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Linguistic reconstruction of California languages is complicated
by the pervasive intersection of linguistic forms and conventions that
transcend genetic boundaries throughout the California linguistic area
(cf. Haas 1964).[1] The areal spread of phonological features, patterns
of sound symbolism, shared onomatopoeic and other oral cultural tradi-
tions, and whole grammatical systems of pronouns, instrumentals, and
affixes is accompanied by massive lexical borrowing. Californianists
are at last emerging from a restrictive stage analogous to that of the
geologists of a few years ago. When the geologists were confronted
with evidence of previous contact among distant continents, the majority
reacted by postulating now-completely-lost land bridges that spanned the
oceans, or by denying the validity of the contact evidence. It has
since been proven that the continents themselves had moved, and not
just once, but many times. Linguists have the exact counterpart in
their attempts to span the geographic separation of related languages
by postulating lost dialect chains based only on the separation, or
by denying the relationship where the physical separation appears too
great for any particularly intimate contact. Now we are rediscovering
population mobility.

Long distance population movements in short periods of time are
amply reported in contemporary ethnographic studies, and it must be
remembered that the size of most hunter-gatherer groups was never very
large. Rather they were small bands, often in relatively separated

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locations, who were capable of complex and sophisticated movements on an annual basis. Exploitation of different seasonal resources often extended over wide altitudinal or geographic ranges. There is no reason to believe that the prehistoric picture was greatly different. Interior California and the Great Basin, solidly covered with blocks of color on all linguistic maps, were not solidly populated. Rather, most areas were dotted with moderate-sized groups centered on the lakes, sinks, streams, and mountain springs; with selective use, but not primary occupation, of the surrounding mountain or desert scrub areas. Boundaries between neighboring groups fluctuated on both social and ecological variables.

The reconstruction of the linguistic prehistory of the California linguistic area is being changed to reflect new discoveries about population movements and the nature of prehistoric occupations. Consequently, patterns of social contact very different from those of the historic era must be recognized and their effects on the developing languages analyzed. In order to avoid confusion with the modern California linguistic area, the reconstructed contact patterns or proto-linguistic areas will be called Old California. Temporally, Old California subsumes several distinct stages, but until the relative order of the stages becomes better known, it is least misleading to group together all of the stages prior to the present contact pattern. The picture emerging of Old California is one so full of movement that the complete analysis will be a lengthy process. The geographic extent of Old California includes the Central Valley and surrounding mountains together with much of coastal California, equivalent to the heartland of the modern linguistic area. Old California shows a longstanding

cultural connection with the proto-linguistic area to the north, here called Old Oregon. Earliest Old California correlates spatially with the area occupied by the ancestors of the modern California Hokan peoples. Similarly, Old Oregon was probably the area occupied by speakers of the proto-languages for groups identified as Penutian. The nature and extent of involvement of other linguistic families in the areas are still in dispute.

Fortunately, recent linguistic reconstructions of the proto-languages in several California and nearby languages have now made it possible to provide the beginnings of a relative chronology for the network of lexical borrowings that have long mired lexical reconstruction at the Hokan and Penutian levels. Reconstructing the order of development of particular sound changes is particularly useful for recognizing and dating loan words. Attempts to relate the new linguistic evidence to new developments emerging from archaeology and ethnology are also providing new directions for linguistic investigation.

The most drastic and most useful of the recently proposed revisions of Old California is the hypothesis of multiple entries by individual California Penutian families (cf. Whistler 1977, 1980 ms; Shipley and Smith 1979). This hypothesis has had the effect of opening the center of Old California to other groups whose reasonable physical access might have been blocked by a stationary and monolithic California Penutian kernel. An obvious proposed addition to central Old California is Uto-Aztecan (UA) which has often been suggested as a source for some of the areal features noted in Central California languages even from its present peripheral location (see Jacobsen 1966a, b).

The wide distribution of UA languages from Wyoming well into Central America is indicative more of the mobility of the speakers than of the degree of divergence, since all of the UA languages are closely related. The binary division of the family into the geographically defined Northern Uto-Aztecan (NUA) and Southern Uto-Aztecan (SUA) areas is useful for the following discussion, but it may eventually be discarded in favor of a larger number of coordinate units. NUA includes the four groups north of Mexico: Hopi, Numic, Takic, and Tübatulabal. SUA includes Pimic on the Arizona-Sonora border, Aztec in central Mexico and south into northern Central America, together with a number of separate divisions in northwestern Mexico. The late expansion of Aztec into the heart of Mexico and the diversity of languages to the north has always suggested a more northerly origin for the family as a whole. A PUA homeland somewhere near Pimic is often suggested as a geographical compromise. Reanalysis of the evidence based on the patterning of Old California contacts is now indicating a more radical solution to the problem of locating the UA homeland.

In order to understand the proper relationship of UA and Old California it is necessary to trace backward the NUA population movements based on internal linguistic evidence. The source area for the dispersal of the four NUA groups is in southern California. This is the area of greatest linguistic diversity for the NUA languages as well as the area indicated by ethnobiological reconstructions (see in particular Fowler 1972 for a discussion of previous conclusions and the current opinion). Roughly, the NUA homeland included the southeastern foothills of the Sierra Nevada and Tehachapi ranges and neighboring desert scrublands.

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Tübatulabal is still located in what is traditionally assumed to be its original position in the homeland. However, fragmentary evidence of groups like the Bankalachi living among the Yokuts to the north suggests a previous extension of Tübatulabal into the southern San Joaquin Valley and western Sierra foothills.

The Takic group is also in or near its presumed homeland position except that most researchers would agree that the Takic were not originally a coastal people (cf. Bright and Hill 1967). Some Takic subgroups apparently spread south and west over the coastal ranges from the original homeland after the differentiation of proto-Takic from the other NUA proto-languages. All of the Takic languages are still geographically a single unit.

