GRAMMAR, CONTACT AND TIME

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1. The Area: California

North America is home to considerable linguistic diversity, with 55-60 distinct language families and isolates in the traditional sense, that is, the largest genetic groups that can be established by the comparative method. Of these, 22 are represented in California. Some California languages are members of large families that extend over wide areas of the continent, such as Uto-Aztecan, Algic (Athabaskan-Wiyot-Yurok), and Athabaskan-Eyak-Tlingit. Others belong to medium or small families spoken mainly or wholly within California, such as Utian (12 languages), Yuman (11), Pomoan (7), Chumashan (6), Shastan (4), Maidan (4), Wintun (4), Yokutsan (3), Palaihnihan (2), and Yuki-Wappo (2). Some are isolates: Karuk, Chimariko, Yana, Washo, Esselen, and Salinan. Most of the currently accepted genetic classification was established over a century ago (Powell 1891). Locations of the languages can be seen in Figure 1.

In 1903, Dixon and Kroeber noted structural resemblances among some of these families and isolates and ascribed them simply to common typology. Ten years later, they hypothesized that the similarities might be due to distant genetic relationship and proposed, primarily on the basis of grammatical structure, two possible ‘stocks’ or groups of families, which they named Hokan and Penutian.

The original Hokan hypothesis linked Karuk, Chimariko, Yana, Shastan, Palaihnihan, Pomoan, Esselen, and Yuman. Over the next half-century, various scholars added the Washo, Salinan, and Chumashan families from California; the Tonkawa, Karankawa, and Coahuilteco languages from Texas; Seri, Tequistlatecan, and Tlapanec from Mexico; Subtiaba from Nicaragua; and Jicaque from Honduras. Some of the proposals remain promising, and others have since been abandoned. Evaluation of their validity remains difficult, however. The proposed relationships would be remote, comparable to those of Indo-European or deeper, and documentation of the languages, most of which are no longer spoken, is in many cases limited. There has, furthermore, been a long history of contact.

The original Penutian hypothesis grouped together the California families Maidan, Wintun, Utian (Miwok-Costanoan), and Yokuts. Subsequent proposals added Takelma, Coos, Siuslaw, Alsea, Klamath-Modo, Cayuse-Molala, Sahaptian, Takelma, Kalapuya, and Chinookan of Oregon; Tsimshianic of British Columbia; and Mixe-Zoquean and Huave of Mexico. Ongoing work continues to uncover promising lexical resemblances among some of the families, but in general the difficulties are the same as for Hokan: the remoteness of the proposed relationships, in many cases limited documentation, and the long history of contact. (More detailed histories of the Hokan and Penutian hypotheses can be found in Langdon 1990 on Hokan, DeLancey and
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Yurok
Ghululs
Whilktut
Chimariko
Mattole
Nortgali
Waslaka
Sinkyone
Kato
Coast Yuki
Huchnom
Lake Miwok
Wappo

Coast Miwok
Northern Paiute
Sierra Miwok
Northern Valley Yokuts
Northern Pomo
Southern Valley Yokuts
Southern Paiutes
Sierran
Salinan
Kiskukeh
Southern Shoshone
Western Shoshone
Owens Valley Paiute-Shoshone
Washo
Mono Lake Paiute
Northern Paiute
Kokostalak
Serrano
Mojave
Chemehuen
Gabrielino
Cahuilla
Halchidhoma
Tataviam
Serrano
Luiseno
Tipai
Tipai
Cahuilla
Gabrielino
Luiseno
Tipai

California Indian Tribal Groups

California Indian Library Collections

Figure 1

2. Central Pomo prefixes

The first part of the shared structure consists of sets of verbal prefixes that indicate means or manner of motion, such as those visible in (1) below from Central Pomo. Central Pomo is one of the seven languages of the Pomoan family, is indigenous to an area of Northern California extending from approximately 100 miles north of San Francisco northward, and from the coast about 40 miles inland. Material cited here comes from speakers Salome Aleantra, Alice Elliott, Jesse Frank, Frances Jack, Eileen Oropeza, and Florence Paoli.

(1) Central Pomo verbs

a. \(ya\):q' 'know'
\(de\):ya:q' 'recognize by feeling around (with hands)'
\(\ldots\):ya:q' 'recognize by touching (with fingers)'
\(p\ldots\):ya:q' 'recognize visually (by sight)'
\(ga\ldots\):ya:q' 'recognize (food) by tasting'

A substantial proportion of the verbs in the language contain prefixes of this type. The Central Pomo prefixes are clearly derivational. Over the course of development of the language, speakers have used them to create new lexical items as needed for name-worthy concepts. Speakers know which combinations exist in the language, which could exist but do not, and which would not be well formed. The prefix h-, for example, seen above in h-k'ìn ‘close a door’, occurs in large numbers of Central Pomo verbs, contributing such meanings as ‘moving a long object lengthwise’, ‘poking’, ‘thrusting’, ‘jabbing’, and ‘throwing’. The root q’ál ‘finish, complete’ forms the basis for a number of verbs, as seen above: ‘finish a task’, ‘finish sewing something’, ‘finish peeling something’, ‘finish eating something’, ‘finish drinking something’, ‘finish a speech’, ‘finish reading something’, and more. There is, however, no verb h-q’ál ‘complete poking’. Apparently speakers have not felt the need for such a term. The prefix-root combinations are not constructed anew each time they are used: they are formed once, then learned, stored, and used as single lexical items. In fact the root q’ál- no longer occurs on its own in the language: it now appears only in the verbs with prefixes. The lexicalization of the prefix-root combinations is also apparent in the translations provided by
The verb i-kel is literally ‘clean by pulling’, but the speaker rendered it as weeding a lawn. The verb i-kel is literally ‘clean with fine finger action’, but it was translated as picking pebbles out of beans before cooking. Not surprisingly, many derived stems have somewhat idiomatic meanings, either because they were first coined for a specific purpose, or because their original meanings have shifted over time. The verb ba-yā:q’ in (1a) is literally ‘orally recognize’, but it is usually used to mean ‘follow an order’. The verb da-q’dl in (1c) is literally ‘finish off by pulling’, but in the Point-Arena, Manchester and Yorkville dialects, it is used to mean ‘swipe’ or ‘steal’.

