

Hokan III: Velar obstruents and glottal stop¹

The article continues the series of publications focused on the reassessment of the controversial Hokan hypothesis. In this paper, the traditional comparative method is applied to the reflexes of Proto-Hokan obstruents and glottal stop. The obtained results are compared to Terrence Kaufman's (1989) reconstruction of Proto-Hokan.

Keywords: comparative method; Hokan languages; Native American languages; historical phonology.

0. Introduction

The present article continues the series of publications dedicated to reassessing the controversial Hokan hypothesis (Zhivlov 2024, Zhivlov 2025). The previous installment treated sound correspondences for labial and coronal obstruents. In this article, I will survey the remaining correspondences for obstruents — those for velar obstruents and glottal stop. For the question of family membership, see Zhivlov (2025: 52). The survey of Hokan phonological systems can be found in Zhivlov (2025: 54–61). The list of default sources of language data is repeated below:

Chimariko — J. P. Harrington's fieldnotes (available online at <https://sova.si.edu/record/naa.1976-95/contents>). Harrington's fieldnotes are cited by volume, reel and frame, e.g., (2.20.0024) means Volume 2, Reel 20, Frame 0024;

Karuk — Bright & Gehr (n.d.);

Shasta — Silver (1964) and other works by the same author;

Achumawi — Nevin (2020);

Atsugewi — L. Talmy's fieldnotes (Talmy n.d., a; Talmy n.d., b);

Yana — Sapir & Swadesh (1960);

Pomoan — McLendon (1973);

Salinan — J. P. Harrington's fieldnotes (available online at <https://sova.si.edu/record/naa.1976-95/contents>);

Yuman — Mixco (1985) for Kiliwa, Crawford (1989) for Cocopa, Miller & Langdon (2008) for Jamul Tiipay (data from speakers Adolph Thing and Jane Thing Dumas) and Barona 'Iipay, Couro & Hutcheson (1973) for Mesa Grande 'Iipay, Munro et al. (1992) for Mojave, Salt River Pima-Maricopa Indian Community — O'Odham Piipaash Language Program (2000) for Maricopa, Halpern (1946a, 1946b, 1946c, 1947a, 1947b, 1947c) for Quechan, Joel (1966) for Paipai, Watahomigie et al. (2003) for Hualapai, Hinton (1984) for Havasupai, and Shaterian (1983) for Yavapai; Seri — Moser & Marlett (2010). On sources for 19th century Seri, see Marlett (2010).

Oaxaca Chontal — Turner & Turner (1971) for Highland Chontal, O'Connor (2013) for Lowland Chontal, and de Angulo & Freeland (1925) for Tequistlateco.

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1. Sound correspondences

1.0. Introduction

As in the previous paper (Zhivlov 2025), I present sound correspondences between obstruents in Hokan languages starting from their reflexes in Proto-Pomoan.

1.1.0. Correspondences involving Proto-Pomoan velar stops and fricatives

The following velar phonemes are reconstructed for Proto-Pomoan: *k, *k^h, *k̥ and *x (McLendon 1973: 23-24, 26).

1.1.1. Proto-Pomoan *k

The sound correspondence involving Proto-Pomoan *k is represented in Table 1. This correspondence reflects the Proto-Hokan plain labialized velar stop *k^w. There are no plausible comparisons where Proto-Pomoan *k corresponds to a non-labialized velar in Yuman or Chontal. The reflex in Achumawi may be connected with the position of the sound within the root (see below for Achumawi /t/ as a reflex of a root-final PH *-k), but the data are too sparse for any conclusion. Salinan /k/ in *ʔašák* < PH *k^hak^wá may represent a merger of expected /k/ with a suffix *-ʔ, on which see Zhivlov (2025: 63). Seri has zero (19th century Seri /β/).

PH	Chi	Kar	Sha	Ach	Ats	Yan	PPom	Sal	PYum	Ser	PCho
* k^w	k	k	k	t		k	*k	k	* k^w	$\beta > \emptyset$	* k^w

Table 1. Proto-Hokan *k^w.

(k^w-01) PH *(a-)k^wá ‘mother’s father’

SHA *ʔák-wit* ‘mother’s father’ (Silver 1961: 2)

PPOM *-ká-*çi* ‘mother’s father’ > Pk -*ca.š*-, Ps -*č.áč*-, Pn -*cá?*, Pne *tá.č**ci*, Pse -*ce[n]*, Pe *ká.č* (pPom *-*çi* ‘one’s own kinsman in generations above ego’)

PYUM *(n-)k^wa(·)-w ‘mother’s father’ > Ki -kuw² ‘be mother’s father (and siblings)’, Co n^y-k^waw ‘mother’s father’, JT nə-k^wa·w ‘grandfather’, MGI pa-nə-k^wa·w ‘his mother’s father’, Mo na-k^wew ‘mother’s father, grandfather’, Ma n-k^wo ‘grandfather (maternal)’, Hu k^wáw-a ‘mother’s father, grandfather’, Ha n-k^waw ‘grandfather (mother’s side)’, Ya k^wāw-a ‘mother’s father’ (*n- ‘kinship terms prefix’ [Miller 2001: 86])

SER *aa-š* ‘maternal grandfather; great-uncle (mother’s father’s brother); mother’s father’s sister’s husband’ (pl. *aa-łk* [sg. possessor], *áa-łkox* [pl. possessor], abs. *?apé-ε-š*, 1 sg. *?ε-aa-š*

NOTES. (1) This kinship term forms part of a mini-paradigm of terms for grandparents: PH *(a)-pá ‘father’s father’, PH *(a)-k^wá ‘mother’s father’ (k^w-01), PH *(a)-má ‘father’s mother’, PH *(a)-ká ‘mother’s mother’ (k-01). All four terms for grandparents are preserved in Pomoan, Yuman and Seri. (2) Shasta *-wit*, Yuman **-w* and Seri *-š* are suffixes found in other terms for grandparents. (3) PH **k^w* > Seri zero possibly by way of 19th century Seri /β/ (reflected as zero in modern Seri), but this particular word is not attested in 19th century wordlists. (4) Achumawi *wa·q^hu·wí* ‘mother’s father’ and Atsugewi *?aq^hon* ‘maternal grandfather’ (Talmy n.d., b: 182) are excluded from this set because of aspiration.

McLendon 1964: 131 || Gursky 1974: 191 (#aku-# 'maternal grandfather' (?)) || Webb 1981: 81 || Gursky 1989: 12
|| Kaufman 1989: 145 (#k^{wa}:(wV) 'mother's father' [N/S])

(k^w-02) PH *k^wá ‘to speak’YAN *ka-* ‘to speak, utter’PPOM *ka[hnów] ‘to talk’ > Pk *cahnów-* ‘to sound’, Ps *čáhnú* ‘to instruct young’, Pn *čanó-*, Pc *ca·nów* ‘to voice’, Pne *táno·[-n]*, Pse *cnú* ‘word’, Pe *ka·Nú·* ‘speak, say, talk’, *ka·Nú* ‘word’PYUM *k^wa, *k^wa-*w* ‘to speak’ > Ki *k^wa¹* ‘imperfective aspectual auxiliary: speak, be audible’, *k^wa·w²* ‘shout; call out’ (-*w* directional), Pa *k^waw* ‘one speaks’, Hu *k^wa·w-k* ‘to talk, to speak’, Ha *k^wa·w-k* ‘to talk; to hold conversation’, Ya *k^wā·w-i*, *k^wāw-i* ‘speak’PCHO **-k^wa-* ‘say’ > HCh *di-gwá-?ma* ‘he will talk, say, think’, LCh *kwa* ‘says, say, used often in stories for a general ‘he says’, ‘they say’NOTES. Cf. PH *i-k^wá ‘to say, talk’ (k^w-02).Sapir 1917: 7 || Sapir 1920b: 288 || McLendon 1964: 136 || Gursky 1965: 185 || Gursky 1968: 37 || Gursky 1974: 206 || J. G. Crawford 1976: 319 || Waterhouse 1976: 342 || Greenberg 1987: 252 || Kaufman 1989: 130 (#kwa [a ~ o] ‘to talk; say’ [S]; #k^ya ‘to speak, talk; by speech (incorp preposund)’ [N/S]) || Gursky 1990: 1, 9(k^w-03) PH *k^hak^wá ‘flint; arrowhead’ (= k^h-03)CHI *q^hako* <khako> ‘arrowhead’ (2.22.0211), <khákkò> ‘bullet, arrowhead’ (2.23.0991)KAR *sá·k* ‘obsidian, flint; arrowhead, bullet’ACH *sát* ‘arrowhead; knife; flint; metal; bullet; iron; obsidian’YAN CN *xaka*, Y *xahka* ‘flint; Flint (as a myth character); flint, a design element in basketry’, N *xaka-wi* ‘arrowheads’PPOM *q^hahká ‘flint’ > Pk *qahca*, Ps *kahča*, Pn *k^hačá*, Pc *k^hcá*, Pne *k^háhta*, Pse *qčá*, Pe *xa·ká*SAL A [*ʔa*]šák <‘ašák> ‘arrow point of flint’ (2.85.0096), A [*ʔa*]šák <‘acák>² ‘what they put on point of arrows’, M [*pá*]šák <p‘acák> ‘id.’ (2.86.0584)PYUM *(*ʔ*-)xk^wa ‘knife’ > Mo *ʔa-hk^we* ‘knife’, Hu *a-k^wá*, *ʔ-k^wa*, *k^wa* ‘knife’, Ha *k^wa-ʔa* ‘silver; knife; metal’, Ya *ʔ-k^wá* ‘metal, iron; knife’SER *ʔax* ‘arrow point’ (pl. *ʔax-lk*), 19th century Seri (Pinart) <vaX> ‘pedernal; flint’ (Hernández 1902: 253)NOTES. (1) The word may be a compound with PH *(a/i-)k^haʔa ‘stone’ (k^h-10) as the first part. (2) Seri reflects a metathesized form *k^wak^há.Sapir 1917: 8 || Sapir 1920b: 284 || Sapir 1921: 69 || Greenberg & Swadesh 1953: 219 || Jacobsen 1958: 200 || Haas 1964: 78 || McLendon 1964: 131 || Silver 1964: 173 || Gursky 1965: 169 || Gursky 1974: 188 (#q^hak^ya#; #sak^(y)#) || Langdon 1979: 637 || Greenberg 1987: 259 || Gursky 1989: 9 || Kaufman 1989: 138 (#x^yáHk^wa ‘flint; arrowpoint; knife’ [N/S]) || Leshchiner & Nikolaev 1992: 399 (*č^hákA) || Shaul 2020b: 302(k^w-04) PH *(i-)k^wá/i· ‘to hear’CHI *hike-ta* <hikēta> ‘he heard it’ (2.23.0335), *ʔike-niq* <‘ikēnik> ‘I heard it’ (2.22.0299)YAN *ka-* ‘to hear, listen to’PPOM *[xó·]ki- ‘to hear’ > Pk *šoc-* (Oswalt & Buckley 2018), Ps *šo·či-*, Pn *šó-*, Pc *šó·c-*, Pse *xko*, Pe *šó·k^h*PYUM *k^wa/i(·) ‘to hear’ > Ki *k^wi·²* ‘perceive, sense, hear’, Hu *vik^wá-k* ‘to hear a noise’, Ha *k^wa-k* ‘to hear; to feel’SER *k-i* ‘hear; understand’ (conjug.: *i-t-ii*, *i-t-ii-tim*; *i-t-iii*)PCHO **-k^we[x]*- > HCh *di-gweh-?ma* ~ *di-gyeh-?ma* ‘he will understand, hear with understanding’ (Turner 1973: 100)NOTES. PH *k^w > Seri zero possibly by way of 19th century Seri /β/ (reflected as zero in modern Seri), but this particular word is not attested in 19th century wordlists.Sapir 1917: 8 || Sapir & Swadesh 1960: 16 (*ka-yi) || Gursky 1974: 193 (#kaya#) || J. G. Crawford 1976: 313 || Greenberg 1987: 137 || Gursky 1989: 16 || Kaufman 1989: 128 (#k^weyá ‘to hear’ [N/S])² Harrington notes: “á not very long but falling”.

(k^w-05) PH *a/i-k^wí ‘head louse’

PPOM *ʔahkí[n^y] ‘head louse’ > Pk ʔahci, Ps ʔahči, Pn čí, Pc cí, Pne tí[-ka·], Pse cin, Pe kí·

SER ii ‘head louse (*Pediculidae*)’ (pl. ii-t, abs. ʔai)

PCHO *-a-yk^wi ‘head louse’ > HCh t-á-ygwi ‘the black louse’, LCh a-ykwih? ‘head louse’

NOTES. (1) Cf. (č-05) PH *(a-)či ‘louse’. (2) PH *k^w > Seri zero possibly by way of 19th century

Seri /β/ (reflected as zero in modern Seri), but this particular word is not attested in 19th century wordlists.

Kaufman 1989: 152 (#aHk^wi ‘louse’ [N/S])

(k^w-06) PH *k^wumV ‘all’

CHI kumi[čin] <kúmítjin> ‘all’ (2.23.0761)

PPOM *ku(H)mú ‘all’ > Pe ku·mú (McLendon 1975: 30)

Gursky 1974: 178 || Kaufman 1989: 147 (#k^wu(m) ‘all’ [N])

1.1.2. Proto-Pomoan *k^h

The sound correspondence involving Proto-Pomoan *k^h is represented in Table 2. This correspondence reflects the Proto-Hokan aspirated labialized velar stop *k^{wh}. Karuk has /k/ before *i, but /p/ before *u, cf. below on PH *x^w > Karuk /f/ before *u.

PH	Chi	Kar	Sha	Ach	Ats	Yan	PPom	Sal	PYum	Ser	PCho
*k ^{wh}	x	k, p				k ^h	*k ^h	k	*k ^w		*k ^w

Table 2. Proto-Hokan *k^{wh}.

(k^{wh}-01) PH *a/i-k^{wh}í ‘rain’

PPOM *[k]ihk^hé(·) ~ *ihk^hé ‘rain’ > Pk ʔihc^he, Ps čehč^he, Pn [bi]šé-, Pc cé, Pe k^hi·ké·

PYUM *(ʔ-)k^wi[y] ‘cloud’ > Ki ʔ-k^wiy¹ ‘cloud’, Co k^wi· ‘cloud’, JT k^wi· ‘cloud, clouds’, MGI ʔə-k^wi·y ‘clouds’, Mo ʔ-i-k^we ‘cloud’, Ma k^we ‘cloud’, Qu ʔa-k^wé ‘cloud’, Pa ʔ-k^wi ‘cloud’, Hu k^wi ‘cloud’, Ha k^wi-ʔi ‘cloud’, Ya (ʔ)k^wi ‘cloud’

PCHO *-a-k^wi ‘rain’ > HCh t-á-gwi, LCh a-kwi?

Kroeber 1915: 282 || Greenberg & Swadesh 1953: 219 || Gursky 1974: 202 || J. G. Crawford 1976: 310 || Waterhouse 1976: 337 || Langdon 1979: 638 || Greenberg 1987: 139 || Kaufman 1989: 143 (#[a/i]k^{wh}ey ‘rain; cloud’ [N/S]) || Leshchiner & Nikolaev 1992: 399 (*ʔik^hi)

(k^{wh}-02) PH *(a-)k^{wh}íl ‘to hang’

KAR [tan]kir / [tan]kiri- ‘to hang (things) over something, as a rack or a clothesline’

PPOM *hk^híl- > Pk hc^híl ‘hang, cling to a surface, swing’ (Oswalt & Buckley 2018), Pe k^híl- ‘be located, hanging or suspended’ (McLendon 1975: 185)

SAL M k-áke-l <kákē-l> ‘está colgado’, p-aké-l-o <pakē-lo khé> ‘yo lo voy a colgar’ (2.86.0628); A ake(·)l ‘to hang up’ in <paké-lo> ‘he hung it up’, <makél> ‘hang it up!’, <kakél> ‘hang it up (pl.)!’ (Jacobsen 1954: 159)

PYUM *k^wíl ‘to hang’ > MGI a-k^wíl-p ‘a long object is hanging down’, k^wíl-k^wíl ‘is dangling (of a large object)’

Gursky 1974: 192 || Gursky 1989: 15 || Kaufman 1989: 161 (#KiL [ʔasp] ‘to be hanging/hung; to hang’ [N])

(k^{wh}-03) PH *(a-)k^{wh}-Vʔíy ‘salt’

CHI ʔaki <ak^hi> ‘salt’ (2.20.0040)

PPOM *k^heʔé: ‘salt’ > Pn šeʔé, Pne č^héʔe, Pe k^he·ʔé

SAL A *t-a·káj* <trākáj> ‘sal’ (2.85.0127), M *t-a·káj* <trākáy> ‘salt’ (2.86.0609)

PYUM *k^wʔiy > Ki k^wʔiy¹ ‘salt’

NOTES. (1) PH *k^{wh}- here is possibly the Hokan ancestor of the Proto-Yuman relativizing prefix *k^w- ‘that which is X / does X’ (Miller 2001: 117; Mixco 1985: 52), in this case ‘that which is salty’. Cf. forms without *k^{wh}- under PH *(a-k^{wh}-)Vʔiy ‘salt’ (?-04). (2) Chimariko /k/ instead of expected /x/ is due to a change *k^{wh}iʔi > *k^{wh}ʔi > *k^wi.

Kroeber 1915: 282 || J. M. Crawford 1976: 185 || Langdon 1979: 638 || Greenberg 1987: 140 || Kaufman 1989: 167 (#(a:-)k^{yh}aʔi ‘salt’ [N]) || Gursky 1990: 1

(k^{wh}-04) PH *k^{wh}ú- ‘negative’

CHI x-..[-na] ‘negative verbal circumfix’ (Jany 2009: 113)

KAR *pu-* ‘no’, *pu-* (prefix) ‘negative; not’

YAN *k^hu-* ‘not; not to have’

PPOM *k^hó- ~ *ʔahk^hó- ‘negative’ > Pk *c^how*, Ps *ʔač^how* ‘be absent’, Pn *šó-* ‘not to be/have’, Pc *c^how* ‘not’, Pne *č^hó-[t-on]*, Pe *k^hú-*

SAL *k-* ‘negative’ (a common component in all negative prefixes) (Turner 1987: 132–134)

NOTES. (1) In Chimariko, the initial vowels of verb stems change in the following way after the negative x-: /i/ > /u/, /e/ > /o/ (Jany 2009: 37). This reflects the PH labial vocalism of the negative morpheme. (2) McLendon reconstructs pPom *k^hów ~ *ʔak^hów, but -*w* in Kashaya and Southern Pomo is an absolutive/perfective suffix. The underlying Kashaya stem is *hc^ho-* (Oswalt & Buckley 2018).