The Hopi moved off by themselves to northern Arizona and have acquired the pueblo agricultural complex (see Shaul 1980 ms for discussion of recent theories of Hopi movements and internal linguistic development).

Some languages of the Numic group have remained in the homeland area, but others have spread through a vast area of the west with maintenance of dialect chains and social connections even over hundreds of miles. The Numic spread is relatively recent and continued even after European contact. Comanche, the only Numic language geographically separated from the main block of Numic, looks phonologically different, but the changes are actually only superficial. Originally, the Comanche were part of northeast Shoshoni who obtained the horse from linguistically unrelated groups to the east, adapted to the plains equestrian culture, and ended up in Texas and Oklahoma.

Ute-Southern Paiute-Chemehuevi is a single language spoken by three

groups that have become ethnographically distinct only recently.
Like the Comanche, the Ute became plains equestrians and raided the
pueblos and plains, and also the remaining Southern Paiute. The Cheme-
huevi have diverged from the Southern Paiute as they came into closer
contact with the Yuman-speaking Mohave.

Some Northern Paiute bands have spread north beyond the range of
the pinenut, but they have retained all of the pinenut mythology in-
tact. Some of this same group of Northern Paiute occasionally moved
east to hunt bison with the northern Shoshoni. Some settled there and
became known as Bannock. However, individuals often moved back and
forth between the two areas. In fact there was a constant contact and
interchange along the Northern Paiute interface with the western and
northern Shoshoni. Another recent extension of Northern Paiute was the
offshoot of the Pyramid Lake band who occupied the Honey Lake Valley in
northeastern California, apparently replacing Maidu speakers.

Although they maintained contact with the eastern Mono, western
Mono crossed west over the Sierras and were in intimate contact with
their Miwok and Yokuts neighbors. The Northfork Mono, whose dialect is
most often cited as Mono in comparisons, also spoke Southern Sierra
Miwok and Chukchansi Yokuts.

Intensive Euro-American contact occurred only within the last hun-
dred years and often only in the generation just before that of the ol-
dest living speakers. Most of the linguistic contacts between Numic
languages and their unrelated neighbors is assumed to have been inde-
pendent of direct Euro-American contact, and to reflect aboriginal
patterns of contact.

All of the recent adjustments above are assigned to the late Numic

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period. The middle period of Numic development is defined by the split
of the inner and outer languages, that is, the divergence in Western
Numic (WN) of Northern Paiute from Mono, in Central Numic (CN) of
Shoshoni from Panamint, and in Southern Numic (SN) of Southern Paiute
from Kawaiisu. The middle phase was apparently triggered by the in-
tensive infiltration of the Great Basin by peripheral bands of the inner
languages, who then expanded into the Basin as separate languages. The
earliest period of Numic would be the division of Proto-Numic (PN) into
the three branches, WN, CN, and SN, which presumably occurred in appro-
ximately the positions of the inner languages today within the NUA home-
land.

Prior to the movements described above, the proto-languages of the
four NUA groups were clustered about their common center of dispersal
at the southeastern corner of Old California. Early direct contact with
the Oregonian and Californian languages who are now the neighbors of
Northern Paiute is implausible for PN or common NUA. The previous ex-
planation of resemblances between UA and the northern neighbors of
Northern Paiute has been to assume a source in or through Northern
Paiute. This is clearly no longer possible except for late Numic con-
tacts; anything inconsistent with late contacts must have another ex-
planation.

Unfortunately, the close relationship of the UA languages also ex-
tends to the phonology. Identical sound correspondences between NUA
and SUA are generally expected, e.g. NUA*n:SUA*n < PUA*n; NUA*a:SUA*a
< PUA*a. Therefore the majority of loans from UA into another lan-
guage or into a UA language from outside cannot be dated relative to a
particular stage of UA unless the forms have unusual distribution or

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unusual correspondences. In most cases a recent exchange cannot be
ruled out because the forms lack any criterial features. However, a
few sound correspondences between NUA and SUA are useful for dating
loans relative to the time NUA and SUA separated. The traditional
PUA sound inventory includes: *p *t *c *k *k^W *?

$$
\begin{array}{cccc}
 & & *s & *h \\
*i \quad *\dot{+} \quad *u & & & \\
 & *m \quad *n & *-\eta- & \\
*a \quad *o & & & \\
 & *w \quad *-1- & *y &
\end{array}
$$

The correspondence of NUA(and Pimic)*$\dot{+}$:SUA(except Pimic)*e < PUA*$\dot{+}$
which was always troublesome has had to be discarded since Campbell and
Langacker 1978 traced Proto-Aztecan to *$\dot{+}$ rather than the *e that had
been assumed from Classical Aztec. The PUA alternations of *k/*w, *c/
*y, and *s/*h do not follow the NUA-SUA isogloss but appear scattered
throughout the family. There remain only three NUA:SUA non-identical
correspondences, and these are defective in that they occur only
medially:

    NUA*ŋ:SUA*n, usually called PUA*-ŋ-
    NUA*n:SUA*$^1/_r$, usually called PUA*-1-

    NUA*y:SUA*c, which might well be called PUA*-č- except that the
correspondence occurs only in two sets, NUA*k$\dot{+}$yu:SUA*k$\dot{+}$cu 'fish' and
NUA*m$\dot{+}$ya:SUA*m$\dot{+}$ca 'moon', which are usually treated as special cases.

    The restricted medial distribution of these non-identical corres-
pondences has led to speculation that PUA*-ŋ- and *-1- could be derived
from other reconstructed sounds. Langacker 1976 suggested that the de-
fective sets may be related to stress-affected consonant gradation.
Miller (p.c.) believes the CN and PN*hC medial series to have been

originally conditioned by stress placement. There is a similar problem in other Old California languages; Langdon 1979 discussed the apparent relationship of Proto-Pomo preconsonantal augments *h and *? (cf. McLendon 1973:45-54) and stress placement on the root. Nichols 1974 remarked on the apparent correspondence of vowel length in other NUA languages to the first element of PN complex medials. The details remain uncertain, but the frequent association of vowel length and stress may well be the main clue to linking stress with medial development in several UA groups.