Such morphemes have sometimes been referred to as ‘instrumental affixes’, because they often evoke an instrument: ‘with the hands’, ‘with the feet’, ‘with a knife’, ‘by fire’, etc. They have also been termed ‘lexical affixes’ because their meanings seem quite concrete, more like those of roots or whole words. Their meanings are actually more abstract and diffuse than those typical of nouns denoting instruments like ‘hand’ or ‘knife’. Even from the few examples above, we can see that the prefix da- could be translated ‘by hand’, ‘by touching’, ‘with the palm’, or ‘by pushing’: da-yā:q’ ‘recognize by feeling around (with hands)’, da-ā:ē:ē’ ‘push on something that sticks in your hand’, da-kel ‘brush away dirt’. The prefix s-, seen above in s- yā:q’ ‘recognize (a drink) by tasting’ and s-ā:ē:ē’ ‘while one is drinking, something gets into the mouth that doesn’t belong, such as a bug or dirt’, appears in verbs of drinking, eating mushy food, sipping, sucking, smoking, swallowing, whispering, rain, and more. The prefix ēa-, in ēa-k’un ‘block, as a doorway’, ēg-ā:ē:ē’ ‘sit on a thorn, put a patch on pants’ and ěg-q’ał ‘finish peeling, as apples or potatoes’, is used in verbs involving a massive object, especially the buttocks, but also in verbs involving cutting. The prefix ēa-, seen above in ē-kel’ ‘wipe off, as a baby’s dirty face’, ěq’ał ‘win a game’, and ěh-k’un ‘be blocked by vegetation, like a tunnel overgrown with brush’, has an especially wide range of meanings involving round masses like rocks and the head, shooting, gambling, flowing, and vegetative growth. The ranges of meaning are due to several kinds of factors, only some of which can be recovered.

One is the status of the morphemes as derivational prefixes and the lexicalization of the resulting verb stems. Speakers have created new stems by analogy to existing ones, extending the meanings of the prefixes in various directions. The prefix qa-, which appears in qa-yā:q’ ‘recognize (food) by tasting’ and qa-q’al ‘finish eating something’, can indicate biting and chewing as in these two verbs, but it also appears in verbs meaning ‘catch’, ‘trap’, ‘prune’, ‘use pliers’, ‘lock’, and others. The semantic thread is easy to see in this case.

Others are the result of sound change. The Central Pomo prefix m- appears on the one hand in such verbs as m-ā:w ‘kick’, m-ā:lōčiw ‘knock over with the elbow or foot’, m-ē:sō’ ‘sniff at something’, m-ō:lō ‘miss when trying to kick, or miss in marbles’, and on the other in m-ēdiw ‘unravel’, m-ā:un ‘be clogged, as a hole clogged with dirt’, m-k’i:n ‘be constipated’, m-ō:lō ‘begin to ache’, m-ō:ow ‘chop’, m-ō:oy ‘blister’, m-ō:aw ‘feel hot’, m-ē:ē’ ‘catch fire’, m-ō:lōčiw ‘melt’, m-ō:aw ‘be cooked’, m-yōl ‘cook various things together in the same pot’, and m-bē:ē’ ‘burst open, as from swelling from heat or frost’. Cognates of the prefixes occur in all languages of the Pomoan family, as laid out by Oswalt (1976: 16). In Central Pomo, all vowels in initial syllables except for a have disappeared. Thus Proto-Pomo *ba-, *ča-, *da-, *ma-, *p’a-, *qa- and *sa- correspond to Central Pomo prefixes of the same shape, but both Proto-Pomo *mi- ‘involving protuberance near end of long object’) and *mu- ‘internal force, heat, cold, light, emotions, mind’) correspond to modern Central Pomo m-. The phonological merger has resulted in some doublets: the verb m-ā:n means either ‘dancing along’ or ‘burning along’. Proto-Pomo *ši- ‘clapping, breathing’) and *ši- ‘hooking, dangling’) both appear in Central Pomo as *š-. The first (‘pulling’) was seen above in š-kél ‘pull up weeds out of lawn’. The second (‘hooking’) was seen in š-k’un ‘close a gate’. The Central Pomo vowel loss led to further phonological changes. When the initial consonants of prefixes came into direct contact with the initial consonants of roots, they sometimes underwent further reduction. Proto-Pomo *d- ‘gravity, falling; multiple long objects’) and *d- ‘work, finger action’) first collapsed to *d-, then simply to pre-glottalization in Central Pomo (represented here by an apostrophe ’). A descendant of *d- appears in -lēyač’ ‘kill off all of something, such as
weeds'. A descendant of *du- appears in *-ywd:q ‘recognize by touching’, *-á-e:̂d ‘stick on with fingers’, *-kél ‘clean, as pebbles out of beans before cooking’, and *-q:ál ‘finish a task’. Here, too, the merger of forms has resulted in some polysemous stems. The verb ‘-né:wan is used both to describe someone staggering around, like a man so inebriated that he is incapable of walking and keeps falling down (‘falling’), and for throwing a ball around, from person to person (‘fing finger action’).

The prefixes also differ from nouns syntactically: they do not function as syntactic arguments and are not referential. Verbs containing them are akin to English verbs like ‘slap’, ‘kick’, ‘pore’, ‘bash’, or ‘burn’. They may imply the involvement of a kind of entity: the verb ‘slap’ usually implies a flat surface, particularly the palm of the hand; ‘kick’ implies action with the foot; ‘pore’ implies use of a long, pointed instrument; ‘bash’ conjures up a heavy, blunt instrument; ‘burn’ can imply fire. But none of them introduces a referent into the discourse. I would not say *He bashed me on the head and it broke*, to mean that the rock crumbled (unless the rock was already under discussion). Such verbs can, of course, co-occur with independent referential nouns. I can say *He bashed me on the head with the rock and it broke*. In a similar way, Central Pomo prefixed verbs can co-occur with independent nouns, a further indication that the prefixes and nouns are serving different functions. Furthermore, different nouns can appear with the same prefix, and vice-versa, as in (2).