Sapir 1917: 9 || Sapir 1920b: 288 || Sapir 1925: 423–424 (*k^u, *ku) || Greenberg & Swadesh 1953: 217 || Sapir & Swadesh 1960: 16 (*qhu-) || Haas 1964: 80 || McLendon 1964: 134 || Gursky 1965: 180–181 || Kaufman 1989: 124 (#k^{yh}u(wa) ‘negative’ [N/S]) || Gursky 1995: 147

1.1.3. Proto-Pomoan *k

The sound correspondence involving Proto-Pomoan *k is represented in Table 3. This correspondence can very tentatively be identified as reflecting the Proto-Hokan glottalized labialized velar stop *k^w.

PH	Chi	Kar	Sha	Ach	Ats	Yan	PPom	Sal	PYum	Ser	PCho
*k ^w	k̥		k̥			k̥	*k̥	k̥			

Table 3. Proto-Hokan *k^w.

(k^w-01) PH *k^wá ‘one’

YAN -*ká[li]*- ‘only one’ (applies to subject of intransitive or object of transitive)

PPOM *ká-, *ká- ‘one’ > Ps *čá-[ʔa]*, Pn *čá-*, Pne *čá- ~ čá-[ki]*, Pe *ká[li]*

McLendon 1964: 135 || Gursky 1974: 200 (#k^a(li)#) || Kaufman 1989: 124 (#k^ya ‘one’ [N]) || Leshchiner & Nikolaev 1992: 385 (*k^ʔĀHō)

This correspondence can be very tentatively complemented by the following comparisons without reflexes in Pomoan.

(k^w-02) PH *i-k^wa ‘to say, talk’

CHI *n-iķo* <nik^o> ‘talk!’ (2.23.0967)

SAL M *heka(?)* <hék^a> ‘(el hombre) dijo’, <hék^ā> ‘(yo) dije’ (2.86.0621)

NOTES. Cf. PH *k^wá ‘to speak’ (k^w-02).

Gursky 1974: 206 || Kaufman 1989: 130 (#ik^ya [a ~ o] ‘to say; talk’ [N])

(K^w-03) PH *k^wá/iw ‘snow / hail’SHA *káw* ‘snow’ (Silver 1961: 7)SAL A *kew[nél]* ‘k’ewnél’ ‘granizo’ (2.85.0033), M *kaw[nél]* ‘k’awnél’ ‘granizo’, A *kew[nél]* ‘k’əñél’ ‘id.’ (2.86.0592)

Gursky 1974: 206 || Kaufman 1989: 143 (#K’aw ‘hail’ [N])

1.1.4. Proto-Pomoan *x

Proto-Pomoan *x is reconstructed by McLendon (1973: 26) for the correspondence between *x* in Southeastern Pomo and *š* in all other Pomoan languages. Oswalt (1972), Moshinsky (1976: 57) and Buckley (2024: 1228-1229) reconstruct Proto-Pomoan *š for this correspondence, although Buckley notes that “since the six other languages formed a single group after Southeastern split off, it is possible that */x/ > /š/ was an early shared change” (ibid.).

Proto-Pomoan *x forms part of two sound correspondences. The first correspondence is represented in Table 4. This correspondence reflects the Proto-Hokan labialized velar fricative *x^w. Karuk has /x/ before *a, but /f/ before *u, cf. above on PH **k^{wh} > Karuk /p/ before *u. Salinan has /h/ after a consonant. Proto-Pomoan has zero root-finally. Proto-Yuman has *x before *u, *x^w otherwise (*x^w before *u is synchronically impossible in Yuman). Seri has zero (19th century Seri /β/). Proto-Chontal has *x syllable-finally, *x^w otherwise.

PH	Chi	Kar	Sha	Ach	Ats	Yan	PPom	Sal	PYum	Ser	PCho
*x ^w	x ~ h	x, f	x	h	h	w	*x, Ø	x, h	*x ^w , *x	β > Ø	*x ^w , *x

Table 4. Proto-Hokan *x^w.(x^w-01) PH *(i-)x^wál ‘mountain’

PPOM *[wi]xál^y ‘ridge, mountain’ > Pk *wišali* ‘east’, Ps *wiš-a*, Pn *bišá*, Pne *wiša* ‘mountain’, Pe *-wi-šál* in place names

PCHO *-i-x^wal[a] ‘mountain’ > HCh *t-iWála* ‘the mountain, hill, pile’, LCh *i-Wala?* ~ *i-Wala* ‘highlands, mountains’

NOTES. PPom *wi- in *wixál^y is possibly related to PYum *wiy ‘stone; mountain’ (Miller 2018: A71). Leshchiner & Nikolaev 1992: 381 (*Hik_o’ola)

(x^w-02) PH *(u-)x^wí ‘to smell’

PPOM *mi-hxé ‘to stink’ > Ps *mehše-* ‘to smell, transitive or intransitive, good or bad’, Pn *mišé-*, Pse *mxe-*, Pe *mi-šé-* (pPom *mi- ‘protuberance near end of long obj., toe, nose, horn; reckon, read’ [Oswalt 1976: 16])

PYUM *x^wi ‘to smell’ > Co *x^wi* ‘to smell (trans.)’, JT *wə-x^wi* ‘he smells it’, MGI *wə-x^wi* ‘smells something’, Mo *a-h^we-k* ‘smell (something)’, *i-h^wi-v-k* ‘smell, have an odor; smell like; have a disagreeable odor, smell bad’, Qu *a-x^wé* ‘to be odorous’, Hu *h^wi-k*, *h^wi-k* ‘to smell something’, Ha *h^wi-k* ‘to smell something’, Ya *h^wi* ‘smell v.t.’

PCHO *-ux^we- ‘stink, smell’ > HCh *d-uWe-da* ‘it will have an odor’, LCh *We-loh-ma* ‘stink, smell’ Waterhouse 1976: 337 || Kaufman 1989: 165 (#x^we ‘to (have a) smell’ [S]) || Gursky 1990: 8

(x^w-03) PH *(i-)lax^w ‘head’

SHA *?i-nax* ‘hair’ (Silver 1961: 4), *-iraxi-* in *kíraxačúm-u* ‘greyheaded’, *kíwíraxiwakirik* ‘he washed his hair’, *kíwíraxapuk-ucwik* ‘he pushed it up with the top of his head’ (Silver 1966: 78), KON ‘kí’na ‘head’ (Dixon 1905: 216), NRSHA ‘kin’nux’ ‘head’ (ibid.), OKW ‘in’nux’ ‘head’ (ibid.). ACH *láh* ‘head’

ATS *náh[a]* ‘head’ (Talmy n.d., b: 98)

PPOM *[x/k]iná· ‘head’ > Pk *šina·* ‘head’ (elegant), Ps *šin·a*, Pn *šiná·*, Pc *šná·*, Pne *tína·*

PYUM *x^wal > Co *m-x^wat* ‘hair (of the head)’, BI *x^wat* ‘head’, MGI *ə-x^wat* ‘his forehead’

NOTES. (1) The nasal /n/ in Shastan, Atsugewi and Pomoan is due to the Proto-Hokan diminutive alternation *l ~ *n. (2) Konomihu, New River Shasta and Okwanuchu preserve the old meaning ‘head’, pointing to the innovative nature of the meaning ‘hair’ in Shasta. (3) Northeastern Pomo reflects initial *k-, other languages reflect *x-. These may be different fossilized prefixes. (4) McLendon (1973: 78) compares Eastern Pomo *ki·ná·l* ‘crown’, which supports the reconstruction *kiná·l^y for Proto-Pomo. This word may be unrelated to the rest of the set. (5) Yuman form reflects a metathesized form *x^wál.

Sapir 1917: 20 || Bright 1954: 64 || Gursky 1974: 193 (#l/na/ux#) || Greenberg 1987: 137 || Gursky 1989: 16 || Kaufman 1989: 127 (#(i-)La(x^w) or #(i-)La(xu) [l ~ n] ‘head’ [N])

This correspondence can be complemented by the following comparisons without a reflex in Pomoan.

(x^w-04) PH *x^wá ‘enemy / brave’

SAL A <(e)xai>, M <xai> ‘brave’ (Mason 1918: 151)

PYUM *(?-)x^wa ‘enemy’ > Ki *?-x^wa¹* ‘warrior; enemy, foreigner; principally Cocopa’, Co *x^wa* ‘army, soldier, fighter, warrior’, JT *x^wa* ‘enemy’, MGI *?ə-x^wa·* ‘stranger, enemy’, Mo *?a-h^we* ‘enemy’, *?a-h^way* ‘war, battle’, Qu *?a-x^wé* ‘enemy’, Hu *čih^wá* ‘enemy’, Ha *h^wa·č* ‘Apaches (San Carlos and White River)’, Ya *h^wá* ‘fighting, war; enemy’

J. G. Crawford 1976: 312 || Kaufman 1989: 161 (#x^wa(y) ‘enemy’ [N/S]) || Shaul 2020b: 301

(x^w-05) PH *a/i-x^wá ‘bear’

SHA *?é·xa·* ‘bear’ (Silver 1961: 8)

SAL A *ṭ-axá[ɣ]* <traqáʃ> ‘oso’ (2.85.1114)

PYUM *[m]x^wa(·) ‘badger’, *[m]x^wa(·)-tay ‘bear’ (lit. ‘big badger’) > Ki *mx^wa²* ‘swine (aboriginally badger)’, Co *mx^wa* ‘badger’, MGI *máx^wa·* ‘badger’, Mo *mah^wa* ‘badger’, *mah^wa-t* ‘bear’, Ma *mx^we-t* ‘bear’, Qu *max^wá·* ‘badger’, Hu *mah^wa·?* ‘badger’, Ha *?mh^wa·-?a* ‘badger, wild pig’, Ya *mh^wá·* ‘badger’, *mh^wā-t-a* ‘bear’

NOTES. (1) Possibly a tabooistic epithet of bear as ‘brave’, related to the previous root. (2) In Proto-Yuman, *mx^wa(·) means ‘badger’, while *mx^wa(·)-tay (literally ‘big badger’) means ‘bear’. This is exactly the situation found in neighboring Uto-Aztecan languages of the Cupan subgroup, where reflexes of Proto-Uto-Aztecan *hula mean ‘badger’, while reflexes of *hula-wit — the same root with an augmentative suffix — mean ‘bear’ (Hill 2020: 95–96)

Gursky 1988: 21

(x^w-06) PH *(i-)lax^wá ‘fingernail’

CHI *[po]loxol[t]* <poloqot> ‘fingernails’ (2.23.0719)

SHA *?é·raxa* ‘fingernail’ (Silver 1961: 5)

PYUM *(l^y)x^wa[w] ‘fingernail, claw’ > Ki *sal-xa·w²* ‘fingernail, claws’, Co *tax^wáw*, *ṭkax^wáw* ‘claw, nail (of finger or toe)’, MGI *sal^y-əx^wu·w* ‘his fingernails, claws’, Mo *i-sal^y kul^yoho* ‘fingernail, claw, hoof’, Hu *sirwo·?* ‘fingernail; claw (of an animal)’, Ha *srh^wo?o*, *srhvo?o* ‘fingernail, claw’, Ya *sàl-slh^wō·* ‘fingernail’

PCHO *-[?na]ṭux ‘nail, claw’ > HCh *ṭ-a-?náṭuk* ‘the nail (finger or toe); the claw’, LCh *a-ne-ṭuh* ‘fingernail, toenail, also a bird or animal claw’, Teq <nalú> ‘nail’

NOTES. Syllable-finally, *x^w is not allowed in Proto-Chontal, but the labiality was apparently transferred onto the preceding vowel.

Haas 1963: 50–51 || Gursky 1974: 198 (#ilax^wa#) || Waterhouse 1976: 341 || Gursky 1989: 23 || Kaufman 1989: 138 (#[i/a/u]-lax^w [a ~ o] 'nails; claw' [N/S])

(x^w-07) PH *a-x^wát 'blood / red' (= t-14)

KAR á·x 'blood; (as a postpound) red'

SHA ?á·xt[a] 'blood' (Silver 1964: 171); OKW <axta' > 'blood' (Dixon 1905: 216)

ACH aht[i] 'blood'

YAN CN wat?-tu-wi 'blood', C pa-wat?(ku)- 'red' (pa- 'in quality'), YN ta-wat?-sa- 'red' (ta-...-sa 'to be in appearance of form')

SAL A ?-á-[k]hat-a <ákhata> 'sangre', ?-é?-[k]hat <é'khat> 'mi sangre', M p-á-[k]hat-a <p'ákhata> 'blood (non-poss.)', p-é?-[k]hat <p'é'khat> 'mi sangre' (2.85.0726), A á-[k]hat-a <á·k^hatə> 'blood' (Jacobsen 1954: 16)

PYUM *x^wat 'blood' > Ki t-kh^wat¹ 'blood', Co n^y-x^wat 'blood', JT x^wat 'blood', MGI ?ə-x^wat 'is red, orange, brown; blood; ripe', Mo n^y-h^wat 'blood', Ma x^wet-m 'red', Qu -i-x^wet 'blood', Pa č-x^wat 'blood', Hu h^wat 'blood, (the color of) red', Ha h^wat 'red; blood', Ya (?-h^wat- 'red; blood'

SER ?aaít 'blood' (pl. ?aaít-lox), 19th century Seri B <avt> 'blood', Pt <a'vat> 'sangre' (Marlett 2010: 37)

PCHO *-x^wac 'blood' > HCh l-a-Wác, LCh a-Wác, Teq <fas>

NOTES. Salinan has <kh> in Harrington's transcription and <k^h> in Jacobsen's fieldnotes. Turner (1987: 67) phonologizes the word as /?ákata?/ because Salinan has no aspirated stops. However, this does not explain the persistent aspiration in Harrington's and Jacobsen's fieldnotes, and I prefer to postulate a biphonemic cluster /kh/ here, where /h/ reflects PH *x^w, and /k/ is a fossilized prefix, possibly the PH relativizing prefix *k^{wh}-, on which see note 1 under (k^{wh}-03)³. Note a similar development in the Kiliwa word for 'blood', which contains the Yuman relativizing prefix *k^w-, see Mixco (1977: 173).

Kroeber 1915: 282 || Sapir 1917: 16 || Sapir 1925: 405 (*axwati ?) || Greenberg & Swadesh 1953: 218 || Bright 1956: 46 || Jacobsen 1958: 198 || Silver 1964: 171 || Gursky 1965: 170 || Gursky 1974: 180 (#a/ix^yawaṭi#) || J. G. Crawford 1976: 309 || Waterhouse 1976: 337, 339 || Webb 1980: 75 || Greenberg 1987: 134 || Gursky 1988: 24–25 || Kaufman 1989: 156 (#(a-)x^wá(-t) 'blood; red' [N/S]) || Leščiner 1989: 163 (*x^waṭa) || Leshchiner & Nikolaev 1992: 376 (*x_oāṭa) || Shaul 2020b: 297

(x^w-08) PH *i-x^wáy '(to) smoke'

PYUM *x^way 'smoke' > Co xyay 'smoke, steam', MGI ?u·xuy 'the smoke', Mo ?a-h^wa· 'smoke (noun)', Hu o-?h^wáy 'smoke, smoke particles', Ha o-h^waya 'smoke', Ya ?ə-h^wáy 'smoke'

PCHO *-ix^we- > HCh d-iWe-?ma 'he will smoke' (cont. g-iWay)

Waterhouse 1976: 337 || Kaufman 1989: 142 (#ax^wa 'smoke' [N/S])

The following two comparisons also seem to reflect the same protophoneme, given that in Proto-Yuman, *x^w is not found before *u.

(x^w-09) PH *a-x^wú 'nose'

CHI hohu <hohu> 'nose' (2.20.0024), hoxu <hoqu> 'nose' (2.23.0349)

KAR [y]úf[iv] 'nose', [y]úf-ma·n 'split-open salmon head' (má·n 'skin')

PYUM *xu(·) 'nose' > Ki phi?¹ 'nose', Co ?i-xú 'nose, snout, beak', JT xu 'nose, nostrils', MGI ə-xu· 'his nose', Mo i-hu 'nose, beak', Ma i-xu· 'nose', Qu i-xú· 'nose', Pa xu· 'nose', Hu hu?, hu· 'head', Ha hu-?u 'head', Ya hū·, hū: 'nose; head'

³ With the implication that the original Proto-Hokan polysemy 'blood / red' was resolved in Salinan by creating a derivative *k^{wh}-x^wat 'blood = that which is red'.

NOTES. The vowel *u* in Karuk *yuf-* results from assimilation to the subsequently lost vowel of the following syllable.

Kroeber 1915: 282 || Sapir 1920b: 284 || Sapir 1925: 407-408 (*yaxu?) || Greenberg & Swadesh 1953: 219 || Jacobsen 1958: 201 || Gursky 1968: 34 || Gursky 1974: 199 (#xu#) || J. G. Crawford 1976: 316 || J. M. Crawford 1976: 183 || Greenberg 1987: 139 || Kaufman 1989: 127 (#(ya)xu [a ~ o] 'nose' [N/S], #fi or #pxi 'nose' [N/S])

(x^w-10) PH *x^wulu(k) 'into'

CHI *-xun / -xunok* 'in, into' (verbal directional suffix) (Jany 2009: 134)

KAR *-fúruk* 'into an enclosed space; indoors; inside a living house'

YAN *-wul-* 'in, entering', absolute form Y *-wu·lu* 'into'

NOTES. The nasal /n/ in Chimariko is apparently due to the Proto-Hokan diminutive alternation *l ~ *n.