Although phonemic /l/ occurs in three of the four NUA groups, absent only in Numic, none of these /l/ correspond to the PUA*-l-. Most are found in obvious loans or are derived from other PUA sources, e.g. l < PUA*t in Takic and Tübatulabal (compare Aztec t[1] < PUA*t), and Hopi l < PUA*w. The consensus now is that PUA*-l- is ultimately from PUA *n, although the conditioning is unclear.

Reconstruction of PUA*-ŋ- was initially reinforced by the widespread occurrence of velar nasals in NUA as well as reconstruction of *ŋ for PN and Proto-Cupan, a subdivision of Takic (cf. Nichols 1971b, 1974; Bright and Hill 1967). Most PUA*-ŋ- developed in NUA as /ŋ/ in those languages with phonemic /ŋ/ and as /n/ in languages like Shoshoni which lack /ŋ/. Langacker reexamined the evidence for PUA*-n- and used a synchronic alternation in Numic of lenis medial /m/ > [m∼w̃∼n^w∼w] (see Nichols 1974:64-67) as a model for a sporadic special evolution of the PUA*-ŋ- from PUA*m:

    *m > m, the normal initial and medial development

    *m > w̃ > w, frequently from medial gradation

    *m > w̃ > ŋ^w > ŋ > n, as a sporadic alternate from medial gradation.

The intermediate stages are all synchronically attested in Numic. The
last stage would be the languages which have no phonemic /n/, such as
Shoshoni and all of the SUA languages. One of the examples cited by
Langacker which always had to be treated as a special case because of
the Numic reflex now seems more regular:

>   PUA*kuma 'husband' (formerly reconstructed *kuŋa)
>   PN*kuhma
>   other NUA*kuŋa
>   SUA*kuna

Note that this set also shows the association of a complex medial in PN
with an exceptional development in the correspondences.

Langacker also proposed that PUA*k^W developed to *w in a similar
fashion, but the evidence is much more complicated since the proposed
change was regularly reversed by PN morphophonemics. The rule is still
operating in WN but appears only in lexicalized form in CN, e.g. w > k^W,
ŋ^W: parallel to y > $^{č}/_t$, ñ which recalls the unusual correspondence in
'fish' and 'moon' noted above (see Nichols 1974:53-64).

Even in forms which lack the criterial phonological corresponden-
ces, some loans can be identified as occurring in the late Numic period
because of their distribution within Numic. In order to remove from
consideration as possible early loans many shared forms with suspicious
distributions, the following observations are offered.

Nichols 1971a noted the very small number of lexical borrowings
along the northern rim of Numic where Northern Paiute and Shoshoni are
in contact with Sahaptian languages. Some borrowings into these Numic
languages are shared with Chinook Jargon and other languages of the
Columbia Plateau. Most are ultimately from French, although they

probably antedate direct European-Numic contact. Nez Percé, one of
the Sahaptian languages, has only two loans for which a source in.
Numic is presumed (cf. Aoki 1975). Similarly, most of the shared items
between UA and Washo are compatible with late contact between modern
Northern Paiute and Washo since most of the presumed UA forms are
exactly like Northern Paiute, and most of the presumed Washo forms are
found only in Northern Paiute. A typical late borrowing into Nor-
thern Paiute only is mo'ko 'shoe', cf. Washo mokgo (similar forms are
found in other Sierran languages and the ultimate source is unknown).
Other apparent loans are consistent with a comparatively recent
association of the languages of the California Sierras with WN and nor-
thern Shoshoni and is evidenced by chains of borrowings. Presumably
these borrowings reflect the patterns of contact and trade that are
ethnographically attested. Similar contact chains occur at the
southern and southwestern edges of Numic territory. The evidence for
native borrowings matches closely the pattern of absorption of Spanish
loans into Numic reported in Nichols 1973. Johanna Nichols analyzed
five examples of a California-type of sound symbolism which appears to
have diffused from California in the late Numic period since its dis-
tribution is limited in UA to the same WN-Shoshoni contact zone where
late Numic lexical borrowings are found; cf. J. Nichols 1971.

A few examples that might date to middle or early Numic, or
possibly to PN, indicate an association of Southern Sierra Miwok (SSM),
or possibly Sierra Miwok as a whole, with Numic speakers different from
their modern WN neighbors. WN has lost a series of phonological dis-
tinctions preserved in both CN and SN and reconstructed for PN; there-
fore, shared forms with Sierra Miwok that reflect these distinctions

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cannot be from WN. In other sets the Sierra Miwok forms are shared
with CN or SN, but lack a WN attestation. Two such examples:

PN(CN/SN)*taku⊥ 'thirst':SSM tak⁴Hp, takp 'thirst, to thirst¦,
where the final element in SSM is the common Numic participial
ending *-p⁴.
PN(WN/CN)*ci(")ku > WN*ci'ku, Shoshoni ciŋku 'type of seed beater'
> 'snowshoe' (from the similar shape):SSM ciŋku.

