Suffix Classes

II -sa stem   1. -sa definite past tense

                   2. -say present (or unmarked tense) interrogative

III Imperative   1. -∅ imperative

                   2. -? 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. -t^{h}i 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. -man causative   b. -pa benefactive

                        c. -me comitative   d. -nan reflexive

                        e. -pir reciprocal   f. -her passive

                   2. modal suffixes:

                        a. -les 'can' (used also as a 'come and..., go
                           and...' imperative)

                        b. -len 'should'   c. -čin '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. -?u); evidentials (+ auxiliaries))

Table 5 (part 2): WPCC Verbal Suffix Classes

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V Participial   1. -ro (_V)/-taro (_C) (± auxiliary -bo/-be)

                     (functions to indicate related predicates sequen-

                     tial 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 (± auxiliary -?i))

                  4. -nol 'to be always doing' (?)

Table 5 (part 3): WPCC Verbal Suffix Classes

[text continues from page preceding Table 4]

(stem Ia) are theme-derivational, whereas the various other auxiliary

bases listed under stems Ia and Ib 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:

I. biliteral bases	II. triliteral bases
A.1 CWCW	A.1 CWCWC
A.2 CSCW	A.2 CSCWC
B CWCS	B CWCSC

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

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

series	weak	strong
a	a	a·
i	i	e·
ɔ	ɔ	ɔ·
u	u	|o·| = /ɔ·/

Wikchamni (Gamble 1978:14) adds a fifth series: weak \|ɨ\| vs. strong
\|ɨ·\|(= /ü·/). 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.

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

*-u 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 com-
bination of [Yokuts] root-plus-suffix uses one from among a set of
'dynamic vowel formulas' (Newman 1944:38-53) which specifies the quan-
tity 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.

Yokuts Base Type

	IA1	IA2	IB	IIA1	IIA2	IIB
Stem Class	CWCW	CSCW	CWCS	CWCWC	CSCWC	CWCSC
Reduced	CVC-	CV·C-	CVCV·-	CVCC-	CV·CC-	CVCV·C-
Strong Reduced	---	---	CVC-	---	---	---
A-induced	CVCa-	CVCa-	CVCa-	CVCaC-	CVCaC-	CVCaC-
Strong A-induced	---	CVCa·-	---	CVCa·C-	CVCa·C-	CVCa·C-
Zero	CVC-	CVC-	---	CVCC-	CVCC-	---
Strong Zero	---	---	---	CV·CC-	---	CV·CC-
Strong	CVCV·-	CVCV·-	CVCV·-	CVCV·C-	CVCV·C-	CVCV·C-
Strong-Glottal (Causative)	---	---	---	CVCV·?C-	CVCV·?C-	CVCV·?C-
Full	CVCV-	CV·CV-	CVCV·-	---	---	---

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.

Yokuts Base Type   Hill Patwin Base (or Theme) Types

IA1   CWCW   {IA consonant bases   CVC
              {IIA1,2 vowel bases   CVCa·/a·; CVCu   (in part)

IA2   CSCW   {IB1 consonant bases   CV·C
              {IIB1,2 vowel bases   CV·Ca/o; CV·Cu   (in part)

IB   CWCS   no association proposed

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IIA1	CWCWC		IIA1	vowel bases	CVCa· (in part—mostly trans.)
		$\{$	IIB2	vowel themes	CVC-t^{h}u; CVC-ču (in part)
IIA2	CSCWC		IIB1	vowel bases	CV·Ca (in part—mostly trans.)
		$\{$	IIB2	vowel themes	CV·C-t^{h}u; CV·C-ču (in part)
IIB	CWCSC		IIB1,2	trisyllabic canonical themes	CV_1CV_1·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 characteris-
tics 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; prelimi-
nary work makes it apparent that a system of verbal ablaut is recon-
structible 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 rhythmic alternations in stems. Wintun, on the other hand, by adopting productive verbalizing strategies that produced themes which tended to morphologically 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 Maidun or the Utian language families.

Acknowledgements

is based.

Footnotes

[1]Harmony 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).

[2]Silverstein (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 super-stock. 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.

[3]Eastern 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.

[4]Cf. Newman's (1944:75-76) discussion of the "fake base" in Yokuts.

[5]Typical directional prefixes attested in Patwin compound verbs are: ?el- 'in'; pat- 'out'; ?ol- 'up'; čen- 'down'; sun- 'here, hither'; kʰal- 'away'; daw- 'out, in front'; yel- 'back, behind'; ser- 'across'. Other Patwin directionals do not generally occur as verb

prefixes.

[6]The Patwin -t^{h}u (semelfactive) is cognate with the Wintu suffix
-č, which Pitkin analyzes as a transitive root-deriving suffix, occa-
sionally with medio-passive force. Note the following cognate sets,
for example: Wintu   Hill Patwin

p^{h}ułča   'to blow away'   p^{h}ułt^{h}u   'to blow on (sg.)'

minču-na·   'a close relative   mint^{h}u   'dark; fire to go out'
               to die'

daqča   'scorched; hot'   dikt^{h}u   'burned up'

-sopča   'to slip off   sobt^{h}u   'to come off'
               (clothes)'

p^{h}owča   'to blister; swell' p^{h}olt^{h}u; p^{h}okt^{h}u   '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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SURVEY REPORTS

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Report #1
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