Sapir 1917: 21 || Sapir 1925: 423 (*xwulu) || Kaufman 1989: 120 (#pxuLu [l ~ n] or #fuLu adv/dir 'into the house' [NC])

The second correspondence involving Proto-Pomoan *x is represented in Table 5. This correspondence, in my view, reflects the Proto-Hokan velar fricative *x. It is tempting to reconstruct here *š or *ʃ for Proto-Hokan, i.e., a “hushing” sibilant, distinct from a “hissing” *s. Indeed, Kaufman reconstructs Proto-Hokan *š for this correspondence. However, this would leave us with a system that has *x^w, but no non-labialized velar fricative (see below for the reconstruction of *k^h in place of Kaufman's *x^y). Therefore, I propose to reconstruct Proto-Hokan *x for this correspondence, despite the fact that the overwhelming majority of its reflexes are sibilants. The unusual reflex /t/ in Chimariko can be explained by a following sequence of changes: *x > *ʃ > /t/. While Karuk has /š/ in the only available example, *i-š* < PH *ixi, /s/ would be expected in a position not after /i/. Note that Seri reflects PH *s and *x as /š/ and /s/ respectively. If we were to reconstruct PH *x as *š, we would have to assume an unlikely flip-flop development in Seri.

PH	Chi	Kar	Sha	Ach	Ats	Yan	PPom	Sal	PYum	Ser	PCho
*x	t̚	[s,] š	s	s	s	s	*x	s ~ š	*ʃ	s	*š

Table 5. Proto-Hokan *x.

(x-01) PH *a/i-xál 'hand, arm'

CHI *hiṭa* <hitra> 'hand' (2.23.0200)

PPOM *ʔixál ~ *ʔixál^y 'arm' > Pk *ʔiša*, Ps *ʔi-šan*, Pn *šá*, Pc *šá*, Pse *xal*, Pe *šál* 'wing'

PYUM *šal^y 'arm, hand' > Ki *sal*¹ 'hand, etc.', Co *ʔi-šá-t^y* 'arm, hand, finger, wing (of a chicken)',

JT *šat^y* 'arm, hand', MGI *ə-sat^y* 'his hand, arm, fingers', Mo *i-sal^y* 'hand, arm, sleeve', Ma *i-ša-l^y*

'arm/hand', Qu *i-šá-l^y* 'hand', Pa *šal* 'hand', Hu *sal* 'hand', Ha *sal* 'hand, hands', Ya *sál* 'hand'

SER *i-seł* ~ *i-sil* 'shoulder joint; pectoral fin' (pl. *i-seł-ox* (sg. possessor), *i-seł-kox* (pl. possessor), abs. *ʔá-seł*)

PCHO *-(e)šal > HCh *l-a-šát* 'wing, feather, fin', *d-ešal-ʔma* 'he will grasp it with his hand (to carry it)', *d-ešal-af-ʔma* 'he will help someone to get up by giving them his hand', *d-ešal-fe-ʔma* 'he will put his hand (inside something) to remove (something)', *d-ešal-u-ʔma* 'he will lead by the hand with force', LCh *i-šal* 'wing'

NOTES. While the Chontal reflexes mean 'wing, feather, fin', traces of an earlier meaning 'hand' are preserved in the semantics of verbal derivatives: 'to grasp with hand', 'to help someone to get up by giving them his hand', 'to put one's hand (inside something) to remove (something)', 'to lead by the hand with force'.

Kroeber 1915: 282 || Greenberg & Swadesh 1953: 218 || Haas 1963: 50, 52 || Haas 1964: 79 || McLendon 1964: 137 || Gursky 1965: 178 || Gursky 1974: 178 (#išal#) || J. G. Crawford 1976: 313 || J. M. Crawford 1976: 181 || Water-

house 1976: 337, 341 || Langdon 1979: 636 || Greenberg 1987: 133 || Gursky 1988: 19-20 || Kaufman 1989: 136 (#i-šál' 'arm; wing; shoulder' [N/S]) || Leščiner 1989: 165 (*?ešalΛ) || Leshchiner & Nikolaev 1992: 379 (*?ešálΛ)

(x-02) PH *a-xí 'to name', *a-xí 'name'

PPOM *ʔahxí 'name' > Pk *ši[hcima°č]* 'to name', Ps *ʔahši[·yaw]*, Pn *ši*, Pc *ši*, Pne *[ʔawi]-šé[m]* 'my name', Pse *xi-* 'to name', *xin* 'name', Pe *ši*

SAL A <a'se>, M <as> 'to name, call' (Mason 1918: 139)

PYUM *ši- 'to name' > Ki *t-ʔ-si-2* 'relate, (re)count, tell (something)', Co *ši* 'to name, call by name, give a name to', JT *wə-ši-č*, *ši-č* 'he names him, he calls him by name; he is named; he reads', MGI *ču·xi-* 'names, calls by his name', Mo *ase-k* 'call, name (verb)', Qu *ašé* 'to name', Hu *si-k* 'to name, to call', Ha *si-k* 'to give a name', Ya *pà:ʔsī:ti* 'I name them'

SER *i-[t]áasi* 'name' (pl. *i-[t]áasi-tox*, abs. *ʔa-[t]áasi*)

Haas 1964: 80 || Gursky 1974: 199 || J. G. Crawford 1976: 316 || Langdon 1979: 638 || Gursky 1989: 24 || Kaufman 1989: 130 (#(a:)si [s ~ š] 'name; to name' [N/S]) || Shaul 2020b: 304

(x-03) PH *(a/i-)xí 'meat, flesh'

CHI *hiṭi[y]* <hitrij> 'meat' (2.20.1049)

KAR *í-š* 'meat, flesh, body'

SHA *[ʔúp]si* 'meat' (Silver 1964: 172)

YAN N *[pa]si*, Y *[pa]hsi* 'flesh, meat, body'

PPOM *[bi]hxé 'deer, meat' > Pk *bihše*, Ps *behše*, Pn *bišé*, Pc *pšé*, Pne *béhše*, Pse *bxé*, Pe *bi-šé*

SAL A *[ʔ]aš* <ʔ> 'ciervo' (2.85.1138), M *[p]aš* <p'ác> 'elk', A *[ʔ]aš* <ʔ> 'id.' (2.87.0320)

PYUM *ši (or *si) > Ki *siʔ* 'flesh, meat'

SER *i-[pḫá]si* 'meat, flesh, soft part of plant' (pl. *i-pḫáš*)

PCHO *-i-ši[k] 'meat, flesh' > HCh *l-išik* 'meat', LCh *i-šik* ~ *a-šik* 'flesh or meat, of human, animal, bird, fruit, whatever', Teq <çi> 'flesh, meat'

NOTES. (1) Shasta, Yana and Pomoan forms may reflect compounds with the first part PH *a/i- pá 'deer'. (2) Salinan *p-* looks like a widespread fossilized nominal prefix but may also be a fossilized first part of a compound.

Sapir 1917: 4-5 || Greenberg & Swadesh 1953: 219 || Haas 1964: 77 || McLendon 1964: 133 || Gursky 1965: 170 || Gursky 1968: 34 || Gursky 1974: 180 (#isi# ~ #isi + Vpa# ~ #Vpa + isi#) || Campbell 1976: 163 || J. G. Crawford 1976: 315 || Waterhouse 1976: 339, 341 || Webb 1980: 76 || Webb 1981: 82 || Greenberg 1987: 244 || Kaufman 1989: 126 (#(h)i:-ši 'meat, flesh; body' [N/S]; NC also 'person, Indian; man, male, husband') || Leshchiner & Nikolaev 1992: 394 (*^mbHéšö)

(x-04) PH *(a/i-)ximálk 'ear' (= k-06)

SHA *ʔisa·k* 'ear' (Silver 1961: 4); OKW <is'sawak> 'ear' (Dixon 1905: 216)

ACH *issat* 'ear'

ATS *ʔasmak* 'ear' (Talmy n.d., b: 88)

YAN CN *malʔk[u]*, Y *manʔk[u]* 'ear'

PPOM *xi-mánʔ 'ear' > Pk *šima*, Ps *ši-mo[-mo]* (*mo* 'hole'), Pn *šimá*, Pc *šmá*, Pne *šima*, Pse *xmán[ca]*, Pe *ši-má*.

PYUM *šmalʔk 'ear' > Ki *smaql*¹ 'ear', Co *šma-l* 'ear', JT *šmalʔ*, *šəmalʔ* 'ears', MGI *xəmat* 'his ear(s)', Mo *i-smalʔk* 'ear; dried peach', Ma *šmalʔk* 'ears', Pa *šmalk* 'ear', Hu *smalk* 'large ear', *smark* 'small ear', Ha *smalk* 'ears (large ears, such as of deer, elephant)', *smark* 'ear, ears (small ears, such as of humans)', Ya *smálk-a* 'ear'

NOTES. This word with its nontrivial phonotactic structure may be an old compound.

Kroeber 1915: 282 || Sapir 1917: 10 || Dixon & Kroeber 1919: 106 || Sapir *apud* Dixon & Kroeber 1919: 109 || Sapir 1925: 406 (*isama, *isma(l)k- ?) || Greenberg & Swadesh 1953: 218 || Bright 1956: 46 || Olmsted 1957: 138 || Haas

1963: 43-46 || Haas 1964: 77-78 || McLendon 1964: 131 || Gursky 1974: 185 (#isamarak'u# ~ #isamak'ura#) || J. G. Crawford 1976: 312 || Langdon 1979: 637 || Webb 1980: 76 || Greenberg 1987: 233 || Gursky 1989: 4 || Kaufman 1989: 128-129 ([i/a]-ma-lʷ(-Ku) [lʷ ~ nʷ] 'ear; to hear', #i-sa-má 'ear' [N/S]) || Leščiner 1989: 162 (*šimal-(k'u)) || Leshchiner & Nikolaev 1992: 374 (*šimálΛ-(k'u))

(x-05) PH *(w)a-xú 'digging stick'

SHA [k]was- in *kwas-hi-hú?* 'mountain mahogany' (Silver 1964: 172) (-hi-hu? 'tree, bush' [Silver 1964: 176])

YAN N *wasu*, Y *wahsu* 'digging stick'

PPOM *wa(H)xú > Pe *wa-šú* 'mountain mahogany', *wa-šú-xây* 'digging stick' (McLendon n.d.: 30)

SAL A *ṭ-é-wis* <tréwis> 'baston', *ṭ-m-é-wis* <tréméwis> 'tu ...', *ṭ-ewis-o* <trewiso> 'his...' (2.86.0042), M *ṭ-a-wás* <trāwás> 'baston', M *ṭ-é-wes* <tréwes> 'digging stick' (2.88.0780)

PCHO *-a-šu? 'hoe' > HCh *l-a-šú?* 'the hoe', LCh *a-šu?* 'type of agricultural tool for sowing seed, like a long-handled narrow spade or a pointed stick'

NOTES. Silver (1964: 172) notes that digging sticks were made of mountain mahogany.

Haas 1964: 77 || McLendon 1964: 130 || Silver 1964: 172 || Gursky 1974: 185 || Kaufman 1989: 160 (#wasu [s ~ š] 'digging stick' [N/?+Cho /ašú7/])

(x-06) PH *a/i-xú 'raw'

YAN YN *-[x]su[i]-*, *-[ʔ]su[i]-*, *-su[i]-* 'unripe, uncooked'

PPOM *[q]a(h)xó- 'raw, alive' > Pk *qašo-q-* 'get well, be healed, be cured' (Oswalt & Buckley 2018), Ps *kahšo*, Pn *kašó*, Pne *kašóy*, Pe *qa-šóy* 'raw, alive, well'

PYUM *(x-p-)ši[w] ~ *(x-p-)šu[w] 'raw' > Ki *p-siw*¹ 'green, uncooked, raw', Co *xpsiw* 'be blue or green', JT *xəpši-w* 'it is green', MGI *xəpəši-w* 'is blue, green', Mo *i-vsū-k* 'be raw, uncooked', Ma *xvəšu-k* 'blue / green', Qu *a-vəšú* 'to be raw', Hu *suw-k* 'to be unripe; to be fresh, to be green/blue', *vasu-k* 'to be blue, to be green', Ha *suw-k* 'green (not ripe)', *vasuw-k* 'to be blue or purple; to be blue or green', Ya *hà-vsú(w)i* 'blue, green'

SER *k-is* 'raw' (conjug.: *t-is*)

McLendon 1964: 135 || Gursky 1974: 202 || J. G. Crawford 1976: 317 || Greenberg 1987: 139 || Gursky 1989: 29 || Kaufman 1989: 156 (#(P-)išiw [ʔglott/asp] 'raw; green; to heal, recover' [N/S], #(xʷ)ašúy 'raw, unripe; green/blue; alive' [N/S])

This correspondence can be complemented by the following comparisons without a reflex in Pomoan.

(x-07) PH *m-a-xá/úl 'yellow, red'

SER *k-másot* 'yellow; blond (hair)' (conjug.: *t-másot*; *t-mast*)

PCHO *um-šal-i > HCh *?un-šal-i* 'red'; pCho *a-šal-e > HCh *a-šale* 'tan'

NOTES. The word may contain stative prefix *m-.

Kaufman 1989: 156 (#masó(L) 'red, brown' [N/S]) || Gursky 1990: 22

(x-08) PH *i-xi 'man, person'

CHI *?iṭi* <ṭrì> 'man' (2.23.0124)

SHA *?ís* 'Indian, person' (Silver 1964: 175); NRS HA *gè''ic* 'man' (Dixon 1905: 216)

ACH *ís* 'person; Indian'

YAN CN *hisi*, Y *hihsi* 'man; (Y) husband, husband's brother'

Sapir 1917: 9 || Sapir 1920b: 283 || Jacobsen 1958: 200 || Sapir & Swadesh 1960: 17 || Haas 1964: 77 || Gursky 1965: 180 || Gursky 1968: 33 || Gursky 1974: 197 (#isi#) || Webb 1981: 82 || Greenberg 1987: 242 || Kaufman 1989: 126 (#(h)i:-ši 'meat, flesh; body' [N/S]; NC also 'person, Indian; man, male, husband')

(x-09) PH *xú· ‘net’

YAN C *suu*[wi]- ‘to fish with a seine’PYUM *ʂu- > Mo *su*.[ʔak] ‘fishnet’

SER ʔá-so ‘fishing net’

J. G. Crawford 1976: 316 || Gursky 1989: 24

(x-10) PH *xúk ‘to be tired’ (= k-09)

CHI *ʔuk* ‘be tired, exhausted’ (Conathan 2002: 30)PCHO *-šox- ‘be tired’ > HCh *i-šog-i* ‘tiresome, tiring’, LCh *soh-ta* ‘be tired’

1.1.5. Comparison with Kaufman’s reconstruction

Kaufman reconstructs the following labialized velars for Proto-Hokan: *k^w, *k^w, *k^{wh} and *x^w (see Table 6).

PH	Chi	Kar	Sha	Ach	Ats	Yan	Wsh	PPom	Sal	PYum	Ser	PCho	Tol
*k ^w	k, q	k	k	k, q		k	k	*k ^y , *k, *q	k	*k ^w , [q ^w]	k	*k ^w	k
*k ^{wh}	kh, qh	k	k	k ^h , q ^h		k ^h	k ^h	*k ^{yh} , *k ^h , *q ^h	k	*k ^w , [q ^w]	k	*k ^w	k ^h
*k ^w	k', q'	k	k'	k', q'		k'	k'	*k ^{y'} , *k', *q'	k'	*k ^w , [q ^w]	k	*k ^w	k'
*x ^w	h, x	x	x	x		x	x	*h	x	*x ^w	x	*x ^w	h

Table 6. Correspondences of Hokan labialized velar obstruents according to Kaufman (1989).

Kaufman postulates that in Chimariko, Achumawi and Pomoan, labialized velars can yield uvulars, although he does not specify the precise conditions of such a development. I was unable to find reliable cases where labialized velars of Proto-Yuman or Proto-Chontal correspond to uvulars in Chimariko or Proto-Pomoan.

1.2.0. Correspondences involving Proto-Pomoan uvular stops

The following uvular stops are reconstructed for Proto-Pomoan: *q, *q^h and *q̣ (McLendon 1973: 24–25).

1.2.1. Proto-Pomoan *q

The sound correspondence involving Proto-Pomoan *q is represented in Table 7. This correspondence reflects the Proto-Hokan plain velar stop *k. The same phoneme in a root-final position is reflected as zero in Pomoan. Note that Proto-Yuman can have *k^y, *k and *q in reflexes of the same etymon: the alternation *k^y ~ *k ~ *q forms part of a complex Yuman system of diminutive/augmentative consonant symbolism. Glottalized /k/ found root-finally in Shasta and Yana probably reflects a merger of the expected /k/ with the suffix *-ʔ, on which see Zhivlov (2025: 63).

PH	Chi	Kar	Sha	Ach	Ats	Yan	PPom	Sal	PYum	Ser	PCho
*(-)k-		x	c	c	c	c	*q		*k ^y ~ *k ~ *q	k	*k
*-k	k	Ø	k ~ ḳ	t	k	k ~ ḳ	Ø	k	*k	k	*x

Table 7. Proto-Hokan *k.

(k-01) PH *(a-)ká ‘mother’s mother’

SHA *ʔac-wit* ~ *ʔac-it* ‘mother’s mother’ (Silver 1966: 64)

YAN CN *ʔacu[wi]*, Y *ʔahcu[wi]* ‘paternal grandmother (in C), woman’s daughter’s child, mother’s mother (in Y)’

PPOM *qá-·čì ‘mother’s mother’ > Pk *-qa-*, *-qa°s-*, Pn *-káʔ*, Pne *ká·čì-*, Pse *-qa*, Pe *qá·č*, *-qá·* (pPom *--·čì ‘one’s own kinsman in generations above ego’)

PYUM *(n-)ka(·)-w ‘mother’s mother’ > Ki *h-qha·w¹* ‘be maternal grandmother’, Co *n^y-ka* ‘mother’s mother’, JT *nə-ka·w* ‘grandmother’, Mo *na-kaw* ‘mother’s mother, grandmother’, Ma *n-k^{yew}* ‘grandmother (maternal)’, Hu *kór-a* ‘mother’s mother, grandmother’, Ha *nko-ʔo* ‘grandmother (mother’s side)’, Ya *kól-a* ‘mother’s mother’ (*n- ‘kinship terms prefix’ [Miller 2001: 86])

SER *aa-k[t]* ‘maternal grandmother; great-aunt (sister of mother’s mother); wife of mother’s mother’s brother’ (pl. *áa-ka[t]-x*, abs. *ʔapé-k[t]*)

NOTES. (1) This kinship term forms part of a mini-paradigm of terms for grandparents: PH *(a-)pá ‘father’s father’, PH *(a-)k^wá ‘mother’s father’ (k^w-01), PH *(a-)má ‘father’s mother’, PH *(a-)ká ‘mother’s mother’ (k-01). All four terms for grandparents are preserved in Pomoan, Yuman and Seri. (2) Shasta *-wit* and Yuman **-w* are suffixes found in other terms for grandparents.