For many years the WN languages, Northern Paiute and Mono, were
poorly attested, and the correspondences between Numic and the other UA
languages were unsystematic. Resemblances between words of general
distribution in UA and forms in non-UA languages bordering WN had been
explained as modern contact or early contact between the neighboring
languages. As more data on the UA languages and their reconstruction
became available, this explanation became untenable. Although the
placement of the NUA homeland remains secure, the evidence for earliest
contacts with Old California comes not from the south and does not in-
volve NUA as might be expected. Rather, earliest contacts were with
languages far to the north and involved the complete UA family in-
cluding SUA. Compare the following loan correspondences:

PN*sana' 'pitch, gum' < NUA*sa·na : SUA*sala; Washo šála⁷
PN*ᵖ/_wono 'large pack basket'; Maidu woló 'any large, cone-
shaped basket'
PN*huna('') 'badger' < NUA*hu·na 'badger' > 'bear' (with augment);
Washo hó⁷la⁷ 'badger or raccoon'; Maidu hóhla 'badger'

¹ The phonological irregularities in these interfamily borrowings

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correspond to exactly parallel irregularities within UA. If a source
in UA is postulated for the borrowing, then the phonological corres-
pondences require a source in various UA stages prior to the modern
NUA languages, probably no later than common PUA prior to the departure
of SUA. If borrowing into UA is assumed, then reconstruction of the
borrowed form in PN, NUA, or PUA insures that the contact occurred at
a significant time depth. Additionally, distributional evidence from
the attestation of typical Old California words in the SUA groups like
Pimic and Aztec makes an early contact between Old California and SUA
the only way to explain the modern UA distribution of the forms. With
both NUA and SUA in contact with Old California, a complete revision of
the presumed PUA homeland and UA movements is required.

Although there are several possible ways by which the UA contact
with Old California could have occurred, most alternatives involve
extrapolations not supported by the data. Accordingly, in the absence
of concrete evidence for any of the complicated alternatives, it is
reasonable to take the simplest solution as a working hypothesis, i.e.,
movement by UA at the level of PUA is simpler than moving all of the
other languages in an unbelievably complex manner. It is interesting
to observe that the hypothesis of UA movements presented here is com-
pletely compatible with movements by other groups suggested by Whistler
1977, 1980 ms and Shipley and Smith 1979.

All of the evidence for UA contacts is consistent with the assign-
ment of the PUA homeland to northern Old California or southern Old
Oregon followed by a gradual southerly displacement and fragmentation
that led to the modern UA distribution. As a working hypothesis, the

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contacts might have occurred as follows:

1. PUA (or pre-PUA) is at the northern edge of Old California. PUA
   drifts south as early Penutian groups follow or accompany the PUA
   speakers into Old California. (Period of contact with several Old
   Oregon groups, Proto-Miwok-Costanoan, Proto-Maidun, and probably
   Yukian and some Northern Hokan.)

2. PUA dialect differentiation is well underway as primary occupation
   is in central California including part of the Central Valley and the
   central and southern Sierras. (Period of contact with Proto-Pomo,
   some Northern Hokan, and possibly Proto-Chumash and some early
   Yokuts.)

3. SUA separates immediately after a period of direct contact with
   Eastern Miwok, Washo, and Maidun, resulting in UA displacement from
   central California and the central Sierras. SUA leaves the Old
   California area.

4. NUA occupies the southern San Joaquin Valley and southern Sierras,
   with NUA gradually moving over the Tehachapis and into the NUA center
   of dispersal. (Period of contact with Esselen, Yokuts, Plains and
   Sierra Miwok, Obispeño Chumash, and possibly other Chumash languages.

5. NUA divides and begins dispersal as abandonment of the southern San
   Joaquin Valley and the southern Sierras continues. Sierra Miwok is
   in contact with PN for a time.

6. WN expands north up the east side of the Sierras and Northern Paiute
   resumes a UA contact with Washo, Maidun, Achomawi-Atsugewi, Klamath,
   and Sahaptian.

The new evidence of the involvement of UA as a full participant in
early exchanges among the Old Oregon and Old California languages also

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permits rejection of certain previous hypotheses as unworkable. For example, a previous occupation of the Great Basin by PUA or other early UA groups to explain the contacts with the Sierran languages would not explain the evidence of UA interaction with Proto-Pomo and much of Northern Hokan or with the coastal block of Esselen, Salinan, and Chumash. Ad hoc reconstruction of a lost PUA or NUA branch with SUA features or a lost SUA population travelling a circuit in northern Old California cannot explain the attestations in surviving and very distant SUA. Our knowledge that the majority of Old California groups were small precludes population of more than a small area by PUA speakers at any one time; hence, long dialect chains would be improbable. It is also unlikely that population by UA speakers over a wide area would produce the apparent old in the north and more recent in the south contacts without concomitant population movement. At present the available lexical materials from Oregon and California are more from the montane areas than from the lower areas that were the earliest occupied by Euro-American settlers. The montane bias is also apparent in the evidence for UA contacts. As more data becomes available from the languages of the large valleys, details may force modifications in our hypothesis. Even though the sets for which an early date must be assigned, either from the few phonological criteria available or from internal distribution within UA, would necessarily be only a small fraction of the total number of terms which would have been borrowed, the number of sets which can be identified as early is too large to explain except by prolonged and intimate direct contact.

Ideally, justification for all of the proposed UA contacts and movements would require reference to all the data at once. The huge

number of potentially intersecting forms make complete discussion of each possibility an interminable task. This is especially true since the fact of contact or relationship cannot be assumed, but is rather the goal of the investigation. The intent here is to demonstrate a degree of involvement by PUA on a par with the other Old California languages, rather than be dogmatic about what does or does not constitute a good comparison. To that end several correspondences ·have been noted that are marginal at best, since we do not yet have the methodology to securely exclude them. It is only to be hoped and expected that the refinement of the details of this intense contact will alter or exclude some of the etymologies presented.

The large number of mutually loaned forms makes it certain that reborrowings of the same term have occurred, leading to attestation of similar and ultimately related forms in a single language. Borrowings of cognates from related languages also must have occurred, giving the same result of multiple attestation of a single base form within a language. The overwhelming, area-wide popularity of generating folk-etymologies, puns, and elaborate "just-so" stories insure that some completely foreign terms have assumed native guise either with or without phonological alteration. There can be no a priori exclusion of a word as a borrowing just because it has an "etymology" as a native construction. There is no doubt that the vast majority of early loans are undetectable as such without resort to external comparison. Even then, the direction of borrowing may never be determined.

In order to demonstrate the wide range of possible and probable contacts, a single representative set has been selected from the context of a larger investigation of Old California words for 'house'.