(2) Central Pomo prefixed verbs with nouns

<table>
<thead>
<tr>
<th>(a)</th>
<th>Q̄abéwi</th>
<th>̄q̄abé-wi</th>
<th>̄q̄abé:̂d:̂c’</th>
</tr>
</thead>
<tbody>
<tr>
<td>rock=with</td>
<td>with.massive.object-split-SEMEL</td>
<td>ACTIVE.PERFECTIVE</td>
<td></td>
</tr>
<tr>
<td>‘He cracked it open with a rock.’</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(b)</td>
<td>Q̄abéwi</td>
<td>̄q̄abé-wi</td>
<td>̄q̄abé:̂h-bá:̂c’</td>
</tr>
<tr>
<td>rock=with</td>
<td>thrusting-split-SEMEL</td>
<td>ACTIVE.PERFECTIVE</td>
<td></td>
</tr>
<tr>
<td>‘He threw a rock (and hit someone in the head).’</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Although the Central Pomo prefixes most often evoke a kind of instrument (means) or manner of action, there is no explicit specification of the role of that entity in the situation beyond general involvement. There are relics of a few other prefixes that serve to characterize the central participant (theme) in the situation, though these have not been productive for some time. A prefix ba-, for example, appears in a few common verbs involving multiple participants: m-átw ‘(one) is lying’, ba-átw ‘(more than one) is lying’; ̄q̄ máw ‘(one) is sitting’, ba- máw ‘(more than one) is sitting’.

The Central Pomo prefixes thus typically contribute more concrete meanings than we normally expect of grammatical affixes, but they are not equivalent semantically or syntactically to nouns or verbs.

3. Means and manner beyond Pomoan

Cognates of the Central Pomo means/manner prefixes occur in all of the Pomoan languages. Their ancestors are easily reconstructed as prefixes for their common parent, Proto-Pomoan. Affixes of this type are relatively rare among languages of the world. Yet they are surprisingly common among languages of California and adjacent areas.

3.1 The Hokan hypothesis

Prefixes with similar meanings appear in a number of other families and isolates in the hypothesized Hakan stock: languages of the Yuman-Cochiti and Palaihnihan families and in the isolates Karuk, Yana, and Washo.

Yuman languages are spoken in Southern California, western Arizona, and northern Sonora and Baja California. Means/manner prefixes are somewhat less transparent semantically in these languages than in Pomoan, but a number have been identified. Describing Mesa Grande Diegueño, spoken near modern San Diego, Langdon reports:
The bulk of Diegueño verb stems are formed by the addition to a root of one of a variety of prefixes. While the meanings of these prefixes cannot be covered by a single descriptive term, they fall mostly in the category of instrumental or causatives. Similarly, the meaning of a particular prefix cannot always be clearly established, especially if it occurs with roots not attested in other stems. (1970: 80).

Miller (1990: 32-49) provides a detailed description of their counterparts in the closely-related Jamul Diegueño, citing cognates in Mesa Grande and Yuma, a member of a different branch of the Yuman family. She mentions ca- ‘motion along a path, long motion, motion with long object, motion with instrument’; ch- ‘with the mouth or by talking, or involving multiple small objects or repetition’; k- ‘speaking, action on foot, force’; m- ‘states’; n- ‘willful or self-assertive behavior’; p- ‘involving pressure’, s- ‘contact with a surface’, sh-‘with the hand or by means of a hand-held instrument’; and x- ‘involving nature’. Each of these prefixes appears in just as many verbs without consistent or discernible meaning as with them, however. Other prefixes occur in the same position without obvious means/manner meanings, in fact often with no detectable meaning at all. Miller provides several sets of verbs sharing the same stems. Based on the root kwin, for example, she lists aakwin ‘wrap’, amkwin ‘twist’, apkwin ‘cross legs’, shemkwin ‘pinch’, skwin ‘put on or wear earring’, and terkwin ‘wind a watch’. Based on the root tu ‘hit, strike’ are kuyttd ‘kick’, kudtu ‘pound acorns’, putu ‘run over’, stu ‘pick up several’, shittu ‘shove’, and xtu ‘wind blows’.

The Karuk language is an isolate spoken in Northern California along the Klamath River. Bright (1957: 86-87) describes what he characterizes as

[...] a phenomenon which is marginal to normal derivation, namely the occurrence of certain sub-morphemic elements at the beginning of verbs. These phonemic sequences, analogous to English sn- in sniff, snort, sneeze, etc., are so limited in distribution as to make it inadvisable to place them on the same level as the usual type of morpheme. However, a common meaning may be traced throughout the various occurrences of each element. (1957: 86).


Not far from Karuk to the east are the Palaihnihan languages Achomawi and Atsugewi. Talmy (1972: 407-427) describes the semantics of the Atsugewi means/manner prefixes in detail. The set is rich and generally corresponds to those in the Pomoan languages in meaning but not usually form. They include tu- ‘hands working toward each other; tasting’, ci- ‘hand working manipulatively’, ma- ‘stepping, kicking, involving foot or leg’, ti- ‘involving buttocks’, pu- ‘involving mouth or mouth-shaped object, as a flower’, wi- ‘with teeth’, pri- ‘sucking, tasting, smelling’, phi- ‘spitting, blown breath’, hi- ‘involving whole body’, ce- ‘involving eye or eye-shaped object, as a button or hailstone’ uh- ‘swinging, batting, throwing, pounding, chopping, hailing’, cu- ‘pushing with stick, pool-cueing, prodding, poking, piercing, skewering, supporting with a cane, holding pinned against a wall, flowing liquid, downward pressure as snow on limb, falling, car in collision, sunshade on cradleboard, tightly packed material as caulking’, ra- ‘thrusting up, digging, awling, sewing, propping, leaning, poking, raking, sweeping, scraping, whipping, plowing, smoothing over, hugging, being pinned down by a log, slicing, sawing, carting, driving, getting run over, pressure as from gas in stomach, ice under
soil, leaning cradleboard, a shingle’, *ih-ih* ‘planar object flush against a surface, as a spread out blanket, board nailed to a wall’, *ta* ‘paddling (hot rock around in soup), stirring’, *ka* ‘boring, raining’, *ru* ‘dragging with a cord, flexing forearm, suspending with cord, binding, girding, steady pull as stream on an anchored cloth, attached object as sinew, a belt, an icicle’, *mi* ‘cutting with blade of knife’, *ca* ‘wind blowing’, *miw*-/*mu* ‘heat or fire’, *wu* ‘light shining’, *sa*-/*su*-/*si*-/*sr* ‘visually’, *ka*-/*ku*/*ki*/*kiw* ‘auditorily’, *tu* ‘by touch’, *cri* ‘linear objects in parallel, as hairs in a plait, stalks in a sheaf, sticks in a bundle’. An example is *w*ɔrsəl̃ic’ta ‘she threw the clothes into the laundry tub’, consisting of *w*-/*uh*-swal-ic’t’ *wa* ‘FACTUAL’-throwing-limp.material.move-into.liquid-FACTUAL’.