Sapir 1917: 3 || McLendon 1964: 134 || Gursky 1974: 191 || J. G. Crawford 1976: 316 || Gursky 1989: 12 || Kaufman 1989: 145 (#k^ya:(wV) ‘mother’s mother’ [N/S])

(k-02) PH *(a/i-)ká ‘to bite’

KAR *ax* ‘(animal) to bite, to rend with the teeth; to kill’

ATS *icⁱ* in *p-icⁱ* ‘to bite’ (Talmy n.d., a: 111)

YAN *ca-* ‘to eat, bite’

PPOM *qa- ‘between two strongly opposed, sharp-pointed or gripping forces, such as the jaws and teeth’ > Pk *qa-*, Ps *ka-*, Pc *ka-*, Pn *ka-*, Pse *q-*, Pe *qa-*

PCHO *ka- > HCh *di-ga-ʔma* ‘he will bite into’

NOTES. Superscript *-i* in Atsugewi is a morphophonological symbol with unclear value used by Talmy.

Haas 1964: 81 || McLendon 1964: 137 || Gursky 1974: 180 || J. G. Crawford 1976: 308 || Kaufman 1989: 139 (#qa [Chi q] ‘to bite; by biting, with the teeth (incorp prepound)’ [N/S])

(k-03) PH *pakáy ‘manzanita berry’ (= p-04)

ACH *pacca* ‘black manzanita berry’, *pa-ca* ‘black manzanita’

YAN N *pa-cai-na* ‘manzanita berry’

PPOM *bahqáy ‘manzanita berry’ > Pk *bahqay*, Ps *bahkay*, Pn *bakáy*, Pc *ba-káy*, Pne *báhkay* ‘berry’, Pse *bqay*, Pe *bá·qay*

NOTES. Because of irregular sound correspondences, Karuk *fá·θ* ‘manzanita berry’ is either unrelated or results from diffusion.

Sapir 1917: 4 || Haas 1964: 79 || McLendon 1964: 133 || Gursky 1974: 197 || J. G. Crawford 1976: 315 || Webb 1979: 2 || Gursky 1989: 22 || Kaufman 1989: 154 (#fa:ca ‘manzanita’ [NC]) || Leshchiner & Nikolaev 1992: 390 (*bāč̣.á (~-ō))

(k-04) PH *(a-)kúl ‘long’

KAR *-xár[ah]* ‘long (of spatial measurement), tall’ (compounded with nouns)

YAN *cul-* ‘long, tall’, pl. *cauli-*

PPOM *ʔahqól ‘long’ > Pk *ʔahqol*, Ps *ʔahkon* (sg.), *ʔahko·n-ha* (pl.), Pn *kól* (sg.), *kó·l-ay* (pl.), Pc *kól*, Pne *kól-*, Pe *qól-a* (pl.)

PYUM *k^yul^y ~ *qul^y ‘long’ > Co *kuł^y* ‘be long’, JT *kuł* ‘it is long’, MGI *ʔa-qul* ‘is long’, Mo *ʔa-k^yu·l^y-m* ‘be long’, Ma *qol-m* ‘be long’, Qu *ʔa-qól* ‘to be long’, Hu *k^yul-k* ‘to be long’, Ha *k^yul-k* ‘to be long’, Ya *k^yú(-)l-i* ‘long’; PYUM *kur ‘far’ > Co *kur* ‘distance in space or time’, JT *kur* (n.) ‘far’ /lit. a distant place/, MGI *ʔa-kur* ‘is distant, far; long (time)’, Qu *ʔa-kór* ‘to be distant (in time or space)’, Pa *ku-r* ‘far’, Hu *kur* ‘long ago’, Ha *kur* ‘long ago; already; far away’, Ya *kúr-a* ‘long ago’

SER *k-áakox* ‘large, big’ (conjug.: *t-áakox*; *t-aak^wʔ*)

PCHO *kul[i] ‘far’ > HCh *a-gulíʔ* ‘far’, LCh *kuł^yiʔ* ~ *kuł^yi* ‘far, far away from, distant’

NOTES. The first vowel *a* in Karuk *-xárah* apparently results from assimilation to the vowel of the following syllable.

Sapir 1917: 10 || McLendon 1964: 133 || Gursky 1974: 187, 196 || J. G. Crawford 1976: 315 || Waterhouse 1976: 337 || Langdon 1979: 638 || Greenberg 1987: 241 || Gursky 1989: 7 || Kaufman 1989: 146 (#Kur ‘far, distant’ [S], #aqol^y ‘long’ [N/S]) || Leshchiner & Nikolaev 1992: 381 (*qál(á))

(k-05) PH *(i-)ák ‘bone’

SHA *ʔa·k* ‘bone’ (Silver 1961: 6)

PPOM *ʔihyá(·) ‘bone’ > Pk *ʔihya·*, Ps *ʔi·ha*, Pn *yá·*, Pc *yá·*, Pne *híya*, Pse *ya*, Pe *Ya*

SAL A [*ʔax*]á·k <áqāk> ‘bone (non-poss.)’, [*ʔáx*]a·k <áqāk> ‘my bone’ (2.85.0729), M [*páx*]ak <p’áqak> ‘mi hueso’ (2.85.0730)

PYUM *ak ‘bone’ > Ki *haq¹* ‘bone’, *n^y-haq¹* ‘a bone, someone’s bone; skull’, Co *ya·k* ‘bone (removed from the body), skeleton’, *n^y-ya·k* ‘bone’, JT *ak* ‘bone’, MGI *aq* ‘his bone’, Mo *n^ya-sak* ‘bone’, Hu *čiya·k* ‘skeleton, bone’, Ha *čya·k* ‘bones’, Ya *čyá·k-a* ‘bone’

SER *í-[t]ak* ‘bone; rib, petiole, limb, branch, stem; skeleton or rib (of boat)’ (pl. *í-[t]axk* [sg. possessor], *í-[t]ax-ox* [pl. possessor])

NOTES. Pomoan does not allow two vowels in hiatus, so *y in *ʔihyá(·) is a predictable hiatus-filler, while the *h is a laryngeal increment, added when *y was already in place.

Kroeber 1915: 282 || Sapir 1917: 8-9 || Sapir 1925: 405 (*ihyaka?) || Greenberg & Swadesh 1953: 218 || Gursky 1974: 181 (#i/aʔyak#) || J. G. Crawford 1976: 309 || Langdon 1979: 637 || Greenberg 1987: 197 || Kaufman 1989: 138 (#i(H)θa ‘bone’ [N/S], #a(:)K [K ~ K’] ‘bone’ [N/S]) || Leščiner 1989: 164 (*ʔöja) || Leshchiner & Nikolaev 1992: 378 (*ʔöjá) || Shaul 2020b: 297-298

(k-06) PH *(a/i-)ximálk ‘ear’ (= x-04)

SHA *ʔisa·k* ‘ear’ (Silver 1961: 4); OKW <is’ sawak> ‘ear’ (Dixon 1905: 216)

ACH *issat* ‘ear’

ATS *ʔasmak* ‘ear’ (Talmy n.d., b: 88)

YAN CN *malʔk[u]*, Y *manʔk[u]* ‘ear’

PPOM *xi-mán^y ‘ear’ > Pk *šima*, Ps *ši-mo[-mo]* (*mo* ‘hole’), Pn *šimá*, Pc *šmá*, Pne *šima*, Pse *xmán[ca]*, Pe *ši-má·*

PYUM *šmal^yk ‘ear’ > Ki *smaql¹* ‘ear’, Co *šma·l* ‘ear’, JT *šmał^y*, *šəmał^y* ‘ears’, MGI *xəmał* ‘his ear(s)’, Mo *ismal^yk* ‘ear; dried peach’, Ma *šmal^yk* ‘ears’, Pa *šmalk* ‘ear’, Hu *smalk* ‘large ear’, *smark* ‘small ear’, Ha *smalk* ‘ears (large ears, such as of deer, elephant)’, *smark* ‘ear, ears (small ears, such as of humans)’, Ya *smálka* ‘ear’

NOTES. This word with its nontrivial phonotactic structure may be an old compound.

Kroeber 1915: 282 || Sapir 1917: 10 || Dixon & Kroeber 1919: 106 || Sapir *apud* Dixon & Kroeber 1919: 109 || Sapir 1925: 406 (*isama, *isma(l)k- ?) || Greenberg & Swadesh 1953: 218 || Bright 1956: 46 || Olmsted 1957: 138 || Haas 1963: 43-46 || Haas 1964: 77-78 || McLendon 1964: 131 || Gursky 1974: 185 (#isamarak’u# ~ #isamak’ura#) || J. G. Crawford 1976: 312 || Langdon 1979: 637 || Webb 1980: 76 || Greenberg 1987: 233 || Gursky 1989: 4 || Kaufman 1989: 128-129 (#[i/a]-ma-l^y(-Ku) [l^y ~ n^y] ‘ear; to hear’, #i-sa-má ‘ear’ [N/S]) || Leščiner 1989: 162 (*šimal-(k’u)) || Leshchiner & Nikolaev 1992: 374 (*šimálA-(k’u))

This correspondence can be complemented by the following comparisons without a reflex in Pomoan.

(k-07) PH *mák ‘back’

YAN *mak[i]* ‘back, backbone’

PYUM *mak ‘back; behind’ > Ki *h-maq¹* ‘give one’s back, turn backward’, Co *mak* ‘(space or time) back of, behind, in the rear of’, JT *mak* ‘area in back or behind, in or to an area in back or behind’, MGI *ə-mak* ‘is behind, in back’, Mo *i-mak* ‘back (of the body)’, Ma *mak* ‘back, behind (something)’, Qu *a-mák* ‘behind’, Pa *māk* ‘back; behind; beyond’, Hu *mák-o* ‘back (of the body)’, Ha *mak-o* ‘back (noun; bodypart)’, Ya *mák-a* ‘back, backward’

Sapir 1917: 10 || Greenberg & Swadesh 1953: 218 || Jacobsen 1958: 198 || Haas 1964: 77 || McLendon 1964: 129 || Gursky 1965: 169 || Gursky 1974: 179 (#asilmak#) || J. G. Crawford 1976: 308 || Gursky 1988: 20-21 || Kaufman 1989: 126 (#(i)mak^y ‘back’ [N/S]) || Leščiner 1989: 164 (*mbak^ə) || Leščiner 1990: 36 (*mbāk^ə) || Leshchiner & Nikolaev 1992: 377 (*^mbāk^ó)

(k-08) PH *a/i-púk ‘neck; nape of neck’ (= p-20)

KAR [*v*]ú·p ‘neck’

SHA *ʔé·pk[a]* ‘nape of the neck’ (Silver 1964: 174)

ACH [*w*]ápt[*i*] ‘neck’

ATS *ʔúpki* ‘neck’ (Talmy n.d., b: 107)

PYUM *puk ‘nape; base’ > Ki *puq¹* ‘under, beneath, nether; inside, under cover’, *n^y-puq¹* ‘a spine, someone’s spine’, Co *mpuk* ‘nape of neck’, JT *i-puk* ‘nape of neck, back of neck’, MGI *əyəpuk*, *i-puk* ‘his neck, nape’, Mo *hipuk* ‘base, bottom, foundation; root’, Ma *mi-puk* ‘neck’, Pa *ipu·k* ‘neck’, Hu *yip^húk* ‘back of the neck’, Ha *puk-l* ‘in the corner; at the bottom, down below’, Ya *púk* ‘bottom, foot (figurative)’, *i-púk* ‘neck’

PCHO *-epux ‘nape’ > LCh *-epúh* ‘nape’ (Waterhouse 1976: 337)

NOTES. The vowel *u* in Karuk *vú·p* results from assimilation to the subsequently lost vowel of the following syllable.

Dixon & Kroeber 1919: 106 || Olmsted 1956: 75 || Jacobsen 1958: 201 || Haas 1963: 48-49 || Silver 1964: 174 || Gursky 1974: 199 (#i^upaki#) || Waterhouse 1976: 337, 341 || Gursky 1989: 24 || Kaufman 1989: 129 (#[i:/u]-pu(K) ‘nape; neck; shoulder; arm’) || Leščiner 1989: 163 (*wəp^húk^hi) || Leshchiner & Nikolaev 1992: 375 (*wāp^húk^hi)

(k-09) PH *xúk ‘to be tired’ (= x-10)

CHI *ʔuk* ‘be tired, exhausted’ (Conathan 2002: 30)

PCHO *-šox- ‘be tired’ > HCh *i-šog-i* ‘tiresome, tiring’, LCh *soh-ta* ‘be tired’

(k-10) PH *-k ‘hither’

CHI *-ku* ‘hither’ (Jany 2009: 40), *-k^h <-k^s* ‘motion towards here’ (Berman 2001: 1050-1051)

KAR *-uk* ‘to here, hither’

SHA *-k* ‘hither’ (Silver 1964: 173)

ACH *k* ‘hither’

ATS *-ik* ‘hither’ (Talmy 1972: 40)

PYUM *-k ‘hither’ > Ki *-k*, Co *-k*, JT *-k* (Miller 2001: 70), MGI *-k* (Langdon 1970: 96-97), Ma *-k* (Gordon 1986: 46), Qu *-k* (Halpern 1947a: 28), Pa *-k* (Joel 1966: 35), Ya *-k* (Shaterian 1983: 104)

NOTES. Judging by the Karuk and Achumawi reflexes, the developments expected for root-final position did not apply to suffixes.

Sapir 1917: 20 || Dixon & Kroeber 1919: 107 || Sapir *apud* Dixon & Kroeber 1919: 111 || Sapir 1925: 414 (*-k^h(w)i) || Jacobsen 1958: 201 || Olmsted 1959: 639 || Silver 1964: 173 || Gursky 1965: 178 || J. M. Crawford 1976: 182 || Kaufman 1989: 119 (#-uk^y ‘hither’ [N/S]) || Gursky 1995: 143 || Zhivlov 2018: 154-157

1.2.2. Proto-Pomoan *q^h

The sound correspondence involving Proto-Pomoan *q^h is represented in Table 8. This correspondence, in my view, reflects the Proto-Hokan aspirated velar stop *k^h. This is the well-known correspondence symbolized as *x^y by Sapir, Gursky and Kaufman. Reconstructing *x^y, however, requires postulation of a repeated typologically rare shift “fricative > affricate” in Shasta and Atsugewi and “fricative > stop” in Proto-Pomoan and Chimariko. Since there are no other candidates for a Proto-Hokan *k^h, I propose to reconstruct *k^h for this correspondence. Karuk has *x* before **u* and *s/š* otherwise (the choice between *s* and *š* follows a synchronic rule: *š* is found after *i*). Yana has *x* before **a*, N *s*, Y *c^h* before **i*, and *k^h* before **u*. Salinan has *š* or *šx* before **a* and **i*, but *k* before **u*. Yuman has **x* before **a* and **s* before **i*. Seri has *χ* before **a* and **u*, but *s* before **i*.

PH	Chi	Kar	Sha	Ach	Ats	Yan	PPom	Sal	PYum	Ser	PCho
*k ^h	q ^h	s, š, x	c	s	c ^h	x, c ^h , k ^h	*q ^h	š(x), k	*χ, *s	χ, s	*χ

Table 8. Proto-Hokan *k^h.(k^h-01) PH *a-k^há ‘water’

CHI *ʔaq^ha* <ʔákhà> ‘water’ (2.23.0328), *aq^ha* <äqǎ> ‘water’ (Berman 2001: 1071)

KAR *á·s* ‘water; juice’

SHA *ʔác·a* ‘water’ (Silver 1964: 176); NRSHA <gaʔatsʔ> ‘water’ (Dixon 1905: 216); OKW <atʔsa> ‘water’ (ibid.)

ACH *as* ‘water’

ATS *ʔác^hi* ‘water; watering place’ (Talmy n.d., b: 61)

YAN *xa-na* ‘water, liquid’

PPOM *ʔahq^há ‘water’ > Pk *ʔahq^ha*, Ps *ʔahk^ha*, Pn *k^há*, Pc *k^há*, Pne *k^há*, Pse *χá*, Pe *xá*

SAL A *t-šaʔ* <ʔfǎ>, M *ʔ-šaʔ* <ʔrǎʔǎ> ‘water’, A M *ʔ-é-[t]aš* <ʔréʔaš> ‘mi agua’ (2.85.0084)

PYUM *(ʔ-)*xa* ‘water’ > Ki *ʔ-xaʔⁱ* ‘water’, Co *xa* ‘water’, JT *xa* ‘water’, MGI *ʔa-xa·* ‘water’, Mo *ʔa-ha* ‘water’, Ma *xa* ‘water’, Qu *ʔa-xá* ‘water’, Pa *ʔ-xa* ‘water’, Hu *haʔ*, *ʔ-haʔ* ‘water’, Ha *ha-ʔa*, *ʔ-ha-ʔa* ‘water’, Ya *ʔ-há* ‘water’

SER *ʔa-χ* ‘fresh water; superficial well’ (pl. *ʔá-χa-xam*), *i-χ* ‘liquid, sap, juice’

PCHO *-*xa-ʔ* ‘water’ (HCh *l-a-haʔ*, LCh *a-haʔ*, Teq *xa*)

NOTES. This word is connected by ablaut with PH *i/a-k^hí· ‘to drink’ (k^h-13).