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The semantic developments of 'house' encountered in the set are com-
paratively straightforward. Some words for 'house' simply mean 'dwel-
ling place' and may be applied to animal as well as human habitations.
A particular reinforcement is provided by the resemblances between the
distinctive semi-subterranean pit-houses which were often mounded over
with earth, and the similar hummock of soil thrown up by a rodent around
the entrance to its burrow. Glosses of 'house' and 'hole' for the same
linguistic form result in several languages. Often the pit-houses or
roundhouses were built for specialized ceremonial purposes, and glosses
of 'roundhouse', 'ceremonial house', 'dance house', 'sweat house', and
'menstrual hut' all may refer to similar structures as well as to other
types of construction. The close contact of one group with another
whose style of building or method of using a building differed from its
own provides a rationale for the common borrowing or terms for 'house'
and other buildings.

The phonological differences in the various forms are described
here as regular where the same correspondence occurs in several other
sets as well. Often the correspondences approach the regularity tradi-
tionally used to demonstrate a genetic relationship, and in fact the
resemblances of some terms may well have a genetic basis. The deter-
mination of a genetic relationship would only alter the type of contact
proposed and not the fact of contact.

One of the several words reconstructable in PUA for 'house'
appears below:

PUA   *kani 'house' (formerly reconstructed *kali)
SUA   *ka$^{1}/_{r}$i 'house'

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NUA   ˙ *kani 'house'

PN(CN/SN) *kahni 'house'

Hopi   *kǎni > -qani 'home, place'

Tb   *kaní- > *qani·- > hani·-l 'the house'

If *kani is a borrowing into UA, it can be no later than PUA since
it is attested in SUA as well as NUA. If *kani has been loaned into
any of the other Old California languages, it cannot have been trans-
mitted via Northern Paiute or Mono since the PN term was lost and re-
placed by an unrelated word in Proto-WN. The WN languages completely
lacked attestation of *kani until Northern Paiute borrowed Shoshoni
kǎhni as ka(·)ní in a few dialect areas where it is still perceived as
adapted from Shoshoni by the native speakers. The optional length
appears to reflect the Shoshoni position of the stressed vowel. Any
suggested contact with UA for *kani would have to reflect early contact
only from internal UA evidence.

The Hopi word, cited usually in the expression meaning 'my house,
my place', has been replaced by a different PUA root in the regular
meaning 'house'. The Hopi replacement is shared also by other UA groups
such as Takic and Pimic who lack reflexes of PUA*kani.

The development of PUA*kani is phonologically irregular in that
both PN and SUA reflect secondary changes which could have been con-
ditioned by the same or related factors in PUA. Since the details re-
main unclear, it is most reasonable to maintain the PN and SUA shifts
as joint exceptions from *kani. As was discussed previously, the
traditional reconstruction of PUA*-1- obscures the secondary quality
of the SUA development by implying a regular *1 > 1 while treating PN

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as the sole unusual development in several sets beside this one. Re-
construction of PUA*kani should be considered provisional until the
details of the UA shifts are defined.

In common with other languages in the area, NUA had a general
phonological rule backing *k to *q before *a and *o. Later develop-
ments in Hopi, Takic, and Mono which altered the quality of the con-
ditioning vowels led to a secondary phonemic distinction between
*k and *q not present in NUA. Tübatulabal (Tb) reflects NUA*k before
*a as h presumably from a sequence similar to that reconstructed for
several Old California languages including Proto-Pomo and Proto-Chumash
of *q > x > h ($\sim$? $\sim \phi$).

Two Old California languages have borrowed nearly identical forms
of PUA*kani together with an associated *-pɨ, the participial and noun
class marker noted previously. The suffix is very common in both Numic
and Tübatulabal and occurs in several combined forms with other suffixes.
One such combination common to both NUA groups is *-pɨ$^{(")}$ci, an
affective used originally on words for animals to mark the animal as a
mythical character. Usage has often generalized to that of a noun
class marker for animal words, and was absorbed with that meaning into
Esselen (see Beeler 1978 for several examples). Presumably, these UA
borrowings occurred at the same general time as the Esselen contact
when UA groups were in the northern San Joaquin Valley:

Obispeño Chumash q^{h}ni pu 'house' (also recorded q^{h}nipo, knipu,
qnipu)

Plains Miwok hané·pu- 'house, roundhouse; dancehouse (in comp.)'

The long vowel and stress of Plains Miwok and the choice of which vowel

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to retain in Obispeño suggest a common origin in UA*kaní-p⁴ which is
not phonologically irregular enough to date securely within UA. How-
ever, considering the location of the recipient languages, an early
common NUA would probably be the latest possible source. Klar (p.c.)
notes that Obispeño consistently shows more UA influence than the other
Chumash languages although it is now one of the farthest from the
current position of any UA language. The word for 'house' cited here
is not attested in the other Chumash languages. The several sets for
which a case for PUA contact with Proto-Chumash could be made clearly
belong to an earlier period than the borrowing of Obispeño Chumash
'house' unless the contact was indirect through an intermediary lan-
guage for which there is no evidence.

Broadbent and Callaghan 1960 linked Plains Miwok hané·pu- with a
Proto-Sierra Miwok *han(·)i- 'house' based on the following forms from
Northern, Central, and Southern Sierra Miwok:

    NSM haŋ·i-, háŋi·   'house; sweathouse, dancehouse'
    CSM haŋ·i-, haŋí·-   'roundhouse, ceremonial house'
    SSM haŋ(·)i-   'dancehouse'

They reconstructed a Proto-Eastern Miwok form with a medial *ŋ in the
1960 article, but by Callaghan 1972 *ŋ was reconstructed only for
Proto-Sierra Miwok, and this set was omitted from the discussion.

