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Comparative Issues in Uto-Aztecan

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expansion of a paper delivered at Friends-of-Uto-Aztecan Conf in Boise, Idaho, 2017, abbreviations in Appendix A

We recently passed the century mark since Sapir (1913, 1915) verified Uto-Aztecan (UA) as a language family. While much has been figured out for comparative UA over that century, many issues have remained unresolved. For example, (1) what might explain Tarahumara's initial r- but also many initial t- both from Proto-Uto-Aztecan (PUA) *t? (2) Why do some PUA *w > l in Hopi before low vowels (a, e, ö) while other *w > Hp w before the same vowels? (3) Why do some PUA *w become Luiseño ŋ while others remain w? (4) Why do some PUA *s > h in Sr and Ktn, while others remain s? (5) Stem-final environments explain many Ls absolutive suffixes, -l being common after a vowel and -t after an underlying -C-, but why does -la also appear after vowels? (6) It is known that in Takic, PUA *o seems to have triggered k- > q-, and that in many Northern Uto-Aztecan (NUA) languages (e.g. Hopi and Numic) low vowels lower *ka > qa, but why are there many of both initial qa- and ka- syllables (both q- and k- before the same low vowel of *a*) in Ca, Cp, Ls, and Sr? (7) Why do some PUA *k > Tb h while other PUA *k > Tb k? (8) What is the explanation for both initial b and p < PUA *p in Tr, My, Yq, AYq, and Eu? (9) Uto-Aztecanists are divided on whether PUA *n or *ŋ is the source for the correspondence between Southern UA (SUA) n vs. NUA ŋ, yet Numic m / mw are also among the reflexes, so which is original—*n or *ŋ or *mw? This paper offers an explanatory key for 7 maybe 8 of those 9 unresolved issues.

That explanatory key involves more than a thousand cognate sets, suggesting a degree of language mixing in early UA such that 40% or more of UA descends from a Near-East infusion of Northwest Semitic (Aramaic/Hebrew) elements (nearly 700 parallels) and Egyptian elements (400), over 1000 all together, with consistent sound correspondences, as well as some fossilized morphology and answers to many previously unresolved comparative issues in UA. If the tie is valid, then ignoring it is like finding written records of Proto-Indo-European (PIE) and ignoring those written records in comparative Indo-European studies. If the tie is valid, then we have written records of closely related dialects to about half of PUA. Such a key can provide rapid progress to what would otherwise take decades or be impossible, and it seems

to provide solutions to at least 7 or maybe 8 of the 9 UA issues above, unresolved over the last 100 years. While Aramaic/Hebrew and Egyptian may initially seem an unusual combination, both Aramaic and Egyptian were contemporary international languages in the ancient Near-East during at least the first millennium BC, and both were spoken at some of the same places, such as Elephantine's sizable Aramaic-speaking population within ancient Egypt. That a Phoenician or some other vessel could bring an ethnic mix of such speakers to the Americas may strike as a stretch, but explaining the quantity and quality of parallels otherwise may be a greater challenge.

Consistent with this proposed language tie, Stephen Jett (2017) recently published *Ancient Ocean Crossings* in which his 360 pages enumerate plant, disease, DNA, and other kinds of evidence for pre-Columbian oceanic crossings. In his chapter 31 on DNA, Jett (2017, 345-55) cites Human Leucocyte / Lymphocyte Antigens (HLAs) and that B*21 is closely associated with Arabs, and that in the Americas its highest occurrences are among Uto-Aztecan speakers. B*17 and B*37 also occur in both Afro-Asiatic and Uto-Aztecan peoples. He cites other Near East / European genetic markers that repeatedly occur in Uto-Aztecan populations. Of course, the great variety of arrivals in ancient America means that every thing has mixed with many things. So even if ancient Near-East ships did shove ashore, they naturally would have mixed with many other kinds of DNA over the centuries, including Bering Strait DNA and many others. Most of us have several different ethnic groups in our ancestry, as do Native Americans also. Time will tell on the genetic picture.

First, consider the sound correspondences, as a foundation for understanding the solutions. (Data are from Stubbs, 2011, *Uto-Aztecan: A Comparative Vocabulary*, and from Stubbs, 2015, *Exploring the Explanatory Power of Semitic and Egyptian in Uto-Aztecan*, and the 2nd number in parentheses of each set is the numbered set in the latter. Abbreviations are in Appendix A. The branches included in a particular cognate set are in parentheses at the end of the set.)

Semitic b > Uto-Aztecan p

1(527) baraq 'lightning' (in most Semitic lang's) > UA *pïrok / My berok 'lightning' (Cah, Tep, Tbr)
My berok-; Yq be'ok-; AYq ve'okte (-r- > -'- in Yq); NT vïpïdoxudami (-r- > -d-, thus -pïdox- with reduplication; ST vpgia/vïpgï; Tbr virikí-t; TO wïpgii; PYp vepda. Four languages (Yq, My, NT, Tbr) clearly point to *pïrok.

2(531) Hebrew boo' 'coming, way to' > UA *poo' / pooC 'road, way, path' (in all UA languages)

3(559) Semitic baka^{y}; Aramaic / Syriac baka' 'cry' > UA *paka' 'cry' (Hp, Tak, Tb)
Ktn paka' 'ceremonial yeller, who shouts to announce a fiesta'; Hp pak- 'cry'; Tb pahaa'at 'cry, bawl, howl'

4(534) Hebrew batt 'daughter' > UA *pattï 'daughter' (Num, CrC)
Mn pédï'; NP bbatï; TSh petïC; Sh petïC; Cm petï'; Kw pedï; SP pačï; CU páci; patï-ci-ci; WMU pačü-n 'my daughter'; perhaps Cr pa'arï'ï 'girl'. Most Numic languages show doubled *-tt- > c/_high vowel, as *-t- > -r- (Stubbs 2000).

5(550) Aramaic bəsár 'flesh, penis' > UA *pisa 'penis' (Tep, Tr, Tbr, Hp, Tak)
Wr pisá; Tr bisa / wisá; Hp pis- 'glans penis'; TO wiha; LP via; PYp viaha; Tbr wisá-t; *-pisa- of Ls péévisa-š 'body hair' with Ls pé' 'feathers, fur, body hair' as a compound from 'hair of penis' or 'pubic hair'.

6(535) Aramaic bəquuraa 'livestock' > UA *pukuN/C > puNku / pukku 'domestic animal' (Num, Tb, Hp, Tr, Eu, Tbr)

7(532) Arabic bṣr 'see'; baaṣirat 'eye' ≈ Hebrew *booṣer > UA *pusi 'eye' (in all UA languages except Tbr and Sr)
Arabic baaṣir(at) would correspond to Hebr ***booṣer**(et) 'eye', and Hebrew participial forms (*CooCeC) consistently raise vowels to UA *-u-i, as in **UA *pusi** 'eye' and also 97 UA *puni < Hebrew poone; 3 more examples of *oo > u are 9, 35(620), 323(564).

8(533) Arab **baṣṣara** 'open eyes'; unattested Sem *buṣṣar > UA *pusaC (AMR) 'open eyes, wake up' (all SUA branches)

9(57) Arab/Semitic *singaab ≈ Hebrew *siggoob 'squirrel' > UA *sikkuC 'squirrel' (Numic)

10(528) byt / bayit / beet 'spend the night, house' > UA *pïtï; Tr bete 'house, dwell, spend night'; Num *payïC 'go home'
(528) byt / bayit / beet 'spend the night, house' > UA *pïtï 'lie down, spend night' (Tep, Tr, CrC, Tak/Ca péti)
(528) bytu 'spend the night, plural' > PYp veetu 'lie down, spend night, pl' (Tep)

11(540) Hebrew bṭẖ / *baṭiiẖ 'trust(ed)' > UA *piciwa 'believe' (ṭ > c) (Num, Hp, Tak, Tep, Tr, Cah)

12(552) bṭn 'be pregnant, sated', buṭna/*buṭṭan 'pregnant/cy' > UA *putta > *puca 'pregnant' (ṭ > c): Tr bocá 'be pregnant'; CN ooc-tli 'pregnant'; SP pucca 'filled'; Ch póoca 'inflate'; Sr pöö^{r}č-k 'swell, bloat'; Eu púcika 'overflow'; NUA -c- and SUA -c- suggest *-tt-, because *-c- > -y- in NUA (Alesix Manaster-Ramer (AMR) 1992a). Note pharyngealized vowel in Sr pöö^{r}č- due to pharyngealized ṭ. The NUA forms with -c- do not fit *posa 'swell' (< Hebrew bśq 'swell'). (Num, Tak, Tr, CrC, Azt)

13(553) bṣq 'swell' > UA *posa 'swell' (Num, Hp, Tak, Tr, Azt, CrC)
Hp pös-ti 'swollen'; Wr posa- 'full, sated]'; Tr posá / bosá 'full from eating'; Cr husa 'sated' (*p > Cr h); Mn puusi 'bloat'; Eu vosve 'sated'; Ls havúṣa/i- 'to be swollen, puffed up'.

14(556) bayṣa(t) / beeṣa(t), pl: beeṣoot 'egg, testicle' > UA *pïyso 'testicle' (Tr, Eu, Cah, Tep)

15(558) bwṣ ‘be white’; buuṣ ‘white linen’ > UA *pos ‘white’: Tb poosït~’opoos ‘be white’
16(562) -bbiiṭ ‘look’ > UA *pici / *pica ‘look, see’ (ṭ > c) (Hp, Tb, Tak)
17(529-30) beged / baaged ‘garment, covering’ > UA *paki / * pakati ‘shirt, put on’; *pakiC (AMR) ‘enter, visit’
18(544) bd’ ‘invent, fabricate, lie’, 3 pl: bad’uu > UA *paru ‘say bad about’ (Tep)
19(551) Aramaic bśr / baaśaar ‘(be) sweet, pleasant, well-looking, glad’; Hebr biśśer ‘bring (good) news (make glad); Arab bašara ‘rejoice, be happy’; II baššara ‘bring good news’ (make happy) > UA *pisa ‘to like, love, be good, pretty’: Kw pišaa ‘be pretty, good’; Kw pišaawe ‘like, love’; Sr piiha’n ‘like, love, be fond of’ (Sr h < *s); NP bisa’yu ‘good, gentle, kind’; NP bisa tabïadï ‘beautiful’. (Num, Tak)

The other voiced stops also devoice, that is, Semitic **b, d, g > UA p, t, k**; also Semitic q > k:
20(606) Arabic dubur ‘buttocks, rear’ > UA *tupur ‘hip, buttocks’ (Tep)
NT túpuli 'buttocks'; TO atapuḍ; Nv atuporha; ST atpor; TO čuul, pl: čučpul 'corner, hipjoint’
21(607) Aram dabr-, Hebr dobɛr ‘pasture, vegetation’ > UA *tupi ‘grass, vegetation’ (Tak, Tb, Tr, CrC)
22(1484) Sem dwr / duur ‘go round, turn, revolve’ > UA *tur ‘whirl, roll, twist’
SP turu’ ‘whirl’; CU turú-kwi ‘roll’; WMU turú-’ni ‘be a whirlwind’; Hopi tori(k-) ‘get twisted’; Hopi tori-k-na ‘twist, vt’.
23(1103) Sem dakka ‘make flat, stamp, crush’ > UA *takka ‘flat’
24(1284) Sem dwy ‘be sick’, Hebrew daawɛ ‘faint, sick’, Arabic dawiya ‘be miserable’; Eth dawaya ‘be sick’; Ugaritic dwy ‘be sick’, Aramaic dwy ‘be miserable’; Aram dəwaay-aa ‘grief-the’ > UA *tïwoya ‘sick, sickness’
25(1279) Aramaic *yagar ‘hill, heap of stones’ > UA *yakaC / *yakaR (AMR) ‘nose, point, ridge’ (all branches)
26(608) gdʕ ‘cut off’ > UA *katu’ 'cut, wound' (Tak, Num, Azt)
Sr katu’ 'cut up, cut (into pieces)’; CN kotoona 'cut / break off, wound, vt’; SP qur’u/quttu 'poke in a hole’
27(1014) qədaal ‘neck, nape of neck’ > UA *kutaC ‘neck’ (Num, Tb, Tak, Tr, Cah, Azt)
28(1023) tqn ‘make straight, set, lay down’ > UA *tïkaC ‘put lying down, stretch/spread flat’ (Num, Tep, Tr, CrC, Azt)
29(1089) Hebr qippod ‘hedgehog’; Arb *qunpuđ ‘hedgehog’ > UA *kïNpa ‘prairie dog’
30(864) *quuppoot ‘baskets, pl’ > UA *koppo ‘basket’ (Sr qöpöt; Ls qéépiš)
31(74) Hebrew təbuu’at ‘produce, yield from the land’ > UA *tïpï’at / *tïpa’at / *tïpat (AMR) ‘pinion nut’ (NUA)
Most show *tïpa(C) / *tïpat, Tak shows a final -C or -t (Ls tóóva-t / tuvá-t ‘pinyon’; Cp təvə-t; Ca téva-t, Sr tïvat, Ktn tïva-t); otherwise, Tak would show -l, not -t; but note the glottal stop ’ in Gb tová’at (Hp tïva ‘pinion nut’; Hp tïve’e ‘pinion pine’)

The Semitic similarities in grammatical morphemes (plural suffixes 328-9, passive/reflexive/reciprocal *na- 330, etc) point to Northwest Semitic, specifically Canaanite/Hebrew (see 328-330). Most of the lexical similarities also align with Canaanite/Hebrew, though others align specifically with Aramaic, like 32-34, 56-58, etc. Such a Canaanite/Hebrew mix with Aramaic should not be thought strange, as the two were neighbors for a millennium or two, and the discussion on page 8 offers additional explanation. It is also good to keep in mind that the written vocabulary of ancient Canaanite / Hebrew was limited. The Hebrew Old Testament is the great majority of what we have of ancient Hebrew, yet it contains only a small fraction of what was undoubtedly in the spoken language. For example, there is no word for ‘squirrel’ in the Old Testament, so when we see UA *sikkuC ‘squirrel’ that matches perfectly what the Hebrew correspondences would yield for Semitic/Arabic *singaab ‘squirrel’ (> Hebrew *siggoob ‘squirrel’ > UA *sikkuC, at 9, as the -n- as first C of a cluster doubles the 2nd, *-ng- > -gg- in Hebrew, and Sem long *-aa- > -oo- in Canaanite/Hebrew), then there is no reason to doubt the term’s existence in the spoken language, as it simply did not make the cut into the written corpus. Likewise at 7, Arabic baaṣir ‘eye, see-er’ would correspond to Hebrew *booṣer ‘eye’ (> UA *pusi, with the usual rise in vowels from Semitic to UA), a decent possibility, though Semitic ʕayn ‘eye’ is more common. In addition, just as lexicon compilers of Semitic languages include a variety of related cognates for a sense of the vowel varieties and semantic dimensions in Semitic, so do we sometimes include various related Semitic terms for a broader sense of the bigger picture.

Proto-Semitic *đ (> Arabic đ, **Aramaic d**, Hebrew z) **> UA *t**:
32(616) Aramaic dakar ‘male’ > UA *taka ‘man, person’ (common word, in all branches except Tep)
33(617) Aramaic diqn-aa ‘beard / chin-the’ > UA *tï’na ‘mouth’ (not from Hebrew haz-zaaqaan ‘the chin’)
Most languages show *teni, but Tr ŕe’na-čí has both glottal stop and final -a. Many final UA -V > -i, as -i is somewhat a default final -V, so *-a > -i is frequent, but *-i > -a is not, and Tr ’ aligns with the -q- in -qn- cluster (Tep, Tr, Cah, Tbr, CrC, Azt, Hp, Num)

34(618) Aramaic di'b-aa 'wolf-the' > UA *tï'pa 'wolf' (not from Hebrew haz-zə'eeb 'the wolf')
Most UA reflexes show *tïpa- 'wolf', while Mn to'oppi / to'ápe 'wolf' shows a glottal stop, and its round vowels may be due to the glottal stop. So a reconstruction of *tï'pa is reasonable, and is only a slight vowel assimilation from di'b-aa. (Num, Tb, Tak)
35(620) unattested f. pl: *ɖabboot(ee^{y}) 'flies' > UA *tïpputi 'flea' (Tep, Cah, Tr, Eu, Tbr, CrC, Azt)

Semitic 'aleph or glottal stop ' > w in UA (that change also occurs in Arabic, e.g., sa''ala > sawwala), or other times both a glottal stop and adjacent round vowels occur in UA, perhaps ' causing vowels to round (o, u) as in 34:
36(571) Sem ya'ya' / yaa'ayaa' '(be) beautiful' > Ls yawáywa, Sr yï'aayï'a'n 'be pretty, beautiful' (Tak)
No Uto-Aztecanist would deny the cognacy of the Ls and Sr terms, yet in them is a clear w and glottal stop match, though it is not so regular between these two, but between Semitic and UA the correspondence is more consistent.
37(567) Hebrew ya'amiin-o 'he believes him/it' > UA *yawamin-(o) 'believe (him/it)' (Sr, Gb, Ktn, Tb, My)
Sr yawamin 'believe'; Gb yawáyno 'believe it'; Gb loses bilabials elsewhere also (232, p. 34), which is otherwise identical to Sr, but shows the suffix for a 3rd person masc sg object -o. Thus, Hebrew ya'amiin-o 'believe him/it' > Tak yawamino 'believe him/it' is a lengthy match of **eight** segments. Ktn yaŋam 'believe' and Ktn yaŋamineana 'they believe all of it'; Tb yahn~'aayanh 'believe him' (much reduced); perhaps My yomnia 'answer'. An eight-segment match.
38(569) Semitic 'egooz / 'VNgooz 'nut tree' > UA *wokoC / *woNko 'pine tree' (all branches)
39(581) Hebrew 'arṣ-aa 'earth-ward, down' > UA *wïcï 'fall' (in all branches)
40(575) kama'- 'truffle(s)' > UA *kamo'-(ta) 'sweet potato'
truffles are also edible fleshy appendages to a root system, as are potatoes. CN kamo'-tli; Cr kámwah; Pl kamuh; ST kamav
41(566) 'ariy / 'arii 'lion' > UA *wari 'mountain lion, coyote' (Cah, Tr/Wr, Tbr, Eu, Tep, CrC)
Wr worí 'mountain lion'; Tbr wawi / wowi / vavo 'mountain lion' and Cr waábe'e 'coyote' show consonant harmony; Yq wó'i 'coyote' (-r- > -'-); My wó'i 'coyote'; Op gori 'coyote'; Eu woi/voi/boi 'coyote'; Wr wo'í 'coyote' (loan from Cah);
PYp kolisi 'mountain lion' (note Op gori, thus devoicing of g > k in PYp). Miller's initial vowel *a* (as in Tbr and Cr) is likely original, while the *o* of the others is due to the rounding influence of adjacent w. Note Wr -r- and Op -r- while *-r- > Cah -'- is usual, thus all point to reconstructing *-r- as well as *wari for the whole term.
42(572) Hebrew 'iiš 'man, person' > UA *wïsi 'person' Tr wesi 'someone', with negatives 'no one'
43(574) Hebrew 'išaa / 'ešɛt / 'išt- 'woman, wife of' > UA *wïCti 'woman, wife' Hp wïïti / wïhti 'woman, wife'
44(577) Semitic 'aas- 'myrtle willow' > UA *wasV 'willow': Cr waséh; CN wešoo-tl
45(579) Arab fa'r < Semitic *pa'r- / *pa'ar 'mouse' > UA *pa'wi(N) / *pu'i(N) 'mouse' (Num)
Mn puwee-ci; NP punkacci; Sh po(')neh; Kw pu'-miča-gi-ži; SP pu'iča; CU pu'úyca-ci; Ch pu'^{w}inčaci; WMU pa'wi-či
46(596) 'arnab / 'arnebet 'hare' > UA *wa'na / *wanna 'rabbit net' (Tak, Num, Tb)
47(576) 'ty, *'atii-; Aramaic 'ita / 'ɛta 'come' > Azt *wic 'come' (t > c by high vowels like i, u)
48(871) 'pl / *tu'pal 'be dark, go down (sun), f' > UA *tu'pa > *cuppa 'be dark, (fire) go out' (t > c /_ u)
Tb cuppat 'fire to be out, go out'; Nv tubanu 'go down'; NP coppa 's.th. sinking'; Mn cuppa 'disappear'; Cah *cuppa 'end, v'
49(872) 'pl / *yu'pal 'be dark, go down, m' > UA *yu'pa > *yuppa 'be dark, black, (fire) go out'
Ls yúúpa 'go out (fire)'; Ls yúúva 'be dark'; Ls yuvá/i 'bec. black'; Sr yupq 'go out (fire)'; Cp yúpi-š '(paint) brush'; Ca yúpi 'be overcast, cloudy; Gb yupíxa' 'black'. Hill adds Wc yïvi / yïïvi 'black' (Wc ï < *ü) and Ls yupáqa/i 'go out / put out (fire)'; Gb yupí; Ktn yupk 'extinguish fire or lamp'. Note also Ktn yo'vok / yo'vïk 'be dark/black'.
50(873) 'pl / *yu'pal 'be dark, go down, m' > Azt *yu'pa(l) > Aztecan *yowal, CN yowal-li 'night, n'
Azt branch regularly loses a single -p-. CN yowal- has L and CN tlayo'wa 'get dark' has glottal stop; Pl tayuwa 'night'; etc (Azt)
51(1110) Aramaic 'ard-aa' 'mushroom-the' > UA *witto'VC 'mushroom'
TSh wiitto'e-cci 'mushroom'; Kw hiito'o-pi 'mushroom' (loan? > TSh hiitto'i 'mushroom')
52(1331) 'ikkaar 'plowman, tiller of ground' > UA *wika 'digging stick' (Tep, Azt, CrC, Cah, Tr, Hp)
53(1333) Hebrew m'n / *me''an 'refuse' > Hp meewan- 'forbid, warn'
54(583) Hebrew 'epod 'ephod, priestly garment, shoulder cape';
Aramaic 'epod-aa 'ephod-the' > UA *wipura/*wipula 'belt, sash, blouse' (Num, TrC, Tep, Azt)

Semitic **initial r- > t-** in UA (see also 503 rqʕ, and 508 rooš, and Appendix D for other examples of fortition):

55(600) r'y / raa'aa 'see, v' > UA *tïwa 'find, see' (all branches but Num)

56(603) Aram riimaa / riimə-taa 'large stone-the' > UA *tïmï-ta 'rock': Sr tïmï-t; Ktn tïmï-t; *tï(N) (all branches but Tep)

57(604) Aram rə'emaan-aa / reemaan-aa 'antelope-the' > UA *tïmïna 'antelope': Ktn tïmïna-č 'antelope'
NP tïnna 'antelope'; Hp, Ls, Ca, Cp reflect *tïni, all from the fuller form *tïmïna, as in Ktn, which resembles the fuller / original form, from which the others collapsed the middle syllable: -mïn- > -mn- > -nn- > -n-

58(99) **rakb-uu** 'they mounted, climbed' > UA ***tï'pu / *tïppu** 'climb up' NP tïbbu'ya 'climb up'; Wr mo'tepú-na 'climb up s.th.'

Aramaic **rakb-uu-hi** 'climbed-pl-it, they climbed it' > Mn **cibuhi** 'climb w/ arms and legs'; NP cibui 'climb up on s.th.'
(Initial r > t, then t > c with palatalization before the high-front vowel: *tïppu > cippu)

Aram pl participle: **raakb-iin** 'climbing/ers, pl' > UA ***cippiN**: Kw čipii- 'climb'; Ch cipí- 'come out'; SP cippiN 'come out, appear, ride'; WMU č*ih*ppí-y 'come out, bubble out (a spring), climb into / onto'; CU čipí 'mount, climb on, get on top'. Numic shows geminated *-pp- and so does Tak; otherwise, -v-, not -p-: Ca čípi-n 'cover'. Covering (a hole) is causing s.th. to get on top of it, and a spring bubbling out is a hole being covered by water' or 'surfacing to the top' like a prairie dog 'surfacing to the top, at the top of a hole': So Sh cippih 'prairie dog' is likely also cognate.

59(889) Aramaic rakbaa / **rikbaa** 'upper millstone' > UA ***tïppa** 'mortar (and/or) pestle'
Wr te'pá 'up'; TO čïpa 'a hole in bedrock for mashing mesquite bean'; LP tïpa; NT tïpai; ST topaa 'mortar'; Ls tóópa-l 'mortar for grinding' (note all have -p- < *-pp-, and Ls o < *ï). Note that in millstone (59), wolf (34), and chin (33), the vowels assimilate the same way in all three: *CiCa > UA *CïCa.

60(887) Semitic rkb 'mount, climb up on' > CN tlakpa-k 'above, on top' (CN tl < *t) relates to the above

61(601) Aramaic rawwaay-aa 'drunken one-the'; with the common Aramaic noun suffix -aan, this stem would yield *rawwaan-aa 'drunk one-the' > UA *tawana 'drunk': Azt *taawaana 'get drunk'; Cr tawá 'is drunk'

88(94) Hebr ršʕ 'act wickedly, be guilty' > UA *tasawa 'be/do bad' (for ʕ > w, see below)

Semitic **initial voiceless pharyngeal ħ > UA *hu**, or w/o/u, and non-initially ħ > w/o/u (see also -ħ- > -w- in 11 above):

62(79) Hebrew ħmr 'cover or smear' (w/ s.th.); Arabic ħammar 'to color / dye red' > UA *huma(y) 'smear, spread, paint'
Ca húmay 'smear, paint, vt'; Cp hume- / hum-ine 'spread a liquid or s.th. fine like sugar'; Cp hume-yaxe 'be spread out'; Tr na'oma 'erase, cloud up' (with na- prefix); PYp huhul 'rub, paint' (if *humal > huml > hul). (For -r- > -y, see next paper, and note PYp -l)

63(80) Hebrew ħpp 'to rub off, wash'; Arabic ħaffa (< *ħappa) > UA *up(p)a 'bathe, wash, rub'
Op uva; Eu úva/huba; Yq úba; My úbba; Wr u'upá; Tr úba; Cr -ï'ïwá; Wc -'ïïva/'ïïya. Ktn hïpïpk 'rub buckskin between hands to soften it', and the -wpa of Hp màwpa 'rub along length of, stroke w/ the palm of the hands' < ma 'hand' + *huppa 'rub'.