Immediately to the southwest of Atsugewi is *Yana*, extensively documented by Sapir. The language contains a large set of elements expressing ‘instrumentality’. The Yana dictionary (Sapir & Swadesh 1960) lists such markers as *baa* ‘striking, punching’, *bu* ‘kicking, stepping’, *bu*- ‘invoking feet’, *di* ‘shearing, peeling’, *ga* ‘speaking, uttering’, *ha* ‘invoking long object’, *hi* ‘with the hands of generally instrumentality, pulling, bending, breaking, washing, eating with fingers’, *nis* ‘by or at the foot’, *pu* ‘blowing, sucking, with the mouth’, *wa* ‘invoking a long object’, *yul* ‘mashing’, *Ca* ‘eating, biting’, and *Ĉu* ‘shooting, digging, wind blowing’. Their functions can be seen by comparing sets of verb stems containing *balala*- ‘push, knock’: *bag-balala*- ‘to push, knock down with fist’, *bu-balala*- ‘to kick’, *ga-balala*- ‘to nudge’, *baa-balala*- ‘to strike’, and *Ĉu-balala*- ‘to push’. A sample of verb stems all containing the prefix *ga* ‘speaking’ includes *gg-*c’gai- ‘to talk loudly’, *ga*-lua- ‘to cry, weep’, *ga*-lak’ap’ai- ‘to answer’, *ga*-wu- ‘to shout to’, *ga*-c’an- ‘to make a speech’, *gaba* ‘to stop one from uttering’, *gabi- *busidi*- ‘to speak for one’s happiness’, *ga*-dame- ‘to meet in council’, *ga*-dunmi- ‘to leave word behind’, *ga*-duuk’ab*- ‘to stop talking’, *ga*-k’erailaugi- ‘to speak in a slow drawl’, *ga*-k’uwi- ‘to shout to one’s dream spirit’, *ga*-me*’i*- ‘to prevaricate’, *ga*-mik’uici- *bic’a*- ‘to talk unintelligibly, wrongly’, *ga*-riii- ‘to speak Northern Yana dialect’, *ga*-taa- ‘to speak a non-Northern Yana dialect’, and *ga*-wanu- ‘to talk to’ (1960: 79).

*Washo* is an isolate spoken to the south, around Lake Tahoe in California and Nevada. Jacobsen describes ‘a set of over 125 prefixes of concrete meaning’ (1960: 85). Some indicate a type of means or instrument, with as *d* ‘with hand, fist, instrument held in hand’, *lug* ‘with long object swung sideways’, and *s* ‘by fire or heat’. Some indicate manner, such as *w* ‘by treading on’, *t* ‘by scratching, pinching, squeezing with fingers’, *t* ‘biting, holding in teeth’, *d* ‘shooting, throwing rock’, *h* ‘by pushing, stirring with side of long object’, *lu* ‘by pressing, mashing, stomping on’, and *l* ‘cutting with sawing motion’. Of course means and manner are often indistinguishable. Use of the prefixes can be seen in *di*-***lac’em ‘with instrument held in hand-find’ = ‘to find by digging’, *ċ’uwi-iyu* ‘hanging-oscillate’ = ‘to swing’, and *lug-a:k’iin ‘with long object swung sideways-sever’ = ‘to cut with axe’. Some of the prefixes characterize the entity involved, as in *g-a:kw’i:aw ‘surface-be.hard’ = ‘to be hard, as wood or bread’, *wege-p’ilp’il* ‘(liquid) to be blue’, and *Thi-lsi* ‘(cloth) to be thin, fine’. More will be said about the Washo system later on.

The *Chumash* languages, spoken on the Central Coast of California, were once hypothesized to be possible members of the Hokan group, but the proposal was based on minimal lexical evidence which was subsequently rejected. Nevertheless, these languages show verbal prefixes with functions similar to those seen so far, indicating means, manner, medium, and characteristics of entities involved in the situation. These prefixes, which immediately precede the root, vary greatly in productivity and can have meanings that are difficult to isolate. Among the Ineseño Chumash prefixes listed by Applegate (1966: 346-369) are *apr* ‘of, with fire’, *aput* ‘of liquid in motion’, *aq* ‘with the mouth’, *aqul* ‘of, with a long thin object’, *ašni- ‘with the feet’, *maq* ‘of, with a line or rope’, *naq* ‘with the body’, *pal* ‘of, with a pliable object’, *tak*- ‘with the hand’, *taya* ‘of rain’, *us*- ‘of, with fire’, *uš* ‘with the hand, palm’, *wala*- ‘of, with the body or a massive or bulky object’, *waš* ‘with the hand’, *wašš*- ‘of a flow, liquid in motion’, *yul* ‘of, with heat’, and *yuup*- ‘of the legs’. Uses of *aq*-/*ax* ‘with the mouth’ can be seen in *ax-tap ‘with.mouth-enter’ = ‘to put into the mouth’, *ax-kial ‘with.mouth-crack’ = ‘to
shell acorns with the teeth', *ox-loc with mouth-be perforated* = 'to bit a hole in', and *eg-loc in with mouth-out* = 'to bite in two, bite through'. Others indicate manner, such as *apti- 'crushing, grinding', aqni- mentally', aqsi- 'calling', aqsi- 'eating', aqti- 'verbal or mental activity', axwi- 'swimming', *x- 'following', ikwi- 'pressure, restraint', itxi- 'hearing', kal- 'by cutting', kina- 'dying', kupal- 'drinking', ku- 'growing', max- 'dragging, sliding', qal- 'tying, binding', tal- 'grasping, holding', tr- 'speaking, intention', uqsi- 'throwing', uxmai- 'washing, cleaning', and wi- 'by blows, by hitting'. Uses of this last prefix can be seen in *wi-st-eq 'splitting-off' = 'to split by blows', wi-siq 'hitting-do firmly' = 'to pound tight', and wi-su-kitwon 'hitting-CAUSATIVE-exit' = 'to knock out, dislodge with a blow'.

Although sets of means/manner prefixes appear in numerous languages grouped as Hokan, not all members of the group show them. They are not mentioned in descriptions of Shasta, Essolen, or Salinan. Such prefixes may of course have once existed and been lost, or they may simply have escaped documentation, which in some cases is scant. The pattern is not confined to the Hokan group, however.

### 3.2 The Penutian hypothesis

Sizeable sets of prefixes with the same kinds of meanings, though not the same forms, also occur in languages of California and Oregon hypothesized to belong to the other major stock, Penutian.