Dixon & Kroeber 1913: 651 || Kroeber 1915: 282 || Sapir 1917: 8 || Sapir 1920b: 285 || Sapir 1921: 68 || Greenberg & Swadesh 1953: 220 || Haas 1954 || Bright 1956: 45-46 || Jacobsen 1958: 203 || Sapir & Swadesh 1960: 16 || Haas 1964: 81 || McLendon 1964: 137 || Silver 1964: 176 || Gursky 1965: 188, 193 || Gursky 1974: 210 (#ax^ya#) || J. G. Crawford 1976: 320 || J. M. Crawford 1976: 187 || Silver 1976: 202 || Waterhouse 1976: 337 || Langdon 1979: 639 || Webb 1980: 76 || Greenberg 1987: 213 || Kaufman 1989: 131 (#a:-x^yáʔ ‘water’ [N/S]) || Leščiner 1990: 36 (*ʔǎč^hǎ) || Leshchiner & Nikolaev 1992: 398 (*ʔǎč^hǎ) || Shaul 2020b: 309–310

(k^h-02) PH *a/uk^há ‘belly’

YAN [*y*]o·*xai-* ‘pregnant’

PPOM *ʔuhq^há, *ʔuhq^há· ‘belly’⁴ > Pk *ʔuhq^ha*, Ps *ʔuk^ha*, Pn *k^ha[šé]*, Pc [*m*]k^há, Pse *χá* ‘stomach, entrails, paunch, tripe’, Pe *yu·xá* ‘paunch, tripe, stomach, guts’

SER [*y*]aχ ‘belly, abdomen’ (pl.: [*y*]áχ-kox, abs.: ʔa-[*y*]áχ)

⁴ Oswalt (1972: 27) gives Ps *ʔuhk^ha*, Pc *wq^há*, *mq^há*. If these forms are more correct than those given by McLendon, the variant *ʔuhq^há· with a long vowel can be eliminated.

Gursky 1974: 179 || Greenberg 1987: 133-134 || Gursky 1988: 22 || Kaufman 1989: 133 (#[i/u]q^há 'belly' [N]) || Gursky 1990: 23

(k^h-03) PH *k^hak^wá 'flint; arrowhead' (= k^w-03)

CHI q^hako <khako> 'arrowhead' (2.22.0211), <khákkò> 'bullet, arrowhead' (2.23.0991)

KAR sá·k 'obsidian, flint; arrowhead, bullet'

ACH sāt 'arrowhead; knife; flint; metal; bullet; iron; obsidian'

YAN CN xaka, Y xahka 'flint; Flint (as a myth character); flint, a design element in basketry', N xaka-wi 'arrowheads'

PPOM *q^hahká 'flint' > Pk qahca, Ps kahča, Pn k^hačá, Pc k^hcá, Pne k^háhta, Pse qcá, Pe xa·ká

SAL A [ʔa]šák <ʔák> 'arrow point of flint' (2.85.0096), A [ʔa]šák <ʔacák>⁵ 'what they put on point of arrows', M [pa]šák <p'acák> 'id.' (2.86.0584)

PYUM *(ʔ-)xk^wa 'knife' > Mo ʔ-ahk^we 'knife', Hu a-k^wá, ʔ-k^wa, k^wa 'knife', Ha k^wa-ʔa 'silver; knife; metal', Ya ʔ-k^wa 'metal, iron; knife'

SER ʔax 'arrow point' (pl. ʔax-lk), 19th century Seri (Pinart) <vaX> 'pedernal; flint' (Hernández 1902: 253)

NOTES. (1) The word may be a compound with PH *(a/i-)k^haʔa 'stone' (k^h-10) as the first part. (2) Seri reflects a metathesized form *k^wak^há.

Sapir 1917: 8 || Sapir 1920b: 284 || Sapir 1921: 69 || Greenberg & Swadesh 1953: 219 || Jacobsen 1958: 200 || Haas 1964: 78 || McLendon 1964: 131 || Silver 1964: 173 || Gursky 1965: 169 || Gursky 1974: 188 (#q^hak^wa#; #sak^(ʔ)#) || Langdon 1979: 637 || Greenberg 1987: 259 || Gursky 1989: 9 || Kaufman 1989: 138 (#x^yáHk^wa 'flint; arrowpoint; knife' [N/S]) || Leshchiner & Nikolaev 1992: 399 (*č^hákA) || Shaul 2020b: 302

(k^h-04) PH *k^hapá 'cloud' (= p-03)

PPOM *q^haʔbá(·) 'cloud' > Pk q^haba·, Ps k^habʔa, Pn k^habá·, Pc k^hbá·, Pne k^háʔba· 'fog', Pse xba 'fog', Pe xa·bá 'fog'

PYUM *xpa 'cloud' > Ki p-xpaʔ¹ 'small puffs of smoke, cloud'

NOTES. This word may be a compound with PH *a-k^ha 'water' (k^h-01) as a first part. The second part may be compared with Sal A pay <páj> 'nube' (2.85.0024).

(k^h-05) PH *k^hapí 'metate, grinding stone' (= p-08)

CHI q^hapi[na] <khabiná> 'mortar' (2.20.1080), q^hapi[na] <khap'ina> 'mortar' (2.22.0249)

PPOM *q^haʔbé 'rock' > Pk q^haʔbe, Ps k^haʔbe, Pn k^habé, Pc k^hbé, Pne k^háʔbe, Pse xbe, Pe xa·bé

SAL A t-šxaʔ <tʃqá> 'a rock' (2.85.0081), A t-šxáp-ahnel <tʃqápahnel> 'stones' (2.85.0082), M t-šxáp-elat <tʃqáp'elat> 'stones' (2.85.0083), A t-í-šxaʔ <tríʃqá> 'mi dinero, mi piedra', t-mí-šxaʔ <trímíʃqá> 'tu dinero ó piedra', t-í-šxáʔ-wo <tríʃqá'wə> 'his dinero' (2.85.0083)

PYUM *(ʔ-)xpi 'metate' > Ki xpiʔ³ 'metate, millstone', Co xpi 'metate', JT xpi 'metate', MGI ʔə-xpi 'metate', Mo ʔa-hpe 'metate; name of a cat's cradle design', Pa ʔ-xpi 'metate', Hu p^hi, p^hiʔ, ʔ-p^hiʔ 'metate, grinding stone', Ha p^hi-ʔi 'flat grinding rock', Ya ʔ-hpi 'metate, grinding stone'

SER xap 'grinding stone' (pl. xáp-kox)

NOTES. This word may be a compound with the first part being a shortened form of PH *(a/i-)k^haʔa 'stone' (k^h-10).

Sapir 1925: 411 (*ixa'-pi) || Greenberg & Swadesh 1953: 219 || Gursky 1974: 207 (#ax^yaʔpi#) || Campbell 1976: 162 || J. G. Crawford 1976: 315, 319 || J. M. Crawford 1976: 183 || Greenberg 1987: 141 || Kaufman 1989: 138 (#x^yáʔ=PI(y) [x^y ~ x] compound 'mortar, metate; stone' (<"stone pound" or "stone stone")) || Shaul 2020b: 306

(k^h-06) PH *(a/i-)k^haʔá(y) 'morning' (= ʔ-01)

SHA ʔač·áy 'day' (Silver 1966: 208)

⁵ Harrington notes: "á not very long but falling".

YAN *xa[ʔlai]*- ‘to be daylight, dawn’

PPOM *q^haʔá ‘dawn, morning’ > Ps *k^haʔ-a-*, Pn *k^haʔá*, Pne *k^haʔá-[wi]*, Pse *ʔá-*, Pe *xa-ʔá-*

SAL A [*k*]ešxáy ‘k’eqáj’ ‘la mañana’ (2.85.0014), A [*k*]ešxáy ‘k’ecxáy’ ‘ya ameneció’, M [*p*]ešxay[*léʔ*] ‘p’ecxaylé’ ‘id.’ (2.86.0589)

NOTES. Shasta *č* instead of expected *c* is due to the change *k^haʔáy > *k^hʔáy > *káy.

Sapir 1917: 8 || Sapir 1925: 409 || McLendon 1964: 134 || Gursky 1974: 197 || Gursky 1989: 22 || Kaufman 1989: 143 (#a)xʔa7 ‘morning, daylight’ [N])

(k^h-07) PH *a/i-k^hiy ‘dew’

PPOM *ʔiq^he ‘dew’ > Pk *ʔik^he*⁶, Ps *k^he-ʔe*, Pc *k^hé*, Pn *k^hé-* (Oswalt 1972: 32)

PCHO *-iʔ]axe ‘dew’ > HCh *t-iʔahe* ‘dew’

(k^h-08) PH *puk^há/íla ‘a kind of basket’ (= p-12)

CHI *puq^hela* ‘púk’éla’ ‘small basket’ (2.20.0038)

PPOM *buhq^hál ‘open-woven pack basket’ > Pk *buhq^hal*, Pn *bok^hál*, Pc *p^hk^hál*, Pse [*fáli*] *bʔàl*, Pe *bu-xál* ‘fish trap basket (open-woven and elongated)’

NOTES. (1) The word may be a compound with the first component *(a)pú(-p) ‘to weave baskets’ (p-11). (2) This word has a limited distribution and belongs to cultural vocabulary, so borrowing is not excluded. I tentatively retain this comparison because Chimariko and Pomoan are not immediate neighbors.

Gursky 1974: 179 || Gursky 1988: 21 || Kaufman 1989: 158 (#puq^ha(lʔ) [lʔ ~ nʔ] ‘basket’ [N])

(k^h-09) PH *k^ha/učV ‘cold’ (= č-01)

CHI *q^hača* ‘qát’sa’ ‘ice’ (Berman 2001: 1063)

YAN CN *xa-č[iʔ]*- ‘to feel cold’

PPOM *q^hu(ʔ)čá- ‘winter’ > Pk *q^hoša-*, Pn *k^hečá[ma-]*, Pne *k^huʔčá[ti]*, Pe *xu-čá[y]*

PYUM *xčur[r] ‘to be cold’ > Co *xsu-r* ‘be cold’, JT *xčur* ‘it is cold’, MGI *xčur* ‘is cold’, Mo *hačur-k* ‘be cold’, Ma *xčur-k* ‘be cold’, Qu *xacur* ‘to be cold’, Hu *č^hur* ~ *č^hu-r* ‘winter’, Ha *č^hu-r* ‘year; winter’, Ya *ʔ-č^hú-ri* ‘winter’

NOTES. Yana *xa-č[iʔ]*- ‘to feel cold’ is derived from *xa-* Y ‘cold’. This morpheme is also found in Yan Y *xa-ai-na* ‘cold’. If the Yana form really belongs to this set, the Proto-Hokan form must also be considered a compound with the first element PH *k^ha- ‘cold’.

Sapir 1917: 8 || Greenberg & Swadesh 1953: 218 || Gursky 1965: 172 || Gursky 1974: 183 || Greenberg 1987: 207 || Gursky 1988: 32 || Kaufman 1989: 143 (#xʔač [a ~ o; xʔ ~ ʔ] ‘cold [*a]; winter [*u]’ [N/S]) || Leshchiner & Nikolaev 1992: 401 (*q^háčč)

This correspondence can be complemented by the following comparisons without a reflex in Pomoan.

(k^h-10) PH *(a/i-)k^haʔa ‘stone’ (= ʔ-07)

CHI *q^haʔa* ‘khá’á’ ‘rock’ (2.23.0606)

KAR *as* / *asa-* ‘rock; stone; pit of fruit; in some compounds, earth, dirt’

SHA *ʔíc-aʔ* ‘rock’ (Silver 1964: 175)

YAN *kā[i]-na* ‘stone’

NOTES. Yana *k* instead of expected *x* is due to the change *k^haʔa > *k^hʔa > *ka.

Dixon & Kroeber 1913: 651 || Sapir 1917: 9 || Sapir 1925: 411 (*ixa) || Haas 1964: 81 || Silver 1964: 175 || Gursky 1974: 207 || Kaufman 1989: 138 ([i/a]-xʔa7 ‘stone’ [N/S])

⁶ Oswalt & Buckley (2018) give Pk *ʔik^he-y*.

(k^h-11) PH *k^hán ‘good’

PYUM *xan ‘good’ > Co *xan*^y ‘be new, fine, genuine, real, good, first-class’, JT *xan* ‘he or it is good, fine, well, comfortable, all right, okay, nice’, MGI *ʔə-xan* ‘is good, correct, right, tasty, true, sure’, Mo *ʔa-xan* ‘right (direction); good, proper, original’ (old word used in fixed expressions), Ma *m-xan-k* ‘like, want’, Qu *ʔa-xán* ‘to be genuine’, *m-axán* ‘to admire’, Pa *xan* ‘be good, fine’, *xan...i* ‘one likes, cares for’, Hu *han-k* ‘to be good, to be well’, *hán-o-k* ‘to like something’, Ha *han-k* ‘good’, *han-o-k* ‘to like’, Ya (?)*hān-i* ‘good, handsome, right, first, real, perfect’

PCHO *-xan[a]- > HCh *di-hanah-ʔma* ‘he will like it, love it’, LCh *hanah-ma* ‘like, be pleased by’, *hanáʔ* ‘all right’ (Waterhouse 1976: 337), Teq <xana> ‘to taste good’

Waterhouse 1976: 337 || Gursky 1989: 12 || Kaufman 1989: 161 (#Xan ‘good; pleasant’ [S])

(k^h-12) PH *(i-)k^há/íp ‘to extinguish’ (= p-23)

CHI *n-iq^hap* <ʔu nikháp> ‘put the fire out!’ (2.23.0840), *n-eq^hap* <nekháp> ‘put it out!’ (2.22.0113) (*n-* ‘imperative’ [Jany 2009: 118])

KAR *ışip* ‘to extinguish a fire’, *im-şıp* ‘to cool off; (fire) to be extinguished’ (*im-* ‘by heat or fire’ [Haas 1980: 69])

ATS -*cp* in *p-cí-cp* ‘to extinguish a fire’, *ma-cp* ‘to put out a fire with one’s foot’, *phú-cp* ‘to blow out a fire’ (Talmy n.d., a: 41)

SAL A <cap>, M <cap> ‘to extinguish, put out’ (Mason 1918: 139), M *šap* <cap> ‘ya está apagado’ (2.88.0068)

PYUM *sip ‘to be extinguished’ > JT *wəsip* ‘it goes out (said of a fire)’, MGI *əsip* ‘goes out, is extinguished’

NOTES. (1) Chimariko and Salinan reflect PH *k^háp, while Karuk and Yuman reflect PH *k^híp. These two protoforms are connected by the Proto-Hokan ablaut *a/i. (2) Atsugewi *c* instead of expected *c^h* is due to synchronic neutralization of plain and aspirated consonants in coda position (Good 2004: 8).

J. G. Crawford 1976: 312 || Kaufman 1989: 160 (#šip [i ~ a] [ʔasp] ‘(to die [fire];) to douse (fire)’ [N/S]) || Shaul 2020b: 301

(k^h-13) PH *i/a-k^hí ‘to drink’

KAR *ış* ‘to drink’

SHA -*ic-* ‘to drink’ (Silver 1964: 172)

ACH *is* ‘to drink’

ATS -*c^{hi}* in *i-c^{hi}* ‘to drink’ (Talmy n.d., a: 61)

YAN N *si-*, Y *c^{hi}i-* ‘to drink’

SAL A <icim> ‘to drink’ (Mason 1918: 141); A *eše[m]* ‘to drink’ in <mé~šem> ‘drink!’, <kéšem hék> ‘I’m drinking’ (Jacobsen 1954: 106)

PYUM *si ‘to drink’ > Ki *čhi*² ‘drink’, Co *ši* ‘drink’, JT *wə-si* ‘he drinks something’, MGI *wə-si* ‘drinks’, Mo *i-θi-m* ‘drink; eat soup’, Ma *si-m* ‘drink’, Qu *a-sí/a-sé* ‘to drink’, Pa *si* ‘one drinks’, Hu *θi-k* ‘to drink’, Ha *θi-k* ‘to drink’, Ya *θi* ‘drink’

SER *k-i-si* ‘to drink; to bite and suck (e.g. mosquito)’ (conjug.: *i-t-ási*, *i-t-ásy-at*; *i-t-ásy-ox*, *i-t-ásy-ołka*)

NOTES. (1) This word is connected by ablaut with PH *a-k^há ‘water’ (k^h-01). (2) Superscript -*i* in Atsugewi is a morphophonological symbol with unclear value used by Talmy.

Kroeber 1915: 282 || Sapir 1917: 14 || Greenberg & Swadesh 1953: 218 || Haas 1964: 77 || McLendon 1964: 131 || Silver 1964: 172 || Gursky 1968: 39 || Gursky 1974: 185 || J. G. Crawford 1976: 311 || Silver 1976: 202 || Webb 1980: 76 || Greenberg 1987: 135 || Gursky 1989: 3 || Kaufman 1989: 131 (#i/a-sí [s ~ š] ‘to drink’ [N/S]) || Shaul 2020b: 300

(k^h-14) PH *(i/a/u-)k^hí ‘to sing’

SHA -e·c[ni]- ‘to sing’ (Silver 1966: 74)

ACH as ‘to sing’

ATS -c^{hi} in ye·c^{hi} ‘to sing’ (Talmy n.d., a: 62)PPOM *HV(h)q^hé ‘dance, song’ > Pn k^hé, Pc k^he, Pne k^hé, Pse xé, Pe xe

SER k-ooš ‘to sing’ (conjug.: t-ooš, t-ooš-tim; t-óosi)

NOTES. Superscript -i in Atsugewi is a morphophonological symbol with unclear value used by Talmy.

Sapir 1917: 7 || Gursky 1974: 205 || Greenberg 1987: 255 || Kaufman 1989: 159 (#(e:)x^ye ‘to sing; song; dance’ [N]) || Leshchiner & Nikolaev 1992: 385 (*ʔōčō)(k^h-15) PH *k^hu- ‘2nd person plural’CHI q^ho-, q^hu- ‘2nd person plural’ (verbal prefix) (Jany 2009: 34)SAL ko- ‘2nd person plural’ (verbal prefix)⁷ (Turner 1987: 129).

NOTES. This set forms part of the paradigmatic comparison of Chimariko and Salinan personal prefixes by Sapir (1920a).