64(81) Hebrew ħaaber 'companion'; ħabéret 'marriage companion (feminine), wife' > UA *hupi 'woman, wife'
Nv ubbi; NT úvi; ST 'uvii; TO uwi; Eu hoít; My húúbi; Yq húubi; Wr upí; Tr upí 'wife'; Cr ïita'a 'woman' (*-p- > Cr ø, *u > Cr ï); Cr nya-'ïh 'my wife'; Wc 'ïya 'woman, wife'; Tb hu'ubanah 'widow, widower'. Numic often has PUA *u > ï, so Numic *hïpi 'woman' is cognate also. (Tep, Cah, Tr, Eu, CrC, Num, Tb)

65(82) Aramaic/Hebrew ħz' / ħzy 'see, perceive, look' > Kw wazi'a / huzi'a / huziya 'look, peek' NP wazipunni 'peek at';

66(675) Hebrew ħnp 'to limp'; Arabic ħnp 'have a distorted foot, be pigeon-toed, walk bow-legged with toes pointing inward' (like turtles, lizards, badgers, bears); built on ħnp are Arabic ħanpaa' 'tortoise, chameleon' (creatures whose feet turn inward); Arb aħnap 'person who walks pigeon-toed'; Arb ħanap 'an inversion of the feet, toes pointed inward; Arabic *ħannaap 'one walking with turned-in feet'

UA *hunaC / *hunap- 'badger'; Sr hoonav-t; Ktn huna(-)vi-t 'badger'; Ca húna-l; Cp húna-l; Ls huuna-l; Hp honaani 'badger'; Hp hoonaw 'bear'; Kw huna-ci 'badger'; Ch huna; CU una-pï-ci (< *hunaC- or *huna-ppï); SP ïnaC-; TSh huna-cci. Numic shows a 3rd consonant geminating the next C, but Sr huunav-t 'badger' (v < *p) and Ktn show the *-p-. (Tak, Num, Hp, Cah)

67(672) ħbq / ħabaqa 'pass air, break wind' > Hp hova-qtï 'smell, have odor' (-qtï ? not known for certain)

68(673) ħnk 'train, dedicate'; ħanukkaa 'dedication, consecration' > Ca huneke 'to take an Indian bath';
Yq húnak-te 'show, direct, raise (young)'

69(671) ħmm 'heat, bathe, wash' > Hp paa-homa 'wash, bathe' (paa- 'water')

70(644) Semitic xḍr > ħṣr / ħuṣar 'vegetation, greens' > UA *husa 'grass'
Often many vowelings in Semitic: Arabic xaḍira 'be green'; Arabic xaḍir 'greenery'; Hebrew ħaṣiir 'grass'; Arabic xuḍrat / xuḍar 'vegetation, greens'; Arabic xuḍaarat 'greens, herbs' > UA *(h)usa 'grass': Tbr osá-t, usá-t 'hierba, zacate'; Cr (h)ïša 'grass, straw'.

71(648) ħaaliil 'flute, pipe', verb ħll / yə-ħallel 'play the flute' > Ca yulily 'pipe'; Tb luulu'~'uuluulu' 'play a flute'

72(655) ħrr 'snore, be hoarse' > Yq hóroró'otia 'snore'; AYq ho'otia 'snore'; My hooró'oti; Hp heroro-ta 'snore'

73(660) from many vowelings: ħaram / ħurmat / ħariim ‘woman, wife’ > Wr oerume / oorume ‘woman’

74(667) Aramaic ħwr / ħuur ‘look, behold, gaze’ > UA *hura ‘come up, look in/over’
Sr huur-q ‘come up (as sun), come up over’; Sr huur-kin ‘peek over, look in’; Ca húlaqan ‘peek at s.o., lifting/sticking one’s head out, v’; Ls húla ‘sprout thru the ground, poke thru surface’; Ktn hurïk ‘look forth, peep out’; Tb huuda ‘rise, come up (sun)’; perhaps PYp hoohod ‘look’; ST hoohoiñ ‘look at it’.

75(664) ħtr ‘to dig’ > UA *hotaC ‘dig’
TSh hotaC; Sh hota; Cm hora-; Kw horo-; SP oraC; CU oray; Ch hóóra ‘dig’; NP tïhonna ‘dig roots’; Tr ho- / Tr hora- ‘dig’.

76(663) ħrp ‘to reproach’; Hebrew ħɛrpaa ‘object of reproach (a perceived deficiency) > UA *oppï ‘weakness, disability’
Hp ööpï ‘sickly one, frail one, wounded one, invalid, one with disabling sickness’; Hp ööpï-ta ‘injure, disable’. Hp -p- from cluster *-pp- < -rp- (Hp -v- < p). R is a guttural C in Hebr, and another instance of Hp -ö- (vs. -o-) between gutturals is 91.

77(665) Aramaic ħirgaa’ ‘dust’ > UA *huCkuN > *hukkuN ‘dust’: Sh hukkun; WSh hukkumpïh; Cm huhkuppï; Kw hukubï, hukwabï; SP ukkumpu/a; Ch hukumpü ‘dust’; WMU *huh*kkúpp*ü* ‘dust’; CU kukupï (< *kukkuppï) consonant harmony (Num).

78(855) Hebrew yħm ‘be in heat’ > UA *yoma ‘copulate’ (Tak, Tb, Hp, Tep, Cah)

79(1074) Arabic saaħil ‘coast, seashore’ > UA *suwil /suwïla 'edge, shore, border' (Tep, TrWr)

The Semitic **voiced pharyngeal ʕ > UA w/o/u**, or some form of rounding, as also Greek o < Phoenician ʕ:

80(677) ʕagol ‘round’ > UA *wakol 'round(ed)’ (Tep, Num)
ST gakoly 'go around’ (*w > g in Tep); TO gakoḍk 'curved'. *L > n in Num: NP wïkkono’o 'ring, circle'; Mn wiġo’onogi 'crooked'; SP wïkkonuiC 'round, circular’

81(676) paqʕ- ‘whiteness, species of fungus’ > UA *pakuwa ‘mushroom, fungus’ (TrWr, Tep, Num)
Mn paagú’ ‘type of pink mushroom’; PYp vikoga ‘mushroom(s)’ (*w > g); Wr wehkoári ‘fungus’;

82(683) ʕmṭ ‘cloud over, become dark’ > UA *(w)umaC / *(w)ïmaC ‘rain, be cloudy / overcast’ (Num, Hp, Tr, Tbr)

83(87) Arabic ʕgz / ʕagaza ‘to grow old (of women)’ > Tr wegaca- 'grow old (of women)’ > UA *okaci ‘(old) woman’ (Tep s < *c) TO oks ‘woman’; LP ’okš; Nv oksi; PYp okasi; NT okíši; Eu hokíci 'little girl'; Op oki ‘woman’; Cr úúka 'women'; Wc ’úúkáá 'woman’. Tep *okisi 'woman’ and CN okič- 'man' both < PUA *okac, as the 2nd vowel (*a*) in 5 languages suggests *okaci > okici 'woman’, since ssimilation *a-i > i-i is natural, but not *i-i > a-i. Tr wegaca- 'grow old (of women)’ is the semantic key to these similar forms for men and women, such that *okac originally meant ‘old woman’ then ‘old one, old man’ in some languages. I’ve heard men called ‘woman!’ at politically incorrect construction sites where attempts to highlight ineptitude at the male-dominated occupation revealed a lack of sensitivity that surely permeates all construction crews by now, though perhaps not all of UA prehistory aligned with such sensitivities. (Tep, Azt, TrWr, Op, CrC)

84(88) ʕlq ‘stick, adhere’: Hebr ʕaluqaa ‘leech’; Arb ʕalaq / ʕalaqat; Aram ʕalqaa, ʕilaq-taa ‘leech, anything clammy or sticky, n.f.’ > UA *walaka ‘snail’ (leeches resemble snails in slimy adhering texture); CN wilaka ‘snail’; Tr warákoara; Ls muvílaqa 'snail’; Wr nalágeloci ‘snail’; Tr narákuri ‘snail’. Ls and Wr prefixes eliminate initial w-. (Tak; Tr/Wr, Azt)

85(900) nʕm ‘be lovely, good, beautiful’ > UA *numa / *noma ‘good, well, pretty’ (Ktn, AYq, Hp)

86(902) Semitic pʕm ‘strike, step’; Hebr paʕam ‘beat, foot, anvil’ (Phoenician pʕm ‘foot’, pʕm pʕm ‘step by step’; Mehri fa’am ‘leg’) > puma- of Kw pumake’e ‘stomp in a regular beat, beat (of the heart)’

87(1289) šgʕ, Hebrew məšuggaʕ ‘raging, mad’ > CN šiikoaa ‘be jealous, angry’

88(94) ršʕ ‘act wickedly, be guilty’ > UA *tasawa ‘be/do bad’ (Tr, Tb, Num)

89(681) ʕlw / ʕly / ʕalaa ‘ascend, go up, grow’ > UA *wïla ‘grow, go up’ (Tak, Hp, Tb)
Ca wél ‘grow, rise up high’; Cp wéle ‘to grow’; Ls wola/i ‘grow’; Hp wïŋwa ‘grow, grow up’ (< wïlwa); Tb wilaa’lat ‘to climb’

90(682) t-ʕly / taʕalɛ ‘it/she grows’ (f.sg.imprftv) > UA *tïwïl ‘grow’
Cp tewe ‘grow (of plants)’; TO čïwïl-him ‘to grow’. TO palatalizes t > č before high vowels, but normally *w > Tep g (loan?)

91(686) ʕɛrwaa ‘nakedness, genitals (of woman)’ > UA *wowa > Hp löwa ‘vulva, vagina’

92(876) dʕk ‘fire go out’, duʕk-aa ‘extinguishing-the’ > UA *tuka/i 'fire go out, dark, black, night’ (all branches)

93(1197) Hebrew ʕaaqeeb ‘heel, footprint’ > UA *woki ‘track, footprint’

94(747) Aramaic / Syriac ṣibʕ- ‘finger’ > UA *sipwa ‘finger’ (Num, Tep, CrC)
Cr ansïbi ‘five’; WMU ma-sivwə-n ‘my fingers’ (ma- ‘hand’; -sivwə- ‘finger’; -n ‘my’); ta-sivwə-n ‘my toe(s)’; SP sïu ‘finger, toe’; Mn masïwaki-na ‘have fingers’; Cm masïwïhki’; Ch ma-sïï; CU ma-sïï-vï; NT masááviga / masáágiga ‘finger’; most Num forms lose -p- as 1st C in a cluster, but WMU clearly shows *sipwa.

95(1072) Arab waʕr ‘rugged terrain’; Hebr yáʕar ‘wood, forest’ > UA *yawa > *yïwa/*yuwa ‘open country, outside’ (Num, Cah, Tep, Azt)

96(1204) Hebrew ʕaab / ʕoob ‘beam, wood, forest’ > UA *wopi 'wood, board' (Num, Azt)

Many phonemes (t, k, p, m, n, h, etc) remain much the same; also s, š, and ś all generally merge to UA *s:

97(52) Hebrew mukkɛ ‘smitten’ > UA *mukki ‘die, be sick, smitten’ (all branches)
98(53) Hebrew hukkɛ ‘was smitten’ > Tb hookii ‘deceased grandfather / grandson’
99(565) makar ‘sell’ > UA *maka ‘give, sell’ (all branches)
100(56) šɛkɛm / šikm-, Samaritan šekam ‘shoulder’ > UA *sïka ‘shoulder, arm’, Numic *sikum ‘shoulder’ (all branches)
9(57) *singaab ≈ Hebrew *siggoob ‘squirrel’ > UA *sikkuC ‘squirrel’ (Num)
101(1138) Hebrew šor ‘navel’; Arabic surr ‘navel cord’ > Sr ṣuur ‘navel’
102(13) snw ‘shine, be beautiful’ > Hopi soniwa ‘be beautiful, bright, brilliant, handsome’
103(890) kann ‘shelter, house, nest’ > UA *kanni (NUA) ‘house’ > *kali (SUA) ‘house’
104(903) khh, kehah ‘be inexpressive, disheartened’ > Ktn ’a-kïhahïk ‘sad’
105(1409) Aramaic kuuky-aa’ ‘spider-the’ > UA *kuukya(ŋw) ‘spider’; Hopi kòokyaŋw ‘spider’
106(853) Aramaic ħippuušiit ‘beetle’ > UA *wippusi ‘stink beetle’ (both with geminated -pp-; 7 matching segments)
Ch wiposat ‘13-line beetle’; Mn pipóísi ‘stink beetle’; Sh pippusi. In all 3 Numic branches, and Ch wi- is likely original, while the others harmonized consonants. Note doubled 2nd consonant *-pp- in both Semitic and UA, and vowels identical to Aramaic *-i-u-i.
107(754) Hebrew participle poone ‘turn to, look’ > UA *puni ‘turn, look, see’ (Num, Hp, Tak)
108(851) Hebrew panaa-w ‘face-his’ > UA *pana ‘cheek, face’ (Tr/Wr)
109(852) pl construct paneeʸ- (< *panii) ‘face, surface of’ > UA *pani 'on, on surface of’ (Azt)
110(769) *taqipa (sg), *taqipuu (pl) ‘overpower’ > UA *takipu ‘push’
Wr tahkipúna ‘push many times’; Tr raki- / rakibú ‘push’; SP tïŋwipa ‘push in with the hand’
111(750) tmh ‘be in awe, speechless, to fear’, Syriac təmah > UA tehmat / tïhmï ‘be silent, afraid’:
Tb tehmat ‘be silent’; Ktn tïhmï-k ‘be afraid, constipated’ (h/’ anticipated); both the Tb and Ktn forms reflect Aramaic təmah well, and Sr tuma’-q ‘be quiet’ and Ktn tu’mï-k ‘be quiet’ could be from Sem quṭṭal or huqtal forms (tutmah).
112(755) Hebrew kutónet ‘shirt-like tunic’ > UA *kutuni ‘shirt’
ST kutun 'traditional tunic'; TO kotoni 'shirt'; NP pina-kkïtï ‘shirttail’ < (back-shirt; ï < *u).
113(1339) šippaa ‘make smooth’ > UA *sipa / *sippa ‘scrape, shave’ (all branches)
114(1045) Hebrew *moškat ‘bracelet, fetter, belt’ > Tb mohkat-t ‘belt’
115(563) śapat ‘lip’ > UA *sapal ‘lip’ (Azt, Wr, Tbr, Cah)
116(879) šwy / šawaa ‘broil, roast’ > UA *sawa ‘boil, apply heat, melt' (Num, Tep)
117(1053) Hebr šwb / šuub ‘turn back, return’ > Tb šiiub / šiiwpa ‘again, back again, back’
118(1073) Aram šwp ‘to blow (of wind)’; Hebr suupaa, suupat(aa) ‘storm-wind, gale’ > UA *sïpï / *sïpïta ‘cold, wind(y), winter’ (most branches)
119(1194) Hebr mšš ‘feel, grope’; Arabic mss, mass-uu, impfv (ya)-massu ‘feel, touch’ > UA *masu 'touch, feel, probe'
120(1293) Hebr hiśkiil, hiśkal- ‘understand, have insight’ > CN iskalia ‘be discreet, prudent’ (Azt)
121(1443) Syriac ašiig ‘wash’ (aqtel šwg) > UA *asi / *asï ‘bathe, wash’ (Tak, Tb, Hp)
122(767) Semitic ma ‘what, interrogative/relative pronoun’ > UA *ma ‘interrogative/relative pronoun’
123(803) Hebr kəfiir < *kapiir ‘young lion’ > PYp kaper ‘wildcat’; Wc kapuvi ‘bobcat’ (Tep, CrC)
124(1105) Akkadian kaliitu ‘kidney’; Ugaritic klyt; Hebrew kilyaa; Aramaic kooliit-aa > UA *kali ‘kidney’ (Num, Hp)
125(819) Hebrew tmm ‘be completed, finished, come to an end’ > UA *tama/i ‘finish’: CN tlami ‘come to an end, to finish’; Kw tïrïmaa ‘to finish, be finished’ (with initial reduplication) (Azt, Num)
126(1079) Semitic *nwn ‘multiply, increase’; Aramaic naanii / naanaa ‘mother’ > UA *nana ‘mother’ (Tep, Tr, CrC, Azt)
127(1166) Hebr qɛdɛm ‘in front, east’; Hebrew qidmaa ‘toward east of’ > UA *kitam 'south, east': Ktn kítamik ‘toward the east’; Cp kičám; Ca kíčam-ka 'southward'; Ls kíča-mi-k, kíča-nuk 'southward'; Gb kitáme(k) 'south’ (Tak)

Semitic emphatic or pharyngealized ṣ > s in UA:

128(892) Arabic ṣanawbar ‘type of pine tree’ > UA Sh sanawap-pin ‘pine tree’; *sana ‘pitch’ (Num, Tb, Hp, Tak, Azt)
129(901) ṣb’ / ṣby / ṣəbee ‘wish, want, delight in’ > UA *supiC ‘like, want’ (Num, Eu, Tb)
130(1173) Aramaic mṣṣ ‘suck, wring, press’; Hebrew mṣṣ, impfv: yi-moṣṣ ‘slurp, lap’ > UA *mos 'suck' (Tak)
131(1350) ṣd’ / ṣdy ‘grow rusty’ > UA *sïta / *sïri ‘red’ (Eu, Tr, Cah, Tak)
7(532) *booṣer > UA *pusi ‘eye’ (in nearly all UA languages)

132(731) Hebrew ṣwy / ṣawa ‘to command, order’ > UA *sawi ‘command’: Yq sáwe; My sawwe; Tbr i-sawi-rá (Cah)
133(733) Hebrew ṣwd / ṣyd ‘to hunt’, 3rd sg ṣaad, 3rd pl ṣaduu ‘they hunted ’> UA *sïtu ‘aim, hunt’;
Tr seru ‘aim, hunt’; Tr seru-ame ‘(person who is) a good aim, a hunter’
134(734) Hebrew ṣwd / ṣyd ‘to hunt’, **mə-ṣuudat** ‘net, prey’ (what’s hunted, game) > **UA *masot** > *masat ‘deer’
Four languages show *masat, having assimilated the 2nd V to the 1st, but six others show *masot.
135(739) ṣe’aa ‘excrement, filth’ (form Semitic verb ‘be foul’) > UA *si’a ‘urine, urinate’ (in all UA languages)
94(747) Aramaic / Syriac ṣibʕ- ‘finger’ > UA *sipwa ‘finger’ (Num, Tep, CrC)
136(1186) Semitic ṣmd ‘tie’; Hebr ṣummad ‘strapped on’ > UA *suma 'tie': (Hp, Cah)
137(1095) Arabic faḍḍa < *paḍḍa ‘break open, smash’; Syriac pʕʕ < *pḍḍ ‘to fell, grind’; Hebr pṣṣ ‘break into pieces’ >
UA *pisa ‘pound, grind’: NT viaáhai (< *pisa) ‘grind’; Hp pïsïsï-ta ‘be a continuous drumming or pounding sound’ (Tep, Hp)
Other examples of ṣ > UA s are at 177 and 293.

Semitic emphatic or pharyngealized ṭ > c (ts):
138(832) *sarṭoon ‘scratcher, crab’ > UA *saCtun >*sicu/*suttu ‘claw/nail, crab, scratch’ (all branches but Hp)
139(770) ṭwy / ṭawaa ‘spin (thread)’ > CN cawa ‘spin’
140(771) ṭʕm ‘taste, eat’ (pl participle ṭoʕmiim) > UA *cu’mi 'suck, sip, kiss' (all branches but Tb)
Cp čúme 'suck'; Wr cu’mi 'suck, sip, slurp'; Tr cu’mi ‘suck, kiss, sip; Ca čúŋ ‘suck’; other NUA *cuŋ ‘suck’; SUA *cun; see *-m’- cluster
141(772) ṭame’ ‘(be) unclean’, ṭum’a(t) ‘uncleanness, filthy mass’ > UA *co’ma ‘mucus, have a cold’ (Tr, Cah, Tep, CrC)
142(709) Arabic ṭll / *ṭalala ‘spray, sprinkle, drizzle, bedew’; Hebrew ṭal ‘night-mist, dew’ > UA *cololo ‘sprinkle, rain lightly’: Hopi cölö-(k-) ‘to drip (a single drop)’; Hopi cölölö-ta ‘be dripping, be sprinkling (rain)’.
143(629) *xabbiṭ ‘beat, strike, knock’ > UA *kappica ‘clap, slap’ (Tep)
144(773) Semitic ṭḫn ‘grind, pound, destroy’ > UA *to’na (Num) > co’na (Tep, Op, TrWr, Cah, CrC, Azt) ‘hit, beat’
145(782) Arabic ṭḫy / ṭaḫaa ‘to hurl, shoot’ > Wr cewa ‘to throw or hit with a missile’
11(540) Hebrew bṭḫ / *baṭiiḫ ‘trust(ed)’ > UA *piciwa ‘believe’ (ṭ > c) (Num, Hp, Tak, Tep, Tr, Cah)
12(552) bṭn ‘be pregnant, sated’, buṭna / *buṭṭan ‘pregnant’ > UA *putta > *puca ‘pregnant’ (ṭ > c)
16(562) -bbiiṭ ‘look’ > UA *pici / *pica ‘look, see’ (ṭ > c) (Hp, Tb, Tak)

Sometimes the c lenites (weakens) one more step to s:
146(778) Hebrew ṭibbuur ‘navel’ > NP sibudu ‘navel’; Cr sipu; Hp sipna / sivon- ‘navel’
At 212, Eu is another example of *t > c > s, among mostly -c-.

Proto-Semitic *x and *ḫ eventually merged in some Semitic languages, both becoming the voiceless pharyngeal ḫ in Hebrew, Phoenician, and Aramaic, but the two remained distinct in Ugaritic, Arabic, and Akkadian. The *x and *ḫ also remained distinct in spoken Hebrew until sometime around 300-100 B.C. (Kutscher 1982, 13-18; Sáenz-Badillos 1993, 81; Blau 1998, 12, 30), in contrast to the Phoenicians, who had merged them a millennium earlier. The fact that the Phoenician alphabet had only ḫ (ḫeyṭ) to represent both Proto-Semitic *x and *ḫ suggests that these sounds were already merged in Phoenician when the Phoenicians developed their Phoenician alphabet (Blau 1998, 12, 30), which alphabet the Israelis borrowed to write their Hebrew, though Israel kept *x and *ḫ distinct in their spoken language(s) through most of the first millennium B.C. Of course, Israel’s Hebrew was their adopted dialect of Canaanite/Phoenician, after entering Palestine. Abraham, Isaac, Jacob, Laban, Leah, and Rachel came from Aramaic-speaking areas (note Laban, the Aramean, in Genesis 25:20), though many of their descendants later adopted Canaanite, which Israeli Canaanite dialect eventually came to be called Hebrew. Some scholars, like Young (1993) and Rendsburg (1997, 2003a, 2003b, 2006), suggest that the ancient Israelis were speaking Aramaic for generations while learning the Canaanite / Phoenician / Hebrew language, especially in northern Israel, and may have been bilingual for centuries. If Israel descends from original Aramaic speakers who distinguished *x and *ḫ (which distinction they did not get from Phoenician), then did their ancient Aramaic dialect have that distinction? Leah and Rachel and their boys were speaking their Aramaic 1000 years before the first written Aramaic appears, 800 B.C. or so. So it is interesting that the Semitic underlying UA seems to be something of an Aramaic-Hebrew mix, having forms aligning with Aramaic and others with Hebrew, and that it distinguishes *x and *ḫ.

UA sound correspondences distinguish Semitic x from ħ, and **Semitic *x > UA k/q** initially:

147(1088) *xld ‘to burrow’, xuld / *xild-aa’ ‘mole-the’ > Mn kidá’ ‘groundhog’; NP kidï ‘groundhog’

148(630) *xole ‘be sick, hurting’ > > UA *koli ‘to hurt, be sick’ (Tak, Tep, Tr/Wr, Eu, Cah, CrC, Azt)

149(631) *xmr ‘to ferment’; *xamar ‘wine’; Arabic ximiir ‘drunkard’ > UA *kamaC 'drunk' (Tak)

150(632) *xnk ‘put around the neck’ > UA konaka ‘necklace, string of beads’ (Tak, Tr, Azt)

151(634) *xaṣr- > xaṣṣ ‘hip, haunch, loins’ > UA kaca ‘hip’ (Tr/Wr) (cluster *-rṣ-/-ṣr- > UA -c-, see 304-307)

152(629) *xabbiṭ ‘beat, strike, knock’ > UA *kappica ‘clap, slap’ (Tep)

153(637) *pxd / *paxad / *poxed ‘fear, tremble’ > UA *pakat / *pokat ‘frightened’ (Tak, Num)

Proto-Semitic ***z > c**(ts) in UA:

154(1116) Hebrew zɛ́pɛt (< *zipt-) / zaapet ‘pitch’ > UA *copï ‘pitch, resin’ (Tr/Wr, Tbr, Azt)

83(87) Arabic ʕgz / ʕagaza ‘to age, grow old (of women)’ > Tr wegaca- 'grow old (of women)’

155(627) *zɦl / zaɦal ‘creep, crawl’ > UA *cawa ‘crawl, climb’ (Ca)

156(621) *zkk / *zky ‘be clean, pure, clear’ > UA *cïki ‘clear up (of water / sky)’ (Ca)

157(622) *zgg / zagga / zugga / -zuggu ‘squeeze, force, cram’ > UA *cukka/i ‘mixed, crowded, stuff tight’ (Num, Azt)

Semitic L > UA L, unless in a cluster

Even though many Uto-Aztecanists question whether PUA initial *L exists in UA, Semitic L is well represented in UA data both initially l- and intervocalically -l-, but is often lost or absorbed when in a cluster.