The *Maidu* languages Maidu (Northeastern), Konkow (Northwestern), and Nisenan (Southern) were spoken at contact immediately to the south of Yana and Atsugewi and to the north of Washo in northeastern California. All contain sets of means/manner prefixes, which tend to show vowel harmony with the following stem. Describing Maidu proper, Dixon (1911: 693-699) lists the following prefixes: *hain, hi- 'with the shoulder or back', hain, hi- 'with nose or snout', i:n- 'by sitting on', isi-te- 'with the foot', ka- 'with the flat hand or flat side of something', ki- 'with the fingers', o:- 'with the head', so:- 'with the arms', te- 'with or upon the foot', ba-be/-bo-kö/-tu- 'involving a rounded or massive thing', ho-/nu- 'with the edge of a long thing, generally by a steady, continuous motion', si/si- 'with the end of a long thing', wa/we- 'with the edge or side of a thing, often by a sudden motion or blow', wo-/wö/-wu- 'with the end of a long thing, generally by a blow', ya-/ye-/yo-/yu- 'with the end of a long thing, endways, or in a direction parallel to the length of the thing', he- 'by accident or spontaneously', and wi- 'by force, especially by pulling'. Some examples of the use of o:- 'with the head' are o-bädodom 'breaking a stick with the head', o-po-pökdom 'shaking water out of the hair', o-puldon 'to root up (as a hog), to dig up with horns', o-moto 'to put heads together', and o-miton 'to look into a house, i.e., stick head down through smoke hole'. Some examples of wa/wa- 'with the edge or side of a thing, sudden motion or blow', are wa-apdau 'to scrape off with edge of a knife', wa-bañon 'to break a stick by blow with the butt of an axe or with a club', wa-dastom 'to split with an axe', wa-hapkin 'to insert a stick into a bunch of sticks', wa-katsito 'to bat across, knock across, with side of pole', we-kuttedom 'biting in two with teeth', we-pititn 'to pinch with thumb and fingers', we-tpadadon 'tearing off with teeth'. Similar forms can be seen in Konkow (Ulltan (1967) and Nisenan (Uldall & Shipley 1966).

Just north of the Palaihnihan languages, in Oregon, is the *Klamath* language, described by Barker (1964: 114-119) and discussed in detail by Delancey (1988, 1991, 1996). Klamath contains 72 morphemes that characterize a type of instrument, a manner of action, or a type of entity acted upon. Among them are *n- 'acting with a round instrument', čt- 'acting with the fingers, fingernails', čt- 'acting with a long object', ctn- 'acting with the back', go- 'acting with the head first', gb- 'acting with the mouth, sucking, spitting', kt- 'hitting, kicking', spt- 'dragging, and no- 'burning'. Examples of their use are gb-oyamma 'with mouth-carrying or holding' = 'has something in the mouth', swet-la 'by tying-squash' = 'cinches a horse', and go-wanga 'burning-fall' = 'tree burns down'. Many of the morphemes in this group characterize the entity centrally involved (the theme), such as čt- 'acting on plural objects', gb- 'acting on a flat object', k- ċt- 'acting upon fire', and sl- 'to act upon a clothlike object, as in sl-wtla 'throws down a cloth'.

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Prefixes indicating types of instruments and involved entities also occur in the Takelma language, spoken immediately to the west of Klamath and to the north of Shastan in Oregon. Sapir (1922a: 64-86) lists sets of prefixes, many evoking body parts and other instruments, such as i- ‘hand, with the hand’, waya- ‘knife’, da- ‘mouth, burning, glowing’, dak- ‘head, with the head, on top of’, da- ‘ear, with ear, hearing’, s:in- ‘nose, in nose, with nose’, gel- ‘breast, mentally’, sal- ‘foot, with foot’, al- ‘face, with eye, seeing, looking’, xa- ‘cutting, splitting, breaking’, xi- ‘crushing, mashing, squeezing’, da- ‘involving long object’, ia- ‘bursting, ripping open’. Examples include han-waya-swilsdulhi ‘he tore him open with a knife’, dak-da-haxinda ‘I (with mouth) answered him’, xa-be-nökwa ‘I warm my back with the sun’. The same prefixes can characterize either an instrument or entity acted upon: xa:-be-m-k'wo:k'widin ‘I broke it with a stick’, be:m-wa:it’oxoxi ‘I gather sticks’. When both are mentioned in a verb, the one characterizing the object precedes that characterizing the instrument.


Means/manner prefixes occur in many of the languages grouped into the Penutian stock, as we have seen, but not in all of them. There is no mention of them in descriptions of the Wintun, Utian (Miwok-Costanoan), or Yokuts languages, nor in descriptions of the Oregon Coast languages Coos, Siuslaw, and Alsea, nor further afield.

3.3 Wappo-Yuki

Two remotely related languages comprising a third small family were spoken in areas directly adjacent to the Pomo. Wappo territory is immediately to the southeast of the Pomo, and Yuki territory immediately to the north. Both Wappo and Yuki show small sets of prefixes which characterize means, manner, and sometimes the entity involved in ways strikingly similar to those in other languages in the area. The forms in the two languages appear to be cognate.

Among the Wappo prefixes, Radin (1929: 29) lists me- ‘with the hand’, na- ‘with the mouth’, pe-‘with the foot’, wi- ‘by pulling, by force, general instrumentality’, and me-‘head’, all of which appear in the same position in the verb. Describing me- ‘with the hand’, he notes, ‘This is apparently an old instrumental prefix and in only a few cases is the stem employed as an object’. (1929: 33). Among his examples are me-tsápiki ‘he grabbed’ (with hand), me-k:á ‘to feel with hand’, mai-mo-wále ‘he scours’, me-wi:ti ‘to catch with hand’, me-kétke ‘he tickles (with fingers)’ me-máma ‘he picks up long object with hand’, me-mátumá ‘he picks up flat object with hand’, me-k:aluma ‘he picks up concave object with hand’, and me-pítveski ‘he folded his arms’. In his Wappo dictionary, Sawyer (1965) contrasts meh-woýi:si’il ‘rub with the hands, rub by hand’ and pih-woýi:si’il ‘rub with the foot’. Some additional verbs with the prefix phe/pih- ‘involving the foot’ are pih-chólsi’il ‘scuffle, make scuffling noises’, pih-woýi:si’il ‘rub with the foot’, phe-piwi:šél ‘slip in wet or muddy places’, and pih-yeh:mi’il ‘trot’.