Although UA influence has been suggested for the source of *ŋ in
Miwok based on the Sierra Miwok attestations, the majority of forms
that contain Sierra Miwok *ŋ do not have correspondent forms in UA.
However, there is a striking similarity in the distribution with both
Miwok and UA *ŋ relatively rare and generally restricted to root medial

or suffix initial position. The Sierra Miwok words for 'house' show
the same type of vowel and consonant length variation with stress that
in Numic and NUA occurs with medial irregularities in the cognate sets.
Since attempts to derive Sierra Miwok *n from Proto-Miwok *n are uncon-
vincing, it is possible that a source in *m similar to the development
in UA should be sought. In any case Sierra Miwok *hani- shows the
specialized meanings often associated with loans and probably reflects
a Proto-Sierra Miwok borrowing. If UA is the source, then the presumed
PUA antecedent for a UA*hani would be PUA*kami 'house', rather than the
PUA*kani reconstructed on internal UA evidence.

Recalling the sporadic development of PUA*m > ŋ > n, it is probable
that the process has been present throughout most of UA prehistory; it
is presumed for PUA and for synchronic descriptions of the Numic lan-
guages. It would not be surprising that some original PUA*m fell to-
gether with PUA*n prior to the derivation of SUA*-1- from PUA*-n-.
Similar environments are presumed for the changes of *m > *ŋ and *n > *1
so that the crossover of *m to *n would not alter the inherent suscep-
tibility to the sporadic change. The time at which pre-NUA*kaŋi from
revised PUA*kami became NUA*kani is uncertain because neither Plains
Miwok nor any of the Chumash languages have /ŋ/, and the UA source for
those languages could equally well be *kaŋi or *kani.

The proposed revision of PUA leading to the reconstruction of
*kami rather than *kani is confirmed by reference to languages farther
to the north where an early PUA contact is suggested. Several of the
examples show a morphological link with Takic and Tübatulabal in that
the borrowings show the association of the PUA absolutive *-tɨ (see
Steele 1979) which becomes -1 in the modern languages with the recon-

structed word for 'house'; cf. modern Tübatulabal hani·-l 'the house'.

The northernmost contact proposed for PUA in this set involves the Sahaptian languages where the reconstructed Proto-Sahaptian form shows the PUA*-tɨ absolutive as *t. All of the more southern languages show *l only. Unfortunately Proto-Sahaptian also lacked *n so that the Sahaptian forms could reflect either *n or *n. The intermediate UA form could be *haŋí·-t or *haní·-t.

Proto-Sahaptian *ʔaní·t 'house' (reconstruction mine)

Nez Percé ʔiní·t 'house'

North Sahaptin aní·D 'house'

In North Sahaptin diminutive root reduplication with the diminutive sound shift n̲ > l̲ introduces an interesting parallel to the *ͳ from the SUA variant of the root:

North Sahaptin alí·Dali·D 'little house'[2]

Washo has borrowed -áŋal 'house; v.i. to house' from a UA source similar to *háŋi-l. The Washo form has been previously interpreted as an irregular development from Proto-Hokan,[3] but the identification of the Washo form as a UA loan removes the problem of explaining the medial /ŋ/ and final /l/ which do not appear to be typically Hokan. Possibly Washo káŋa 'cave' could be traced to a similar UA source as well. The vowel assimilation in Washo, as in Sahaptian, is of the unstressed vowel to the stressed vowel, but it is unclear whether the stress assignment derives from the donor or from the recipient language.

PUA*kami-l > *kawi-l is a likely source for a likely pre-Proto-Wintun *qawil based on:

Proto-Wintun *qewel 'house' (reconstruction mine)[4]

Wintu   qewel

Nomlaki   kel, k'el

Patwin   kewel, k'ewel

The source of Proto-Wintun *q is unexplained without reference to the UA*a of the source where a back allophone of *k would be expected from internal evidence. Notice too that the PUA reconstruction *kami and not *kani is required for both Washo and Proto-Wintun. An apparent borrowing from UA in Yawelmani Yokuts ka·wiy 'tent' is presumed to have had a development similar to Wintun.

An interesting example of an early possible borrowing from PUA *kami is found in the Achomawi dialects. In the Achomawi-Atsugewi materials available most of the segmentation and grammatical analysis is uncertain, but the following examples appear well explained by the proposed segmentation.

Astariwawi (Achomawi) mekā·mi 'menstrual lodge, a small sweat-house of bark large enough for three or four women' is clearly related to

Achomawi timakamit 'sweathouse' which in turn appears to be derived as a deverbal noun from a single verb stem attested in three shapes:

Achomawi - maqam- 'to sweat'

            -am qām- 'to take a sweat bath'

            -amaqām- 'to build a fire in a sweathouse'

The combination of the three shapes suggests a revised gloss 'to

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use a sweathouse' which appears on internal evidence to contain a
verbal root *ama 'to use' and the nominal root *kami 'sweathouse'
borrowed from PUA*kami 'house'. Compare:

> Achomawi   -amasj ? 'to sweat'
>
> > asǰuy 'ceremonial or winter house; winter'
>
> cf. asǰē· 'cold'

This second verb 'to sweat' appears to be exactly comparable in
formation with the first with *ama 'to use' followed by a root for a
sweathouse-like structure from a different source.

The postposed -1 absolutive from PUA *-ti is matched in Takic not
only by -1 but also by a series of affricates and spirants which usually
appear with a palatal, retracted, or fully retroflexed articulation.
Interpenetration within Takic and levelling in the individual languages
make it difficult to reconstruct a Takic root noun with a unique deve-
lopment of the absolutive. A Takic CVCV root noun may occur with a
postposed 1, s, c, š, č, or a reasonable approximation in other ortho-
graphies. There is an areal tradition in much of western North America
for affective markings on nouns in storytelling, a tradition especially
related to animal speech or to names for animals (see J. Nichols 1971
and Langdon 1973). A general pattern of attaching an overt marker to
noun roots of all types with a sort of absolutive function appears to
have been an Old California trait. A strikingly similar phonological
shape is shared by most of the Old California languages for this ab-
solutive. UA languages postpose their absolutives, but the correspon-
ding forms in Hokan languages are preposed where they have often amal-
gamated with the root and are no longer segmentable. In spite of the

generally recognized tendency of the Penutian languages for suffixation (see Silverstein 1979), some of the languages show that at least the common Old California absolutive was frequently prefixed. Some languages show evidence of the absolutive on both ends of the root. It is presumed that the intense borrowing among languages in Old California would lead to frequent borrowing of the common Old California absolutive as part of the root resulting in multiple attestation on a single form when the productive form of the absolutive was also attached.