158(695) Semitic lqɦ / laqaɦ ‘take (to wife), impregnate’ > Hp lööqö(k-) ‘marry, wedding’ (final pharyngeal cause rounding)

159(706) Semitic lwy / lawa^{y} ‘turn, twist’ > Ls líwa/i ‘twist tightly’; Ca líwiwey ‘sing aloud, wring out’ (Tak)

160(705) Semitic l’y / la’a^{y} ‘be tired, poor, unfortunate, weak’, prtcpl: loo’e^{y}; > UA *lo / *lo’i ‘tired’; Tbr lo- ‘tired’; Yq/AYq/My lotte- ‘tired’; Wr e’loí-na ‘be tired’; PYp lo’ig / lo’og ‘poor’. Wr e’loí with impfv prefix yi-/yV- or an et-l’y form, with glottal stop anticipated, as also in 210, 234, 242, 489, 141. Semantic expansion from ‘poor’ is Ls li’i-lí’a ‘to dress untidily’; Ls li’í-l’i-š ‘sagging, loosely fitting (clothes)’; Ca lé’eley ‘get loose, wobble (tooth, tree, etc)’. (Cah, Tbr, Tep, Tak)

161(704) Arabic laqlaq ‘stork’ > Ca la’la’ ‘grey goose with long beak’; Cp le’e-l ‘large water bird’; Ls lá’-la ‘goose’ (Tak)

162(702) Semitic lawz / luuz ‘nut, almonds (< lwz)’ > Tb lalwaš-t ‘pine nut cache’, from reduplicated *lawas (Tb)

163(699) Sem / Hebr lmd / laamad ‘learn, be trained in, accustomed to’; Hebrew prtcpl **loomed** ‘one learned, trained in’ > UA ***lomi** ‘know’: Tr **lomi**-mea ‘know well, master a knowledge/skill/specialty’

164(700) Sem / Hebr *lummad ‘learned, trained, accustomed to’ (unattested intensive passive) > Hp loma ‘good, beautiful, fine, nice’. Hp o < UA *u, and the semantic shift from **lummad** ‘trained/taught’ to UA *luma ‘good, fine, beautiful’ is not so great when one considers that ‘knowing’ the desired skills makes one ‘desirable’, and in the case of women, ‘aesthetic desirability’ inevitably gets mixed into the package and, over time, not surprisingly emerges later as the more salient semantic dimension.

165(698) Sem / Arb lahgat ‘tongue’ > Hp leŋi ‘tongue’ (for g > ŋ, see next paper); Tb lalan-t; consonant harmony yielded *naŋi / *nani in all other branches of UA.

166(703) Sem / Arabic lmm ‘gather, collect, assemble, IV befall, overcome’; lamma(t) ‘assembly, misfortune, calamity’ > UA *lïmm / lïmïmï ‘burn, fall in (structure)’: Ca -lémeme- / -lémm- ‘to burn a great deal’; Ls lóma/i ‘collapse (a structure), fall into coals’. As a fire burns, the wood structure falls in on itself, which ties the two Takic meanings (‘burn lots’ and ‘fall into coals, collapse’), which UA semantic tie is otherwise opaque; however, Semitic ‘collect, befall/overcome’ may resemble ‘collapse/fall’ and the resulting coals are collapsed together/gathered/collected. The 3 consonants are identical—lmm in both Semitic and Takic.

167(1501) Sem / Arabic slw / sly / salaa, ta-salla ‘to delight, take pleasure in’ > Hp salày-ti ‘pleased, joyed, gratified’

168(1387) Sem / Arabic pgl ‘be thick’ > Hp pööŋala ‘thick (in size)’ (for g > ŋ, see next paper)

142(709) Sem / Arabic ṭll ‘spray, sprinkle, drizzle, bedew’; Hebrew ṭal ‘night-mist, dew’ > UA *cololo ‘sprinkle, rain lightly’: Hopi cölö-(k-) ‘to drip (a single drop)’; Hopi cölölö-ta ‘be dripping, be sprinkling (rain)’.

169(712) Sem / Ugaritic hll ‘to cheer’; Aram hallel ‘to praise’; Arabic hll / halla ‘shout’; Hebr hillal-, -hallel ‘praise, exclaim halleluia’ > UA *hala / *halala ‘happy’: Hp hàalay ‘be happy, cheerful, enjoy oneself’; Ls ’alaláá ‘an exclamation of praise or pleasure’; AYq allea ‘happy’; My al-leiya ‘is happy/ joyful’; Tb yilaha-t~’iyilahaša ‘be happy’ shows metathesis and 3rd person imperfective prefix: yəhallel. (Cah, Hp, Tb, Tak)

170(714) Semitic / Hebrew pl’ ‘be extraordinary, wonderful’ > Ca pálaw ‘be pretty’

171(717) Sem / Aramaic / Syriac qlp ‘peel off, shell, rub away’; Arabic qlp ‘strip bark’; Hebrew glb ‘shear, shave’ > UA *kïlipi ‘shell, shuck, degrain, v’: TO kïliwi (w < *p); LP kïkv-; NT kïlivi; NT kïlíívai ‘scrape kernels off’; ST kïlyiiv.

172(718) Sem npl ‘fall, be born’; impfv stem *-npul > Hebr **-ppol** > UA ***puli** ‘fall, give birth, daughter’: Ca púli 'fall, be born'; Cp pulíne ‘give birth’; Cp pulíni-š ‘baby’; Ca púlin 'woman's daughter'; Sr pulin 'woman's daughter’. Sapir also ties CN -pil 'offspring, son, daughter' and Cr péri 'son, daughter' with Tak forms. (Tak, Azt, CrC)

173(720) Hebrew **nebɛl** ‘skin-bottle, skin’, Syriac nbl / **n’bl** > CN **no’pal** ‘cactus fruit used to make alcohol’. The UA form even has Semitic glottal stop ’, and the semantic shift is similar to English from ‘bottle’ to ‘alcohol’. The cognates in most other branches are *napa and *napu.

84(88) ʕlq ‘stick, adhere’: Hebr ʕaluqaa; Arb ʕalaqat; Aram ʕilaq-taa ‘leech’ > UA *walaka ‘snail’

Uvular q encourages vowels toward the upper back quarter of the mouth: o, u, ï

174(958) Hebrew qiynaa ‘funeral song, dirge’ > Hopi kïyna ‘begin singing a song, start a song’ Note Middle Hebr qonen ‘to begin singing a dirge’; and pl of Hebr qiynaa ‘funeral song’ is qiynoot ‘lamentations’.

175(959) Syriac qml ‘suffer from leanness’ (that is, be **thin**); Hebrew qml ‘wilt, wither away’. UA *komal ‘**thin**’: TO komal; UP komalikï; Nv komarika ‘thin (as paper)’; NT komálika; NT komááli ‘thin’. Syriac quumaal- ‘barley **cakes baked** in the embers and allowed to grow sour’; Semitic qml > UA *komal ‘griddle’: CN komaal-li ‘griddle’; Pl kumaal ‘tortilla griddle’; Hp qöma ‘to make qömi’; Hp qömi ‘oblong **cake of baked** sweet corn flour’.

176(961) Hebrew dɛqɛl ‘date-tree, palm’; Arabic daqal ‘kind of palm tree’; Semitic *daqal > UA *taku ‘palm tree’: Eu takú-t; Wr tahkú; Tr ŕakú; My takko; Tbr takó-t; Wc taakïï; Cr takï; Yq táko.

177(738) Hebrew qayiṣ/qeyṣ ‘summer’ > UA *kuwïs 'summer' also shows the strong rounding influence of q.

1(527) Semitic baraq ‘lightning’ > UA *pïrok / Cah beroq ‘lightning’; note -a- > -o- anticipating -q.

178(963) Hebr qaaṣiir ‘branch(es)’ > UA *kusi ‘wood’: Mn kussi-woqqopï 'Jeffrey pine'; Wr kusí 'branch, brush, thicket'; Tr kusí/gusí 'stick, branch’.

179(1161) Hebrew qippaa’oon ‘sharp frost’ (< qp’ ‘to congeal, become rigid’); minus the noun suffix -oon, we have Sem *qippaa’ > UA *kïpa 'snow, ice'. In 174, 179, and 33 below, note backing of *i > UA ï by q. (Tep, TrWr, CrC)

33(617) Aramaic diqn-aa ‘beard / chin-the’ > UA *tï’na ‘mouth’

180(962) Aramaic qooʕ-aa ‘throat, windpipe-the’ > UA *kuwiC ‘throat’: TSh kuwi(cci) ‘throat, front of neck’; Sh kuicci ‘throat’; Cm kuici; PYp kuikvor; Wc kïipí (Wc ï < *u); ST kui ‘larynx, trachea’; CN kooko’-tli ‘throat, windpipe’; CN kooko’tlan ‘neck, throat’. (Num, Tep, CrC, Azt)

181(966) Hebrew **šqp** ‘look down on from above’; Arabic θqf / θaqqafa ‘seize, confiscate’; Aramaic tqp ‘seize, hold firmly’; the Hopi form has Hebr sound correspondences (š < *θ, *p > Arabic f), but the Arabic and Aramaic meaning > Hopi **sokop**-ti ‘1. steal, pilfer, 2 get to the stage (of child development) when one can hold on to things’. Round vowels could be due to q, or from verbal noun Hebrew šəqop with assimilation.

182(1000) Aramaic qa’t-aa ‘pelican’ > UA *ko’ota / *koto ‘crane’: TO kookoḍ; Nv kokorh; Op koro-ci; Eu koró; Tr goró; Yq kórowe; My kóorou; Tbr koló ‘pájaro’; NP kodïdï 'crane’; Mn kodito / kodi’i 'sandhill crane'; Ch cakora 'sandhill crane’; Kw ko’ota 'a kind of goose'. Kw nicely reflects the Aramaic. (Tep, Op, TrWr, Cah, Tbr, Num)

183(1016) Semitic qbr / qabara / qəbar- ‘bury’ > UA *kopa / *kopor 'dig': LP kov; Nv kokova; NT kóvai; NT kovóóltïudai 'make a hole'; ST kov; Wr te’kopá-ni 'be a hole or slight depression'; TO kovod-k ‘shallow hole with flat bottom surface’. What is more grave-like than a flat-bottom hole? And NT and TO show all 3 consonants. (Tep, TrWr)

Semitic non-initial -r- > -r-

Semitic non-initial intervocalic -r- often remains -r- in UA as well, though it changes to glottal stop (*-r- > -‘-) in Yq, AYq, CrC, and to -ḍ- in TO, and to -l- in languages lacking r, like other Tep languages and Azt. The Numic languages supposedly have no -r-, but the presumed intervocalic -t- is pronounced as -r-, though considered and reconstructed *-t-, yet it aligns with Semitic -r-. The UA liquid-nasal spectrum has been a thorn in the side of Uto-Aztecanists for 100 years and no solution satisfactory to a large majority has yet emerged. A comprehensive solution to that pot of puzzles is not on the immediate horizon, but the material in this and coming papers should shed enough light to bring us closer.

184(803) Hebrew kəfiir < *kapiir ‘young lion’ > PYp kaper ‘wildcat’; Wc kapuvi ‘bobcat’ (Tep, CrC)

185(1201) Hebrew təmuuraa ‘exchange, n.f.’ > UA *tïmïrï 'buy, trade, exchange’ (Num)

186(1015) Semitic kbr / kabara / kəbar ‘be big’ > UA *kïpata / *kïbara ‘long, tall’: TSh kïpïtappi ‘long, tall’; Sh kïpata ‘long, tall’; Wr kahpíla-ni ‘be long’. Sh kïpata is pronounced kïbara and ‘big’ > ‘tall’ (Num, Wr)

187(1016) Semitic qbr / qabar / qəbar- ‘bury’ > UA *kopa / *kopor 'dig':

1(527) baraq ‘lightning’ (nearly all Sem lang’s) > UA *pïrok / My berok ‘lightning’ (Cah, Tep, Tbr)

20(606) dubur ‘buttocks, rear’ > UA *tupur ‘hip, buttocks’ (Tep)

22(1484) dwr / duur ‘go round, turn, revolve’ > UA *tur ‘whirl, roll, twist’

41(566) ’ariy / ’arii ‘lion’ > UA *wari ‘mountain lion, coyote’ (Cah, Tr/Wr, Tbr, Eu, Tep, CrC)

72(655) ħrr ‘snore, be hoarse’ > Yq hóroró’otia ‘snore’; AYq ho’otia ‘snore’; My hooró’oti; Hp heroro-ta ‘snore’

73(660) from many vowelings: ħaram / ħurmat / ħariim ‘woman, wife’ > Wr oerume / oorume ‘woman’

74(667) Aramaic ħwr / ħuur ‘look, behold, gaze’ > UA *hura ‘come up, look in/over’

2.0 The Egyptian Contributions Yield the Same Sound Correspondences as the Semitic Lexica

Egyptian terms in UA exceed 400 and have the same sound correspondences as the above Semitic. Egyptian did not include written vowels, only the consonants, though i/y and w often reflect high-front and back-round vowels, respectively. Sometimes vowels are hinted at in transcriptions from other languages, or from Egyptian’s later forms in Demotic and Coptic, but generally only the consonants are written. UA usually preserves the Egyptian phonology better than Coptic does, though UA is two more millennia removed. I am not the first to suggest similarities between Egyptian and Uto-Aztecan. The internationally renowned Semitist and pioneering authority in Ugaritic (a Northwest Semitic language), Cyrus Gordon (1971, 135) published the first item or the nearly identical words for crocodile in Egyptian and Nahuatl. I merely added another 400.

Egyptian	**Uto-Aztecan**

188(115) sbk / *subak ‘crocodile’ > CN *supak / *sipak ‘crocodile’ (b > p) (Gordon 1971, 135)

Gordon (1971, 135) noticed the crocodile-god **Sobek**’ and Classical Nahuatl **sipak**-tli ‘crocodile’ are impressively similar enough, but he did not know that because UA *u > CN i, the first vowel (CN i) could be from either UA ***supak** or ***sipak**, the first being identical to the probable original Egyptian voweling. Egyptian, like Semitic, originally had only three vowels—a, i, u—so the Greek transcription Sobek points to an original Egyptian voweling of ***subak**, or exactly the one proto-Nahuatl option

189(116) -i ‘old perfective/stative verb suffix’ > UA -i ‘intransitive/past/passive/stative suffix’ (all branches)

190(117) -w / -iw ‘passive verb suffix’ > UA -wa / -iwa ‘passive suffix’ (Hp, Tb, Tr, Tbr, Cah, CrC)

191(124) tks ‘pierce’ > UA *tïkso ‘pierce, poke’ (Eu, Op, Tr)

Eu tékso 'pierce, prick, sting'; Eu hi-tekso-rat 'hiking stick' (pokes ground); Op tesso-a 'puncture'; Tr teso 'lean on a hiking stick’.

192(125) km ‘be black, brown’ > UA *koma ‘dark, gray, brown, black’ (Tep, Hp, Num)

193(126) nmi ‘travel, traverse’ > UA *nïmi ‘walk around’ (Azt, Num, Hp, Tak)

194(129) wnš, pl wnšiw ‘jackal’ > UA *wancio / woncia ‘fox’ (Num, Tep)

NP wacia’a 'fox'; TSh wocia; Sh wocia; Kw woziya; Ch oncia; and SP paonci ‘beaver’ (‘water-fox’). Ch and SP show the nasal and PUA *-c- > NUA -y- (AMR 1992a); so these -c- must be from something else, i.e., *-nš-; NP and Kw show *a*, and adjacent w influenced *a > o in the others. UA *wacio > Tep *gasio > *kasi 'fox': TO gaso; Nv kaš; PYp gas; NT kašió; ST kašio. The clusters -ns- vs. -nc- are hardly distinguishable, like English *sense* and *cents*, or *once* and *wants*; so Egyptian wnšiw and UA wancio are remarkable matches.

195(131) šm / šim ‘go, walk, set out, leave’ > UA *sima ‘go, leave’ (Tep, Tr/Wr, Cah, Tbr, CrC)

196(130) sn ‘brother’; **snw** ‘companion, fellow’ > UA ***sïnu** ‘another, different’ (Hp, Cah, TrWr)

Tr senu ‘another, different one’; Yq sénu/séenu ‘one, other’; AYq seenu ‘one, someone’; My seenu ‘one’; Hp sino ‘person, individual, human’

197(219) iqr ‘skillful, excellent, capable, intelligent’ > UA *yikaL ‘knowing, intelligent, able, good’

Ls yixélvu-l ‘intelligent, alert’ (Egyptian iqr-pw ‘he (pw) is intelligent’); Eu dedekara-wa ‘knowledge, wisdom’ (PUA *y > Eu d); Eu dedeka- ‘know, be (cap)able’; CN yeek ‘well, thoroughly, good, right’ (Tak, Op, Azt)

198(221) wr ‘great (in size/importance), **wrw** ‘greatest’ > UA *wïru / wï’wïru ‘big’ (all branches but Tb)

199(222) wnx ‘be clothed, roll of cloth’ > UA *wanaC ‘cloth, clothing’ (Num)

200(136) win ‘thrust aside, push away, set aside’ > UA *wina 'throw down/out, spill, empty' (Num)

201(253) spd ‘sharp, be sharp pointed’ > UA *sipaC 'point' (Tak, Tb, Eu, Hp)

202(255) sqd ‘slope (of pyramid)’ > UA *sikiC ‘slanted (terrain), side’ (Num)
203(210) twt, dual **twty** ‘sandal(s)’ > UA ***tuti** ‘sandal(s)’ (Tep, Hp)
UA *tuti ‘sandals’ (> *tuci (Hp tooci, t > c/_i), > cuci > Tep susV). Often Tep s < c < *t (Stubbs 2011a, 15-16); thus, *tuti > *cuci > *susi, as *t > c before high vowels, and in time for the Tep change c > s. Tep often anticipates vowels, so the suffix -ka yields *susi-ka > Tep *susaka: TO šuušk; LP šuušak; NT súúsaka; ST suusak; Nv suska.
204(339) t’-ḫimat ‘the-wife’; Coptic hime > UA *tïhima 'spouse' (Wr tehimá ‘spouse’; Ls to’ma 'wife’)

Note again **Egyptian b > UA p**, as in the Semitic above:
188(115) sbk / *subak ‘crocodile’ > Azt *supak / *sipak ‘crocodile’ (b > p)
205(132) sbq ‘calf of leg’ > UA *sipikaC ‘lower leg’ (b > p)
Ls ṣivííqa-t ‘lower leg’; Ca sivíqa-t ‘lower leg’; Cp sivisívi ‘calf of leg’; Tbr sa-sapá-r ‘lower leg’
206(133) sbty ‘enclosure’ > Yq sápti ‘fence of branches’ (< *sapVti)
207(134) qbb ‘cool; calm, quiet, cool breeze’ > UA *koppa ‘quiet, calm’ (Cah, Tep, Num)
208(137) bbyt ‘region of throat’ > UA *papï / *papV ‘larynx, throat, voice’ (Tak)
Ca páve ‘throat, voice’; Cp pava ‘neck, throat’; pav- of Ls pávkuni-š 'larynx, Adam apple'; pääv- of Sr päävčan 'narrate, tell (story)’
209(138) bši ‘spit, vomit, v’, **bšw** ‘vomit, vomiting, n’ > UA ***piso**-(ta) ‘vomit’ (Tak, TrWr, Cah, Azt, Num)
*piso > Tep wiho < *piso, TO wihot; ST viota, Cah bisata; Tr o’pésu / ku’péso; Sr piiṣ ‘vomit’; plus Num and Azt
210(154) sb’ ‘star’ (Coptic siu) > UA *si’po ‘star’ (< *sipo’ is as likely) (in all branches)
UA *si’po (< *sipo’?) ‘star’: Wr so’póri; Tr se’porí / so’porí / so’parí; Eu síbora/sí’ibor, all show p and glottal stop, and glottal stops are also often anticipated or jump ahead of the precending C: *sipo’ > *si’po > si’ipo.
211(139) bnty ‘breast’ > UA *piCti / *pitti ‘breast’ (all branches but CrC, Azt)
212(141) bit ‘bee’ > UA *pitV > *picV 'bee, wasp' (all branches of SUA)
213(142) bik ‘falcon’ > Hp piikwa ‘lesser nighthawk’; TSh pikkitiki-ççi ‘sparrow hawk’

Egyptian x > UA *k, as in the Semitic above, and in Aramaic loans from Arabic (see Appendix D):
214(170) txi ‘be drunk, drink’, **txw** ‘drunkard’ > UA *tïku 'drunk’ (Tr/Wr, Tep, Num)
215(294) xpš ‘foreleg, thigh’ > UA *kapsi ‘thigh’ (all branches except CrC)
Tb hapši-l ‘thigh, upper leg’; Ls qáási-l; Hp qàasi/qahsi ‘thigh, hind quarter’; Wr kasí; Tr gasí/kasí; CN kees ‘thigh, leg’
One of Manaster-Ramer’s (1993b) more brilliant discoveries was to find the evidence in Tb and Hp that brought to light the previously hidden -p- in a cluster and changed our reconstruction of ‘hip’ from *kasi to *kapsi.
216(295) xpd ‘buttock’ > UA *kupta ‘buttocks’: Ls kupča-t ‘buttocks’; Cr kïcá ‘buttocks’;
Wc kïcá ‘buttocks’; Cp xútaxwi ‘back’; -t- suggests a cluster -Ct-, as single *-t- > -l- usually in the Cupan languages
217(174) sxt ‘field, pasture, willow, n.f.’ > UA *sakat / *sakaC ‘willow (Tak, Num), grass (Hp, SUA)’
Cp sáxa-t; Ca sáxa-t; Ls ṣaxá-t; Sr haqat; Gb saxát/sakát (note Tak -t, not-l); Hp tïïsaqa ‘grass, hay’ (Egyptian sxt is a f. noun and Egyptian t’- ‘the’ is the f. definite article); WSh saka-ppin ‘type of willow’; Ch saga-vï ‘willow’; CN saka-tl (all branches but CrC)
218(178) x’yt ‘disease, slaughter, corpse-heap’ > UA *ko’ya ‘die, pl subj; kill, pl obj’ (all branches except Tb, Cah)
SP ko’i; CU ko’ay; Ls qi’éé; Sr qö’ai; Hp qöya; NT kooda; Eu koda; Tr go’í-mea, go’ya-rï (pret.) ‘kill pl obj’s’; Wr ko’yá-ni
219(320) xpx ‘rob’ > UA *kïpïk ‘take, grasp’: Yq kebék-ta ‘take, grasp’
220(224) wxd ‘be painful, sick, suffer, endure’ > UA *okotï ‘be in pain, suffer, sorrow’ (Tr, Cah)
221(452) xt ‘fire, heat’ > UA *kut ‘fire’ (Num, Tak, Tb, Tep, Eu, Cah)

Egyptian initial **pharyngeal ḫ > UA *hu/ho (or w/o/u**, especially non-initially:
222(180) ḫbi ‘be / make festival’ > UA *hupiya ‘sing, song’ (Num)
223(181) ḫnqt ‘beer’; n’-ḫnqt ‘the drinkers’ > Hp hoonaqa ‘drunkard, silly person, drinking habit’
224(182) ḫtp / hotpe ‘be gracious, peaceable, set (sun), bury’ > UA *huppi ‘peaceable, go down, sink, dive’:
Hp hopi ‘behaving, peaceable’; Ca ’upi ‘dive’ and Ktn ’op-ïk ‘dive, sink’; all suggest a medial cluster (*-pp-/*-Cp-).
Tb ’obat- ‘dive’ lost gemination, but all else aligns; and dive is disappear into s.th., as a burial or setting sun. (Hp, Tak, Tb)
225(187) ḫw’ ‘foul, putrid, stink, vi’ > UA *hu’a / *hu’i ‘break wind, stink’ (all branches but Hp, CrC)
226(188) nḫbt ‘nape of the neck, yoke’ > UA *nohopi > nopi ‘arm, hand’ (Tep)
A semantic shift down the arm, like at 100: ‘shoulder’ > ‘arm, hand’
227(189) nḫb ‘to harness, to yoke’ > UA *noopi ‘carry on back’ (Num)

228(397) ɧti ‘smoke, fog, cloudiness’ > UA *huti 'dew, frost’ (Tep, Op, CrC, Hp, Num)
NT va-uši 'dew'; Wc há-ïci ‘dew’; Hp oy-nïp-ti ‘covered with frost’; these first 3 reconstruct to *(pa)-uci (pa- ‘water’), as *c > s in Tep/NT, *p > h in Wc, *-c- > -y- in Hp and *u > o in Hp; however, NP huzi- / husi- ‘frost’ suggests an earlier *huti > *uci.
229(415) ɧnn ‘penis’ > UA *huna ‘penis’ (CrC)

Egyptian **glottal stop ’ > w**, or glottal stop by round vowels, as in Semitic (e.g., Arabic sa’’ala / sawwala)
230(147) m’i ‘lion’; Coptic mui > UA *mawiya ‘mountain lion’ (Tr/Wr, Eu, Tbr, Tep, CrC)
231(205) t̲’y ‘male, man’ > UA *tawi > *tïwi ‘male, boy, son’ (all branches but Hp, Azt)
232(322) q’i ‘tall, high’; q’yt ‘high land, hill’ > UA *kawi ‘mountain, rock’ (Tak, Eu, Cah, CrC); Num *ko’ï
233(515) ’xi ‘sweep together’ > UA *wak / *wok ‘sweep, comb, brush’ (Tak, Hp)
Ls wáqi ‘sweep, brush, comb’; Cp wák ‘comb, sweep’; Ca wáka’an 'sweep, clean, comb, rake'; Hp laq-ta ‘sweep snow clear’; also *wok: Sr wööq 'sweep, brush, comb'; Ktn wok- ‘brush, sweep’
234(157) it̲’ ‘take, carry, steal’ > UA *itu’i > i’tu ‘steal, take’ (Cp itu’e ‘to steal’; Wr i’to ‘take’)
210(154) sb’ ‘star’ > UA *sipo’ > *si’po ‘star’ (all branches)
235(151) i’w ‘old man’; i’wi ‘be aged’ > UA *yo’o ‘old, grow’ (Cah, Tb)
Yq yó’o- ‘old, grow up / old’; My (y)ó’ola, ó’ora ‘old’; My yó’otu ‘is growing’; My yó’owe ‘is grown, is big’; AYq yo’ora / yo’owam ‘elders, ancestors’; Tb yo’ol~’oyo’ola ‘be bald’
236(150) t’ ‘earth, land’; Coptic to > UA *tïwa / *to’o ‘sand, dust, earth’ (Tb, Tak, Hp)
Hp tïïwa 'sand'; Hp compounds suggest a semantic range to include ‘dust, earth’: Hp tïïwa-nasave ‘earth-center’; Tb tïïwï-t 'dust'; Cp tïw- ‘dust’; Ls toowu-t ‘dust in the air’ (Ls o < *ï); Cah *to’ocia ‘dust’; Sr tiüva-ţ ‘earth, ground, land, world, country, floor, dirt, dust’.
237(148) t’yt ‘shroud’ > UA *tawayi ‘cape-like garment’
Ls tawaayi-š ‘any cape-like garment, formerly of rabbitskin’; Eu hitárawe 'get dressed'; Jane Hill adds Numic *taa’ï ‘shirt, clothing’
238(259) st̲’ ‘jar, jug’ > AYq soto’o-te ‘make pots’; My sóto’o-ri ‘pot, bowl’; Yq sóto’i
239(258) st̲’ ‘drag, pull, pull out, draw’ > Mn ca-sutu’i ‘pull out’; TSh pi-sotoC ‘pull, drag, vt’
240(370) ɧ’ ‘behind, around’ > UA *howï ‘around’: Kw huweegi ‘around’; Mn howée; SP oa- ‘around’
m-ɧ’ ‘behind, around’ > UA *mahowï ‘around’: Sh ma-hoi ‘around’; Cm mahoinitï ‘encircle’