Sapir 1920a || Gursky 1965: 182 || Kaufman 1989: 116 (#q^hV ‘second person plural pronoun marker’ (same as #KV?) [N]) || Zhivlov 2018: 144(k^h-16) PH *a-ták^hu ‘many’ (= t-06)

SER k-átxo ‘many, much, abundant’ (conjug.: t-átxo; t-átxo-x [t-átxo-xam])

PCHO *ataxu > LCh atahu ‘many, a lot of’

Gursky 1974: 197 || Waterhouse 1976: 339 || Greenberg 1987: 237 || Kaufman 1989: 147 (#aTaXu ‘many’ [S])

(k^h-17) PH *(a/i-)k^húl ‘dry’

KAR axr[ah] ‘dead tree’, iv-áxr[ah] ‘to be dry’ (im- ‘denominative’)

SHA k-ic-úr ‘dry’ (Silver 1961: 12) (k- ‘deverbative nominalizing prefix’ [Silver 1966: 210])

ACH [w]asú·ll[i] ‘it dries’

YAN YN k^hul[si]- ‘to feel dry, to dry’ (erroneously placed by Sapir & Swadesh [1960: 104] under the root k^hul- ‘to be, feel’)

SER k-íxox ‘to dry (columnar cactus fruit)’ (conjug.: i-t-íxox; i-t-íxox)

PCHO *-xuł ‘to dry’ > HCh di-húł-ʔma ‘it will dry out’, i-húł ‘dry’, LCh huł-ma ‘dry, dry up’, Teq <hur> ‘to dry’

Waterhouse 1976: 341 || Gursky 1989: 4 || Kaufman 1989: 142 (#Xulʔ ‘dry’ [S]) || Gursky 1990: 24

1.2.3. Proto-Pomoan *q̣

The sound correspondence involving Proto-Pomoan *q̣ is represented in Table 9. This correspondence reflects the Proto-Hokan glottalized velar stop *ḳ.

PH	Chi	Kar	Sha	Ach	Ats	Yan	PPom	Sal	PYum	Ser	PCho
*ḳ	q̣	x	č̣	č̣		k	*q̣	ḳ	*x	x̣	*ḳ

Table 9. Proto-Hokan *ḳ.

(ḳ-01) PH *ká/ís ‘to scrape, to scratch’ (= s-05)

KAR ta-xíš-xiš ‘to scrape’ (ta- ‘with tool or implement’), [θiv]xiš ‘to plane (a board)’

⁷ Turner gives this as k-, but remarks: “Whatever the first vowel of the verb stem, it is replaced by a in the first person plural and by o in the second person plural” (Turner 1987: 129).

PPOM *-q̄a·s > Pk -q̄a·s (verb root) ‘scratch and make a streak’, e.g. in *da-q̄a·s* ‘scratch and make a streak, with the hand or paw’ (*da-* ‘with the hand, especially the palm, with the paw of animals’) (Oswalt & Buckley 2018), Pe *da-q̄a·s* ‘scratch with nails; harrow’ (*da-* ‘with or affecting the hand’) (McLendon 1975: 66)

PYUM *xas ‘to scrape’ > Co *č-xaš* ‘scrape, scrub, scour, whittle, shave, sharpen (a pencil)’, Mo *a-haθ-* ‘peel (something) with a peeler or knife’, *a-ha-θ-* ‘trim down a stick, whittle’, Ha *haθ-k* ‘to scrape (using a knife)’, Ya *háθ-v-i* ‘scrape, shave’

SER *k-[ta]xš* ‘scratch; take away forcibly’ (conjug.: *i-t-[tá]xš*, *i-t-[tá]x-ka*; *i-t-[tá]x-kox*), *k-[šá]xaš* ‘scratch’ (*i-t-[šá]xaš*; *i-t-[šá]xaš-ox*), *k-[pa]xš* ‘scratchy, rough; broke, without money’ (conjug.: *t-[pa]xš*; *t-[pa]x-ka*)

NOTES. Seri *ta-*, *ša-* and *pa-* look like fossilized instrumental prefixes/prepounds; *ta-* may be the same prepound that is reflected in Karuk *ta-*, Pomoan **da-* and Cocopa *č-* (pYum **t-*)⁸.

J. G. Crawford 1976: 317 || Kaufman 1989: 139 (#(T)aXas [s ~ š; a₂ ~ i] ‘to scrape; scratch’ [SW/?+Kar] (?causative prepound pHok *ta=))

(k-02) PH *(a-)k̄aw ‘fox’

KAR *apra·x* ‘gray fox (*Urocyon cinereoargenteus*)’

PPOM *haq̄aw ‘fox’ > Pk *haq̄aw*, Pn *k̄aw*, Pc *k̄aw*, Pne *k̄aw-*, Pe [*qa-*]q̄aw

PYUM *prxa·w ‘fox’ > Ki *pnxa·w*² ‘fox (probably kit fox; *Vulpes macrotis*)’, Co *prxa·w* ‘kit fox (*Vulpes macrotis*)’, JT *p̄rxa·w* ‘fox (gray fox, *Urocyon cinereoargenteus*)’, MGI *parxa·w* ‘fox’, Mo *marho* ‘grey fox’

NOTES. Cf. PH *a-pVI-k̄aw ‘fox’ (p-21).

Langdon 1979: 637 || Kaufman 1989: 148 (#(a)pVrax ‘fox’ [Kar:NC +Yum]) || Leshchiner & Nikolaev 1992: 394 (*h̄eq’ówá)

(k-03) PH *(a-)ká/i ‘to finish’

CHI *q̄e[h]-ta* <κ’eh̄ta> ‘she is dead’ (2.20.1114), *q̄e[?]-men* <κ’e’men> ‘I pretty near died’ (2.22.0145)

YAN N [*ti*]ka[u]- ‘used up; to finish’ (cf. *tinti-* ‘to stop’), Y [*te-tu*]ka[u]..[?a] ‘to finish’, -[*tu*(·)]ka[m]- ‘to finish’

PPOM *-(?)q̄á[l] > Pe *q̄ál* ‘to terminate, finish an activity’ (McLendon 1975: 53)

SER *k-i-xi* ‘finish; finish making’ (conjug.: *i-t-áxi*, *i-t-áxi-tim*; *i-t-áx-t* [*i-t-áx*]), *k-óoxi* ‘die (especially animal); fade’ (*t-óoxi*; *t-óoxya-t*, *t-óoxya-tołka*)

McLendon 1964: 131 || Kaufman 1989: 163 (#q’a ‘to finish’ [N])

(k-04) PH *(a-)k̄úy ‘neck’

PPOM *q̄óy[u] ‘neck’ > Pk *k̄uyu* ‘windpipe’, Pse *q̄oy*, Pe *q̄óy*

SAL A [*l*]á·k̄oy <lák’oj> ‘mi nuca’, applied to back of neck only (2.85.0478)

Gursky 1974: 199 || J. G. Crawford 1976: 319 || Gursky 1989: 24 || Kaufman 1989: 129 (#q’o(y) ‘neck; throat; to swallow’ [N/S]) || Shaul 2020b: 305

This correspondence can be complemented by the following comparisons without a reflex in Pomoan.

(k-05) PH *kal ‘to scrape, to scratch’

KAR *ak-xár[ap]* ‘to scratch’ (?*ak-* ‘with the hands’ [Haas 1980: 70]), [*vim*]xár[ap]-sur / [*vim*]xár[ap]-suru- ‘to scratch off’ (-sur/-suru- ‘off’)

⁸ According to S. A. Marlett (pers. comm.), Mary Moser noticed that a lot of verbs that have *t-* at the beginning have something to do with the hand.

YAN N *kal-čau-* ‘to scratch with sharp claws’ (*-čau-* ‘to get stuck in cleft, claws, teeth’)

PCHO **-kał-* ‘to scrape’ > HCh *di-kát-ʔma* ‘he will whittle or trim it; he will chip it away’, LCh *kał-u-ma* ‘scrape, of the skin’

Haas 1964: 81 || Gursky 1968: 39 || Gursky 1990: 2

(k-06) PH *(i-)kay ‘bitter, sour’

CHI *qoy[oʔ]-it* <‘ojo’it> ‘it is sour’ (2.20.0045)

SHA *ʔičáy* ‘bitter’ (Silver 1961: 11)

ACH *i-ča-yiʔ* ‘strong tasting; bitter; sour’

YAN *kai-* N ‘bitter, strong (liquor)’ Y ‘bad-tasting’

Sapir 1917: 9 || Sapir 1925: 418 (*ikay(a)?) || Haas 1964: 77 || McLendon 1964: 129 || Silver 1964: 171 || Gursky 1965: 189 || Gursky 1974: 180 || Greenberg 1987: 258 || Kaufman 1989: 134 (#ikʷa(y) [a ~ o] ‘bitter, sour’ [N/S] OR: #qʷay [a ~ o] ‘bitter, sour’ [NC])

(k-07) PH *(a-)kít ‘unripe, young’ (= t-15)

KAR *xí-t* ‘green, unripe’

SER *k-axt* ‘tender, delicate, young [plant, vegetable]; young [person]’ (conjug.: *t-axt*; *t-axt*)

NOTES. Notions ‘unripe’ and ‘young’ are frequently colexified in world’s languages, see <https://clics.clld.org/edges/1207-1958>.

Gursky 1990: 19

(k-08) PH *kūn ‘to want’

YAN YC *kun-*, N *kut-* ‘to want, like’

SAL A <cu*nip> ‘desear, apetecer, &c.’: <comcu*nip> ‘no desear’, <cozamcu*nip> ‘no desearas, no apeteceras’ (Sitjar 1861: 21)

NOTES. (1) The reconstruction *kʷun is also possible. (2) Mason writes the Salinan verb taken from Sitjar as <k’unip> ‘desire’ (Mason 1918: 143). According to him, in Sitjar’s vocabulary “[t]he fortis stop was generally expressed by an asterisk after the vowel” (Mason 1918: 121).

Sapir 1921: 71 || Haas 1964: 81 || Gursky 1965: 187 || Gursky 1974: 210 || Greenberg 1987: 142 || Kaufman 1989: 167 (#KʷuN ‘to want, desire’ [N])

1.2.4. Comparison with Kaufman’s reconstruction

Kaufman reconstructs the following nonlabialized velar and uvular consonants: *kʷ, *kʷʷ, *kʷʰ, *xʷ, *q, *qʷ, *qʰ and *x. In addition, he reconstructs the cluster *qx. See Table 10 for Kaufman’s correspondences.

PH	Chi	Kar	Sha	Ach	Ats	Yan	Wsh	PPom	Sal	PYum	Ser	PCho	Tol
*kʷ	k	k	k	k	k	k	k	*kʷ	k	*kʷ, *k	k	*k	k
*kʷʰ	kh	k	k	kʰ	?	kʰ	kʰ	*kʷʰ	k	*kʷ, *k	k	*k	kʰ
*kʷʷ	kʷ	k	kʷ	kʷ	kʷ	kʷ	kʷ	*kʷʷ	kʷ	*kʷ, *k	k	*kʷ	kʷ
*xʷ	qʰ	s	ʕ	s	c	x	š	*qʰ	š	*x	x	*x	h
*q	q	k	k	q	[q]	k	k	*q	k	*k, *q	k	*k	k
*qʰ	qh	k	k	qʰ	?	kʰ	kʰ	*qʰ	k	*k, *q	k	*k	kʰ
*qʷ	qʷ	k	kʷ	qʷ	[qʷ]	kʷ	kʷ	*qʷ	kʷ	*k, *q	k	*kʷ	kʷ
*qx	qh	x, k	k, x	k, x	[q], x	kʰ	kʰ	*qʰ	k, x	*q(x), *k	k	?	kʰ
*x	x	x	x	x		x	x	*h	x	*x	x	*x	h

Table 10. Correspondences of Hokan nonlabialized velar and uvular obstruents according to Kaufman (1989).

The main difference with my reconstruction is that Kaufman postulates a triple opposition between front velar, labialized velar and uvular stops. However, the only languages where the reflexes of Kaufman's front velars and labialized velars are consistently different⁹ are Yuman, Chontal and Comecrudo¹⁰, where the labialized velars preserve their labialization. This means that any word reconstructed with a front velar without reflexes in Yuman or Chontal can be reconstructed with a labialized velar instead. Note that while Kaufman uses the cover symbols *K for *q or *k^y and *K! for *q, *k^y, or *k^w (Kaufman 1989: 109-110) he has no dedicated cover symbol for “*k^y or *k^w”, although this must be a frequent situation given the overlap between correspondences for *k^y and *k^w. Unambiguous cases of front velars in Kaufman's reconstructions are quite rare, and none of them is reliable enough to support the reconstruction of separate phonemes. Therefore, I propose to reconstruct labialized velars in place of both Kaufman's front velars and labialized velars.

As for Kaufman's uvulars, these supposedly give uvulars in Chimariko, Achumawi, Atsugewi, Pomoan and (in some cases) Yuman. The Yuman evidence is ambiguous, since Proto-Yuman *q was used as an augmentative grade of *k in consonant gradation. Kaufman himself admits that “[i]n fact /k/ may be the normal Yuman reflex of pHok *q” (Kaufman 1989: 101). While there is evidence that Chimariko and Pomoan uvulars correspond to each other, in Achumawi and Atsugewi they correspond to sibilant affricates and fricatives. For this type of correspondences, I reconstruct velar stops. Thus, the origin of uvular stops in Achumawi and Atsugewi remains so far unknown.

Kaufman also reconstructs three velar/postvelar fricatives: front velar *x^y, labialized velar *x^w and uvular *x̣. Kaufman's *x^y has such reflexes as Chimariko /q^h/, Shasta /c/, Atsugewi /c^h/ and Proto-Pomoan *q^h. This makes it rather unlikely that we deal here with an original fricative, because it would require several independent typologically rare shifts of fricative to stop or affricate. Since I do not find sufficient evidence for Kaufman's *q^h, which would be *k^h in my system, I reconstruct Proto-Hokan *k^h in place of Kaufman's *x^y. Instead, I reconstruct as *x the phoneme reconstructed by Kaufman as *š (see above).

Reflexes of Kaufman's labialized velar *x^w and uvular *x̣ differ only in Yuman, Chontal and Comecrudo¹¹. This means that any word reconstructed with *x̣ without reflexes in Yuman or Chontal can be reconstructed with *x^w instead. Note that while Kaufman uses the cover symbols *X for *x̣ or *x^y and *X! for *x̣, *x^y, or *x^w (Kaufman 1989: 109–110) he has no dedicated cover symbol for “*x̣ or *x^w”, although this must be a frequent situation given the overlap between correspondences for *x̣ and *x^w. In such cases, Kaufman usually reconstructs *x̣. Unambiguous cases of *x̣ in Kaufman's reconstructions are quite rare and none of them is reliable enough to support the reconstruction of a separate phoneme. Therefore, I propose to reconstruct *x^w in place of both Kaufman's *x̣ and *x^w.

Finally, Kaufman's correspondence for *qx̣ features too many unexplained reflexes to be considered as regular: it can give /k/ or /x/ without complementary distribution in Karuk, Shasta, Achumawi and Salinan.

⁹ According to Kaufman, labialized velars can yield uvulars in Chimariko, Achumawi and Proto-Pomoan, although he does not specify the precise conditions of such a development. I was unable to find reliable cases where labialized velars of Proto-Yuman or Proto-Chontal correspond to uvulars in Chimariko or Proto-Pomoan.

¹⁰ Comecrudo data are scarce; they are best left out of consideration at the present stage.

¹¹ Kaufman also postulates partly different reflexes in Chimariko: while *x̣ yields Chimariko /x/, *x^w can yield both /h/ and /x/ under unknown conditions.

1.3.0. Correspondence involving Proto-Pomoan glottal stop

Glottal stop *ʔ is reconstructed for Proto-Pomoan in a large number of words (McLendon 1973: 25). However, most of these cases belong to one of the two following categories: 1) word-initial glottal stop, and 2) glottal stop as a “laryngeal increment” before consonants. There are no vowel-initial words in Proto-Pomoan, and word-initial *ʔ and *h are in near complementary distribution: *ʔ if the next consonant is voiceless and unglottalized, but *h if the next consonant is a glottalized stop, voiced stop or ʔ. Before a voiced sonorant, both *ʔ and *h are possible (Oswalt 1976a: 3). Because word-initial glottal stop is almost always predictable, such cases will not be considered below¹². Laryngeal increments, i.e. laryngeal consonants immediately preceding the initial consonant of the tonic syllable (McLendon 1973: 50-51), will be discussed in one of the next papers in this series. What remains is the glottal stop in Proto-Pomoan stems of the shape *CVʔV.

1.3.1. Proto-Pomoan *ʔ

The sound correspondence involving Proto-Pomoan *ʔ in *CVʔV stems is represented in Table 11. This correspondence reflects the Proto-Hokan glottal stop *ʔ. See below on the reflex *h in Pomoan.

PH	Chi	Kar	Sha	Ach	Ats	Yan	PPom	Sal	PYum	Ser	PCho
*ʔ	ʔ	Ø	ʔ	Ø		ʔ	*ʔ, *h	ʔ ~ Ø	*ʔ	ʔ	*ʔ

Table 11. Proto-Hokan *ʔ.

(ʔ-01) PH *(a/i-)k^haʔá(y) ‘morning’ (= k^h-06)

SHA ʔač·áy ‘day’ (Silver 1966: 208)

YAN xa[ʔlai]- ‘to be daylight, dawn’

PPOM *q^haʔá ‘dawn, morning’ > Ps k^haʔ-a-, Pn k^haʔá, Pne k^haʔá·[wi], Pse ʔá-, Pe xa·ʔá-

SAL A [k]ešxáy <k’eqáj> ‘la mañana’ (2.85.0014), A [k]ešxáy <k’ecxáy> ‘ya ameneció’, M [p]ešxay[léʔ] <p’ecxaylé> ‘id.’ (2.86.0589)

NOTES. Shasta č instead of expected c is due to the change *k^haʔáy > *k^hʔáy > *káy.