The Old California absolutive might be reconstructed as variants of a **l or **ṭ with reflexes in the individual families of laterals, retroflexes, and palatals predominating. Some notable examples:

Obispeño Chumash ɫ- is almost completely segmentable and intra-Chumash comparison additionally reveals an otherwise unexplained pre-posed t- as one of the group of relic noun prefixes (Klar, p.c.).

Salinan is rife with historically segmentable initial ṭ- and s/s/š- on nouns, and especially on animal names (Turner, p.c.).

Several sets of presumed cognates in Hokan involving the comparison of Proto-Pomo and Proto-Yuman show unexpected initial problems which might be possible to trace to old prefixed *l and *ṭ that amalgamated with the original root initial in one or both of the groups. Specifically, this may include the occurrence in Proto-Pomo of some voiced initial stops and unexpected examples of initial *n.

The troublesome correspondences in Penutian initials when the rest of the form appears not to be cognate is sometimes due to the initial reflex of the Old California absolutive: Klamath l-, Wintun ɫ-, Costanoan r-, and Yokuts ṭ(t/c/č). Shipley 1966 traced these to Proto-Penutian initial *r as part of the root together with Maidun h-,

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Miwok n-, and Klamath s-. The dual reflex in Klamath is paralleled by Wintu where ɬ varies with s morphophonemically. The identification of the Maidun and Miwok reflexes may be erroneous since the prefixal reflex in these languages is usually lacking. Broadbent and Pitkin 1964 reconstructed *-tV- as an 'animate classifier' from postposed elements in Wintun and Miwok which appear to be a reflex of the Old California absolutive. The sets for another word for 'house' in Penutian in Shipley 1957 and 1966 are cited incorrectly with the absolutive as the root initial.

The Numic languages of UA show a large number of suffixed elements which may ultimately prove to be relatable to the Old California absolutive. However, because of the high degree of homophony among suffixes in Numic, it is safer to wait until the details of the Old California areal system are better known before attempting an identification of the particular Numic suffixes which correspond to it historically. Synchronically, the Numic system differs from that of Tübatulabal and Takic.

Returning to the group of possible intersections with PUA*kami, there are several examples where the initial is segmentable as an old prefixed Old California absolutive. These include several forms from Hokan where the medial -m- might be a problem for Proto-Hokan reconstruction.

Western Miwok lám·a 'sweathouse, roundhouse' with a preposed l-
Salinan tá·m 'house' with a preposed t-
Obispeño Chumash ɬ'imi 'house, tent, any house' with the preposed ɬ.

The Lake and Bodega Miwok languages of Western Miwok appear to

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have borrowed the basic form from a Hokan language. Compare Shasta
ʔám·a· 'house'. The correspondence of the medial -m- and the vocalism
of the borrowings suggest that a relationship with PUA may be just as
deep within Hokan as the alleged Proto-Hokan word for 'house' (cf.
footnote 4).

Chukchansi Yokuts sa·mis 'dance house' also recorded wasam, shows
the *-a·mi- from PUA with the Old California absolutive on each side.
The glottalized m of the second variant represents the amalgamation of
the last two consonants following loss of the second vowel of the
initial borrowing (see footnote 5 for a parallel development in Chumash).
The preposed wa- is unexplained. The reconstruction of Proto-Yokuts
*t^{h}iʔ~*t^{h}i·- 'house' (adaptation mine) strengthens the identification
of Chukchansi sa·mis and Yawelmani ka·wiy as loans but provides further
problems.

If the intial *t of the Proto-Yokuts form is segmentable, the re-
maining *-^{h}i- might be compared with Proto-Maidun *hɨ- 'house' and
Chukchansi Yokuts xoʔ 'house', but the shortness of the forms compared
leaves the relationship in doubt. One recording of Chukchansi Yokuts
(CY) [xon] may link this group to PUA if the questioned gloss 'home?'
is confirmed. The development might be as follows:

PUA*kami > pre-CY*qóm > CY xon 'house, home?' recast as CY xoʔ
parallel to: PN(and PUA?)*ka'mɨ- > Proto-Yokuts*xomix > CY xomix
'jackrabbit'.

The PN form shows a fortis medial *m retained in Proto-Yokuts as m.
Rounding of *a before *m regularly may produce *o. A tendency to
shorten the word for house occurs also in modern Shoshoni ka· which may

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substitute for kahni 'house' in compounding. The Proto-Yokuts, Proto-
Maidun, and Chukchansi Yokuts forms might result from a generalization
of the shortened form of an earlier stage of UA.

Proto-Maidun shows a rounding parallel to that proposed for Chuk-
chansi in a set more clearly relatable to PUA*kami. The glosses suggest
a possible loan, but the initial glottalized consonant is unexplained.