Egyptian d̲ corresponds to Semitic ṣ, and thus **Egyptian d̲ > UA *s**, like Semitic ṣ > UA *s also:
241(200) d̲bt / *d̲ubat ‘brick, adobe brick’ > UA *supa ‘adobe’ (TrWr, Tep, CrC)
Tr supá-na-ri ‘adobe’; Tr supá-ca-ri ‘adobe’; NT úúpasai ‘adobe’ (*s > h/ø, *c > s); Wc šïnaríiya 'adobe' (*p > ø)
242(199) d̲b’ ‘to clothe, garment, clothing’ > UA *si’pu ‘slip, skirt, shirt, clothing’ (< *sipu’ as likely)
Wr si’picá ‘skirt’; Tr sipuca ‘skirt, enaguas, gown’; Tr siputa-ma 'put on skirt, enaguas, gown'; Yq/My/AYq supe ‘shirt’
243(197) d̲ʕb ‘coal-black’, d̲ʕbt ‘charcoal’ > Eu *so’obei ‘black’
244(194) d̲’i ‘pierce, transfix’ > UA *so’a / *sowa / *so’i 'pierce, sew, thorn, shoot arrow'
CN soo ‘pierce’; CN so’soowa ‘pierce, nail’; AYq soa ‘poke, puncture’; My sóiya ‘be pierced’; Wc šuu ‘string (beads)’; Ls ṣé’i 'pierce, shoot with a bow'; TO ho’i; PYp ho’i; NT hoí; Wr so’i 'be pricked’; Tr so’(w)i-mea 'pierce'; AYq sooso ‘thorn, sticker’

Egyptian **initial r- > UA t-** (see Appendix D), though Tarahumara retains r-:
245(167) rwd̲ ‘cord, bow-string’ > UA *tusa / *tïsa ‘rope’ (Num)
246(165) rwi ‘dance, v’ > UA *tawi / *tuwiya > *tuya ‘dance’
AYq tatawiilo ‘turn around’; Sr tuhtu’ 'dance’; Ktn tuhtu’ ‘dance’; Ktn tuhtuic ‘dance, n’; Ls tóótuwi-š ‘guardian spirit, person who performs a certain dance, the tatahuila’; CN i’tootiaa ‘dance, v’; Pl ihtutia 'dance, vt/refl’; *tuya > PYp tuuda ‘dance;
247(169) rmt̲ ‘man, person’ > UA *tïmati ‘young man’: Tr ŕemarí, Eu temáci-
248(163) rʕ / rʕw ‘sun, day’ > UA *tawa / *tawi ‘sun, day’ (all branches)
249(337) r’-ib ‘stomach’ > NUA *to’i ‘stomach’ / SUA *toCpa ‘stomach’
250(164) rn ‘young one, of animals’ > UA *tana ‘offspring’
Wr taná 'child, little one'; Tr ŕaná(ra) ‘offspring, son’; Ktn titini-t ‘young boy, child, baby’ (TrWr, Tak)
251(166) Egyptian **rwi** ‘go away, depart’ (> Coptic lo ‘cease, stop’) > **UA *tawa > *towa** 'leave, be left (remain, wait)':
Tbr towa ‘leave s.th.’; Wr toa 'leave s.th. for s.o.'; Tr arewe ‘leave s.th./s.o. behind, abandon’; AYq taawa ‘leave behind unintentionally, vt, stay, remain, vi'; Mn tatawa 'wait'; Tbr towi ‘stay, remain, vi’; Yq táawa/tawa ; My taawa-k (Tbr, Cah, TrWr)

Egyptian **pharyngeal ʕ > UA *w/o/u**, as also in the Semitic component

248(163) rʕ / rʕw ‘sun, day’ > UA *tawa / *tawi ‘sun, day’ (all branches)

252(162) šʕy ‘sand’; Coptic šoo > UA *siwa(C) ‘sand’ (Num)

253(262) ʕnt ‘nail, claw’ > UA *watti > *waci 'claw, fingernail' (Tak, Hp)

Ktn waci-č ‘claw, nail’; Sr waṭ ‘claw(s), fingernail(s), toenail(s)’; Hp ma-laci 'finger’ (ma- ‘hand’)

254(400) sʕr ‘thorn bush(es)’ > UA *sawaro ‘saguaro cactus'

Tbr samwiró-t; Yq sáuwo. Spanish saguaro (sawaro) is thought to be a UA loan, perhaps from Opata sawaro.

255(426) ʕnr(t) ‘flint’ > UA *wi’naC ‘flint’ (-r/’- anticipated)

Ch wïn’na-pi ‘flint’; SP wï’naC- / wï’na-ppï ‘arrowhead’; Kw wina-pi 'obsidian blade’

256(464) ʕq ‘enter’ > UA *waka/u ‘enter’ (Num)

257(475) sw ‘it, pronoun’ (is) p’ʕt ‘quail’ > UA *supa’awi ‘quail’: Cah and My pl: suba’awim

Like the devoicing of Egyptian b > UA *p, so also Egyptian d > UA *t, and g > *k:

258(268) dwn ‘stretch, straighten; Coptic town > UA *tuna ‘straight’

Mn tunaapaa ‘straight’; TSh tunaan(tïn) ‘straight’; Sh tunaah- ‘straighten, be straight’; Cm tunaa;
My tennei ‘straight’ (*tuna > *tune > tene)

259(269) dqr ‘fruit’ (Coptic tiče / jiji) > UA *taka(C) ‘fruit’ (Cah, Tbr, TrWr, Num, CrC)

260(273) dw’ ‘rise early’; dw’yt ‘morning’ > UA *to’i ‘rise, come up/out’ (Num)

261(272) dmi (dmr) ‘touch’ > UA *tam ‘touch’ (Tep)

262(271) dm ‘be sharp, sharpen’ (Coptic toom) > Ca tama ‘be sharp’; Cm tomociarï ‘sharpen to a point’

263(395) ngg ‘gander/male goose’ > NP nagïddï ‘goose’; TSh nïkïnta; Sh nïkïntan (Num) (g > k)

More parallels:

264(192) Egyptian nhp ‘copulate’ > Hebrew n’p; Aramaic n’p > UA *na’pa ‘copulate, join together’

Tr na’pe ‘copulate’; Tr napa ‘union, joining’; Wr na’pa ‘a pair, the two joined together’; Wr na’pe ‘mix, join’;
Ktn nap-ïk ‘be stuck together’ (Ktn -p- < *-’p-), otherwise, -v-; Ktn napa-wicu’ ‘splice a rope (< together + twist)’

265(263) šwt ‘shade, shadow’ > CN seewal-li ‘shade’

266(264) šmrt ‘large bow’, pl **šmrwt** ‘bows’ > CN -**samaaloo**-t in koo-samaaloo-tl ‘rainbow’ (most of SUA)

CN koo-, from ‘snake’ and used for color terms in much of SUA, as snakes are colorful, precedes -**samaaloo**- < š**mrwt**.

267(267) twr ‘reed’ > CN tool-in ‘cattails, reeds’

268(266) šnw / šni ‘hair, grass’; šni ‘encircle, cover’ > UA *soni / *sono ‘grass, blanket’ (Num, Tb, Eu, Tr/Wr, Tbr)

269(331) qny ‘be yellow’; qnit ‘yellow(ness)’ > Cp kenekene’e- ‘yellow’

270(333) qd ‘go round, turn, spin’ (> Coptic koote) > UA *koti / *kuri ‘turn, go around’ (Num, Hp, Tak, Cah, Tr, Tep)

271(446) qm’ ‘fight’; qm’tyw ‘enemies’ > UA *kïma’a / *kïmma(n)ci ‘different, enemy’ (Num)

272(409) nk ‘copulate’ > UA *naka / naki ‘copulate, cover, want, love’ (all branches but Tb)

273(470) t’-imnti ‘the west’ > UA *tïmïnïmïn ‘west, north’ (reduplicated)

Sr tïmïnïm ‘west’ and especially Sr tïmïnïmnu’ṭ ‘one(s) from the west’ suggest reduplicated -mïnï- portion, and reduced clusters of -mn- > -m- better explain two m’s in Cp temám ‘north’ and Ls tumáá-m-ik ‘northward’ rather than Sr creating new consonants.

274(519) wpi ‘open, separate, divide’ > Tb woopaanat ‘divide in two’; Tb woopayu ‘on each side’

275(215) i<u>tt</u> ‘fly up’ > UA *yïtti (sg) / *yotti (pl) ‘fly, jump’

Numic -c- < *-tt-, because *-t- > -r- and *-c- > -y- (AMR rule, 1992a): Mn yoci; NP yoci; TSh yïcï, pl: yotiC ‘jump, fly up, take off’; Sh yïcï, pl: yotiC ‘get up, fly’; Cm yïcï ‘fly, sg’; Kw yozi, pl: yori ‘jump, fly’; CU yïčí ‘fly’; Cp yutyút- ‘trot, v’.

3.0 The Near-East Tie Clarifies Many Consonant Clusters

Cluster *-m’- > UA *-mw- > -ŋ- (NUA), -n- (SUA) in some items widespread throughout Uto-Aztecan. Below are nine sets in which a guttural + m or m + guttural > NUA ŋ / SUA n, with enough surviving -m- to make the case that an original -m- was involved. In the widespread cognates for ‘salt’, ‘lung’, and ‘husband’, several Numic -m- are usually not included in discussions on NUA ŋ vs. SUA n, but several Numic -m- support the -m- clusters. For example, UA

*omwa ‘salt’ is in all UA languages except Sr and Azt. Mn and TSh show an -m-, along with most NUA oŋa and SUA ona. Southern Numic loses the intervocalic nasals, as Sapir noted:

276(280) ħm’ / ħm’t ‘salt’ (> Coptic hmu) > UA *omwa > *oŋwa / *oŋa ‘salt’ (SUA ona)

Mn	omábi; omaa- ‘salt, vt’	Hp	öŋa; öŋaskïyi (s. solution)	Eu	onát, ónta (acc)
NP	oŋabi	Tb	uŋaal	Tbr	oná-t
TSh	oŋwapi(cci)/omapi-	Sr	čuka’t	Yq	’óna; AYq čo’oka ‘salty’
Sh	oŋa-/onka-/ona-pin	Ca	’íŋ-il	My	oona
Cm	ona-/onaabi/ona’aitï	Cp	yewá-l; íŋeyu ‘to salt’	Wr	woná
		Ls	’éŋ-la	Tr	oná / koná / noná
Kw	’owa-vi	Gb	’oŋó-r		yakáwi- ‘v. salt/season s.th’
Ch	aso-na; asómpï	TO	on	Cr	unáh
SP	oa	PYp	ona; ta’akil ‘salty’	Wc	’únaa; ‘ucíivi ‘salty’
WM	’ööá-vi	NT	ónai		kwíe.túušáari ‘earth with salt’
CU	’öá-vi	ST	’on; vasdak ‘lack salt’	CN	ista-tl; poyek ‘salted’

277(281) sm’ ‘lung’; pl: sm’w ‘lungs’ > UA *somwo > *somo/*soŋo ‘lungs’ (TSh somo/soŋwo/soŋo and Cm soomo show -m-)

278(284) qm’ ‘create, beget (of father)’ > UA *kumwa > *kuma/*kuŋa ‘husband’

Mn	kúwa	Hp	kooŋya	Eu	kúnwa
NP	guma	Tb	kuuŋa	Tbr	kona-ká-m 'husband-haver'
TSh	kuhma(cci)	Sr	wöčahav	AYq	kuuna
Sh	kuhma/kuha	Ca	wél’isew-ily	My	kuuna
Cm	kumahpï’	Ls	kúúŋ; tó’ma-vu	Wr	kuná
Kw	kuhma	Cp	kúŋ	Tr	kuná(ra)/guná(ra)
Ch	kumá	TO	kun	Cr	kïï´n
SP	kumma	PB	kun	Wc	kïna
WMU	piwá	NT	kúna	CN	--
CU	piwá; kumáa-vi ‘male animal’	ST	kun		

Most Numic languages show -m-, along with the rest of NUA kuŋa and SUA kuna)

279(1246) Old Canaanite sim’al ‘left’, *ha-sim’al ‘the-left’ > Tb aašiŋan ‘left side’ (l > n in NUA)

Similar clusters of guttural + m > ŋ

140(771) ṭʕm ‘taste, eat’ (pl prtcpl ṭoʕmiim) > UA *cu’mi 'suck, sip, kiss' (all branches but Tb)

Kw čohmi ‘suck’; Wr cu’mi 'suck, sip, slurp'; Tr cu’mi ‘suck, kiss, sip; Cp čúme 'suck'; Cp čúŋe ‘kiss’; Ca čúŋ ‘suck’; Ls čúúŋi; Sr čuuŋ; Ktn cuŋ; SUA: My čuune; AYq čuune; CN (paal)čičiina 'soak up, suck in' (*u > CN i); Nv tup’suma ‘suck’; NT višúúsumai 'suck’ fits a compound *pici-cu’ma ‘breast-suck’ as Tep/NT s < *c. Cp (above) and Hp (below) have two forms: Hp cooconŋa ‘smoke (tobacco)’; Hp còocona 'kiss, suck, suck on pipe'. Perhaps one of each is borrowed.

280(1144) Hebr ’almaanaa ‘widow’ (from Sem/Arb ’lm ‘experience grief’) > **UA *o’mana** ‘sad, suffering’ (Tak, TrWr, Azt)

CN a’mana ‘be unsettled, upset, disturbed’; Tr o’moná ‘be afflicted, saddened’; the -uŋani- portion of Sr ahauŋanik ‘sad, miserable’; Sr hahauŋan ‘be poor, miserable’; Sr hauŋani-č ‘poor one, orphan’; Ktn haoŋa ‘poor’. The long Sr forms must be compounds, and -oŋani- parallels *o’mana/i. And the cluster appears as -’m- in CN and Tr, but -ŋ- in the Tak languages.

281(1012) šeqma(t) / šiqma(t) ‘sycamore tree’ > UA *sïŋŋa(C) 'cottonwood or aspen tree' (all branches of Num)

282(940) *-mʕ- > -ŋ-: impftv -mʕak ‘squeeze, crush, rub’ > UA *ŋaka/i ‘grind, scrape, rub against’ (Tak)

283(941) *-nʕ- > -ŋ-: impftv -nʕar ‘shake, grunt, roar’ > UA *ŋïy ‘shake, be dizzy’ (for -r- > -y-, see next paper) (Tak)

Bilabial stops (b, p) as first consonant in a cluster are generally **lost**:

284(757) Hebrew **šipħaa** ‘maiden’ > UA ***siwa** ‘woman, girl, wife’ (Num, Hp, Tb, Tak; Tep, Tbr, Azt)

215(294) Egyptian **xpš** ‘foreleg, thigh’> UA ***kapsi** (Tb) > ***kasi** (all else) ‘thigh’

216(295) Egyptian **xpd** ‘buttock(s)’ > UA ***kupta (**Ls) > *kuta / *kutta (others) ‘buttocks’;

285(296) Egyptian **ib’** ‘dance’ > *yapwV > UA ***yawa/yawi** 'dance' (Tr/Wr, Eu, Tbr)

286(298) Egyptian **ʕbxn** ‘frog’ > *wapkan > UA ***wakaC(-ta)** 'frog' (Num, Tak, Tb, Tr, Cah)

287(300) Egyptian **i'bty** 'east, left' > UA ***opoti** (> *opti) > *otti 'left'
CN oopooč-tli; Cr -'uhtah (Cr u < UA *o). If Cr lost -p- (or *p > Cr h/ø), then Cr and CN may reflect *opoti; o often next/due to ' (*-'p- > CN -p-) or *(y)o'boty > CN oopooc(i), then in NUA *opoti > opti > *otti > oci, as in the *-c- in Sr ööc 'left', ööci'ka' 'left-handed one', Ktn oci'(ŋa) 'left hand', Ls 'éčva-š, vs. the -l-/-r-, as expected if not a clustered -tt-, also Cp iṣvá; Ca 'íšva. Sr ö, Ls e, Cp i, and Ca i, all agree with PUA *o. The usual source of NUA -c- is -tt- (*otti) because PUA *c > y in NUA (AMR 1992a). Even Tbr ote-wi-ná 'left' < *otti, as -t- would yield Tbr ore.

288(486) Egyptian **xftiw** 'enemy' > kaftiu > katyu > UA ***kaytu** 'enemy': Cp -qáytu 'enemy'; Ca káytu 'rival, competitor in game, enemy'; Ls káytu-š 'enemy, opponent'; Sr -qaiš 'opponent, enemy'; Ktn kayšu-c 'opponent' (bilabial lost in cluster)

289(297) Egyptian **sp' / zp'** 'centipede'> UA ***(ma)-siwa** 'centipede' (ma 'hand') (Tr/Wr, Eu, Cah, Tep)

290(299) Egyptian **hpʕ** 'chew' > *hipwa > UA ***hiwa** 'taste': Yq híiwe 'taste', AYq hiiwe, My hiiwe

291(794) Aramaic **'eebr-aa'** 'penis-the' > ***wï'aC** 'penis' (6 Num and 3 Tak languages)

284(757) Hebrew **šipħaa** 'maiden' > UA ***siwa** 'woman, girl, wife' (Hp, Azt), and Num sï'a 'girl', but Tak *suŋa: Cp ṣuŋáma 'man's daughter'; Ca súŋama 'man's daughter'; Ls ṣuŋáá-l 'woman, wife'; Gb ásoŋ 'wife'; Sr ṣuuŋ 'man's daughter'

Notice that in 284 above and 292 below, both show clusters whose 2nd C is ħ, and both show -w- (typical of ħ) except in Tak where both clusters reduce to ŋ. Also notice that in 291 and 284, both clusters reduce to glottal stop in Numic. We also have at least three sets (below) showing an r-plus-pharyngeal cluster becoming ŋ: -rħ-/-rʕ- > -ŋ-

292(332) Eg qrħt 'serpent, partner' (*qarħat >) > UA *koNwa 'snake, twin' (Azt, CrC, Cah, Tbr, Eu, Num)
or *koNwa (Kaufman) and *koŋwa (Campbell 1976): Cp qeqiŋi-ly 'king snake'; Ls qiqeŋ-la 'ring snake'

293(737) Ls ṣááṣaŋ-la 'yellowjacket' < Hebrew ṣirʕa(t) 'hornets'

294(1066) Arb ḍrʕ / ḍariʕa '1. be lowly, humble, 2. become weak, slender, emaciated', verbal nouns ḍarʕ, ḍuruuʕ (Lane 1787) > **UA *corowa / *corwa (< *cVrVwa)** 'be hungry': Wr coloá-ni 'be hungry'; Hp cöŋö-w(ï) 'hunger' (< *colwa). Wr coloá- and Hp cöŋö- match well, since Hp ö < *o, and a cluster of *-rw- > -ŋ- in NUA, as in 293 above (Stubbs 2003, 10). Tr čiriwísa 'be hungry' (same 3 consonants—c, liquid, w) solidifies it. This ties to *coro 'wither, shrivel' below.

UA *coro(N) / *co'ro 'wither, wrinkle': Eu coró; My čóori / čooli; AYq čoowe 'dry up, wither (of plant), get skinny' (AYq loses intervocalic -r-); Tr čo'ró 'whither, shrivel'; PYp soron 'wrinkle'; Nv sorhona; CN šoločoaa 'fold, wrinkle' (another c/s issue in CN? Or borrowed?) (Hp, TrWr, Tep, Cah, CrC, Azt)

Many instances exist of consonant clusters losing the first consonant in being absorbed to double the second, a few examples being these 18 for starters: 48, 49, 58, 59, 76, 138, 194, 211, 216, 224, 253, 295, 297-302.

295(384) Eg inqt 'net' > UA *ikkaC / *iCkaC 'carrying net'
Cp íkat 'carrying net'; Ca 'íka-t 'carrying net'; Ls 'íika-t 'carrying net'. A solid -k- in all Cupan languages may suggest geminated *-kk-, and final -t shows in Tak -t, not -l.

296(391) Eg ishb 'jackal, fox' > UA *isap / *isa'apa 'coyote'
Mn 'issa'a 'coyote'; NP ica'a; TSh 'icappï'; TSh 'isampapi 'wolf'; Sh isapai-ppï 'coyote (mythological name)'; Tb 'išt; Ca 'isi-ly; Cp 'isi-ly; Ls 'is-wu-t 'wolf'; Gb 'isát 'lobo'; Hp iisawï. Mn and NP show '; and TSh and Sh show b/p, while all show the first two consonants.

297(398) Eg k'p 'cover, close (eyebrows/eyelids) > UA *kuppa / *kuCpa 'close (eyes)'
(Tak, Tep, Tr, Cah, Eu, CrC, Azt, and many show geminated *-pp-)

298(1076) Akkadian naabu > Aramaic naab-aa 'louse egg' (written na'b-aa') > UA *no'pa > *noppa 'egg' (SNum)

299(434) Eg g'p 'cut' > UA *kappi 'break, cut' (Num and Tak both show *-pp-)

300(404) Eg ħ'dt 'basket' > UA *huCta 'basket' (Num, Tbr)

301(614) Hebr makteš 'mortar, grinding stone' (< ktš 'grind') > *maCta / *matta 'grinding stone, mortar' (all branches)
Many reflexes have lost the gemination, but others do suggest a medial cluster: NP mata (< *matta); ST mattur; My matta; Wr mahtá; Tr ma'tá; most impressive is Ca mataš 'to crush, squash' showing final -š and a medial cluster or geminated *-tt-, as single *-t- > -l-, though Ca mála-l 'metate' does not.

138(832) *sarṭoon 'scratcher, crab' > UA *saCtun >*sicu/*suttu 'claw/nail, crab, scratch' (all branches but Hp)
Again many reflexes have lost the gemination, but Sh sittun; Tbr sutu-r 'mano' suggest geminated *-tt-, and CU sïčú-či 'crab' and CU sïčú-ppï 'fingernail' certainly require *-tt- > -c-, as *-t- > -r-, and *-c- > -y- (AMR 1992a).

302(1274) Aramaic kaukb-aa' / kookb-aa' 'star-the' > UA *kuppaa' > Sr kupaa' 'to shine (as of the stars)'
Another verbalization of a noun, and all as expected: (1) vowels generally rise from Semitic to UA (o > u); (2) Sr -p- (vs. -v-) shows an underlying cluster (*-kb- > *-pp-); and (3) all other segments as expected, even the final glottal stop of suffixed article -aa'. Even Syriac itself denominalizes the noun to a verb: Syriac kawkeb 'to cover with stars'.

303(1098) Hebr qubbaa ‘vault, dome, arched room’; Arab qubbat ‘dome, dome-shaped edifice’; Syriac qbb ‘stand on end, bristle (of hair), to over-arch, form a dome’ > UA *kuppa ‘hair of head, head’: Hp kòopa ‘top of head, crown’ (Hp -p- < *-pp-, vs. -v- < *-p-); TO kuwijk ‘have a dome or peak’ (-w- < -p-). Hp and all the rest show geminated *-pp-: NT kuúpa ‘head, hair’; ST kuup ‘head, hair’; Wr kupá ‘hair’; Tr gupá / kupá; Wc kïïpá; Cr kïpwá; CN iikpa-tl ‘thread, fiber’; My kóbba ‘head’; Sr a-kupiaa’ ‘top, up, above it’; Ktn kupeac ‘top of head, summit of a mountain’ (Num, Hp, Tep, Cah, TrWr, CrC, Azt)

Liquid plus sibilant clusters, such as the cluster ***-rṣ- > -c-**

304(28) Arabic ṣurṣur / ṣurṣuur ‘cricket’; Aramaic ṣarṣuur ‘cricket’; Akkadian ṣarṣaar-u ‘cricket’ > UA *corcor ‘cricket’: Ktn corcor ‘cricket’; Cr su’usuí (-r- > -’- in Cr); Wc šuušúi. The Ktn form aligns well with Semitic ṣurṣur, and so do Cr and Wc, with the usual *-r- > -’- in CrC. Many UA forms are not reduplicated, like Ca sé’lyem (pl), while others are, Cp selyimselyim ‘cricket’. Other terms show the one syllable compounded: Eu bawisoróc ‘cricket’; Hp laqan-coro ‘squirrel-cricket’; Tbr toko-sol / tuko-súl ‘black-cricket’

305(634) Hebrew ħalaaṣ-aa-w ‘loins-his’; Aramaic ħarṣ-aa ‘hip-the’; Mandaic halṣa, haṣa; Akkadian xanṣaatu; Syriac ħaṣṣaa (in Semitic also *-rṣ- > -ṣṣ-); Arabic xaṣr- ‘hip, haunch, waist’ > UA ***kaca**- ‘hip’: Tr kačá ‘hip bone’; Wr kahcá ‘hip’

306(859) Aramaic qursəl-aa ‘ankle bone-the’; Akkadian kursinnu ‘region of the ankle-bone’ > UA *koci 'ankle(bone)’

307(1003) Arabic kirš / kariš ‘stomach, paunch, belly’ > UA *kïca ‘belly, waist’: Eu kecáka 'waist’; PYp kesar 'womb’. UA *c > s in Tep/PYp, and PYp matches through four segments. UA *kïca may be from an Aramaic form: kirš-aa

39(581) Hebrew ’arṣ-aa ‘earth-ward, down’ > UA *wïcï ‘fall’ (all branches)

A difference between 304 ṣurṣur > UA corcor and 39 ’arṣ-aa > UA *wïcï is that in 39 the -r- is fully absorbed, which yields *-c- > NUA -y- in 39 and 305-307 for those having NUA reflexes, but not so in 304. The likely differences are (1) that in UA ṣur-ṣur, the apparent reduplicable syllable can be isolated, as it is in Hp, Eu, Tbr, and Ca, (2) which helped maintain the two as separate entities even in reduplication, as we see in Cr su’usuí (< *surusuri, as -r- > -’- in Cr) and Wc šuušúi and Cp selyimselyim ‘cricket’. (3) And because Sem *ṣ > UA s, which we also see in Cr, Wc, and Cp, the *-c- > NUA -y- does not happen, or is not applicable, being perceived as s, not c. (4) As well, intervening vowels (*surusuri), possibly excrescent or of later creation, kept r and s separated, such that the cluster -rs- > -rc- in Ktn corcor resulted later, from a later vowel loss, after the *-c- > NUA -y- rule. Nevertheless, -rs- did become -rc-, as is typical in UA, and that then triggered consonant harmony: *sursur > sorcor > corcor, possibly with one of the other Semitic vowelings (*sarsur > sorcor > corcor) that leveled the vowels (a-u > o-o). In fact, Cp selyi- and Ca selye- may recommend that voweling.