Sapir 1917: 8 || Sapir 1925: 409 || McLendon 1964: 134 || Gursky 1974: 197 || Gursky 1989: 22 || Kaufman 1989: 143 (#(a)xʔa7 ‘morning, daylight’ [N])

(ʔ-02) PH *ʔáy ‘father’

PPOM *(me-)ʔé ‘father’ > Pk meʔe ‘your father’, Ps meʔe ‘your father’ (O), Pn -ʔé ‘father’, Pne -meʔé-, Pse meʔe ‘father’, Pe meʔé ‘your father’

PYUM *n-ʔa(·)y ‘father (of woman)’ > Co n^y-ʔa· ‘father (f.s.)’, Mo na-ʔay ‘father (of a woman)’, Ma n-ʔay ‘father (female’s)’ (*n- ‘kinship terms prefix’ [Miller 2001: 86])

PCHO *-ʔay[i] ‘father’ > HCh ʔ-a-ʔáyíʔ ‘father; priest’, Teq <ai>, ‘yayi’ ‘father’

NOTES. According to McLendon (1973: 74), “Pk, Ps, Pn, and Pe have all apparently reshaped the proto morpheme by segmenting the initial syllable, identifying it with the second person singular prefix *mi-, as in OLDER BROTHER”. I prefer a simpler scenario, in which

¹² Seri and Proto-Yuman contrast glottal stop and absence of a consonant word-initially. In particular, the absolutive prefix can be reconstructed as *ʔa- for the last common ancestor of Seri and Yuman (Zhivlov 2018: 141). At the present stage of reconstruction it is hard to say whether this contrast goes back to Proto-Hokan.

*me- is the second person prefix (going back to Proto-Hokan *m-, see Zhivlov 2018: 144), while the Northern Pomo form reflects the unprefixated stem.

Gursky 1974: 187 || Waterhouse 1976: 337 || Langdon 1979: 637 || Gursky 1989: 7-8 || Kaufman 1989: 145 (#7ay [ʔi ~ a] 'father' [N/S])

(ʔ-03) PH *i-ʔíy 'hair of head'

PPOM *heʔé, *heʔey(?) 'hair of head' > Pk *heʔe*, Ps *heʔ·e*, Pn *ʔé·*, Pc *ʔé·*, Pne *héle (?)*, Pse *ʔéy*

PYUM *ʔiy 'hair of head' > Ki *ʔiy¹* 'head', Mo *i-ʔe*, *n^y-i-ʔe* 'hair of the head', Ma *i-ʔe* 'hair', Qu *i-ʔé* 'hair'

Gursky 1974: 192 || Langdon 1979: 637 || Gursky 1989: 14 || Kaufman 1989: 128 (#i-ʔíy 'head; hair; fur' [N/S])

(ʔ-04) PH *(a-k^{wh}-)Vʔíy 'salt'

CHI *ʔaki* <'ak'i> 'salt' (2.20.0040)

PPOM *k^heʔé: 'salt' > Pn *šeʔé·*, Pne *č^héʔe·*, Pe *k^he·ʔé*

SAL A *ʔ-a·káy* <trākáy> 'sal' (2.85.0127), M *ʔ-a·káy* <trākáy> 'salt' (2.86.0609)

PYUM *k^w-s-ʔiy 'salt' > Ki *k^wʔiy¹* 'salt', JT *seʔil^y* 'salt', MGI *ʔa-sil^y* 'salt', Mo *ʔa-ʔi·* 'salt', Ma *sʔi·* 'salt', Qu *ʔa-sʔi·* 'salt', Pa *ʔ-si·* 'salt', Hu *i-ʔi·* 'salt', Ha *ʔi-ʔi* 'salt', Ya *ʔ-ʔi·* 'salt'

PCHO *-uʔwe 'salt' > HCh *ʔ-óʔwe* 'salt', LCh *uwe* 'salt', Teq <weh> 'salt'

NOTES. (1) Cf. PH *(a-)k^{wh}-Vʔíy 'salt' (k^{wh}-03), where only forms with the prefix *k^{wh}- are adduced. (2) PCHO *-uʔwe < *-uʔe (sequences like *uʔV, where V is a non-labial vowel, are prohibited in Proto-Chontal).

Kroeber 1915: 282 || J. M. Crawford 1976: 185 || Langdon 1979: 638 || Greenberg 1987: 140 || Kaufman 1989: 167 (#(a:-)k^{yh}aʔi 'salt' [N]) || Gursky 1990: 1

The following two cases have unexpected *h instead of *ʔ in Pomoan. One possible explanation is a dissimilation *ʔVʔV > *ʔVhV (the word-initial glottal stop possibly belonged to the PH absolutive prefix *ʔa-, see note 10 above). While synchronically in Proto-Pomo the choice between word-initial *ʔ and *h depends on the following consonant, historically the direction of dissimilation might have been the reverse in this particular case.

(ʔ-05) PH *(a-)ʔáw 'fire; wood'

SHA *ʔá·w[a]* 'wood' (Silver 1964: 176); NRS HA <ga'au> 'wood' (Dixon 1905: 216)

ACH *áw* 'wood; sticks'

YAN *ʔau-na* 'fire'

PPOM *ʔohhó 'fire' > Pk *ʔoho*, Ps *ʔoh·o*, Pn *hó*, Pc *hó*, Pne *ʔóho*, Pse *xó*, Pe *xó*

SAL A *ʔ-aʔáw* <tra'aw> 'fire' (2.86.0021), M *ʔ-aʔáw* <tra'aw> 'lumbre' (2.86.0022)

PYUM *(ʔ-)ʔa(·)w > Ki *ʔ-ʔa·w²* 'fire', Co *ʔa-ʔá·* 'fire, embers, electricity', JT *ʔa·w ~ ʔa-ʔa·w* 'a fire', MGI *ʔa·w* 'fire', Mo *ʔa-ʔaw* 'fire', Qu *ʔa-ʔáw* 'fire', Pa *ʔo-ʔo ~ o-ʔo* 'flame; fire', Hu *o-ʔó* 'fire', Ha *ʔo-ʔo-ʔo* 'fire', Ya *ʔ-ʔó* 'fire'

NOTES: (1) McLendon (1973: 75) reconstructs pPom *ʔohxó, while Oswalt (1972: 35) reconstructs pPom *ʔoho. I assume that the Proto-Pomoan form was *ʔohho, where the first *h is a laryngeal increment. Geminated *hh was strengthened in Southeastern Pomo and Eastern Pomo and simplified in all other languages save Southern Pomo. (2) Notions 'fire' and 'wood' are frequently colexified in world's languages, see <https://clics.clld.org/edges/221-1803>.

Kroeber 1915: 282 || Sapir 1917: 4 || Sapir 1920b: 284 || Sapir 1925: 410 (*(a)awa) || Greenberg & Swadesh 1953: 218 || Haas 1964: 78 || McLendon 1964: 131 || Gursky 1965: 175 || Gursky 1968: 30 || Gursky 1974: 188 (#(ʔa)ʔahw#), 211 || Langdon 1979: 637 || Greenberg 1987: 136 || Kaufman 1989: 141 (#a-Hów or #a-Háw [a ~ o] 'fire; (fire)wood; to make a fire' [N/S]) || Leshchiner & Nikolaev 1992: 400 (*ʔáŋHa) || Shaul 2020b: 301

(?-06) PH *(a-)ʔiy ‘tree, wood’

YAN CN ʔi-na, Y ʔi-wi ‘stick, wood, tree’

PPOM *ʔahháy ‘wood’ > Pk ʔahay, Ps ʔah-ay, Pn háy, Pc háy, Pne ʔahá, Pse xay, Pe xáy

PYUM *(?-)ʔiy ‘wood’ > Co ʔi· ‘wood’, JT ʔi· ‘wood, stick, lumber, tree’, MGI ʔilʷ ‘wood, stick, tree’, Mo ʔa-ʔi· ‘wood, firewood’, Ma ʔi· ‘wood’, Qu ʔa-ʔi· ‘wood, tree’, Pa ʔi-ʔi· ~ i-ʔi· ‘wood; stick’, Hu i-ʔi ~ i-ʔi· ~ ʔi ~ i· ‘wood, stick’, Ha i-ʔi ~ i-ʔi-ʔi ‘wood, stick, log’, Ya ʔ-ʔi· ‘wood, tree’

SER ʔéʔé ‘plant, bush, tree; wood; stick, club; meter’ (pl.: ʔéʔé-t)

PCHO *ʔe[x] ‘tree’ > HCh al-ʔek ‘tree, wood’, LCh ʔeh ‘tree, branch’, Teq <eh> ‘tree, wood, plant’

NOTES. (1) McLendon (1973: 75) reconstructs pPom *ʔahxáy, while Oswalt (1972: 35) reconstructs pPom *ʔahay. I assume that the Proto-Pomoan form was *ʔahháy, where the first *h is a laryngeal increment. Geminated *hh was strengthened in Southeastern Pomo and Eastern Pomo and simplified in all other languages save Southern Pomo. (2) The vowel *a instead of expected *e (< PH *i) in Pomoan may be due either to a translaryngeal assimilation *ʔa-ʔiy > *ʔa-ʔáy or to a contamination with PH *(a-)ʔáw ‘fire; wood’ before *aʷ in the latter has yielded pPom *o.

Kroeber 1915: 282 || Sapir 1917: 9 || Sapir 1925: 411 (*ixai?) || Greenberg & Swadesh 1953: 220 || Gursky 1965: 187 || Gursky 1968: 39 || Gursky 1974: 209 (#ʔi#) || J. G. Crawford 1976: 320 || Waterhouse 1976: 341 || Langdon 1979: 639 || Greenberg 1987: 268 || Kaufman 1989: 141 (#i-ʔly ‘tree, wood’ [N/S]) || Leshchiner & Nikolaev 1992: 388 (*ʔähö)

(?-07) PH *(a/i-)kʰaʔa ‘stone’ (= kʰ-10)

CHI qʰaʔa <kháʔ> ‘rock’ (2.23.0606)

KAR as / asa- ‘rock; stone; pit of fruit; in some compounds, earth, dirt’

SHA ʔíc-aʔ ‘rock’ (Silver 1964: 175)

YAN ka[i]-na ‘stone’

NOTES. Yana k instead of expected x is due to the change *kʰaʔa > *kʰʔa > *ka.

Dixon & Kroeber 1913: 651 || Sapir 1917: 9 || Sapir 1925: 411 (*ixa) || Haas 1964: 81 || Silver 1964: 175 || Gursky 1974: 207 || Kaufman 1989: 138 (#[i/a]-xʰáʔ ‘stone’ [N/S])

(?-08) PH *(a-)ʔil ‘flea’

SAL A ʔ-a-yél <trājél> ‘pulga’ (2.85.0859)

PYUM *ʔilʷ ‘louse’ > Ki ʔilʷ ‘louse, vermin; worm’, Co ʔi-ʔilʷ ‘head lice’, JT ma-ʔilʷ ‘lice (*Pediculus humanus spp.*)’, MGI ʔ-m-ilʷ ‘his head louse’, Mo nʷ-i-ʔi-lʷ ‘head louse’, Pa ʔil ‘worm’, Hu ʔil ‘worm’, ʔel ‘a louse’, Ha il ‘worm’, ʔel ‘louse’, Ya ʔ-ʔi-l-a ‘worm’, h-ʔél ‘louse’

PCHO *ʔilʷ ‘flea’ > HCh gál-ʔilʷ ‘flea’, LCh ilʷ ‘flea; the common flea that dogs would have’

Gursky 1974: 197 || Waterhouse 1976: 337 || Greenberg 1987: 136 || Kaufman 1989: 152 (#ʔilʷ ‘louse; flea’ [N/S])

1.3.2. Comparison with Kaufman’s reconstruction

Kaufman reconstructs two laryngeals for Proto-Hokan: *ʔ and *h (see Table 12).

PH	Chi	Kar	Sha	Ach	Ats	Yan	Wsh	PPom	Sal	PYum	Ser	PCho	Tol
*ʔ	Ø	Ø	ʔ	ʔ	ʔ	Ø		Ø	ʔ	*ʔ		*ʔ	Ø
*h	h	h	h	h	h	h		*h	ʔ	*ʔ, *y, *w		ʔ	

Table 12. Correspondences of Hokan laryngeals according to Kaufman (1989).

Kaufman’s correspondences for *ʔ do not differ significantly from the correspondences postulated here. Cases where Kaufman reconstructs *h will be discussed in one of the next papers in this series under vowel-initial roots.

The next paper in this series will deal with the reconstruction of sonorants.

Language abbreviations

Ach — Achumawi; Ats — Atsugewi; BI — Barona 'Iipay; Chi — Chimariko; Co — Cocopa; Ha — Havasupai; HCh — Highland Chontal; Hu — Hualapai; JT — Jamul Tiipay; Kar — Karuk; Ki — Kiliwa; Kon — Konomihu; LCh — Lowland Chontal; Ma — Maricopa; MGI — Mesa Grande 'Iipay; Mo — Mohave; NRSha — New River Shasta; Okw — Okwanuchu; Pa — Paipai; Pc — Central Pomo; PCho — Proto-Chontal; Pe — Eastern Pomo; Pk — Kashaya; Pn — Northern Pomo; Pne — Northeastern Pomo; PPom — Proto-Pomoan; Ps — Southern Pomo; Pse — Southeastern Pomo; PYum — Proto-Yuman; Qu — Quechan; Sal — Salinan; Sal A — Antoniano Salinan; Sal M — Migueleño Salinan; Ser — Seri; Sha — Shasta; Teq — Tequistlateco; Wsh — Washo, Ya — Yavapai; Yan — Yana; Yan C — Central Yana; Yan N — Northern Yana; Yan Y — Yahi.

Literature

- Berman, Howard. 2001. [Sapir's] Chimariko linguistic material. In: Victor Golla, Sean O'Neill (eds.). *The collected works of Edward Sapir XIV: Northwest California linguistics*: 1039–1080. Berlin / Boston: De Gruyter Mouton. doi:10.1515/9783110879803.1039.
- Bright, William. 1954. Some Northern Hokan relationships: a preliminary report. In: *Papers from the Symposium on American Indian linguistics held at Berkeley July 7, 1951* (University of California Publications in Linguistics 10): 63–67. Berkeley / Los Angeles: University of California Press.
- Bright, William. 1956. Glottochronologic counts of Hokaltecan material. *Language* 32(1): 42–48. doi:10.2307/410651.
- Bright, William & Susan Gehr. Karuk dictionary. Available online at: <http://linguistics.berkeley.edu/~karuk/karuk-dictionary.php>. [Accessed 20 June, 2019].
- Buckley, Eugene. 2024. Pomoan. In: Carmen Dagostino, Marianne Mithun, Keren Rice (eds.). *The languages and linguistics of Indigenous North America: A comprehensive guide* (The World of Linguistics 13.2): vol. 2, 1223–1246. Berlin / Boston: De Gruyter Mouton. doi:10.1515/9783110712742-049.
- Campbell, Lyle. 1976. The linguistic prehistory of the Southern Mesoamerican periphery. In: *Fronteras de Mesoamérica: 14a mesa redonda*: vol. 1, 157–183. Mexico: Sociedad Mexicana de Antropología.
- Conathan, Lisa. 2002. Split intransitivity and possession in Chimariko. In: Lisa Conathan, Teresa McFarland (eds.). *Proceedings of the 50th Anniversary Conference, June 8–9, 2002, University of California at Berkeley* (Survey of California and Other Indian Languages, Report 12): 18–31. Berkeley: Department of Linguistics, University of California. Available online at: <https://escholarship.org/uc/item/01c141b1>.
- Couro, Ted & Christina Hutcheson. 1973. *Dictionary of Mesa Grande Diegueño*. Banning, CA: Malki Museum Press.
- Crawford, James M. 1976. A comparison of Chimariko and Yuman. In: Margaret Langdon, Shirley Silver (eds.). *Hokan Studies: Papers from the First Conference on Hokan Languages held in San Diego, California April 23–25, 1970* (Janua Linguarum: Series Practica 181): 177–191. The Hague / Paris: Mouton. doi:10.1515/9783110819113-012.
- Crawford, James M. 1989. *Cocopa dictionary* (University of California Publications in Linguistics 114). Berkeley / Los Angeles / London: University of California Press.
- Crawford, Judith G. 1976. Seri and Yuman. In: Margaret Langdon, Shirley Silver (eds.). *Hokan studies: Papers from the First Conference on Hokan Languages held in San Diego, California April 23–25, 1970* (Janua Linguarum: Series Practica 181): 305–324. The Hague / Paris: Mouton. doi:10.1515/9783110819113-020.
- de Angulo, J. & L. S. Freeland. 1925. The Chontal language (dialect of Tequixistlan). *Anthropos* 20(5/6): 1032–1052. Available online at: <https://www.jstor.org/stable/40444929>.
- Dixon, Roland B. 1905. The Shasta-Achomawi: a new linguistic stock with four new dialects. *American Anthropologist* 7(2): 213–217. doi:10.1525/aa.1905.7.2.02a00030.
- Dixon, Roland B. & Alfred L. Kroeber. 1913. New linguistic families in California. *American Anthropologist* 15(4): 647–655. doi:10.1525/aa.1913.15.4.02a00050.
- Dixon, Roland B. & Alfred L. Kroeber. 1919. Linguistic families of California. *University of California Publications in American Archaeology and Ethnology* 16(3): 47–118.
- Good, Jeff. 2004. A sketch of Atsugewi phonology. Presented at the SSILA Annual Meeting, Boston. Available online at: <https://www.researchgate.net/publication/267809944>. [Accessed 4 August, 2024].