Maidu	k'ûm	'house'
	k'ùm-hí	'sweathouse' (a compound with the other word for
		'house')
	k'umú	'community dwelling, dancehouse'
Konkow	k'úm	'roundhouse'
Nisenan	k'um	'roundhouse, gopher mound, hump'

If the initial ?ii- of Yana ?iigun(na) 'sweathouse' is segmen-
table, then the medial *-gun- may be relatable to PUA as well via a
development similar to that just proposed for Maidun. Similarly, the
Yukian forms below were suggested to intersect with Penutian (Shipley
1957) and UA (Schlichter, in press). The forms are not phonologically
identifiable to a particular UA stage, but the location of Yukian and
the PUA intersections with other languages in the area would suggest
an early contact with PUA*kami, perhaps via *kaŋi.[5]

Yuki	han, hɔ́·n	'house'
Huchnom	hūn, hɔ̂n	'house'
Coast Yuki	hên	'house'

The Pacific Coast Athabaskan languages show varying words for
'house', one of which resembles the nearby Yukian languages in an

apparently coincidental way. Hupa xon-tah 'house' is one of a series of Athabaskan constructions which have come to be most easily translated as 'house', but which appear to be old descriptive phrases. Several have an initial velar with a nasal component following, but the initial correspondences point to different velars. For example Southwestern Athabaskan Navaho -ɣàn 'house, home', a potential intersection with later UA in its current location, cannot be cognate with the Hupa form. The fact that these Athabaskan forms have internal etymologies is a minor factor in their rejection as loans from UA. The crucial factor is the distribution of cognates for both the Navaho and Hupa forms in far away Northern Athabaskan and the known late arrival of the two Athabaskan groups in their current areas. The accidental nature of the resemblance extends only to the fact of their different origin from Old California Uto-Aztecan. There is no way of determining whether the choice of these particular Athabaskan phrases of the many available for the meaning 'house' might or might not have been influenced by the presence of similar sounding words with the same meaning in their new home areas (Golla, p.c.).

The similarity between the various related forms in the Hokan languages and UA*kami and its phonological derivatives is suggested to derive from PUA since there are phonological mechanisms for eroding the initial PUA*k but no secure ways to produce the velars. If additional examples of the relic prefix *q or *k of Proto-Chumash could be identified and linked with this set of PUA*kami 'house', then the alternative derivation of the items in the above set from Hokan could be presented. With early UA securely in the Old California area, there would have been plenty of time for numerous exchanges in both directions.

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It is hoped that this brief exposure from a UA bias will stimulate additional comparisons among the Old California languages. There is no chance that these languages developed in isolation from one another. In the case of PUA*kami 'house' the correct reconstruction is only possible by reference to languages outside UA. However, the resultant revision is internally acceptable with known UA phonological processes operating in the same way as in internally reconstructed sets. The selection of the form most acceptable from evidence from borrowings in neighboring languages in the Old California stages can only enhance the accuracy of our internally based reconstructions in all of the families in the area. A model for the approach is present not only in Uralic-Indoeuropean linguistic convergence but also in the recovery of early Chinese loans from the neighboring, culturally associated Japanese, Korean, and Vietnamese languages. External Old California comparisons must then take their rightful places alongside internal reconstructions.

Footnotes

[1]Most of the linguistic data used in this paper are from published sources. Because these are so well known and so easily recognizable, the sources are listed only in the bibliography at the end. Additionally, unpublished sources and personal compilations, including both published and unpublished material, have been made available through the generosity of the following: Madison Beeler (Chumash), Victor Golla (Athabaskan), William Jacobsen Jr. (Washo), Kathryn Klar (Chumash), Alice Schlichter (Yuki and Wintun), David Shaul (Hopi), William Shipley (Yokuts), and Katherine Turner (Salinan). The

[2]There is some evidence for dialect diversity in early UA, but the evidence is also consistent with borrowing via an intermediate language. For example, SSM ʔen·i- 'house' and SSM heni·-t 'to move house (to move campsite?)' show a different stage or source of derivation of original PUA*kami from SSM haŋ(·)i 'dance house'. Evident phonological similarity to the Sahaptian forms above confirms the identification of the source but further obscures the temporal assignment of the borrowing contact. Achomawi -a·nī́ʔj- and -īnīju·j- 'to move camp' may also contain the PUA borrowing as the first elements.

In the course of discussion of the potential PUA contacts
several references will be made to forms that have been suggested as
developments of Proto-Hokan 'house', usually reconstructed as something
like *iwa, *awa, *wa, or *awi, with alleged reflexes of *w including
w, v, p, m, n, and ŋ. Since more than one reflex may occur in the same
language, the Hokan developments, if indeed all are in fact Hokan, can-
not be described as linear. The primary intent is to provide alternate
associations to help explain the cited marginal or troublesome reflexes
whose exclusion would not alter the basic Hokan reconstructed form.

[4]Intersection with several Hokan languages and the Algonkian-
related Yurok and Wiyot has also been observed. If the borrowings in
these languages are related to PUA then a medial development of *m >
*w > v,β > p must be assumed. Hokan requires a similar hardening pro-
cess to that noted for Proto-Chumash ʔáwaʔ 'house' (reconstruction mine)
where the loss of the unstressed second vowel presumably led to a
sporadic hardening of the cluster *wʔ to *p. Compare Inezeño and Bar-
bareño Chumash ʔap 'house': Island Chumash ʔawa 'house'. The Proto-
Chumash form could be from Proto-Hokan or from a PUA*káwi from earlier
*kami with later erosion of the initial, as has been noted in other
languages, and the common harmony to the stressed vowel. Compare the
following examples some of which also show -1:

Karok	xav-[ra·m]	'house pit?', cf. ʔi·v- 'house'
Yurok	kep'oł	'house pit'
Wiyot	βṹl	'house'
Achomawi	apūli	'house of 2 upright poles supporting the roof and walls of cedar bark'

Madesi (Achomawi) apū̄li   'rat's nest'

apū̄lē?   'cocoon'

[5]This Yukian set is undoubtedly one of the resemblances noted by
Swadesh when he compared Yukian with some of the southeastern lan-
guages; compare Chitimacha hana 'house'; cf. Schlichter, in press.

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JC(GB)APL Journal of California (and Great Basin) Anthropology
           Papers in Linguistics

Lg   Language

UCPL   University of California Publications in Linguistics

VFPA   Viking Fund Publications in Anthropology

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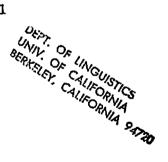WOODWARD, MARY.F.   1964.   Hupa Phonemics.   UCPL 34.199-216

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