Clusters of -n- plus sibilant also go to -c-, as the homophones *sense* and *cents*, and *once* and *wants* are indistinguishable

194(129) wnš, pl wnšiw ‘jackal’ > UA *wa(n)cio / wo(n)cia ‘fox’ (Num, Tep)

308(1077) Semitic manzaal ‘star, moon’ > UA *mïcaC / *mïncaC ‘moon’. Many see Assyrian manzal-tu as the loan source for Aramaic mazzaal-aa; Hebrew mazzaal < *manzaal; pl: mazzaaloot ‘constellations’; Arabic manzil. UA *mïcaC ‘moon’ is in all UA languages, tho Ca méni-ly and Cp méni-ly curioiusly show -n- instead of *-c- (NUA -y-), and note that the UA voweling (-ï-a) again aligns with Northwest Semitic forms (Aramaic/Hebrew) in the long 2nd vowel, more likely originally stressed early in UA.

Next, like clusters of -r/n- with sibilants (ṣ, š, z), as if -r/n- is absorbed to double the sibilant, similarly, doubled -ṣṣ- (Egyptian -dd-) yields PUA *-c-, which goes to NUA -y-:

309(365) Egyptian xddw ‘fish (collective pl)’ > UA *kicu/*kucu ‘fish’ > NUA *kiyu/*kuyu (all branches but CrC and Azt)

Clusters with velar plus -r- as 2nd consonant show -Cr- > -Cy-, especially -gra / -qra > -kya:

310(1130) Aramaic pagr-aa ‘body, carcase-the’ > Hopi pïïkya ‘skin, hide, fur’; Cp pélki-š ‘hide, skin’ interestingly anticipated and preserved the liquid; Sh pika-ppïh ‘buckskin’, etc.

311(1403) Syriac šigr-aa ‘drain, ditch, gutter-the’ > Hopi sikya ‘small valley, ravine, canyon with sloped sides’

312(1405) šqr ‘fair, yellow to red’, Arabic šuqra ‘fair complexion, blondness’ > Hopi sikyà ‘yellow’ (see also 505)

313(743) *tamar; Aramaic tuumr-aa ‘palm tree-the’ > UA *tu’ya ‘palm tree, sp’ (TrWr)

The Cluster *-qš- > -q-/-k-, losing the š

314(1068) Semitic qšb ‘perk up (of ear), listen’: Hebr qaššɛbɛt ‘attentive’ (subject of verb is ear, Nehemiah 1:6,11); Hebrew qšb / ti-qšab-naa ‘be fully alert’ (the ears of listeners)’; Hebrew hi-qšiib ‘listen, prick up the ears (to listen)’ (pfv); Hebrew ya-**qšeeb-uu** (3impfv-listen-pl); Proverbs 2:2 ha-qšiib … ozne-ka ‘perk up your ears, cause ears to pay attention’. With loss of -š- in a cluster and minus Sem prefixes ya-/ta-/ha-/ma-, the UA forms *kïpu / kepu and *kipu reflect well Hebr impfv (present/future) pl **-qšeebu / -qšiibu** > **UA *kïpu** ‘hear’: Eu keivuwa-/keivúve ‘listen’; Tr gipú ‘hear, listen’; Wr kepú-na/ma ‘hear’.

315(1070) Semitic qšb ‘perk up (of ear), listen’: Hebrew hi-qšiib ‘listen, prick up the ears (to listen)’ (prfv), ya-**qšeeb-uu** (3impfv-listen-pl); Proverbs 2:2 ha-qšiib … ozne-ka ‘perk up your ears, cause ears to perk up and pay attention’. Given that all 4 consonants appear in some UA forms, UA ***naqapa** ‘ear’ appears to be from a *na-qtal form: ***na-qšab** ‘what is perked up, i.e., the ear’. While the form is unattested, CN, Pl, Cr, Eu show s, and Sr, Kw, Ch, SP, WMU show p:

UA terms for ‘ear’:

Mn	náqa	Hp	naqvï	Eu	nakát 'ear'
NP	naka	Hp	naaqa 'ear pendant'	Eu	kéisiven 'inner ear'
		Tb	naŋha-l ‘ear, leaf’	Tbr	naká-r
TSh	naŋki	Sr	qävaač ‘ear, leaf’	Yq	náka
Sh	nainki	Ca	náq-al	My	nákka-m
Cm	naki	Ls	náq-la	Wr	nahká
Kw	naga-vi-vi	Cp	náq’a	Tr	naká
Ch	naŋkávï	TO	naak	Cr	našaíh
SP	naŋkava-vi	PYp	naaka	Wc	naaká
SP	naŋka 'hear, v’	NT	naáka	CN	nakas-tli
CU	nïká-vi	ST	naak/nak	Pl	nakas

UA *nakka / *naNkapa (< *na(N)kasapa) ‘ear’: some terms of interest include Mn naqqa 'ear, to hear, vt'; NP naka (< *nakka) 'ear, to hear'; SP naŋka 'to hear, ear ornament'; SP naŋkava 'ear'; Cr našáih ‘ear’. ‘Ear’ is one of few pervasive cognates in all UA languages. The *na- and -k/q- are in all languages, yet note also *s* in Aztecan, Eu, Cr, and *p* in SNum, Hp, Sr, Ktn kava-c (and lacking na- in Ktn, Sr); and both in Eu kéisive 'oído’. Eu keívuve 'listen' (< *-qšebu be)

4.0 Loss of Initial Laryngeal Syllables (ʕə, ’ə, ɦə) When Very Short and Unstressed

When about ¼ the length of the following the long and stressed vowels, the first syllable is lost:

316(1056) Aramaic/Syriac ɦady-aa ‘chest-the, n.f.’, pl: **ɦ^{ə}daawaat** > UA ***tawa(C) / tawi** 'chest'
Hp tawicqa; Ca táw; NT tagí; Op tawa; Tbr tamwí-t 'body'; Tbr tamwí-ta-m 'chest'; Wr tawiráci; Tr ɾawí; Yq táwi; My tauwi; Cr tabí; Wc tawí/taavíi. (Hp, Tak; Tep, TrWr, Cah, Tbr, CrC)

317(594) Hebrew ’^{a}ɦoot(ee^{y}) (ɦ < *x) ‘sister’ (Syriac ɦaat-aa ‘sister’ loses first syllable also) > UA *koti / *ko’ci ‘older sister’ > Tak *qoci: Cp qísma; Ca qis-ka; Ls qee’is; Gb óxo’; Sr -qöö^{r}r; Eu kócwa; Wr ko’cí; Tr go’čí; Tb kuudzin; My ákoro ‘older sister’; Tbr kocí; Wc kurí; Cr ne-kuu-cí’i. Non-possessed ’aaxoot has a long first vowel, but is shortened severely to ^{a}, ’^{a}xoot(ee^{y}), when possessed, and UA *koti appears to be from the construct or possessed pl form, which -ee^{y} suggests also. And this term has Proto-Semitic *x, not *ɦ, which explains the k/q. Is glottal stop in Wr and Tr from a perceived stop? The final -o of My ákoro may be a fossilized -o ‘his’, the Hebrew possessive suffix, and first vowel a- is significant as exactly what the Hebrew has, though lost in the others.

318(590) Hebrew (construct/poss’d) ’^{a}**bootee^{y}** ‘fathers (of)’; the term is often used in the sense of generations or grandfathers past, which makes the UA sense ‘paternal grandfather’ (not maternal) noteworthy: ’^{a}**bootee^{y}** ‘fathers > **UA *poci** ‘paternal grandfather’: TO wosk / woji; Eu boc / voc / vócwa; Eu bóci ‘one who has a grandfather’; Wr wocí; Tr očípari; PYp voska; NT vošíika ‘father’s father’; Nv boska and Nv bosidi ‘his grandfather’ (*c > s in Tep). If *wo, we should see Tep g; yet Tep and Eu point to ***poci***

319(994) Hebrew ʕqr ‘uproot, weed’; Syriac ʕqr / ʕ^{ə}qar ‘uproot, be barren, heal’; denominalized verb from Aramaic **ʕ^{ə}qaaraa ‘root, remedy’** > **UA *qaya/i** ‘uproot, clean/clear (ground), heal’ (loss of initial ʕə in initial short unstressed syllable of denominalized verb, for -r- > -y- see next paper): Ls káyi ‘to uproot’; Ls qáya/i- ‘fall, as a tree’, blow down (tree)’;

Ls qáya/i- ‘heal (sore), get well, wash hands’; Ca qáyi ‘get clean, clear (ground, body, etc)’; Ca qáyi-n ‘to clean, get rid of, wash, clear’; Cp qéye ‘pull out, vt’; Ca qúyen ‘to pull out (tree)’. Interestingly, Bright’s Luiseño dictionary lists the Ls forms as separate verbs, Ls qáya/i- ‘blow down (a tree)’, that is, ‘uproot’ and Ls qáya/i- ‘heal’, because the different meanings seem unrelated, yet the two are phonologically identical, and amazingly, the **Syriac verb also has both meanings ‘uproot’ and ‘heal’** in that roots are often the source of medicines.

320(591) Hebrew ’ᵃdaamaa ‘earth’ > UA *tïma ‘earth’; same voweling as ʕᵊqaaraa above and same loss of 1st syllable.

321(1055) ’aamaqqət-aa ‘lizard-the’ > UA *makkaCta(Nka)-ci ‘horned toad’

322(102) Arabic **’anaa** ‘I’; Aramaic **’anaa’** ‘I’; Syriac **’inaa’ / naa’** ‘I’ > UA *nï’ ‘I’ (Even Syriac loses the first unstressed vowel, as does UA, and UA even shows the final glottal stop, whether it was pronounced in Sem or not.)

323(564) Hebrew śaapaa(t) ‘lip’, pl: śapoot ‘lips’, sᵊpooteeʸ ‘lips of’ > UA *puti ‘lip’ in Tbr tini-purí-t ‘lip’ is from the Hebrew plural: Tbr first lost the vowel in the unaccented syllable, which cluster later lost the s: *sᵊpote > sputi > puti, and rising of o > u and e > i is usual in UA. Though not a laryngeal, this item also shows loss of first short unstressed syllable.

Loss of intervocalic -y- has happened in Arabic (*bakaya > bakaa) and happens at least in TrWr:

324(823) Hebrew ba-yyameey ‘in the year of, lit: days of’ > *payami > UA *pami 'year': Tr bamí; bamíbari ‘year’; Wr pamíbari ‘year’; Wr pamíbame ‘years’.

325(801) Hebrew yamiin ‘right hand/side’; ha-yyamiin-aa ‘the-right-toward’ > UA *(h)ayamina / ahamina ‘right’: Wr ahamína ‘right side’ (< hayaminá, Tr and Wr often transpose consonants, this time yielding Wr ahamína < hayaminá.; various forms of Sr -ayuno’/ aiïnu’/ayïnu’ ‘right, right side’ end like Hebr yamin-o ‘right-his’ though between y- and -n is reduced.

326(1063) Hebrew yaabeš, impfv yiibaš / tiibaš ‘(be) dry’; Arabic yabisa, impfv taybasu ‘dry’ > UA *tapasu ‘dry’; these contain the f. impfv prefix *ta- for *taybašuu > UA *tapasu ‘dry’: Kw tavasï 'dry, v’; Ch tavásï; SP tavašu'; CU tavási. Note *pasa in WNum and CNum (below) and *tapasï/u in SNum (Kw, Ch, SP, CU); and Cahitan: My tapsiólai 'thin'; AYq tapsiolai 'thin'; and Eu tasúkei 'thin'; Cr tïsiisčira’a ‘thin’ (with usual loss of *-p- in CrC). (SNum; Cah, Op, CrC)

327(1062) Hebrew yaabeš, impfv yiibaš / tiibaš ‘(be) dry’ > UA *pasaC in WNumic and CNumic, as if prefixes yV-/tV- dropped from impfv stem, Mn pasa ‘be dry, dried out’; NP wïpasa’hu 'wind dries it'; NP mabasaga ‘dry food’; TSh pasaC; Sh pasa(C); Cm pasa(kï)rï; Sr vaṣi-vaṣi 'thin (as cloth)'; PYp vahakisi (< *pasakici) ‘s.th. hung out to dry for preservation’. (WNum, CNum, Tak; Tep)

5.0 Morphology

Uto-Aztecan vowels sometimes accord with the archaic vowelings of Hebrew/Phoenician; e.g., the UA morphemes below show a near identity between Pre-Hebrew forms and Proto-Uto-Aztecan (PUA) forms:

	Hebrew		Pre-Hebrew		PUA
328(1) plural suffix (m. in Hebrew)	-iim	<	*-iima	>	*-ima
329(904) plural suffix (f. in Hebrew)	-ooteeʸ				*-te
330(2) reflexive/reciprocal/passive prefix	ni-	<	*na-	>	*na-
331(3) sit, dwell (3rd m. sg)	yaašab	<	*yašiba	>	*yasipa

328(1) Phoenician/Hebrew **-iim** is from an earlier ***-iima** (Moscati 1964, 88, 97; Blau 1976, 30 explains loss of final short vowels in pre-Hebrew; and Huehnergard 1987, 296; Gordon 1947; Segert 1984, 51; and Bennett 1998, 79 show the form -iima in Ugaritic for the Northwest Semitic genitive and acc masc pl, from which the Phoenician/Hebrew plural derives): **Pre-Hebr *-iima > UA *-ima (> -im, -m, -mï)** ‘plural suffix’: Hp -m/ -mï- ‘dual/pl suffix’; Sr -m / -mï-; Ktn -m; Ca -m; Cp -m; Ls -m; Gb -m; Tbr -m; Kw -mï; CN -me’; Op -m(e) (Shaul 2003, 27). Langacker (1977, 80) reconstructs *-mï, and many UA forms are indeed -mï; yet several forms suggest *-ima. Note Cp -im; Ca -em; Yq, My, and AYq -im (after C), -m (after V) and that those 5 languages show a high front vowel before -m (-im/-em). Furthermore, several languages show a vowel after -m-, usually -mï, yet Cr -ma; Wc -ma; Wr -ma (pl verb suffix) show the final vowel -a. And Dakin (1979) reconstructs an earlier *-ma for CN -mï. Tep languages show pl -m only on pronouns. So 5 languages (Cp, Ca, Yq, My, AYq) show a high front vowel (i/e) before -m, and 3 languages show -ma, and because ï behaves like the UA schwa, a change from final *a > ï is nearly expected as an unaccented final V. The loss of the first vowel *-i is also expectable, because most UA words end with a vowel, which creates an environment of two vowels, the second usually giving way to the first; e.g., if a noun ends in -a, then: *-a- + -ima > -amï. Wick Miller agreed before his

untimely death (p.c.) that a reconstruction of *-ima for that pl suffix is reasonable, which matches specifically Canaanite or early Hebrew, not Aramaic -iin, nor Arabic -uuna/-iina, nor Akkadian -uu. (Num, Tak, Hp; Tep, Op, Wr, Tbr, CrC, Azt)
329 Hebrew feminine plural suffix -oot / -ootee^{y}; often has the m. pl construct -ee(y) analogically added, resulting in -ootee^{y} (Gesenius 1910, 258; Blau 2010, 273) from which the first vowel is again lost, due to dipthongs' loss of 1st V: **Hebrew *-ooteey > UA *-tï** 'plural suffix': CrC pl suffix *-te (Cora and Huichol); Op -te 'pl possessive suffix' (Shaul 1990); Op -t 'plural verb ending' (Shaul 2003, 27); Hp -t/-tï- 'dual/plural suffix'; CN -tin 'absolutive plural suffix'; and an additional consistency is that both *-iima and *-ootee usually lose 1st V when suffixed to a noun. We also see the f. pl suffix (*-ootee > UA *-uti) fossilized into some lexical items (e.g., 35, 323). UA *-tï/-te does not match the f. pl. -aat of Arabic, Aramaic, and Akkadian, but does match Hebrew -ootee. (Hp; Op, CrC, Azt)
330 Northwest Semitic ***na-*** (Blau 1976, 51) as a passive, reflexive, and reciprocal prefix in Northwest Semitic is identical to the UA reflexive, reciprocal, passive ***na-***: Hp naa- 'reflexive prefix on verbs'; TSh na- 'passive prefix on verbs' (Dayley 1989, 50); Sh na- 'passive/reciprocal verb prefix' (Crapo 1976, 12, 19-20); Cm na- 'passive / reflexive / reciprocal plural prefix on verbs' (Charney 1993, 103-4, 126); Ch na- 'reflexive/reciprocal prefix (Press 1979, 49); SP na- 'reflexive/reciprocal prefix'; CU na- 'reciprocal prefix on verbs' (Givon 1980, 159-60); Eu na- 'reciprocal prefix on verbs' (Lionnet 1986, 29); Tr na- 'reciprocal verb prefix'; WTr na- 'reciprocal verb prefix' (Burgess 1984, 33); CN ne- 'passive prefix' (Sullivan 1988, 75); Cr nya- 'refl prefix' (Casad 1984, 160). This *na- is again Canaanite/ Hebrew, not Aramaic or Arabic. (Num, Hp, Tr, Eu, CrC, Azt)
331 Hebrew **yšb** 'sit, dwell'; Arabic wθb 'jump, take off'; voweling of earlier Northwest Semitic 3rd sg perfective ***yašiba** > UA ***yasipa** 'sit, reside, jump ': many UA languages show only the first 2 syllables: TO đaha / đahi; Wr yasa / yasi; Tr yasá; Yq yesa; My yeesa; Wc yááše; yet other UA languages show a 3rd syllable: Hp yésiva (Voegelin 1957, 35); Tr asiba; TO dahiva; ST daivu; TO đahivup 'sit/alight repeatedly. (TO and ST are Tep languages for which *y > d, *s > h or zero, and *p > v). Some Uto-Aztecanists attribute final -pa to an old choative suffix; however, ST daivu 'stop (of bird) and sit' and TO both show *u*, not *a*, which does not align with -pa, but aligns perfectly with the Northwest Semitic 3 plural *yašibuu, while UA *yasipa aligns with the Northwest Semitic sg *yašiba. (Hp, Tb, Tep, TrWr, Op, Cah, CrC)
332(609) Hebrew **ha-** 'interrogative particle prefixed to first word in a yes-no question' > UA * ha- 'interrogative particle to yes-no questions' usually after first word, as a topicalized noun and then a question about it, puts it between the 1st and 2nd word. (Num, Tak, Hp, Tep, Eu)

Conjugated verb forms: Though no longer productive in UA, a considerable amount of fossilized Phoenician/Hebrew morphology / conjugations are found in UA. Besides *yašiba / *yašibu (sg/pl) above (331), below are other examples.

333(1420) Semitic nwr 'to make/become light' has infinitive and imperfective -nuur(u), and perfective naar. UA has both in Eu nurú 'to dawn, become light' and Tbr nare 'to dawn, become light'.

Uto-Aztecan has 3 separate conjugated forms from the Semitic verb bky /bakaa 'to cry, weep':
3(559) Semitic bky/ bakaa 'he cried, wept'; Aramaic bakaa / baka' > UA *paka' 'cry' (UA even shows Aramaic ')
Because bilabials as first segment in a cluster disappear (-bk- > -k-), the impfv 3rd person m. sg *ya-bkV 'he weeps' with imperfective prefix originally *ya- (later yi-) also matches UA *yakka 'cry'
334(560) Semitic *ya-bka^{y} 'he weeps, cries, m.sg.' > UA *yaCkaC > UA *yakka / *yaka 'cry'
335(561) Semitic *ta-bka^{y} 'she weeps, cries, f.sg.' > UA *takka > NP taka 'cry'.
So Northern Paiute has both the masc 3rd sg of *ya-bka > yakka and the fem 3rd sg *ta-bka > UA *takka 'cry' (and geminates/doubles the middle consonant in both as well), those in addition to the perfective stem in UA *paka'.

Uto-Aztecan also has three separate morphological forms from the Semitic root ktš 'grind': the imperfective verb stem in most languages, a perfective qittel in Yaqui, and a noun 'grindstone' in most languages:

Hebrew root ktš 'grind'	UA
336(1094) impfv -ktoš (< *-ktusu) 'pound, grind'	*tusu 'grind' with loss of 1st C in a cluster
337(615) *kitteš (< *kittaš) 'grind'	Yq kitte / kittasu 'grind'
301(614) makteš 'mortar, grinding stone'	*ma'ta 'mortar, grinding stone' and Ca mataš (< *mattaš)

Significant is the denominalized verb Ca mataš 'crush, squash, vt' shows final -š and a medial cluster or geminated *-tt-.

89(681) ʕlw / ʕly / ʕalaa ‘go up, grow’ > UA *wïla ‘grow, go up’
90(682) t-ʕly / taʕalɛ ‘it/she grows’ (3rd sg f. imperfective) > UA *tïwïl ‘grow’

158(695) Hebrew **lqḫ / laaqaḫ** ‘take, grasp, take as wife’; Arabic lqḫ / laqaḫa ‘to impregnate’ > UA *looko ‘marry’
Hopi **lööqö(-k**-) ‘(for a bride) to go to the groom’s house to begin the wedding ceremony’
338(696) 3 sg. impfv of lqḫ ‘take, take as wife’ is ***yi-qqaḫ** > **UA *yïkoC > *yokoC** ‘copulate’; the final pharyngeal rounded UA vowels. (Num, Azt)
339(697) Hebrew *hiqqaḫ ‘cause to take, that is, give’; though this hiqtil form is unattested in the Biblical text, it would match well with Wr ihko- ‘to give as a present’. So we have three different conjugated forms of lqḫ.

107(754) *pny, Hebr participle poone ‘turn, look’ > UA *puni ‘turn, look, see’ (Num, Hp, Tak)
108(851) *pny, Hebr panaa-w ‘face-his’ > UA *pana ‘cheek, face’ (Tr/Wr)
109(852) pl construct paneeʸ- (< *panii) ‘face, surface of’ > UA *pani 'on, on surface of' (Azt)
340(1122) Hebrew pny intensive *panniy ‘cause to turn, turn/direct someone/something’ > UA *pani ‘pull, drag, influence’ (Tep, TrWr, CrC)
341(1123) Hebrew pny intensive impfv *-panniy / pftv *pinne ‘have s.o./s.th. turn or head in a direction’ > UA *pana ‘put into, turn animals into’: Hp pana ‘put into, let enter, bring into’; Sr paaʳvan ‘wet, add water to’ (Hp, Tak)

The hiqtiil conjugation of Hebrew produces hiCCiiC (3 sg perfect) and maCCiiC (participle): Tr has the 1st, Tb the 2nd.
391(810) Hebrew **hikkiir** ‘recognize, know, know how to’ (hiqtiil of nkr) > Tr **iki-** ‘know, be aware of.’
and Hebrew makkiir ‘know(er), know(ing), participle’ > Tb maakat ‘know, vt’. The Tb vowel change is discussed in Stubbs (2011, 39) with examples of Tübatülabal’s frequent preservative assimilation of second vowel to the first

Among imperfective (impfv) stem shapes, the more common is a higher back stem vowel (Aramaic -CCuC, Hebrew -CCoC, Arabic -CCuCu), as in those below:
336(1094) impfv -ktoš (< *-ktusu) ‘pound, grind’ > *tusu ‘grind’ with loss of 1st C in a cluster
342(1411) Arab nasaga, impfv -nsugu ‘to weave’; Hebr impfv *yi-ssugu > UA *suku ‘sew’: Tr su / sugú; Tr i’su ‘sew’
343(1064) Semitic lxš ‘whisper, charm’: Ugaritic lxšt ‘whispering’; Akkadian laxaašu ‘whisper, exorcise’; Semitic impfv *-lxusu, Hebr *-l**xoš** ‘whisper, charm’; losing first C of cluster (*-lx- > -k-), impfv ***-lxusu** > **UA *kusu** ‘crow, sing (of birds), make sound (characteristic of the animal), whistle, hiss.

Another impfv stem shape is with the vowel *a*: -CCaC (Aramaic, Hebrew), -CCaCu (Arabic), both kinds following prefixes (tV-/yV-CCaC). In both cases, the consonant cluster loses the first -C-, and only the 2nd and 3rd consonants appear in UA (-C_2aC_3), as in the first of each pair below:

344(749) Hebrew tmh, impfv: **-tmah** ‘be in awe, speechless, to fear’ > UA *maha- ‘fear’: Wr maha- ‘be afraid’; My mahwe ‘tiene miedo’; Yq máhhae; AYq mahai; Tr mahá (TrWr, Cah)
111(750) tmh ‘be in awe, speechless, to fear’, Syriac təmah > UA tehmat / tïhmï ‘be silent, afraid’: Tb tehmat ‘be silent’; Ktn tïhmï-k ‘be afraid, constipated’ (h/’ anticipated); both the Tb and Ktn forms reflect Aramaic təmah well, and Sr tuma’-q ‘be quiet’ and Ktn tu’mï-k ‘be quiet’ could be from Sem quṭṭal (tummah) or huqtal forms (tutmah).