- Gordon, Lynn. 1986. *Maricopa morphology and syntax* (University of California Publications in Linguistics 108). Berkeley, CA: University of California Press.
- Greenberg, Joseph H. 1987. *Language in the Americas*. Stanford, CA: Stanford University Press.
- Greenberg, Joseph H. & Morris Swadesh. 1953. Jicaque as a Hokan language. *International Journal of American Linguistics* 19(3): 216–222. doi:10.1086/464222.
- Gursky, Karl-Heinz. 1965. Ein lexikalischer Vergleich der Algonkin-Golf- und Hoka-Subtiaba-Sprachen (1). *Orbis* 14: 160–215.
- Gursky, Karl-Heinz. 1968. Gulf and Hokan-Subtiaban: new lexical parallels. *International Journal of American Linguistics* 34(1): 21–41. doi:10.1086/464993.
- Gursky, Karl-Heinz. 1974. Der Hoka-Sprachstamm. Eine Bestandsaufnahme des lexikalischen Beweismaterials. *Orbis* 23: 170–215.
- Gursky, Karl-Heinz. 1988. *Der Hoka-Sprachstamm: Nachtrag I* (Abhandlungen der Völkerkundlichen Arbeitsgemeinschaft 58). Nortorf.
- Gursky, Karl-Heinz. 1989. *Der Hoka-Sprachstamm: Nachtrag II* (Abhandlungen der Völkerkundlichen Arbeitsgemeinschaft 63). Nortorf.
- Gursky, Karl-Heinz. 1990. *Der Hoka-Sprachstamm: Nachtrag III* (Abhandlungen der Völkerkundlichen Arbeitsgemeinschaft 65). Nortorf.
- Gursky, Karl-Heinz. 1995. Some grammatical evidence for the Hokan stock. In: Michael Dürr, Egon Renner, Wolfgang Oleschinski (eds.). *Language and culture in Native North America: studies in honor of Heinz-Jürgen Pinnow* (LINCOM Studies in Native American Linguistics 2): 138–153. München.
- Haas, Mary R. 1954. The Proto-Hokan-Coahuiltecan word for “water.” In: *Papers from the Symposium on American Indian linguistics held at Berkeley July 7, 1951* (University of California Publications in Linguistics 10): 57–62. Berkeley / Los Angeles: University of California Press.
- Haas, Mary R. 1963. Shasta and Proto-Hokan. *Language* 39(1): 40–59. doi:10.2307/410761.
- Haas, Mary R. 1964. California Hokan. In: William Bright (ed.). *Studies in Californian linguistics* (University of California Publications in Linguistics 34): 73–87. Berkeley / Los Angeles: University of California Press.
- Haas, Mary R. 1980. Notes on Karok internal reconstruction. In: Kathryn Klar, Margaret Langdon, Shirley Silver (eds.). *American Indian and Indoeuropean studies: Papers in honor of Madison S. Beeler* (Trends in Linguistics: Studies and Monographs 16): 67–76. The Hague / Paris / New York: Mouton Publishers. doi:10.1515/9783110808681.67.
- Halpern, A. M. 1946a. Yuma I: Phonemics. *International Journal of American Linguistics* 12(1): 25–33. doi:10.1086/463884.
- Halpern, A. M. 1946b. Yuma II: Morphophonemics. *International Journal of American Linguistics* 12(3): 147–151. doi:10.1086/463905.
- Halpern, A. M. 1946c. Yuma III: Grammatical processes and the noun. *International Journal of American Linguistics* 12(4): 204–212. doi:10.1086/463915.
- Halpern, A. M. 1947a. Yuma IV: Verb themes. *International Journal of American Linguistics* 13(1): 18–30. doi:10.1086/463926.
- Halpern, A. M. 1947b. Yuma V: Conjugation of the verb theme. *International Journal of American Linguistics* 13(2): 92–107. doi:10.1086/463933.
- Halpern, A. M. 1947c. Yuma VI: Miscellaneous morphemes. *International Journal of American Linguistics* 13(3): 147–166. doi:10.1086/463945.
- Hernández, Fortunato. 1902. *Laz razas indígenas de Sonora y la guerra del Yaqui*. Mexico: J. de Elizalde.
- Hill, Kenneth C. 2020. *Wick Miller’s Uto-Aztecan cognate sets* (Survey of California and Other Indian Languages, Report 18). Vol. I. Berkeley: University of California, Berkeley. Available online at: <https://escholarship.org/uc/item/9px6p8h8>.
- Hinton, Leanne. 1984. *A dictionary of the Havasupai language*. The Havasupai Tribe.
- Jacobsen, Jr., William H. 1954. [Binder of field notes on Antoniaño Salinan], 2014-21.001.061, in “William H. Jacobsen Materials on Indigenous Languages of North America”, California Language Archive, Survey of California and Other Indian Languages, University of California, Berkeley. Available online at: <http://cla.berkeley.edu/item/22959>.
- Jacobsen, Jr., William H. 1958. Washo and Karok: an approach to comparative Hokan. *International Journal of American Linguistics* 24(3): 195–212. doi:10.1086/464456.
- Jany, Carmen. 2009. *Chimariko grammar: areal and typological perspective* (University of California Publications in Linguistics 142). Berkeley / Los Angeles / London: University of California Press.
- Joel, Dina Judith. 1966. *Paipai phonology and morphology*. PhD Thesis. University of California, Los Angeles.

- Kaufman, Terrence. 1989. A research program for reconstructing Proto-Hokan: first gropings. In: *Papers from the 1988 Hokan-Penutian Languages Workshop, held at the University of Oregon, Eugene, Oregon, June 16–18, 1988*: 50–168. Eugene, OR: Department of Linguistics, University of Oregon.
- Kroeber, Alfred L. 1915. Serian, Tequistlatecan, and Hokan. *University of California Publications in American Archaeology and Ethnology* 11(4): 279–290.
- Langdon, Margaret. 1970. *A grammar of Diegueño: the Mesa Grande dialect* (University of California Publications in Linguistics 66). Berkeley / Los Angeles / London: University of California Press.
- Langdon, Margaret. 1979. Some thoughts on Hokan with particular reference to Pomoan and Yuman. In: Lyle Campbell, Marianne Mithun (eds.). *The languages of Native America: historical and comparative assessment*: 592–649. Austin / London: University of Texas Press. doi:10.7560/746244-012.
- Leščiner, D. R. 1989. Rekonstrukcija nazvanij častej tela v jazykax sem'i xoka. In: *Lingvističeskaja rekonstrukcija i drevnejšaja istorija Vostoka. Materialy k diskussijam na Meždunarodnoj konferencii (Moskva, 29 maja — 2 ijunja 1989 g.)*. Čast' 1: 159–166. Moskva: Izdatel'stvo "Nauka."
- Leščiner, D. R. 1990. Rekonstrukcija tonov i dolgot v prajazyke sem'i xoka. In: *Sravnitel'no-istoričeskoe jazykoznanie na sovremennom etape. Pamjati V. M. Illič-Svityča. 6-9 fevralja 1990 g. Tezisy dokladov*: 34–36. Moskva: Institut slavjanovedenija i balkanistiki AN SSSR.
- Leshchiner, Dmitry & Sergei Nikolaev. 1992. Proto-Hokan roots. In: Vitaly Shevoroshkin (ed.). *Nostratic, Dene-Caucasian, Austric and Amerind: materials from the First International Interdisciplinary Symposium on Language and Prehistory, Ann Arbor, 8.-12. November 1988* (Bochum Publications in Evolutionary Cultural Semiotics 33): 366–402. Bochum: Universitätsverlag Dr. Norbert Brockmeyer.
- Marlett, Stephen A. 2010. *The nineteenth century Seri word lists: comparison and analysis* (SIL-Mexico Branch Electronic Working Papers 008). SIL International. Available online at: <http://www.mexico.sil.org/resources/archives/56726>. [Accessed 7 March, 2019].
- Mason, J. Alden. 1918. The language of the Salinan Indians. *University of California Publications in American Archaeology and Ethnology* 14(1): 1–154.
- McLendon, Sally. 1964. Northern Hokan (B) and (C): a comparison of Eastern Pomo and Yana. In: William Bright (ed.). *Studies in Californian linguistics* (University of California Publications in Linguistics 34): 126–144. Berkeley / Los Angeles: University of California Press.
- McLendon, Sally. 1973. *Proto Pomo* (University of California Publications in Linguistics 71). Berkeley / Los Angeles / London: University of California Press.
- McLendon, Sally. 1975. *A grammar of Eastern Pomo* (University of California Publications in Linguistics 74). Berkeley / Los Angeles / London: University of California Press.
- McLendon, Sally. n.d. A brief word list of Eastern Pomo, McLendon.001, in "Miscellaneous papers from the Survey of California and Other Indian Languages", California Language Archive, Survey of California and Other Indian Languages, University of California, Berkeley. doi:10.7297/X2RV0KNJ.
- Miller, Amy. 2001. *A grammar of Jamul Tiipay* (Mouton Grammar Library 23). Berlin / New York: Mouton de Gruyter. doi:10.1515/9783110864823.
- Miller, Amy. 2018. Phonological developments in Delta-California Yuman. *International Journal of American Linguistics* 84(3): 383–433. doi:10.1086/697588.
- Miller, Amy & Margaret Langdon. 2008. *Barona inter-tribal dictionary: 'Tipay Aa Tiipay Aa Uumall*. Lakeside, CA: Barona Museum Press.
- Mixco, Mauricio J. 1977. The innovation of /h, hw/ in Kiliwa. *International Journal of American Linguistics* 43(3): 167–175. doi:10.1086/465478.
- Mixco, Mauricio J. 1985. *Kiliwa dictionary* (University of Utah Anthropological Papers 109). Salt Lake City, UT: University of Utah Press.
- Moser, Mary Beck & Stephen A. Marlett. 2010. *Comcaac quih yaza quih hant ihiip hac: cmiiue iitom — cocsar iitom — maricaana iitom = Diccionario seri — español — inglés: con índices español — seri, inglés — seri*. 2nd edn. Hermosillo, Son.: Editorial UniSon: Plaza y Valdés Editores.
- Moshinsky, Julius. 1976. Historical Pomo phonology. In: Margaret Langdon, Shirley Silver (eds.). *Hokan Studies: Papers from the First Conference on Hokan Languages held in San Diego, California April 23-25, 1970* (Janua Linguarum: Series Practica 181): 55–75. The Hague / Paris: Mouton. doi:10.1515/9783110819113-004.
- Munro, Pamela, Nellie Brown & Judith G. Crawford. 1992. *A Mojave dictionary* (UCLA Occasional Papers in Linguistics 10). Los Angeles: Department of Linguistics, University of California, Los Angeles.

- Nevin, Bruce. 2020. Achumawi dictionary. Webonary.org. SIL International. Available online at: <https://www.webonary.org/odissi/>. [Accessed 29 August, 2025].
- O'Connor, Loretta. 2013. *Latyaygi — English — Español: A trilingual dictionary of Lowland Chontal of Oaxaca* (Languages of the World/Dictionaries 48). Muenchen: LINCOM GmbH.
- Olmsted, D. L. 1956. Palaihnihan and Shasta I: labial stops. *Language* 32(1): 73–77. doi:10.2307/410654.
- Olmsted, D. L. 1957. Palaihnihan and Shasta II: apical stops. *Language* 33(2): 136–138. doi:10.2307/410725.
- Olmsted, D. L. 1959. Palaihnihan and Shasta III: dorsal stops. *Language* 35(4): 637–644. doi:10.2307/410603.
- Oswalt, Robert & Eugene Buckley. 2018. Kashaya — English dictionary. Webonary.org. SIL International. Available online at: <https://www.webonary.org/kashaya/>. [Accessed 20 June, 2019].
- Oswalt, Robert L. 1972. ProtoPomo reconstructions, Oswalt.002.004, in “Robert Louis Oswalt Papers on Pomoan Languages”, California Language Archive, Survey of California and Other Indian Languages, University of California, Berkeley. Available online at: <http://cla.berkeley.edu/item/2133>.
- Oswalt, Robert L. 1976a. Baby talk and the genesis of some basic Pomo words. *International Journal of American Linguistics* 42(1): 1–13. doi:10.1086/465380.
- Oswalt, Robert L. 1976b. Comparative verb morphology of Pomo. In: Margaret Langdon, Shirley Silver (eds.). *Hokan Studies: Papers from the First Conference on Hokan Languages held in San Diego, California April 23-25, 1970* (Janua Linguarum: Series Practica 181): 13–28. The Hague / Paris: Mouton. doi:10.1515/9783110819113-002.
- Salt River Pima-Maricopa Indian Community — O'Odham Piipaash Language Program. 2000. *Piipayk M'iim: A Maricopa vocabulary and phrase book*. Scottsdale, AZ: Salt River Pima-Maricopa Indian Community Cultural Resources Department O'Odham Piipaash Language Program. Available online at: <https://www.saltriverschools.org/common/pages/DisplayFile.aspx?itemId=8926463>. [Accessed 22 September, 2024].
- Sapir, Edward. 1917. The position of Yana in the Hokan stock. *University of California Publications in American Archaeology and Ethnology* 13(1): 1–34.
- Sapir, Edward. 1920a. A note on the first person plural in Chimariko. *International Journal of American Linguistics* 1(4): 291–294. doi:10.1086/463727.
- Sapir, Edward. 1920b. The Hokan and Coahuiltecan languages. *International Journal of American Linguistics* 1(4): 280–290. doi:10.1086/463726.
- Sapir, Edward. 1921. A supplementary note on Salinan and Washo. *International Journal of American Linguistics* 2(1/2): 68–72. doi:10.1086/463735.
- Sapir, Edward. 1925. The Hokan affinity of Subtiaba in Nicaragua. *American Anthropologist* 27(3–4): 402–435, 491–527. doi:10.1525/aa.1925.27.3.02a00040.
- Sapir, Edward & Morris Swadesh. 1960. *Yana dictionary* (University of California Publications in Linguistics 22). Berkeley / Los Angeles: University of California Press.
- Shaterian, Alan William. 1983. *Phonology and dictionary of Yavapai*. PhD Thesis. University of California, Berkeley.
- Shaul, David Leedom. 2020. *Salinan language studies* (LINCOM Studies in Native American Linguistics 85). Muenchen: LINCOM GmbH.
- Silver, Shirley. 1961. [Shasta vocabulary], Silver.002, in “Shirley Silver Papers on California Indian Languages”, California Language Archive, Survey of California and Other Indian Languages, University of California, Berkeley. doi:10.7297/X2JM27K0.
- Silver, Shirley. 1964. Shasta and Karok: a binary comparison. In: William Bright (ed.). *Studies in Californian linguistics* (University of California Publications in Linguistics 34): 170–181. Berkeley / Los Angeles: University of California Press.
- Silver, Shirley. 1966. *The Shasta language*. PhD Thesis. University of California, Berkeley.
- Silver, Shirley. 1976. Comparative Hokan and the Northern Hokan languages. In: Margaret Langdon, Shirley Silver (eds.). *Hokan Studies: Papers from the First Conference on Hokan Languages held in San Diego, California April 23-25, 1970* (Janua Linguarum: Series Practica 181): 193–202. The Hague / Paris: Mouton. doi:10.1515/9783110819113-013.
- Sitjar, Bonaventure. 1861. *Vocabulary of the language of San Antonio mission, California. By Father Bonaventure Sitjar, of the order of St. Francis*. (Shea's Library of American Linguistics VII). New York: Cramoisy Press.
- Talmy, Leonard. 1972. *Semantic structures in English and Atsugewi*. PhD Thesis. University of California at Berkeley.
- Talmy, Leonard. n.d. [Atsugewi vocabulary], Talmy.002.001, in “Leonard Talmy Papers on the Atsugewi Language”, California Language Archive, Survey of California and Other Indian Languages, University of California, Berkeley. Available online at: <http://cla.berkeley.edu/item/1744>.

- Talmy, Leonard. n.d. [Atsugewi vocabulary], Talmy.002.003, in “Leonard Talmy Papers on the Atsugewi Language”, California Language Archive, Survey of California and Other Indian Languages, University of California, Berkeley. Available online at: <http://cla.berkeley.edu/item/1746>.
- Turner, Katherine. 1987. *Aspects of Salinan grammar*. PhD Thesis. University of California, Berkeley.
- Turner, Paul R. & Shirley Turner. 1971. *Dictionary: Chontal to Spanish-English, Spanish to Chontal*. Tucson, AZ: The University of Arizona Press.
- Watahomigie, Lucille J., Jorigine Bender, Malinda Powskey, Josie Steele, Philbert Watahomigie Sr. & Yamamoto, Akira Y. 2003. *A dictionary of the Hualapai language*. Osaka: Osaka Gakuin University, Japan: Endangered Languages of the Pacific Rim, Faculty of Informatics.
- Waterhouse, Viola Grace. 1976. Another look at Chontal and Hokan. In: Margaret Langdon, Shirley Silver (eds.). *Hokan Studies: Papers from the First Conference on Hokan Languages held in San Diego, California April 23-25, 1970* (Janua Linguarum: Series Practica 181): 325–343. The Hague / Paris: Mouton. doi:10.1515/9783110819113-021.
- Webb, Nancy M. 1979. The semantic domain “tree”: Hokan lexical evidence. In: James E. Redden (ed.). *Proceedings of the 1978 Hokan languages workshop, held at the University of California, San Diego, June 27-29, 1978* (Occasional Papers on Linguistics 5): 1–7. Carbondale, IL: Department of Linguistics, Southern Illinois University.
- Webb, Nancy M. 1980. Esselen-Hokan relationships. In: James E. Redden (ed.). *Proceedings of the 1979 Hokan languages workshop, held at the University of California, Los Angeles, June 26-28, 1979* (Occasional Papers on Linguistics 7): 72–77. Carbondale, IL: Department of Linguistics, Southern Illinois University.
- Webb, Nancy M. 1981. Some notes on Hokan person terms. In: James E. Redden (ed.). *Proceedings of the 1980 Hokan languages workshop, held at the University of California, Berkeley, June 30-July 2, 1980* (Occasional Papers on Linguistics 9): 78–85. Carbondale, IL: Department of Linguistics, Southern Illinois University.
- Zhivlov, Mikhail. 2018. Some morphological parallels between Hokan languages. *Journal of Language Relationship* / *Вопросы языкового родства* 16(2): 138–161. doi:10.31826/jlr-2018-161-211.
- Zhivlov, Mikhail. 2024. Hokan I: A review of comparative studies. *Journal of Language Relationship* / *Вопросы языкового родства* 22(1–2): 162–188. doi:10.31826/jlr-2024-221-209.
- Zhivlov, Mikhail. 2025. Hokan II: Labial and coronal obstruents. *Journal of Language Relationship* / *Вопросы языкового родства* 23(1–2): 51–93.

М. А. Живлов. Хока III: велярные шумные и гортанная смычка

Настоящая статья продолжает цикл работ, посвященных переоценке остающейся по сей день спорной гипотезы о родстве хоканских языков. В данной статье классический сравнительно-исторический метод применяется к рефлексам прахоканских велярных шумных и гортанной смычки. Полученные результаты сравниваются с хоканской реконструкцией Терренса Кауфмана (1989).

Ключевые слова: сравнительный метод; языки хока; индейские языки; историческая фонетика.