In her reconstruction of Proto-Yukian (from the three Yukian dialects or closely related languages), Schlichter (1985: 43) notes that ‘a few derivational, non-pronominal prefixes are reconstructable’. She lists *mi- ‘of the hand or foot’, *na- ‘of the mouth’, *hu- ‘face’, and a few others of less clear meaning. As in Wappo, the prefixes appear in both nouns and verbs. Sawyer

### 3.4 Uto-Aztecan

The Uto-Aztecan family is large in terms of both number of languages and geographical spread. It contains over 30 languages and extends from Idaho in the north to El Salvador in the south, and from the California westward as far as Oklahoma, due in part to recent migration. Means/manner prefixes occur in just one branch of the family: Numic. Numic languages are spoken throughout the Great Basin, in eastern California, adjacent Oregon, Idaho, and into Utah and Wyoming.

Describing Kawaiisu, a Southern Numic language spoken in south-central California to the east of the Chumash languages, Zigmond, Booth & Munro (1990: 78) report:

Most typically, these prefixes specify the instrument or body part with which an action was performed, but they sometimes are used to refer to an object rather than an instrument, or they can have a less specific adverbial meaning. There are six of these prefixes in Kawaiisu:

- **ca-** ‘with the hand; grasping’
- **di-** ‘with a long pointed instrument’
- **ki-** ‘with the mouth or teeth’
- **ma-** ‘with the hand’
- **ta-** ‘with the foot’
- **wi-** ‘with an instrument’

Examples of verbs with ca- ‘with hand, grasping’ are ca-ga- ‘to lead into; to make a twined basked’, ca-nikwi- ‘to pull’, ca-pugwiti- ‘to sew, mend’, ca-waga- ‘to scratch, with intent to draw blood’, ca-wele- ‘to scratch an itch’, and ca-wirugwi- ‘to shake hands’.

Other Numic languages show similar inventories of means/manner prefixes. Túmpis (Panamint) Shoshone, a Central Numic language, was spoken before contact in what is now southeastern California and southwestern Nevada. Dayley (1989: 93-97) lists the following prefixes which ‘typically indicate the instrument with which a transitive activity is done, but sometimes they indicate the manner of the activity, and sometimes, especially with intransitive verbs, they indicate the source or causal factor of an activity’ (1989: 92-3). ma-/mo- ‘with the hand’, ki-/ku- ‘with the teeth or mouth’, ku-/ko- ‘with heat or fire’, ni- ‘with words, by talking’, pa-/po- ‘with or pertaining to water’, pi- ‘with the butt or behind’, sü- ‘with or from cold’, sun- ‘with the mind, by feelings or sensing’, ta-/to- ‘with the foot’, ta-/to- ‘with a hard rock-like instrument’, to- ‘with the fist, by violent motion’, tso-/tso- ‘by grasping, in the hand’, tsi- ‘with a sharp or pointed instrument’, tso- ‘with the head’, and wi-/wo- ‘with an elongated instrument, generic’. (Many automatically germinate a following consonant.) The meanings added by the prefixes can be seen by comparing sets of verbs based on the same root, like ka’ah ‘break (of flexible object)’: ku-ka’ah ‘break from heat’, ki-ka’ah ‘bite in two, break with the teeth’, mu-ka’ah ‘break with the nose’, pi-ka’ah ‘break with the butt’, sü-ka’ah ‘break from cold’, ta-ka’ah ‘chop with a rock-like instrument’, isa-ka’ah ‘break by pulling apart’, ti-ka’ah ‘cut’, wi-ka’ah ‘chop’.

The inventories of means/manner prefixes in the various California languages vary considerably in elaboration, but prefixes with certain types of meanings appear in set after set, meanings such as ‘with the hand or by grasping’, ‘with the foot or by kicking’, ‘with the teeth or by biting’, ‘with fire or by burning’, ‘with a pointed instrument or by thrusting or poking’.

### 4. Central Pomo locative/directional suffixes

The second part of the shared verbal structure consists of sets of suffixes indicating location and/or direction. Central Pomo, seen earlier, contains such a set. Their effect can be seen by comparing the verbs in (3), all based on the root ča-, used for one person running or one or more riding in a vehicle. (The forms below do not specify tense, but like all Central Pomo verbs, they...
are inflected for aspect. Perfectives are marked by -w after a vowel and zero after a consonant. Imperfectives singulars are marked by -n.)

(3) Central Pomo suffixes

<table>
<thead>
<tr>
<th>Suffix</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>ća-w</td>
<td>'run' (one)</td>
</tr>
<tr>
<td>ća:-la-w</td>
<td>'run down'</td>
</tr>
<tr>
<td>ća:-gal'</td>
<td>'run up (as up a hill)'</td>
</tr>
<tr>
<td>ća-' ć'</td>
<td>'run away'</td>
</tr>
<tr>
<td>ća-way</td>
<td>'run against hither, as when a whirlwind came up to you'</td>
</tr>
<tr>
<td>ća:-w-an</td>
<td>'run around here and there'</td>
</tr>
<tr>
<td>ća-mih-w</td>
<td>'run around it (a tree, rock, house, pole etc.)'</td>
</tr>
<tr>
<td>ća-mač'</td>
<td>'run northward'</td>
</tr>
<tr>
<td>ća-ć'</td>
<td>'run by, over (along on the level), southward'</td>
</tr>
<tr>
<td>ća-m</td>
<td>'run over, on, across (as bridge)'</td>
</tr>
</tbody>
</table>

These locative/direotional suffixes can and often do co-occur with the means/manner prefixes described earlier.

(4) Central Pomo prefix-suffix combinations

<table>
<thead>
<tr>
<th>Suffix</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>da-di-la-w</td>
<td>'push something over a cliff'</td>
</tr>
<tr>
<td>ma-di-la-w</td>
<td>'kick something over a cliff'</td>
</tr>
<tr>
<td>p'a-di-la-w</td>
<td>'slowly glide into a swimming pool'</td>
</tr>
<tr>
<td>p'A-di-la-w</td>
<td>'jump down, over a cliff, into the water'</td>
</tr>
<tr>
<td>ěa-di-la-w</td>
<td>'chase (dog) downhill'</td>
</tr>
<tr>
<td>ba-di-la-w</td>
<td>'walk downhill singing'</td>
</tr>
<tr>
<td>'di-la-w</td>
<td>'carry something downhill in hands'</td>
</tr>
<tr>
<td>s-di-la-w</td>
<td>'carry something downhill by the handle'</td>
</tr>
</tbody>
</table>

Like the means/manner prefixes, the locative/direotional suffixes are pervasive in the vocabulary and in speech.