345(639) Hebrew psḫ (< *psx) ‘be lame, limp’; Arabic fsx, ya-fsaxu ‘dislocate, disjoint’; impfv ***-psax** > UA *sakV: CU sakï- ‘limp, v’; WMU süǧű-y / sügű-y ‘limp, be lame’ (with slightly raised vowel a > ï/ü). (Num)
346(640) Semitic psx ‘lame’; ***pissex** ‘limp, lame’ > UA ***pisika** ‘bad, (become) rotten, infected’ and Eu piopiioké ‘limping’. Just as ‘lame’ has recently come to mean ‘bad’ (that was a lame movie, lame excuse), so did lame come to mean ‘bad, infected, rotten’ in UA. This lexime is in most UA branches (Num, Tak, Tb, Hp, Cah, TrWr, Op, CrC)

347(542) Hebrew **bṭḫ** ‘trust’(< Sem bṭḫ), impfv -bṭaḫ > UA *cawV ‘believe’ (Num, CrC)
11(540) Hebrew bṭḫ / *baṭiiḫ ‘trust(ed)’ > UA *piciwa ‘believe’ (ṭ > c) (Num, Hp, Tak, Tep, Tr, Cah)

348(1031) Hebrew qn’ ‘be jealous’, impfv: -qna’; Arabic qn’ (impfv: -qna’u) ‘become red, incite, kill’; Ethiopic qan’a ‘be jealous’; Soqoṭri qn’ ‘be jealous’; Semitic impfv -qna’V > UA *nawa ‘jealous’: Cp náwe 'be jealous of’; Ca nawaan 'be jealous’; Ls nááwin 'be jealous'; Hp nawawa-ta 'complain’; My na’ibúke ‘be jealous’. (Num, Tak, Hp, Cah)

349(796) Hbr to’kal ‘she/it eats’ > UA *tïkkaC ‘eat’ (Num, Tb)

350(1108) Hebr ṣlʕ ‘limp, be lame’; Arab ẓlʕ / ẓalaʕa ‘be lame, limp’, impfv -ẓlaʕu > UA *lo’i ‘lame, limp’ (from impfv with loss of 1st C in the cluster: Yq ló’i ‘lame’; My ro’i/lo’i ‘lame’ (rounded first vowel due to pharyngeal). (Cah)

351(1142**)** Aramaic blṭ / balleṭ, impfv **yV-balleṭ** ‘be worm-eaten, moth-eaten, rot’ > **UA *yïpali** ‘rotten’ (Tep)

189(116) A widespread morphological feature found in every branch of UA is consistent with the Egyptian stative, also called the old perfective, in fact, was originally a perfective which became a stative (Allen 2010, 206-7; Gardiner 1969, 234-8). The stative of Old Egyptian 3rd person masc sg and pl verbs ended with -i, whether a suffix or a change of the last vowel to **-i** to make it stative. That final -i later changed to suffixed -w, but was originally -i. This suffix was more stable on verbs that already ended with -i, and caused a fusion of the two for a longer stronger i + i = y: mry/mrii ‘(be)loved’; iry/irii ‘done’; msy/msii ‘born’ (Allen 2000, 202-3; Loprieno 1995, 65,67; Gardiner 1969, 235, 237). Like the final -i of the Egyptian stative, UA languages in every branch exhibit final -i for intransitive, passive, or stative verbs (Langacker 1977, 132) and -a for transitive or active verbs:
UA *-a/-i ‘vowel alternation on the end of verbs such that *-a ‘transitive, active’ and *-i ‘intransitive, passive, stative’ (Sapir 1930, 73, 143; Whorf 1935; Langacker 1977, 132; Dakin 1982):
Cr -i ‘stative suffix’ (Casad 1984, 159);
Wc sana ‘break’; Wc sani ‘broken’;
Yq -i ‘stative suffix’ (Estrada Fernández et al 2004, 399);
Wr has transitive verbs ending in -a with corresponding intransitive verbs ending in -i (Miller 1996, 130):
Wr co’a ‘put out fire’; Wr co’i ‘be no fire’;
Wr wela ‘put upright/standing’; Wr weri ‘be upright/standing’;
Wr mo’a ‘put pl obj’s inside’; Wr mo’i ‘enter, pl subj’s’;
Wr sa’wa ‘cure s.o., alleviate s.th.’; Wr sa’wi ‘be alleviated, go away’;
Tr also has such pairs of verbs’ (Hilton 1993, 139):
Tr mana ‘put, place, set’; Tr mani ‘be (in/at a place), exist’;
Tr bi’wá ‘clean it’; Tr bi’wí ‘be(come) clean’;
Tr čiwá ‘stick s.th., vt’; Tr čiwí ‘be stuck, vi’;
CN also has such pairs of verbs (Sullivan 1988, 171):
CN tla-tema ‘fill, place s.th.’; CN temi ‘be full, be lying down’;
CN tla-kotona ‘break s.th.’; CN kotoni ‘be broken’;
CN tla-mana ‘put s.th. on the floor’; CN mani ‘be stretched out, extended’;
CN tla-toma ‘undo s.th.’; CN tomi ‘be undone’; and so does Tbr:
Tbr towa ‘leave s.th. behind, vt’; Tbr towi/tovi ‘stay, remain, vi’.
Nv vurha ‘tie, vt’; Nv vurhi ‘tied’;
Nv tuha ‘grind, vt’; Nv tuhi ‘something ground’;
Nv virioka ‘untie’; Nv virioki ‘something untied’;
TSh sawa ‘boil, vt’ and TSh sawi 'melt, vi’; and others;
SP muntunaa ‘cover oneself’ (active); SP muntun’i ‘be covered’ (stative) (Sapir 1930, 73, 143);
SP yauqqwa ‘push in’; SP yauqqwi ‘go in, set (of sun)’; SP yunna ‘put down (pl objs)’; SP yunnia ‘fall, drop down, pl’;
SP ton’na ‘strike, hit, vt’; SP ton’ni ‘shake, vi’; SP ova ‘pull out hair, vt’; SP ovi ‘come out (of hair), vi’
SP pačá’a ‘fasten s.th., vt’; SP pačá’i ‘hang, be fastened, vi’; SP münišša ‘turn over, vt’; SP münišši̇C ‘turn over, vi’;
SP tuġwa ‘put fire out, vt’; SP tuġwa / tuġwi ‘fire goes out, vi’
WMU spæ’naa-ti’(i) ‘flatten, vt’; WMU spæ’ni ‘flat, stative/adj’
WMU -’nűga-y ‘put in, stick in’; WMU nűġi ‘wear, be put in, be in’

WMU tuġwá-y ‘put fire out, vt’; WMU tuġwí- ‘fire went out by itself, is gone out (stative/past)
Hp -iwa ‘passive suffix’ eliminates final -a of transitive verbs, so it is likely -a > -i with added -wa:
Hp paata 'melt, vt' vs. Hp paati 'melt, vi'; Hp aama ‘bury, vt’ vs. aamiwa ‘was buried’;
Hp maqa ‘give’ vs. makiwa ‘was given’ (Kenneth Hill / Hopi Dictionary 1998, 881);
Tb -(i)w ‘passive’; like Hp, the examples show -i of -iw changes verb final -a > -i (Voegelin 1935, 99);
ST taapna’ ‘part, split, vt’; ST taapñia’ ‘part, split, vi’.
Ls has this feature, but somehow reversed it to -a being intransitive/passive and -i being active/transitive.
Some languages have the final -i vowel as the perfective (having been done) rather than stative (is done):
Ca -’i ‘realised’ (Seiler 1977, 138-40).

Some UA languages have final -i as the perfective, like Egyptian’s old perfective more than the stative:
Cm -i ‘completive suffix on verbs’ (Charney 1993, 142-3).
TO -i ‘perfective is marked by a final vowel change to -i’ (Langacker 1977, 131);
Op -i ‘perfective changes final -a to -i’ (Shaul 2003, 25);
Eu -i ‘the final stem vowel changes to final -i for the Eu preterite [past tense] in many, if not most Eu verbs, vs. Eu -a-n ‘present indicative verb ending’:
Eu hipra-n ‘watch over, care for’ vs. preterite: hipri ‘watched over, cared for’;
Eu maka-n ‘give’ vs. preterite: maki ‘gave’;
Eu taha-n ‘burn’ vs. preterite: tahi ‘burned’;
However, some Eu verbs show an -a transitive and -e intransitive distinction (e being halfway from a to i in position), as well as the -i preterite for both:
Eu wehra ‘stand s.th. up, vt’ (pret: wehri); Eu wehre ‘stand up, grow, vi’ (pret: wehri);
Eu pitása ‘smash, flatten, vt’ (pret: pitási); Eu pitáse ‘be/get flattened’ (pret: pitási).

352(1273) Two other fossilized morphemes are the Aramaic definite article suffixes in UA, *-taa ‘the, f.’ and *-aa ‘the, m’.
Aramaic ***-taa*** ‘the’ (f. suffixed definite article, often part of citation form, drops when possessed) >
*UA ***-ta*** ‘absolutive suffix on nouns (dropped when possessed), accusative suffix in some branches: TSh -tta ‘accusative’; Sh -tta (obj form); Tb -l, -t; Hp -t(a-) ‘non-possessed acc sg’; Sr -t(a-)/-ç(a-)/-č(a-) ‘singular’; -t(a-) ‘non-possessed’;
Ca -t/-l/-l^{y}/-š/-č; Cp -t/-l/-l^{y}/-č; Ls -t(a-)/-l(a-)/-š/-ča; Gb -t/-r/-y; My -ta ‘accusative’; Op -ta ‘accusative for class I verbs in Op (Shaul 1990, 563); TO -t, -č; CN -tl/-tli/-li < PUA *-ta. Relevant to this is that in some Aramaic dialects, the definite noun form is the citation form or equivalent to UA’s absolutive, and Voegelin actually translates the Tübatulabal suffix as ‘the’. In (638) Hebrew **raaḫeel** (< ***raxel**) ‘ewe’ > **UA *tïkïya** (> tïhïya) 'deer' appears in several languages, but Mn tïhïta 'deer' and Mn tïhïya 'old buck' show *-ta for feminine ‘deer’ and -a for masculine ‘buck’. The Aramaic definite articles are fossilized into the forms and match gender. Masc. -aa is also fossilized in 33, 34, 54, 57, 61, 105, and several more. (Num, Tb, Hp, Tak, Tep, Op, Cah, Azt)

353(122) Egyptian **pw** was originally a demonstrative pronoun ‘this/it’ later ‘he/they’ and came to be used for emphasis or to topicalize, usually in 2nd position in specific structures: A-pw B ‘it is A who is B / A is B’ or A-pw verb ‘it is A who verbs’ (Allen 2000, 72-3, 334; Gardiner 1969, 103-4, 143):
UA *po/pu ‘he, she, it, 3rd sg’: Ls -pu-; Wc pï-; and My -po. Mayo -po is suffixed to Mayo pronouns with no apparent meaning other than adding emphasis to the Mayo pronouns (Collard and Collard 1984, 214), yet is in exactly the expected position to be the old fossilized Egyptian -pw, which is also a structure for emphasis. Compare the Mayo enclitic subj pronouns (1st column) and emphatic pronouns (2nd column):

	Nominative pronouns	(Mayo) Emphatic pronouns
I	-ne	inapo
You, sg	-’e	empo
He/she/3rd sg	--	aapo
We	-te	itapo
You pl	-’em	eme’e
They	-mme/-em/-m	bempo

Note how Mayo **ina-po** aligns with Syriac **'inaa / naa** 'I' + -po
Ls yixél**vu**-l 'intelligent, alert': this Ls form fits perfectly the Egyptian iqr-pw 'he (pw) is one excellent / capable' as a fossilized form (Allen 2010, 79); Cr pu '3rd person sg subject particle' (Casad 1984, 297).
Wc pï 'it/he': e.g., Wc šasúni 'true' vs. Wc pïšasúni 'it is the truth' and so Wc pï < UA *pu
Wr puu 'that'; Tr mapu 'relative pronoun, which, what' (< ma-pu, or Egyptian m-pw 'it is what/that which').
In Tr, the -pu element is actually isolated to mean 3rd person pronouns:
Tr ke-ne 'my' (-ne = I); Tr ke-mu 'your, sg' (-mu = you, sg); Tr ke-tumu 'your, pl' (-tumu = you, pl);
Tr ke-**pu** 'his, her, their'; thus, -pu is isolatable as a 3rd person pronoun (Brambila and Bianchi 1953, 33)
Ls 'itéŋvu 'hot spring' ('itéŋ- 'hot'); Kw pu-/pï- 'relative pronoun' (Zigmond et al, 1991, 127).
Kw wižavu-vï 'calf of leg' with *-pu suffix as *wicca- 'calf' is the stem in the rest of Numic (1084)
SP pï- 'whom, which, what, relative pronoun' (ï < *u); Tb pïkanan 'one doing' < pw q/kana
Eu sisvi wecát 'awl' and Eu vusiven 'awl'; Tb allaawat 'to talk, speak'; Tb allaawappïï-l 'speaker' (< *haddabbar-pw);
354(1146) Aramaic tkk / tikk-aa 'twisted cord, chain' > *tikkaa-pu: Mn tïǧápo 'rope'; NP tïgapu 'rope'.
355 Egyptian feminine definite article prefix t'-, often tə- with schwa-like non-descript vowel > UA *tï-, *tV- is a fossilized prefix in some UA nouns; the two below are examples, among a few others:
217(174) sxt 'field, pasture, willow, f' > UA *sakat / *sakaC 'willow (Tak, Num), grass (Hp, SUA)'
Other UA languages show *sakat / * saqaC 'willow, grass' with both meanings in both the Egyptian feminine noun and in UA; what's more, Hp tïïsaqa 'grass, hay' has the Egyptian feminine prefix fossilized on the Hp noun.
204(339) t'-ɧimat 'the-wife'; Coptic hime > UA *tïhima 'spouse' (Wr tehimá 'spouse'; Ls to'ma 'wife')
Wr not only shows the exact Egyptian/Coptic vowelings of ɧimat 'wife' but also shows the feminine definite article prefix tV- fossilized into the noun.
393(433) Tb piga-t 'stone knife' < Egyptian p'qt 'fine sheetmetal or metal plate' > UA *pikkat (AMR) 'knife'
Ls piká-t 'stone knife'; Eu vikát; Wr tehpiká 'knife'; Tr ripiyá/ri-pigá 'knife'. Egyptian p'qt (pV'qat) is a fem noun and the fem article prefix appears prefixed to *pikkat in Wr and Tr, tho it could be from *tï- 'rock' also. (Num, Hp, Tb, Tak; Tep, TrWr)

6.0 Pronouns of Uto-Aztecan

Pronouns are important in comparative considerations. Above (353), we have already mentioned the 1st sg pronoun anaa' > nï' 'I' and the Mayo pronouns. Most UA pronouns align with Semitic, and two 3rd person singular pronouns align with Egyptian. All basic pronominal slots (sg: 1st, 2nd, 3rd; pl: 1st, 2nd and 3rd) are represented in this tie.

356(101) Hebrew -i 'my' is a possessive suffix pronoun, and like other Semitic suffix pronouns came to serve as prefix pronouns in UA, and so Hopi i- 'my' may well derive from the Semitic 1st sg possessive -i, with adjusted syntax.

	1st sg: independent pronouns (I)		suffix (object and possessive: me, my)	
	Aramaic 'anáá'	Hebrew 'anii, 'anoki	-nii,	-iy
Ch	nïï			
SP	nï			
WMU	nïï'			
Tb		nik		
Hp	nï			i-
Ca	ne'			
Tr	ne			
TO	a-ni		-ni	
CN	ne'			

322(102) Hebrew 'anii 'I'; Arabic **'anaa** 'I'; Aramaic **'anaa'** 'I'; Syriac **'inaa' / naa'** 'I':
Uto-Aztecan *nï' 'I' does not align with Hebrew *anii*, because final -i is Uto-Aztecan's favorite final vowel, so if Hebrew 'anii 'I' were the source, there would not be a change in the final vowel. However, Uto-Aztecan *nï' 'I' aligns well with Arabic / Aramaic / Syriac 'anáá', and the 2nd vowel, long and stressed, was retained. Relaxation of the vowel a > ï is

common in these data and loss of an unstressed vowel is also common; thus, ’anáá > nïï is expectable, doing like Syriac **’inaa’ / naa’** ‘I’ in its schwa-like behavior of 1st vowel (a > i) or complete loss of it (as in UA) for lack of stress:
UA *nï’ ‘I, me, my’ (in nearly all UA languages)
357(103) While Hebrew -i is the 1st sg suffix possessive pronoun ‘my’ as in Hopi (101) but changed to a prefix, Hebrew -ni is the object 1st sg pronoun ‘me’ and UA *-ni ‘me’ is also in several UA languages and remains a suffix: Tb -ni ‘me’ (Voegelin 1935a, 37); Ch -ni ‘me (1 sg pronoun postfix)’ (Press 1979, 48); -ni ‘me’ (Langacker 1977a, 37); Tr -ni ‘I’; Sh -nia ‘me’ has the -a ‘accusative suffix’ added to -ni ‘me’.

Second person pronouns: Semitic *-ka ‘you/your, masc sg’ and Semitic *-ki ‘you/your, fem sg’ and Hebrew *-kem ‘you/your, pl’ (Arabic/Aramaic -kum) parallel UA *-’ï ‘you, your, sg’ and UA *-’ïm ‘you, your, pl’ respectively (also Egyptian -k ‘you/your’). These Semitic pronouns were originally suffixed, so -k was usually in a cluster, thus loss of k, or *-k > -’ or ø in a cluster, as in English: him > -im or them > -əm when suffixed (feed-im, love-əm). Then they changed from suffix to independent and subject pronouns, for even in Hebrew the possessive pronoun can be subject of a verb: ra’ot-ka ‘seeing-you (obj)’ or ‘your seeing (as subj)’. Yet given *-k > -’/ø, some UA languages show a similar sg vs. pl distinction as in Semitic.

358(104) **359**(105)

Semitic	-kV ‘you sg’	-kVm ‘you masc pl’ (suffix/possessive/object pronouns)
	you sg	you pl
Cp	e / e’e	eme / emem
Ca	’e	’em
Hp	’ï	’ïmi- (possessive pronouns)
Cr	mu’e	mu’en
Yq	-a’e	-a’em (enclitic pronouns)
My	-’e	-’em (enclitic pronouns)

In the above, we see **UA *’ï** ‘you sg’ and **UA *’ïm(ï)** ‘you pl’, but in other UA languages, the pl *’ïm(ï) ‘you pl’ often became ‘you sg’ as in English ‘you’ (pl) replaced ‘thou’ (sg) as the 2nd person sg pronoun. And UA *’ï (< *-kV) ‘you, sg’ and UA *’ïm(ï) (< *-kVm) ‘you, pl’ both lost initial k-, probably because they were originally suffixes (in Semitic) and thus were often part of a consonant cluster.

Though SNum generally shows s.th. like *’ïmm(w)i ‘you sg’, Sapir (1930, 183-5) called SP -’- ‘you sg’ (2nd person sg suffix flanked by echo vowels) “entirely peculiar to the enclitic series” yet it is the expected 2nd sg reflex of the Semitic 2nd sg suffix pronoun, without the -m of the other UA forms above.

The other UA languages that have ’ïm for the 2nd person sg pronoun, underwent a change like in English. English used to distinguish *thou* (sg) and *you* (pl), but later, the plural *you* replaced singular *thou*, such that now both sg and pl 2nd person pronouns are *you / your*. Likewise, many languages—English you, Spanish vos, French vous, German Sie—have changed 2nd pl > 2nd sg in an honorific or polite pl coming to be used for sg. Thus, the UA languages below appear to derive both their sg and pl forms from the Semitic pl, as seen by an abundance of -m, which signifies plural in Hebrew (and in UA).

	sg	pl
Tb	imbi	imbuumu
Ch	ïmi	mïmi
Hp	’ïm	’ïma
Yq	’empo	’eme’e
SP	immi	mwïmmwi

360(106) Most UA languages use their variant of the Hebrew suffix/possessive/object pronouns (-kV, -kVm) as subject pronouns also, but Tarahumara has 2nd person plural *subject* **tumu** ‘you’ like Semitic -tem / -tum ‘2nd pl *subject* pronoun’; and Tr emi is the dative/object 2nd pl as in Hebrew. Note Tr **tumuhe** ‘you, pl (subject pronoun)’:

	subject pronouns ‘you, plural’	object pronouns ‘you, plural’
Arabic/Sem	’antum (independent pronoun)	-kum (obj/suffix pronoun)
Hebrew	’attem (independent pronoun)	-kem (obj/suffix pronoun)
Aramaic	’attum	-kum (obj/suffix pronoun)
Arabic/Sem	-tum (subject pronoun on perfective verbs)	
Hebrew	-tem (subject pronoun on perfective verbs)	
Tr	**tumu / tumuhe** ‘you pl, subj’	**emi** ‘you pl, dative/object pronoun’
SP		ŋumi ‘you, your, pl obj pronoun’

So Tarahumara has both the 2nd person pl *subject* pronoun matching the Semitic 2nd pl *subject* pronoun, and the 2nd person pl *object* pronoun matching Semitic’s 2nd pl *object* pronoun. Note also Southern Paiute **ŋumi** ‘you, your, pl obj pronoun’ with a velar ŋ aligning with the Semitic velar -k-. The Aramaic vowels are -kum and -tum, so SP ŋumi and Tr tumu are voweled like Aramaic.

Third person UA pronouns also contain numerous reflections of Semitic 3rd person pronouns:

361(107/108)	Sg: he/she, him, his	**362**(109)	Pl: they/them/their
Hebrew/Semitic	hu/huwa ‘he’; hi/hiya ‘she’; -o ‘him/his’		hem, hum, -am
SP	huŋwa		humwi
Yq	hu ‘that’		hume ‘those’; ’am, -ame
Ca	he-, hi-		hem
Tr	hu / u	Hopi	-’am

361(107) Hebrew/Semitic hu’ / huu / huwa ‘he, that’ > **UA *hu** ‘that’: My hu’; SP uŋwa ‘he, that one’; first u- of NP usu; Cm usï ‘that, that one (removed, definite)’; CU u/uru ‘that, those, it’; Tb undugal ‘that, that one’; Pl uni (vowel wrong, notes Hill). Add Op hu (ju in Spanish orthography) ‘that one’ (Shaul 2007).
361(108) Hebrew huu ‘he’ is also used as a copula verb in a position to make it seem like ‘is’ of English: e.g., Hebrew *ha-’adam huu ’ab-i* (literally: the-man he father-my) or ‘the man is my father’. Tr and other UA languages have this *hu* doing both roles: ‘he/that’ and ‘is’ between nouns. Tr **hu / u** ‘is’ is thought to be a participle of ni-ma ‘be’ yet between nouns it was reinterpreted from ‘John he the man’ to ‘John is the man’. Other UA languages do similarly with *hu*.
362(109) Hebrew hum / hem ‘they, subject pronoun’:
UA *(h)ïmï ‘they’: NP ïmï; Kw imï; CU umïs; Pl yehemet. Two forms exist—hum and hem—but -am (below) has a distinct vowel, no h, and must be a suffixed object or possessing pron.
362(110) Hebrew -am ‘them/their, object suffix, or possessive suffix’:
Hopi -’am ‘their’ is analyzed as -’a-m, the -m being a pl suffix; My -am ‘them’; Yq ’am- ‘direct obj [them], 3rd pl [their]’; Yq -’ame-u ‘to them’; Yq -’ame-mak ‘with them’.

Note also that the CN sg pronouns align with Semitic pronominal impfv verb prefixes, of the Aramaic verb ‘be’ no less:

	Hebrew/Semitic sg		Hebrew/Semitic pl	maghrib Arabic	Classical Nahuatl
1st	’e-/’a-	‘I (verb)’	ni-/na- ‘we (verb)’	n- ‘I verb’	ne’wa / nehwa ‘I’
2nd	ti-/ta-	‘you sg (verb)’	ti-/ta .. uu ‘you pl (verb)’	t- ‘you verb’	te’wa / tehwa ‘you, sg’
3rd	yi-/ya-	‘he (verbs)’	yi-/ya .. uu ‘they (verb)’	y- he verbs’	ye’wa / yehwa ‘he’

The Classical Nahuatl (CN) singular pronoun series—nehwa (I), tehwa (you), yehwa (he)—parallels the imperfective of the Aramaic ‘be’ verb—’ehwe, tehwe, yehwe. Though the Nahuatl 1st person (nehwa ‘I’) differs from Semitic ’e-, the n- of the CN form is analogically like the fundamental n- of most Semitic ‘I/me’ forms. In fact, the maghrib Arabic dialect did the same thing, that is, analogized the impfv verb prefixes to be n-, t-, y- (Goldenberg 2013, 86), like the Classical Nahuatl singular series did also—nehwa, tehwa, yehwa.
363(111) Aramaic **tehwe** ‘you are’ > **UA *tï / *tïhwa** ‘you sg’: CN te’ / te’wa(tl) / tehwa(tl); Pl taha.
Add Sr t ‘you sg’ (Ken Hill, Serrano Sketch, 2001).
364(112) Aramaic **yehwe** ‘he is’ > **UA *yïhwa** ‘that, he, she’: CN (y)e’ / (y)e’waa / yehwaa / (y)e’waatl (pl. (y)e’waan /(y)e’waantin ‘that one, he, she, they’); Pl ya, yah ‘he, she, it’; Pl ye(e)met ‘they’.

365(114) One UA 3rd person sg pronoun is similar to the Egyptian demonstrative Egyptian **p'y** 'this, that' (Allen 2000, 54) > **UA *pa / *pï/pï'/pï'ï** 'he/she/it, that, 3rd person sg': NP pï 'him, her, it'; Cm pï 'him, her, it'; Ca pe' 'he/she/it'; Cp pə/pə'/pə'ə 'he/she/it' (s.th. remote); Sr vï' '3rd person sg subject element in compound subj-obj pronouns'; Sr pat; pï- '3P prefix on postpositions' (e.g., pïhpa' 'on him/her/it'; pïmia' 'with him/her/it'); pïï-/pïïr-/puu- 'their' (possessive prefix); Sr pana' 'like that, that way'; Ls póó' (acc. póy, pl. pumóm) 'that; he, she, it' (Ls o < *ï; thus Ls po' < *pï'); Gb paráma' (acc. pára, pl. pámo) 'aquel'; Tb -p '3rd person pl possessive pronoun'; Tb also has other 3rd person hints of initial p- pronominal elements, like Tb paaim 'some, others' (Voegelin 1935, 180); Hp pan 'like that, that way' and also

Hopi:	subj	obj
Sg	pam 'he/she/it'	pït 'him/her/it'
Pl	pïma 'they'	pïmïy 'them'

Add Wc p- 'it, obj, e.g., p-áine 'lo dice' vs. (h)áine 'dice'. It is common, by the way, for demonstratives to become 3rd person pronouns and vice versa, as happened in Latin, etcetera.