5. Location and direction beyond Pomoan

Cognates of the Central Pomo locative/direotional suffixes can be found in all languages of the Pomoan family, so they can be reconstructed for Proto-Pomoan (Oswalt 1976: 23-24). Suffixes of this type occur beyond the family borders as well. As we will see below, the general structures are the same, though the shapes of the markers are not.

5.1 Location and direction within the Hokan group

Inventories of locative/direotional markers are quite elaborate in some of the languages that have been proposed to be members of the Hokan stock.

**Karuk**, the Northern California isolate, contains a rich set, many of which reflect the setting along the Klamath River in which the language is spoken. Bright (1957: 95) lists the following: -mu 'thither', -rapu 'hence downriverward', -unih 'down from a considerable height, hence downhillward', -ra: 'hither, hither from downriver, hither from downhill', -ura: 'up to a considerable height, hence uphillward', -faku 'hither from uphill', -ro:t:vu 'hence upriverward', -váræk 'hither from upriver', -sip(riv) 'up to the height of a man or less', -i(s)rih 'down from the height of a man or less', -káro: 'hence across a body of water', -rīma 'hither from across a body of water', -kara 'horizontally away from the center of a body of water, into one's mouth', -riPa: 'horizontally towards the center of a body of water', -rúPa: 'out of one's mouth', -rámnih 'into a container', -risuk 'out of a container', -vara 'in through a tubular space', -ktiv 'out through a tubular space', -ripréh 'in through a solid', -riprév 'out through a solid', -fùruk 'into an enclosed space', -rúPuk 'out of an enclosed space', -rín 'in opposite directions', -hùna 'toward each other', váraxyva 'here and there within an enclosed space', and -húna 'here and there in an open area'. Some examples of the use of -kara 'horizontally toward the center of a body of water' are ikpyuh 'swim', ikpú:hi-kara 'swim across the river'; ikxip 'fly', ikxi:-kara 'fly across.
the river'; *iškak* ‘jump’, *iškak-kařa* ‘jump into (a river or lake)’; *piv* ‘step’, *piv-kařa* ‘step out over (a creek)’; *sir* ‘disappear’, *sir-kařa* ‘swallow’; *tářiv* ‘pour’, and *tářiv-kařa* ‘drink’.

**Shasta**, spoken immediately to the east of Karuk in Northern California and into Oregon, also shows a set of locative/directional suffixes. Silver (1966: 144-155) lists *-cw* ‘away, thither’, *-ehē:wi* ‘downstream’, *-ehē:w* ‘out of a container’, *-ahā:b* ‘into a circumscribed area’, *-wak* ‘in liquid’, *-hāvpi:’ ‘downward, outward’, *-asv* ‘away, off’, *-cw* ‘upward’, *-lNēni* ‘through a circular or tubular space’, *-ipsiri* ‘down into’, as well as some suffixes which occur in combination with others, *-wak* ‘located in relation to a circumscribed area’, *-nhi* ‘along with, after’, *-hō:l* ‘into’, *-tac:ā* ‘toward’, *-kni* ‘up over’, *-kway* ‘up along’, *-lō:l* ‘down along’, *-awhi* ‘straight ahead into a circular/tubular space’, *-wak* ‘in liquid’, *-ak*i ʻencircling a long object’, *-ähō:w* ‘along in space’., *-k’ā:hu* ‘upstream from the mouth of a stream’, and *-rahhā* ‘here and there’. Some examples of the combinations are: *k’wirylifogta:ka?* ‘he walked along the river upstream’, *ri:ʔeʔawhi?* ‘Let him look straight ahead into the hole’, *kwāhuh:hepmip* ‘he puts mouth on body and sucks’, and *kixam:ehempirakmok:ira?* ‘he’s going from chair to chair (to see which is the most comfortable)’.

The **Palaihnihan** languages also contain locative/directional suffixes. Talmy (1972: 432-467) lists numerous examples of Atsugewi verbs containing them. Among them are *-ak*: ‘locative’, *-iik*: ‘hither’, *-im* ‘thither’, *-ic* ‘up’, *-mto* ‘down onto the surface of the ground’, *-swaw* ‘off from over a surface’, *-ic* ‘into a liquid’, *-ik’s* ‘at the lateral surface of a solid’, *-cis* ‘down onto the upper surface of a solid’, *-ihiv* ‘on one’s body’, *-cam* ‘to a position adrift a firesite’, *-asv* ‘all about within itself (hair tousling about, clothes flapping about)’, and *-asvy* ‘multiply together, into an accumulation’. The suffixes also occur in combination: *-ihiv-iik*: ‘out of a snug enclosure or socket, detached from moorings’, *-nmk-iy* ‘all about, here and there, back and forth’, *-pik-aqw* ‘around’, *-mik* ‘onto a head, into a face, into an eye’, *-wam-im* ‘into someone’s body’, *-tip-asv* ‘apart’, and *-tip-u* ‘down into a pit in the ground’. This last can be seen in *nohmēq’tpu:ma* ‘the house fell all the way down into the cellar’ (*ruw-uh-miq’tpu*-IM-A EVIDENTIAL-by-gravity-for-house-like-structure.to.move-down.into.pit-thither-FACTUAL). Another example is *s’w-phu-puq-waw-ihiv-a FACTUAL-blowing-dust.to.move.into.cloud-off.from.over.a.surface-on.one’s.body-FACTUAL*.