366(1528) **First person plural** PUA ***tammu** 'we': Egyptian tmw / **tmmw** 'mankind' > UA ***tammu** 'we'; a precedent for a semantic shift from 'man/people' > 'we' is in Numic wherein nïmi/nïmï 'walk around, the people who do traditional hunting/gathering lifestyle' became 'we'; that is, the Numic branch uses Numi 'people' to become 'we, exclusive' : UA ***tammu** 'we': NP tammi; Cm tamï; Sh tammïn; TSh tammï; Kw tami; CU tami; Hp itam; Sr ačam/ičam; Ktn icam; Ca čémem; Cp čəmə; Ls čáá'um, čaam, čá'a, čám; TO aačim; NT aatï-; ST aatʸi'; Eu tamíde; Tr tamu(he); Wr remé; My ítapo; Yq itepo, te, ítom; Wc tááme. The Numic languages suggest a geminated *-mm-. The final vowel was likely *-u, in light of Numic ï (< *u often) and Tr tamu; as well, Yq ítom (< *itomo < *itammu) and Ls čáá'um, both show assimilation to a now lost final *-u. This involves a semantic change from 'man(kind), people' to 'we'. The change 'people' to 'we' has precedent in Numic, where 'person/Indian' or '(we) people' became 'we'. In Numic, the UA branch that developed inclusive vs. exclusive 1st pl pronouns, *nïmi 'we, exclusive, I and they, but not you' lets *tammu 'we, inclusive, you and I/we' mean 'we inclusive'.

7.0 Seven Previously Unexplained Puzzles Explained by Underlying Semitic and Egyptian Data

7.1 First, Why Some PUA *t- > Tarahumara r- but other *t- > Tarahumara t-

Regarding PUA *t, the traditional view has been that PUA *t > Tr r, but that PUA *t remained t in other UA languages outside of some palatalizing (*t > c) before high vowels. The problem is that in Tr are also as many initial t- terms, besides the items in which Tr r- corresponds to the t- of other UA languages. So if the traditional view is correct, then where did Tr initial t- come from? Said differently, why do some UA cognate sets of initial PUA *t- yield Tr ŕ- but others yield Tr t-? (Non-initial t/r terms are not dealt with in order to avoid medial-environment factors.)

This is explained by a consistency of Egyptian t, ṯ, d or Semitic initial t, d, ḏ, ṭ > t- in Tr, but initial r- of both Semitic initial r- and Egyptian initial r-, remain ŕ- in Tr, though initial r- > t- in the other UA languages. This distinction is clear in Tr. A few Tr words have alternate forms, one with initial t and one with initial ŕ, likely due to influences from nearby and closely related Wr and other UA languages. Some forms are not identifiable to the Near Eastern tie, but of those identifiable to the tie, 31 of 34 (91%) match this distinction: that Tr initial ŕ corresponds to Egyptian r or Semitic r, while Tr t corresponds to Egyptian t, ṯ, d or Hebrew initial t, d, ṭ. The other 3 may well be items that developed variants, then lost the original of the pair and kept the variant, or 2 of the 3 could easily be consonant harmony to the 3rd C which is also -r-. In Brambila's Tr dictionary, initial t forms come from t, ṯ, d, ṭ, all corresponding to UA t.

Tarahumara	Semitic / Egyptian (the set's number in Exploring Explanatory Power)
367(610) tábiri 'thing'	< daabaar 'thing' (Hebr)
Eu hitávic '(some)thing'; Wr ihtapéripéri 'thing'; CN tepi/tipi- 'small thing' in tepi-cin 'small thing' and CN tepiton 'small thing'	
214(170) tégu- / téku- 'to be drunk'	< txw 'drunkard' (Egyptian) also in Wr, Tep
368(1036) ta- / taní 'to ask for'	< -ttan 'to give' (Hebr impfv stem of natan) also in Tep, Azt, Wr
176(961) takú 'type of palm tree'	< daqal 'date palm tree' (Hebrew, Arabic) also in CrC, Cah, Wr, Eu
191(124) tesó < UA *tïkso 'pierce, hiking stick'	< tks 'pierce, poke' (Egyptian)
369(1497) ti 'me'	< 'ootii 'me, obj pronoun' (Hebrew)
33(617) teté'na- / ŕe'na- 'yawn, open mouth'	< Aramaic diqn-aa 'chin-the' (denominalized verb)

This is one of the sets in which Tr has both variants teté'na- / ŕe'na-, as also in 370 and 376 below

35(620) téburi ‘louse’ < *ɖabboot(ee) ‘flies’ (Hebrew, Semitic) also in Tep, Cah, Eu, Tbr, CrC, Azt
370(1059) tewé-re- / ɾewé-re- ‘be named’ < dʕy / daʕaa ‘to call, name’ (Arabic)
371(1327) tibú- ‘watch, take care of’ < tbʕ ‘follow, trail, observe’ (Arabic)
372(751) tami / timi ‘like, look like’ < dmy / damaa ‘be like, resemble’ (Hebrew)
373(159) toa / to- ‘take along, carry’ < ṯ’w ‘take up, seize, steal, bear’ (Egyptian) two rounding segments -’w-
374(1471) tókowa ‘to crow (as bird)’ < tqʕ ‘to sound / blow (a horn)’ (Semitic)
Hp töötöq- ‘shout, cry out, yell’; My reko-te ‘crow, cackle’; Tb tokokoo’at ‘pop’; CN tookaa-yoo-tiaa ‘name, vt, call s.o. by name’
375(725) tori ‘cock, hen’ < toor ‘turtle-dove’ (Hebrew)
231(205,206) towí ‘boy’ < ṯ’y ‘male, man’ (Egyptian)
360(106) tumu-(hé) ‘you, pl’ < ’antum / -tum ‘you, pl’ (106 Arabic/Aramaic), attem (Hebrew)
376(494) tosá- / ɾosá- ‘white’ < t’-ḫḏt ‘the-white’ (494 Egyptian)
377 tu’na- ‘be thick’ < dšn ‘be fat’ (Hebrew)
378(420,421) tutuguri / ɾutuburi ‘a ritual dance’ < twt ‘stand, perfect’ (Egyptian)
259 (269) tagá-či- ‘give fruit from a vine’ < dqr ‘fruit’ (Egyptian)
379(1159) toba- ‘sink in mud, get stuck’ < ṭbʕ / ṭbl (Semitic)
380(1499) tarí ‘seed for sowing’ < dry / dara^{y} ‘to sow (seed)’ (Semitic)
381(1472) tékoa / tékowa ‘master, lord’ < tqʕ ‘pierce(d)’ (Hebrew)
366(1528) tá / tamu ‘we’ < tmmw ‘man(kind)’ (Egyptian) explained at 366

While Semitic and Egyptian initial r- became t- in the rest of UA, Tarahumara retained intial ɾ, so Tr distinguishes initial r- vs. t-, showing Semitic and Egyptian d, ṯ, t > t, but also showing Semitic r > Tr ɾ and Egyptian r > Tr ɾ:

247(169) Egyptian rmṯ ‘man’: Tr **ɾemarí** ‘boy’; Eu temáci ‘young man’; Wr te’marí ‘boy, young man’;
Wr re’marí ‘friend’; Wr remarí ‘man’ (probably loans from Tr).
382(168) Egyptian rm ‘fish’ (Coptic rame); Egyptian rm is often found in the pl rmw: Tr **ɾamú** ‘small fish’.
250(164) Egyptian rn ‘young one, of animals’ > UA *tana ‘offspring’: Wr taná 'child, little one';
Wr tana-ní/tani-má 'give birth'; **Tr ɾaná**(ra) ‘offspring, son’; **Tr ɾana**-mea ‘give birth’;
249(337) Egyptian r’-ib ‘stomach’ > UA *to’i / *to’(pa)/*toCpa 'belly, stomach': **Tr ɾopá**; Wr tohpá;
My toppa; My tópa’ara; Ca tí’i-ly (< *to’o); Ls téé’-la 'belly'; Sr tö’č; Eu toa.
383(422) Egyptian rḏi > rdi (in middle Egyptian) ‘give, put, grant, give (the price, i.e. buy), sell’ >
UA *tari 'sell': Wr tariké ‘sell s.th. to s.o.’; Wr tala-ní ‘buy, vt’; **Tr ɾari**-mea ‘buy’; Tr ɾarinéa-ma ‘sell’
55(600) Hebrew r’y / ra’aa ‘see, v’ > UA *tïwa ‘find, see’: Hp tïwa ‘find, perceive’; Tb tïwat~’ïïtïw ‘look
for, find, guess’; Cp tewa ‘see, vt’; Ca téew ‘find, discover’; PYp teega ‘find, see, vt’;
PYp teegida ‘show, vt’; NT tïïgai; Eu téwa; Wr tewa; **Tr ɾewa**/tewa; My téwwa ‘hallar’; Yq tea;
56(603) Aramaic rymh (= riimaa) ‘large stone’; Aramaic *rima-taa ‘large stone-the, n.f.’; Syriac ryaam-taa
> Sr tïmï-t; Ktn tïmï-t; NP tïb-bi; Sh tïm-pin; Tb tïn-t; Yq téta; My tetta-(m); Wr tehté; **Tr ɾeté**; ɾeepó.
The final -ta / -te of the SUA languages is fossilized absolutive suffix *-ta.
384(1240) Arabic raǧul ‘man’ > UA *tihoyi ‘man’: Wr tihoé/rihoé; Wr(MM) rihoé / tehoyé ‘man’; **Tr ɾehói**;
Wr also has loans from Tr it appears.
385(1341) Hebrew rʕm ‘to rage, roar, thunder’ > SP tom’mu ‘make a big noise, thunder’;
Wr te’ó-na ‘buzz, roar, thunder’; **Tr ɾe’o**-ma ‘thunder’.
386(403) Egyptian rd ‘foot’: UA *tara ‘foot’: Eu tarát ‘foot’; **Tr rará** ‘foot’ (Tep, Tr, Azt, Hp, Num).

Three forms to the contrary are below, though they could be due to other language influences, or consonant harmony (for 313 and 388), or be the survivor of a pair of variants that had both forms, but lost the original:
387(602) Hebrew régaʕ ‘a moment, in a moment, a short while, abruptly’
> Tr teko ‘soon, in a short time, quickly’ may be a loan from Wr or an invalid non-match.
313(743) Aramaic tuumr-aa ‘palm-the / date-palm-the’
> UA *tu’ya ‘type of palm tree’: Wr tu’ya ‘palmilla’; Tr ɾu’ya ‘kind of palm tree’ (perhaps C harmony r-r

388(866) Aramaic ṭmr / ṭəmar ‘hide, bury, cook underground’ > Tr ŕemé- ‘tamales, make tamales’ (C harmony r-r?)
TO cïmait (t > c/_high vowels); Wr temei; CN tamal-li ‘bread made of steamed cornmeal, tamale’; ST tïmaiči ‘tamale’; PimaBajo tïmi-ta ‘tortilla’; Cr temwá ‘tamal’. Note how many UA languages (TO, ST, Cr) have the same voweling as Aramaic -ə-a > UA *-ï-a. These tie to Numic *tïm’a / *tï’ma ‘bake under ashes, bake underground’: Ch tïm’a- ‘bake’; SP tï’ma- ‘roast under ashes’; WMU tïm’ma-y ‘bake or roast (usually underground)’; Kw tï’ma. For a fuller sense of the semantics, note Syriac ṭəmiir-taa ‘a loaf baked in ashes’ and Akkadian tumru ‘ash(es), cinder, bread baked over coals’. (TrWr, Azt, CrC, Tep, Num)

Among the Wr dialects and the Tr dialects, all in the general vicinity of each other for convenient borrowing, doublets or word variants that have both an initial t- form and an initial r- form are plentiful, such as 55 Tr ŕewa/tewa vs. Wr tewa and UA *tïwa in a dozen other UA languages. So not counting the three that have both variant forms (initial t- and r-, 33, 370, 378), there are 31 forms that agree with the Semitic t- vs r- > Tr t- vs ŕ- alignment and three do not, though they may have had both variants and lost the original. Nevertheless, 31 of 34 is 91% agreement.

7.2 Second, Why Some PUA *k > Tübatulabal h but other *k > k

The two Tübatulabal (Tb) reflexes from Proto-Uto-Aztecan *k > Tb h and *k > Tb k were partially explained by Sapir (1913) and Manaster-Ramer (1984, 1992c), since in a great percentage of instances we see *k > h before low vowels (a, o) and *k > k before high vowels (i, ï, u). Manaster-Ramer (1992c) additionally offers a reasonable explanation for two exceptional etyma: kaŋaa-l ‘beard’ and akaa- ‘paternal grandrelative’. Nevertheless, several other apparent exceptions are explained by an underlying doubled Semitic consonant or cluster that results in underlying *-kk-, which remains -k- in Tübatulabal (group 1), not changing to Tb h regardless of vowel environment. For example, of the 11 additional examples below of *-kk- > -k- in Tb, 7 of the 11 show a *-ka- syllable with -k- before the vowel -a: 114, 286, 389, 391, 349, 393, 92. In Kenneth Hill’s monograph Tübatulabal dictionary are several other Tb initial ka- terms not known to be part of the Near-East-UA tie and which as of yet remain unexplained. Regardless of the Near-East tie, the Tb data themselves suggests *-ka- remaining ka when doubled: e.g., in Tb umuša-t ‘arrow feathers’, the -t (vs. -l) suggests an underyling final -C, and Tb umušakkayïlat ‘go along gathering arrow feathers’ also shows gemination in the place where that underlying -C doubled the *-kk-. Yet a single k, g, ġ, q, or x > h (group 2), unless followed by a back round vowel u, o, or ï (group 3). The vowel ï may not be back and round, but can be back and in Numic its assimilative influences trigger rounding. So ï being associated with the back round vowels u and o is not surprising. This explanation holds for the great majority of examples below, but the pair in group 4 may be exceptions, though an explanation is available for them also. In Kenneth Hill’s Tübatulabal Dictionary (2010) are 5 pages of ko, ku, kï, and 2 pages of ka and 2 of ki, about twice as may being before -o, -u, -ï. Yet among initial h- words are 5 pages of Tb ha, but only 1 ½ pages of ho, but less than a half page of hu and a quarter page of hï, and many of those are not from PUA *k, but from PUA *h. So those lopsided ratios support the over generalization that *k tends to remain k before o, u, ï (not unlike Tep ko/ku, but no bo/bu, i.e., kw before -o/u, but b before -a/ï/i), but *k > h in Tb more often before the other vowels (a, i). Yet the data below show that more is involved than following vowel. Thus, Semitic/Egyptian k, g, ġ, q, and x all generally become k in UA, but in Tb, the k vs. h distinction is determined more by gemination / doubling or not, than by the quality of the following vowel.

Group 1: When Semitic *-kk- is doubled or clustered *-Ck- (≈ -kk-), it remains -k- in Tb:
97(52) Tb mukut ‘dead’ < Hebrew mukke ‘smitten’ > UA *mukki ‘sick, dead’ (in nearly all UA languages)
98(53) Tb hookii ‘deceased grand-relative after death’ < Hebrew hukke ‘was smitten’
114(1045) Hebrew *moškat ‘bracelet, fetter, belt’ > Tb mohkat-t ‘belt’
286(298) Tb waakaayš-t / Tb waagaaiš-t < Egyptian ʕbxn ‘frog’ due to cluster > *wapkan > *wakka… > Tb -k-, not -h-
389(1151) Tb pahkaanï~pahkaan ‘to speak’ < Aramaic etpakkan ‘be insolent, abuse, gabble’
390(829) Tb pikiiniššït ‘wear or put on a shirt’ < *piC-kinis (*-Ck- > -kk-), Semitic kns ‘cover, wrap’
391 Tb maakat ‘know, vt’ < Hebrew makkiir ‘know(er), know(ing), participle’ (see discussion on p. 20)
349(796) Tb tïkkat ‘eat’ < Hbr to’kal ‘she/it eats’ > UA *tïkkaC ‘eat’ (Num, Tb)
392(1015) Tb ekeewan / egeewan ‘big, large’ < Semitic/Aramaic et-kabbar (see next paper for Tb -’w- < UA *kw < -bb-)
393(433) Tb piga-t ‘stone knife’ < Egyptian p’qt ‘fine sheetmetal or metal plate’ > UA *pikkat (AMR) ‘knife’
Ls piká-t ‘stone knife’; Eu vikát; Wr tehpiká ‘knife’; Tr ripiyá/ri-pigá ‘knife’ (Num, Hp, Tb, Tak; Tep, TrWr)

92(876) Tb tuka-l ‘night’ < Aram duʕk-aa ‘extinguishing’ from verb dʕk ‘go out, be extinguished (fire)’ (in all branches)

Group 2: Egyptian and Semitic **x > Tb h**
217(174) Tb šaahat ‘willow’ < Egyptian sxt ‘willow’ > UA *sakaC
215(294) Tb hapši-l ‘thigh’ < Egyptian xpš ‘thigh, upper arm’ > UA *kapsi ‘thigh’
394(172) Tb nohhot ‘to roast in the ground’ < Egyptian nwx ‘cook, singe’ > UA *noko ‘roast (meat)
Sh nokko 'to roast, bake'; Cm nohko / noki 'bake biscuits'; NP no’ho 'to roast, bake'; Tb nohoo’yiin 'roast, vt'
Not sure why some forms have gemination, but Tb has -h- agreeing with *nwx, and not -k-

Egyptian and Semitic **q > Tb h** when before the vowel ***-a***
395(827) Tb tïdïha~’ïtïdïha ‘be cut up’ (Tb *tïha redupl’d) < UA *tïkV < Semitic dqr ‘pierce’
396(1069) Tb ha’~’aaha’ ‘hear’ (pfv of ha’ït) < UA *ka… ‘hear’ < Hebrew (hi)-qšab ‘listen’
397(1216) Tb haa-l ‘willow’ < UA *kana ‘willow’ < Hebrew qaanɛ ‘reed, stalk’
398(1135) Tb pahaabïl / paha’bïl ‘sugar cane plant’ < UA *pa-kaN ‘reed’ < Hebrew qaanɛ ‘reed, stalk’
399(328) Tb haawa-l ‘wood rats’; Hp qaala ‘packrat’; Ls qáw-la ‘woodrat’ < Egyptian q’r ‘bundle, pocket’
400(1448) Tb haayčan ‘to chew’ < Semitic *qrḍ > Hebrew qrṣ ‘bite’

Semitic **-g- > Tb -h-**
38(569) Tb wohhompoo-l / wohhoono-l ‘gray pine, bull pine’ < Hebrew ’egooz < *’V(N)goz
25(1279) Tb yahaawi-t / yahaawi-l ‘summit, point of a hill’ < Aramaic *yagar ‘hill, stone heap’ > UA *yakaR nose, ridge’
401(1332) Tb wiih ~ iiwihï ‘to wait for’ < Arb ’ğl < *’gl ‘to hesitate, wait, linger’
402(927) Tb wahaminaš ‘down at an angle’; Ca waŋam ‘deep (water)’ < Semitic ʕgm / ’gm ‘be low, depression, swamp’
403(1365) Tb waahay’ ‘work’ < Semitic ’gr ‘hire’

Semitic **ġ > Tb h**
404(690) Tb haa’išš(a) ‘no, not’; Tb hayyi / haayi ‘no, not any, none’ < Semitic/Arabic ġayr ‘without, no/not’
UA *kay / *kaC ‘no, not’ (in nearly all UA languages, tho the word-final segments are not phonologiclly clear)

Semitic **k > Tb h**, before -a:
103(890) Tb hannii-l ‘house’ < Semitic *kann ‘shelter, house’
405(1422) Tb hammaššat ‘be sad’ < Aramaic kmr / *kamar ‘be sad’ (another suffix?; -r- > -s- often by voiceless C)
99(565) Tb mahat, pfv amha ‘give’ < Hebrew makar ‘sell’ > UA *maka ‘give’
3(559) Tb pahaa’at/’apahaa’ 'cry, howl' (Hp pak- ; Ktn paka’) < Hebrew baka^{y} ‘cry’; Syriac bakaa/baka’

Tb ku is much more frequent than Tb hu, and Tb hu < PUA *ku is almost non-existent, which suggests that, all else being equal, the vowel u encourages retention of *ku > ku, not *ku > hu, as Sapir and AMR have said:

Group 3: Egyptian/Semitic **x, k > Tb k** before -u and -ï
221(452) Tb kutt ‘fire’ < Egyptian xt ‘fire’
317(594) Tb kutči / kuudzin ‘older sister’ < Hebrew ’axoot ‘sister’
309(365) Tb kuyuu-l ‘fish’ < NUA *kVyu < UA *kVcu < Egyptian xddw ‘fish’
406(326) Tb kuu-l ‘yellow flower’ < Egyptian **x’w** ‘flowers’

Semitic **k > Tb k** before -u, -ï
407(997) Tb kuyuu- ‘lower leg’ < Hebrew kəraaʕ ‘lower leg’ (Num yu’u; and for -r- > -y- see next paper)
408(1314) Tb kïyii-l ‘arrowhead’ < Hebrew kəliiy ‘tool, weapon’
409(798) Tb aakït, pfv: a’aak ‘open mouth, bite’ < Hebrew ’kl ‘eat’
410(1049) Tb kuuhupi-l 'elderberry’ < Egyptian **k’w** ‘sycamore figs’

Group 4: One instance of Semitic g- > Tb k- and one of q- > Tb k- might be enigmatic, though the perfective of both shows a cluster or gemination, which may have encouraged retention of the stop even when initial:
411(936) Tb kam’mut, pfv aŋkam’ ‘to fit, be proper’ (l > ’ in cluster) < Semitic gml ‘complete, beautiful, proper, fit’
Ca qami (before C), qamñ (before V) ‘leave, quit’ (having completed); Kw kagamïniyaa ‘pleasant’ (l > NUA n);
Tr gamea ‘1 be able, 2 look good 3 fit, be enough’ (intervocalic liquids r/l often lost in Tr; cf. Tr -mea < *mïla)
412(1508) Tb kamiič|ït, pfv: akkamiič ‘to catch’ < Syriac qmṭ ‘lay fast hold of, take’, passive prtcpl qamiiṭ ‘grabbed’

The stated hypothesis accounts for at least 37 of the 40, or 92.5% of the instances identifiable from the Near-East tie. If the explanations for 411 and 412 are accepted, then 39 of 40 (97.5%) align with the hypothesis. Other forms not identifiable with the Near-East tie, but which contain *-ka- syllables and thus counter previous explanations, include (adopting Hill's underlying Tb orthography wherein *-k- > -g- and *-kk- > -k-): Tb weekat 'to break', šeeka'šeekat 'to pant', iišiwkat 'to comb (hair)', ipii'iwkaŋ 'to blossom', iška-l 'bucket', kalii- 'cross uncle', kahï-t 'be lazy', kapopaa'at 'to rattle', kapee'pïïl 'brown (thing)', kattahwat 'get sick, die', kawiišuu'itt 'snowshoe rabbit', muutakkat 'to dodge', mïlïï'kat 'be smooth', mïï'kat 'kill', mïïkat 'to stretch', nahaakanna- 'one that has lice', owookat 'to swell', pika'aš 'perhaps, approximately', puškat 'to blow', šeekappišt 'barn owl', šikaal 'crack in a rock, grave', šikaalaanat 'willow house', taa'kat 'to meet', takkašat 'tanned skin, hide', toomookal 'bumblebee', cakaa- 'great-grandparent', tuka' / tukaawan 'deep', tïï'pinnukaa'tawaa-l 'myth', ukanwït 'get ready', ullakkat 'be open', puncikaacat 'boil mush', untukkakkaciip 'on the other side', wašaakappuwat 'seem to flame up', wiikat 'discard, throw out', woo'kkan 'pretty soon, recently', wookami 'yet, still'.

7.3 Third, Takic Absolutive Suffixes and Luiseño -la

Final features have been discussed by many (Sapir 1913; Sapir 1930, 62-65; Wick Miller 1983; Manaster Ramer 1992b and 2004) who explain that these features suggest the absence or presence and type of underlying consonant at the end of each stem. For example, Sapir (1930) found that Numic stems had one of three final features: gemination causes a doubling of the next consonant (> -CC-); nasalization (-N) adds a nasal dimension to precede the next consonant (> -NC-); or spirantization appears to be a lack of a final underlying consonant, such that the next morpheme's initial consonant appears as it typically does between vowels (*-k- > -x-/-ġ-, *-t- > -r-/-d-, *-p- > -v-). Miller, Elzinga, and McLaughlin (2005) provide some TSh examples with the post-position -pa'a 'on' after spirantization (*naka-pa'a > naġa-va'a 'bighorn sheep-on'), gemination (*tua''-pa'a > tuappa'a 'son-on'), and nasalization (*pïyïN-pa'a > pïyïmba'a 'duck-on').

The variety of absolutive suffixes (*-ta > -t(a), -l(a), etcetera, mostly in NUA) similarly leave hints of the existence and type of final consonant (Sapir 1913; Manaster Ramer 1992b). For example, in Tak and Tb, an absolutive suffix -l suggests the lack of a final consonant, that is, the stem ended with a vowel, making the -t- intervocalic and leniting to -l- (*V-ta > V-la > V-l), whereas an absolutive suffix of -t suggests that the noun stem had an underlying final consonant no longer obvious, but clustered with -t- to keep it -t (*VC-ta > V-t).

The most common absolutive suffix is PUA *-ta, from the Aramaic definite suffix *-taa '-the'. In many UA languages the final vowel drops to leave final -l or -t in Tb and in the Takic branch. Similarly, in the Aztecan branch it is usually -tl, which is from PUA *-ta (Whorf 1937), which lateralized as -tla before losing the final vowel: *V-tla > V-tl. But if the stem ends in a consonant, then a final vowel on the suffix remains (VC-tli) to avoid a final consonant cluster (C-tl does not occur). However, when a Nahuatl noun ends with -l-, then the final -t (or -tli) assimilates to -l (or -l-li), and the suffix's final vowel -li is also kept to avoid ending with a doubled -l-l, as in tamal-li and chil-li. Similarly, in Luiseño the usual Ls absolutive suffixes are -l and -t: -l when the stem ends with a vowel, such that intervocalic -t- > -l-, as in *V-ta > V-la > V-l; and Luiseño -t when the stem ends with an underlying consonant no longer obvious, such that the cluster VC-ta causes -t to remain -t: *-Cta > -ta > -t. However, slightly less frequent than those two, but frequent enough is the Luiseño suffix -la. Uto-Aztecanists can see that, synchronically, a final nasal encourages the retention of the vowel on the absolutive suffix (…N-la), as the Ls phonology does not end a word with a two-consonant cluster. For example, the first group of 8 Ls terms end in a nasal consonant (n or ŋ), so that the -la form of the absolutive suffix is N-la rather than N-l, again avoiding a closing cluster. The items in group 2 also take the -la suffix, as they too end with consonants, even if weak consonants. The words in group 3 end with glides (y or w), yet glides are quite vowel-like (y ≈ i, and w ≈ u/o), so in synchronic terms the need for -la is somewhat opaque, though intense glides are indeed consonants. So the first 3 groups are synchronically understandable, resulting from mechanisms to avoid word-final consonant clusters. However, group 4 stems end with long vowels, with no apparent final consonants whatever, yet strangely take the -la suffix. In those cases, the underlying Semitic and Egyptian consonants of gutturals and liquids create a nearly 3-consonant cluster with -la, such that the liquid encourages the absolutive liquid, as in Nahuatl, and the formidable 2 or 3-consonant clusters (not at all obvious) clarify the need for the final vowel: *-ẖr-, -lʕ-, -ɬr-, -l-, -'r-ta > VV-la. Such gutturals become -l- in Hopi also. In these Ls apparent vowel-final stems, the need for -la is baffling. However, the Semitic and Egyptian sources

of these words clarify VV-la. In other words, when an underlying cluster guttural + liquid would develop, then -la appears, though the cluster is not synchronically (presently) apparent at all. Group 5 has other clusters that may not include a liquid on the stem, but which also reduce a 2- or 3-consonant cluster to what results or appears as one light C: …CC-la > -la. Stress patterns may also have been helpful in preserving the vowel of -la in that when the 1st syllable is stressed, the 2nd unstressed syllable tends to collapse, which encourages the 3rd syllable to be stressed, which may be the suffixed -la, lending it some stress, and thus preserve the final vowel of -la, normally lost in other forms. The 1st and 3rd stress would help 2nd vowel to disappear and the 2nd and perhaps 3rd consonants to cluster, again creating a 2- or 3-consonant cluster with -la. Most interesting and consistent with the preceding phenomena is Ls tóó-ta 'stone, rock', explained at the end.