**Yana** contains a similar set of markers. In his introduction to the Yana dictionary, Swadesh remarks that ‘the most numerous class [of suffixes] is directional and locations’ (Sapir & Swadesh 1960: 13). Sapir lists the following suffixes for the Northern Yana dialect: *-aɾ* ‘in the fire’, *-at* ‘up to, arriving at’, *-bal* ‘up from over a surface’, *-bil* ‘about, here and there’, *-di-bil* ‘at random, over all over, to pieces’, *-bit* ‘following’, *-but* ‘first, ahead’, *-dap* ‘out of the house’, *-di’ ‘down’ , *-du* ‘back home, retracing one’s steps’, *-dun* ‘straight down, moving down’, *-dun* ‘one after another’, *-dun-i*: ‘back, backwards’, *-da* ‘straight ahead’, *-dyi:* ‘around, in a circle’, *-dja:ri* ‘on top, on a surface’, *-gap* ‘from the north’, *-gil* ‘moving over the crest’, *-git* ‘to a neighboring house’, *-hau* ‘to the east’, *-ki* ‘toward the speaker, hither’, *-kai-* ‘moving through’, *-kap* ‘to oneself, toward the speaker’, *-k’ul* ‘sideways, slantwise’, *-la:u* ‘out of an enclosed space, out of the mouth, out of one’s eye, from a spring, from the plain up to the mountain, out of the ground, from the water on to land’, *-lu* ‘in the head’, *-ma* ‘there, from there’, *-mar* ‘down in a hole, pit, basket’, *-mal* ‘just outside the house’, *-maw* ‘to the west’, *-mgu* ‘near the house, right there’, *nai-* ‘all over the house’, *sa:* ‘off, away’, *sedja’ gone up (refers to houses)’, *-t’dyj* ‘up in the air’, *-lkh:* ‘from the east’, *-lpoa:* ‘to the south’, *l’au* ‘in the plain’, *-gai* ‘all over (hands and feet)’, *-tst* ‘in a zigzag line’, *-tsil* ‘in the water’, *-uld* ‘down from a height, down the mountain’, *-waqai* ‘from the south’, *wagal* ‘through a hole or opening’, *wasa* ‘above, over’, *wal-di* ‘down on the ground’, *walma* ‘in hiding, in the woods’, *walsa* ‘hidden in the house’, *wil* ‘across (a stream), crosswise’, *-wil-mi* ‘on one side’, *wul* ‘into the house, into an enclosed space’, and *utimag* ‘in the middle, between’ (Sapir 1922b: 224-230). A number of verb roots never appear without such suffixes, particularly those describing position or movement, such as ‘one male walks’, ‘dance’, ‘chase’, ‘extend one’s foot’, ‘flow, spill’, ‘turn’, ‘spread out’, ‘reach out’.
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'handle', 'long object moves', 'blow', 'suck', 'creep', 'shoot', 'wind to blow', and more. The root Ci- 'creep, move in non-erect fashion', for example, appears in verbs Çīlān 'he lies down in fire' (Yahi dialect), Çīl-gil- 'to get into a spring to bathe', Çīlāwunsttī (squirrel) scurries back into its burrow' (Yahi), Çīk'ud'sulī-Cūsī 'he slips up from behind', and Çīk'ud'suasi 'he slinks away, creeps away' (1960: 199).

Washo also contains a rich set of locative/directional markers including āmad 'to the south, from the north', āmi 'to the east, from the west', āti 'down, downwards', āliwei 'up, upwards', āt'i-we? 'uphill, diagonally upwards', āwei 'on the ground', āpis 'up from a surface', ādab 'spread over a horizontal surface', āqīl 'on something', ā-ilm 'under, underneath', āhād 'across', āwed 'over the edge, the summit', āxī 'in', āt'um-towei 'down in, out of sight', āmad 'in a tube', āmi 'out from', āyab 'through a narrow opening, going past', āgal 'in the mouth, down the throat', āwei 'in a certain direction', āxīb 'straight, right', ācor 'on top of, and āgel 'around something, around in a circle', āyu 'oscillating', ālīb 'together', āt'a-t'i 'apart', and ātāy 'away, out of the way' (Jacobson 1980).

5.2 Location and direction in the Penutian group
Like the means/manner prefixes, the locative/directional suffixes occur beyond the Hokan group. In fact they are as pervasive among Penutian languages as among Hokan languages, if not more.

The Maidūn languages all show sets of locative/directional suffixes. Maidu contains 15 such suffixes, all but one of which (t'a 'on top of') imply motion. Shipley (1964: 42-44) lists the following: -c'ik 'over or into, especially covering or closing', -c'o 'up over the edge, around from behind', ādaw 'down and away', ādiq 'up to and into', ādaj 'upward', āje 'hither', ālīg 'downward', āk'oj 'away from here, thither', āmit 'down onto or into', ān 'downstream, downhill (usually southwest)', āno 'along, general motion without implication of direction or attitude', āpaj 'against', ām 'hither', āsip 'out of', āt'a 'on top of', and āwaq 'apart'. The suffixes sometimes occur in sequences, such as -c'o-pin 'up over the edge and hither' and -no-je 'aimlessly'. Examples of their use can be seen in lāt-daw- 'drip away', āhē-daw- 'fall away', penj-kit- 'bend down under weight', t'up-sip- 'spit out', āk-št'a 'to the right, going through a narrow place', āk-n-je- 'aimlessly'. Similar forms can be found in Utian (1967: 72-80), and Nisenan forms in Uldall & Shipley (1966).

Klōhīt shows well over a hundred such markers. Among those listed by Barker (1964: 143-151) are -en 'away', āWa 'along the back', āig 'into a container', āyyamn' around', āoditgo:l 'out from underneath', ā-t'amsg 'between', al'a:l 'into the fire', āba:ni 'to the limit, end', āk'ayl 'up high, hanging up', ā-abamn 'up against, to the shore', āk'we 'across', āygo 'over, above', āotq 'up out of water', āk'uyamn 'around, surrounding', āayq 'right beside', āywitt 'spread out', ātpe:gi 'on top of a full load', ālē'wy 'right up to', āli 'down off', āwaw- 'from hand to hand', k'akwe: ā 'stick in a tight place', ā-wi:n 'among', āt'a-wi 'in the sun', āt'sq 'out of a tubular object', ātn 'at, against, onto', āmi 'up', āwei 'down a hill', āt'ewi 'over a mountain', phelih 'back and forth', āsl 'on fire', āk'ewy 'in a narrow place', āli'g 'on the edge of a stream, on the forehead', āc'p 'sliding down off a tubular object', , āgamm 'up, upstream', āyel 'inside', āyq 'extending out onto a plain', āwal 'covering, on top', āeq 'in the air repeatedly', āyq 'up, raising, lifting', āykr'n 'to the edge, off a fire, out of water, in a line', ā'g 'down, to the earth', ākang 'around, here and there', and āela 'onto, onto a surface, onto a vehicle'. Examples of their use are in ks-el-apga 'is loading a live object onto' (ks'-el-apga-a act.upon.live.object-onto.vehicle-DURATIVE-INDICATIVE), kitiwunga 'pushes someone around' (kt-nw-ng -a push-act.violently-around-INDICATIVE), ngat'o:wonele:q'a 'jumps up and down' (ngat'rr-wal-e:q'a jump-INTENSIVE-on.top-in-air.repeatedly-INDICATIVE), st'ast'aaq:Li:kina 'is bald inside along the edges, hairline goes way back in' (trst'aq'-oLy-yk:n-a DISTRIBUTIVE-be.bare/bald/grassless-inside-to-the.edge-INDICATIVE).