Luiseño -la suffix

Group 1 (…N-la, nasal consonant before -la):
413(218) Ls ṣún-la 'heart, sad, suffer' < Egyptian swn 'suffer' > UA *sun 'heart' (in all branches)
276(280) Ls 'éŋ-la 'salt' < Egyptian ħm't 'salt'
414(330) Ls kún-la 'sack' < Egyptian gwn 'sack'
292(332) Ls qiqeŋ-la 'ring snake' < Egyptian qrħt 'snake' > UA *koNwa 'snake'
57(604) Ls tón-la < *tïmïna 'antelope' < Aramaic rə'emaan-aa / reemaan-aa 'antelope' > UA *tïmïna 'antelope'
415(912) Ls huŋ-la 'the wind' < Semitic ħwg 'horizon, atmosphere' (also Tbr honá- 'be windy'; Tbr honí-t 'wind')
293(737) Ls ṣááṣaŋ-la 'yellowjacket' < Hebrew ṣirʕa(t) 'hornets'
370(1059) Ls túŋ-la < *tï(N)wa 'name' < Arabic dʕw / dʕy / daʕaa 'to call, name'

Group 2 (…š/'-la, non-nasal consonant before -la)
7(532) Ls púš-la 'eye' < Semitic *booṣer 'eye'
161(704) Ls lá'-la 'goose'; Ca la'la' 'goose' < Arabic laqlaq 'stork, n'
210(154) Ls ṣú'-la 'star' < Egyptian sb' 'star' > UA *sipo' 'star'
416(1248) Ls qéš-la 'seashell' < Aramaic qesṭ-aa 'measure, coin, ancient money' > UA *koCta 'bark, shell, money'
Arabic qasaṭa 'divide up, measure'; Hebrew qəšiiṭaa 'ancient weight, used as money, n.f.';
Syriac **qesṭ-aa** 'measure, n' > **UA *koCta** 'bark, shell, money': Cp qíči-ly 'money, silver'; Ca qíč-ily 'money' (pl: qišlyam);
Sr -qöč 'hide, bark'; Sr qöčaaviam 'money'; Gb (a)-xóxoc; Cr kúcape'e (Cr u < *o) 'shell'; Cr kuhca'ana 'type of tree with useful bark'; Ktn koco 'shell (of turtle), peel, skin'. Nv koska 'mother of pearl' (Nv s < *c) may be loan source for CN kooska-tl 'jewel, ornament, necklace' and may tie to UA *koci 'shrimp' and Tbr koci-kal 'shrimp', etc. The fact that we see both NUA -c- and SUA -c- means an original cluster like *-Ct-, as *-c- > NUA –y- (AMR 1992a). (Tak, Tep, CrC)

Group 3 (…y/w-la, a glide/approximant before -la)
417(479) Ls súy-la 'scorpion' < Egyptian d̲'rt 'scorpion' > UA *suyi 'scorpion, sting': Cp súye 'sting, v'; Cp suyve 'stinger'; Cp súyi-lʸ 'gnat, biting insect'; Ca súyi-lʸ 'scorpion'; Ls suypi-š 'stinger'; Ls súyi 'itch, v' (Tak)
418(92) Ls yúy-la 'spruce tree' < Hebrew yáʕar 'wood, forest, thicket, wooded heights with trees to be felled' >
UA *yuy / *yuwiN 'pine': Cp yúyi-ly 'fir'; Ca yúyi-ly 'California juniper'; Sr yuhaaţ 'pine';
(> Num *yuviN): Kw yïvi-bï 'ponderosa or yellow pine'; Ch yuvimpï 'pine sp.'; CU yïvï-pï 'pine tree' (Tak, Num)
399(328) Ls qáw-la 'woodrat' < Egyptian q'r 'pocket, bundle' > UA *kawa 'packrat, rat' > Ca qáwa-l; Cp qáwe-l;
Sr qää-ţ; Gb xar; Ktn ka-č; Hp qaala; Tb haawa-l; Mn qawa; NP kawa 'packrat'; TSh kawan; Sh kaan; Kw kaa-ci 'woodrat';
SP kaa-ci; CU kaac'a-ci 'packrat, gopher'; Ch kaaci 'rat' (Tak, Tb, Hp, Num)

Group 4 (…VV-la, only vowels appear before -la, but clusters of liquids and gutturals underlie the end of the vowels)
419(290) **Ls púú-la** 'shaman' < Egyptian p<u>hr</u>t 'remedy, medicine', Egyptian p<u>hr</u> 'stir, make medicine' (3 C: …<u>hr</u>-ta > -la)
(> UA *puha 'medicine, supernatural/healing power': TSh puha; Sh poha; Cm puha; Kw poha-vi 'poison, power'; SP pua / poa 'supernatural power'; CU puwa-vï 'medicine power, spiritual power'; Tb tïboohat 'to doctor, work at curing (usually animal)';
Tb tïboohanat 'apply medicine (to a person)'; Cp púu-l 'shaman'
420(710) **Ls túú-la** 'charcoal' < Hebrew tooleʕaa / toolaaʕ (3 C: …lʕ-ta > -la) Hebr toolaaʕ 'crimson (color, dye, or material)' is made from Hebrew **tooleʕaa** / toolaʕat '(crimson) worm' > UA *tul / ***tulo** 'embers, charcoal, black, dark' (in UA semantics

‘embers’ are rather scarlet, then embers to coals (black/dark) and scarlet itself is more dark than light): CN tliil-li ‘black ink, soot’; CN tliilloo-tl 'blackness’ (*PUA *u > i in CN); Cp tú-l ‘charcoal’; Ca tú-ly; Cp túla 'get black, get a tan'; Cp tultúlaxwe 'it is soiled'; Sr tïnää’q ‘turn black’; Sr tuu-ţ ‘charcoal, coal(s), ember(s)’; Tb tuu-l ‘charcoal, embers, coals’; TO čuuḍagi ‘embers, charcoal’ (standard Tep sound changes *t > c/_high vowel, TO g < *w, TO ḍ < *l). (Tb, Tak, Hp, Azt, TrWr, Tbr, Tep)

421(1165) **Ls páá-la** ‘water’ < baɦr ‘water’ (3 C: …ɦr-ta > -la)
Arabic **baɦr**- ‘water (vs. land), sea, large river’ (Arabic baɦra(t) ‘pond, pool’) > UA ***paa** ‘water’ in nearly all UA languages, yet in Cahitan (My,Yq) *ba’we ‘sea’: My báa’a ‘water’; My báawe ‘sea’; Tr ba’wí ‘water, juice, stew, liquid’; Wr pa’wí ‘water’ vs Wr pa’wé ‘sea’. In spite of scarce rounding for the pharyngeal, consider first, a common word like ‘water’ said frequently could be established as initial CV (paa) early on; second, some languages do show pharyngeal effect: Sr paaʳvan ‘wet, add water to’ is a compound showing paaʳ- with a pharyngealized vowel somewhat rounded. Note also Numic *paNkicu ‘fish’ (*kicu ‘fish’) whose water morpheme shows final nasalization, and liquids and pharyngeals often result in Numic nasals when clustered. Note also the -hï of Hopi paahï, which -hï is thought to be a rare absolutive suffix, but could it simply be what is often dropped, as paahï < *baɦr? Note also the Ca possessed form -paw’a and Kw po’o; all in addition to the final -la of Ls páá-la

422(599) Ls ’iyáá-la ‘poison oak’ < Hebrew ’ayil ‘tree, oak’ (…l-la > -la)

423(1044) Ls wááwa-la 'mud wasp' < Aramaic ʕrʕy-tˀ ‘wasp’; Aramaic ʕaaraaʕii- ‘wasp’ > UA *wa’wa 'wasp':
Cp wá’walim 'yellowjacket'; Tb weweehyuu-l 'yellowjacket'. UA *wa’wa may result from an initial reduplication or from a later cluster after loss of 2nd vowel, not from an original cluster: ʕaaraaʕii- > warawV > warwa > wa’wa, like wïrwïru > wï’wïru ‘big’, and kolkoli > ko’koli ‘pain, sick’. Note Tb -y- (< *-y-). (Tak, Tb)

424(389) Ls yúú-la, -yu’ (poss’d) ‘head, hair’ < Egyptian i’rt ‘hair (of hide)’ (…’r-ta > -la)

425(1078) Ls méé-la ‘head of cattail rush’ < UA *mo’o ‘head’ < Arabic/Semitic muxx- ‘brain’ (…xx-la)

426(78) Ls húú-la ‘arrow’ < Hebrew ɦeṣ / ɦeṣi ‘arrow’; Arabic ɦaẓwat / ɦuẓwat ‘arrow’ (…ṣ(w)-la)

Ls kúúkunta-la 'bumblebee' vs. Cp kutáŋva-l 'bumblebee' show a velar nasal in Cp, with the nasal anticipated in Ls, but Cp’s 3rd and 4th consonants (-ŋv- now clustered) are where the Ls word ends and Ls shows -la, which in the same way explains -la (vs. -l), though no Near Eastern parallel is noticed for this item.

Another cause of Ls -la is when multiple consonants were reduced and are not visible at the end of the stem (like in bumblebee above), but underlyingly exist(ed) such that their effect still underlies the stem’s end before -la:

Group 5 (…CC-la, underlying consonant clusters before -la more complex than the single consonant seen)

315(1070) Ls náq-la ‘ear’ < Semitic na-qšab ‘what perks up to listen’ (3 C: …qšb-ta > q-la)

308(1077) Ls móy-la ‘moon’ < Semitic manzaal ‘star, moon, heavenly body’ (4 C: … nzl-la > y-la)

249(337) Ls téé’-la ‘belly’ < Egyptian r’-ib ‘stomach’ (3 C: … V’b-ta > V’-la)

427(1275) Ls ’éx-la ‘earth, land, dirt’ < Syriac ɦaql-aa ‘field-the, open country-the’ (…ql-la)

428(989) Ls ’áy-la ‘abalone’ / Ls páá’i-la ‘turtle’ < Arabic qarʕ- ‘gourd’; Syriac qara’- ‘gourd’ (…rʕ-la)
< UA *ayo / aya ‘shell, turtle, rattle’ < qrʕ ‘gourd, rattle’ (turtle shell similar texture to a gourd)
(these forms will be explained in the next paper)

Most interesting of all is Ls tóó-ta ‘stone, rock’ with possessed form Ls -tó’. Rare in Ls is the absolutive suffix -ta, and at 603 (in Stubbs 2015) we see that this is the Ls reflex of UA *tïmï ‘rock’ from Syriac ryam-ta / Aramaic riimaa / riimə-taa ‘large stone’. Yet consistent with a near final nasal and a final multi-consonant cluster (*-mt-t-), both encouraging the retention of the vowel -a, we also see -t- in -ta (vs. -la), which is significant since the Aramaic form is riimətaa. Adding the UA suffix -ta would yield *rimᵃt-ta > *tïmt-ta > *tïï-ta (and Ls o < UA *ï), thus Ls tóó-ta. (…mt-ta)

56(603) Ls tóó-ta ‘stone, rock’ < Aramaic ryam / rim(a)-taa plus perhaps another synchronic -ta

Though some details might be debated, nearly all the cases align with the proposed explanation(s).

7.4 Fourth, Four Takic languages distinguish Semitic / Egyptian velars (k, g > k) vs. uvulars (q, x, ġ > q)

Proto-Uto-Aztecan *k is generally k throughout UA, though Hopi and many Numic languages acquired a phonological rule that lowers PUA *k > q before low vowels. Yet in the Takic branch, four languages (Ca, Cp, Ls, Sr) have both initial ka and qa, preceding the same vowel. The k- vs q- distinction adjacent to other vowels or an intervocalic

-k/q- between two vowels might be explained by environmental factors, but to find both initial ka and qa, both before _a, in those four Takic languages cannot be attributed to environment and is a distinction not found elsewhere in UA, yet no satisfactory explanation to date has explained that phenomenon in Takic. However, Semitic and Egyptian again offer an explanation consistent with the great majority of the data. Semitic has velar k and uvular q: e.g., Arabic kalb ‘dog’ and qalb ‘heart’, often pronounced [kælb] and [qɔlb], k and q affecting their respective adjacent vowels. Besides q, some Semitists are beginning to think an uvular (rather than velar) nature belie Semitic *x and *ġ (Rubin 2010, 24; Goldenberg 2013, 67) or an uvular-like glottalic/ejective original in *x’ that eventually merged with *x in East Semitic and with pharyngeal ḫ in West Semitic (Rubin 2010, 24).

Interestingly, the Takic languages suggest the same: that Semitic *x and *ġ were uvulars for speakers of the Semitic / Egyptian contribution into UA. First, are presented items from Semitic initial velars *ga… and *ka… > Takic ka…. Then are presented items showing Semitic initial uvulars *qa, *xa, and *ġa > Takic qa.

In fact, even though other branches of UA do not show the q vs. k distinction, other branches do show evidence of previous/underlying uvular q causing adjacent vowels to round, which velar k does not do.

176(961) Hebrew dɛqɛl ‘date-tree, palm’; Arabic daqal ‘kind of palm tree’; Semitic *daqal > UA *taku ‘palm tree’: Eu takú-t; Wr tahkú; Tr ŕakú; My takko; Tbr takó-t; Wc taakïï; Cr takï; Yq táko.

177(738) Hebrew qayiṣ/qeyṣ ‘summer’ > UA *kuwïs 'summer' also shows the strong rounding influence of q.

1(527) Semitic baraq ‘lightning’ > UA *pïrok / Cah beroq ‘lightning’; note -a- > -o- anticipating -q.

429(1402) Egyptian mx’ ‘make fast, tie, bind, fetter’ > UA *maĝo’i- ‘bag, bind, wrap, blanket’, we see Sr q and also a deep uvular in CU, even a pharyngeal tap in WMU: TO mako ‘connect, couple, hitch together, shackle’; Sr möö̆q-kin 'fold, wrap, vt’; NP mago'o 'bag'; Kw mogwi’i ‘tanned hide’; WMU maĝwáy’ / moĝwé’ ‘blanket’; CU moĝóy’a ‘blanket’; Sh mokoccih 'sack, bag'.

Another matter relating to rounding adjacent to q are several items showing Takic *qo…, in which other Uto-Aztecanists have figured that UA *ko > Tak qo because of the vowel o, and then *qo > Ca/Cp qi, Ls qe, Sr qö. That makes sense and may be so; but also possible is that *q is original and in short unstressed syllables, the uvular caused short unstressed vowels to round *qV > qo, and would not necessarily have to be from *ko. The fact that we also have both Takic qa and ka in those four languages suggests that uvular *q was a proto-phoneme in Takic (or PUA) as well as *k, and that the two merged to *k in other branches, and that unstressed initial *qV > *qo happened due to the uvular affecting the otherwise rather non-descript, short, unstressed vowel, a schwa-like vowel in an uvular environment that defaulted to *qo.

In the data below, we first see 4 sets exemplifying velars remaining velars: g, k > k. Then 12 other sets show Semitic uvulars qa, *xa, *ġa aligning with Takic *qa, instead of ka in initial position, and then 7 medial uvulars of Semitic aligning with Takic uvulars are listed. Then 9 sets show unstressed or less certain vowels of Semitic qV > Takic *qo. Then 4 -q- > -x- are noted, mostly involving medial -x-, which may be the only fricative option in the UA phonology for an original uvular. Intervocalic / medial -q- exists in some highlighted Takic forms, but if fricativized, there is not an uvular fricative alternate to -x- in UA. So it appears that fricativization either eliminated the uvular dimension or minimized the difference enough to make it difficult to discern. In fact, Sr -q- aligning with Ca, Cp, Ls -x- in 217 and 286 below are evidence of exactly that.

Semitic initial velars ga / ka > UA velar *ka

26(608) Semitic gdʕ / gadaʕ ‘cut down, cut off’ > Sr katu’ 'cut up, cut (into several pieces)' 1/1

430(636) Semitic kp’ ‘bend, bow, incline, curve, lean over’; kappep ‘bend, vt’; Syriac kapiipuu-taa ‘crookedness’; Syriac kapaap-taa ‘anything hollow or curved, coffer’; Assyrian kappu / Hebrew kap ‘hollow or flat of hand, palm, sole, pan’; and ‘pan, cup of hand, or hollow’ is like an olla, cup, a hole/hollow: Cp kavá’mal ‘pot’; Ca káva’mal ‘olla, water jar, cup, pot’; Ls kaváá’a-l ‘clay pot’; Ls kapa-kpa-ma-l ‘short, low’. UA *kapV / kappV '(make/be) a hole, open, yawn': Ca kavi ‘have a hole, be open (window, etc)’; Ca kávi-ve 'hole'; Cp kápe ‘yawn’; Cp kápele ‘to open’; Cp kápal 'make hole'; Sr kïvïhka’ ‘hole’; Sr kïvïhï’q ‘be a hole’. Also of kp’ / kappV’, note Syriac kapiipuu-ta ‘crookedness’ and Ca kapu-kapu ‘be crooked (back, tree, etc); and Syriac kp’/kpy ‘bend, bow, incline, curve, lean over’; Aramaic kpy/kp’ ‘bend over, turn upside down’ > Ca kavay ‘go round, turn around, to curve (road). And all these Tak terms show initial ka… or k. 4/4

Semitic medial velars *-g-/-kk-/-k- > Takic -k-:

431(926) Hebrew/Aramaic ’agap ‘wing, pinion feather, arm, shoulder’ > UA *wakapu > *wakaC > *waki / *wiki ‘wing, feather’: Ca wáka-t ‘wing’, Ca wiki-ly ‘feather’; Ls kawí-t ‘wing’ (< *waki); Ls no-wki ‘my wing’; Cp wíki-ly / wáki-ly ‘feather’; SP wiġivï-vi ‘eagle tail-feather’ and Hp -wïki ‘feather’ in Hp kwaa-wïki ‘primary wing feather of the eagle’ (kwaa ‘eagle’). Metathesis in Ls (*waki > kawi); and SP shows the 3rd consonant *-p-. 3/3

23(1103) Semitic dakka ‘make flat, smooth’ > Ls táka/i ‘be straight’; Ls tááki-š ‘stone for smoothing pottery’; among other UA *takka ‘flat, smooth’ reflexes. 1/1

Semitic initial uvulars *qa-, *xa-, or *ġa- > Takic uvular qa-

432(1251) Hebrew qaw / qaaw ‘string’; Syriac qəwee ‘woven’, Aramaic pl *qawiin > Ls qááwina-š ‘bowstring’ 1/1

433(1347) Syriac qəwaayaa ‘a loom’; Syriac beyt qəwaaye ‘web’ > Ca qaawi ‘get tied, hooked’ 1/1

404(690) Arabic ġayr- ‘other than, without, no, not, non-, un-’ > Tak *qay ‘no’, not kay:
Sr qai; Ls qáy; Cp qáy; Ca kílye ‘not’ / kí’i ‘no’. high V may have changed q > k in Ca 3/3

215(294) Egyptian xpš ‘thigh’ > UA *kapsi (> *kasi) ‘thigh’: Tb hapši-l 'thigh'; Ls qaasi-l; Hp qàasi / qahsi ‘thigh, hind quarter’; but *kasi throughout the rest of SUA. Tb shows -p- and Hp suggests a cluster, but note Ls q instead of k. 1/1

232(322) Egyptian q’yt ‘high-lying land, hill’ from Egyptian q’i ‘be high’ > UA *qawi ‘mountain, rock’: Cp kawí-š ‘rock’; Ca qáwi-š ‘rock’; Ls qawíí-ča ‘mountain, hill’; Gb xay ‘sierra’; Sr qaiič; Ktn kay-c; Sr qaqaiič ‘mountains all over’ and *kawi in many SUA languages. Bilabial lost in Gb again; cf. 37. Note that both BH.Cup and HH.Cup reconstruct Takic *q, not *k. Ktn has no q, only k, and 3 of 4 languages that have both, do show q. 3/4

434(1382) Aramaic qəpiiduut-aa ‘shrinking, shortness’; Late Hebr quppad ‘was rolled up, made shorter, cut short’; Syriac *et-qapped ‘be shortened, cut off, shrunk, shrivelled’ and in UA: Sr qapöc ‘short’. 1/1

435(329) Egyptian qd ‘go round’; Egyptian qdi ‘walk about’; Egyptian qd / qdd ‘sleep’; Egyptian qdqd ‘wander, stroll’; UA *katï / *kattï ‘sit, be/live (at a place)’: Mn qatï; NP katï; TSh katï; Ch karï; Kw karï; SP qarï; CU karí; Tb halït~’aahal; TO kaač; Op katte; Eu kací; Wr kahtí; My káttek; Tbr katé. All Tak q: Cp qa’; Ca qál; Ls qál ‘live, be’; Sr qaţ/qaţï. 4/4

319(994) Hebrew ʕqr ‘uproot’; MHebrew neʕeqar (< *na-ʕqar) ‘be uprooted’; Syriac ʕqr / ʕəqar ‘**uproot, heal**’; Syriac **ʕᵉqaar-aa** ‘root, medicinal herb’; UA denominalized verbs from the noun ʕᵉqaaraa ‘root, remedy’, whose first syllable was lost > Takic *qaya/i ‘uproot, weed, clean’: Ls qáya/i- ‘fall, as a tree, vi’, blow down (a tree), vt’; Ls qáya/i- ‘heal (sore), get well, wash hands’; Ca qáyi ‘get clean, clear (ground, body, etc)’; Ca qáyi-n ‘to clean, get rid of, wash, clear’; Cp qéye ‘pull out, vt’; Ca qúyen ‘to pull out (tree)’. Though Ls káyi ‘to uproot’ has k instead of q, Ls qáya/i- ‘blow down (a tree)’ (same result as ‘uproot’) and Ls qáya/i- ‘heal’ both have q- and are listed as separate verbs in the Luiseño dictionary, though phonologically identical, yet the corresponding Syriac verb ʕqr also has both meanings ‘uproot’ and ‘heal’. 4/5

149(631) Aramaic ħamar (< *xamar) ‘wine’; Hebrew ħɛmɛr ‘wine’; Arabic xmr ‘to ferment’; Arabic xamr ‘wine’; Arabic ximiir ‘drunkard’; Arabic xamrat ‘wine’; Ugaritic xmr ‘wine’ > UA *kamaC 'drunk': Sr qäm|(ä)’q ‘get, be drunk, crazy’. Ken Hill shows Sr qäm|(ä)’q has pharyngealized (ä), not (a), that is, with some rounding, as well as q instead of k. 1/1

436(1525) Aramaic ql’ / qly ‘roast’ > Ls qali- ‘boil (food)’; semantics not identical, but both are ways of cooking food. 1/1

288(486) Egyptian xfty(w) ‘enemy(ies), opponent(s)’ > UA *kaytu ‘enemy, opponent’: keep in mind that the bilabial as first element in a cluster -ft- is not expected to remain, and intervocalic -t- > -l- in Takic, so the fact that it remains -t- does suggest the cluster, and -y- may anticipate the i after t; and the Egyptian plural suffix -w is apparent in Takic -u (xaftyw > qatiu > qaytu): Cp -qáytu; Ca káytu 'rival, competitor, enemy’; Ls káytu-š; Sr -qaiš. (2 of 4 show q, and 2 have k, split) 2/4

399(327) Egyptian q’r ‘bundle, pocket’ > UA *kawaC ‘pocket, bag’: Ca káwkun-ily ‘pocket, bag, purse’; Sr qawaa-taŋa-ţ poss'd: -qaawtaŋ 'pocket’; Cp qáwkuni-ly 'bag, sack’. Ch kawa’a ‘kind of big packbasket made with string’. The last part of Ca and Cp (-kuni) is *kuna 'bag’. (Tak, Num)

399(328) Egyptian q’r ‘bundle, pocket’ > UA *kawaC ‘pocket, bag’ and UA *kawaC ‘packrat’; the 1st has identical semantics, the 2nd a semantic extension, but two things suggest UA *kawaC ‘packrat’ is also from q’r: (1) Ls qáw-la ‘woodrat’ whose -la suffix is infrequent and happens when the stem ends with a laryngeal + liquid cluster or nasal; (2) we do have an identical semantic match above and the two UA reconstructions are identical phonologically. Again BH and Munro both reconstruct *q, not k: BH.Cup *qawala’ ‘rat’; Munro.Cup107 *qaawa-la ‘rat’: Mn qawa; NP kawa ‘packrat’; Sr qää-ţ; Ls qáw-la ‘woodrat’; Ca qáwa-l; Cp qáwe-l; in all branches of NUA, but not in SUA. 4/4

Among the above, 35 of 39 cognates show qa or ka as predicted, nearly 90% (89.74%). And even the misses are due to 3 of 4, and 4 of 5, and 2 of 4 being in agreement; in other words, in every set all terms or most terms aligned with the Near-East velars or uvulars, except one 2 of 4 set, half instead of all or most. None of the sets were against; all sets aligned by majority, even if not all terms in every set aligned. That is 15 ½ of 16 sets, or 97% of the sets align with the Near-East suggestion. Those should be compelling statistics. The items below also support the matter, but they involve more complex environments not easily amenable to statistical computation, though the medial uvulars in the next section might be added, which would bring the numbers to 47 of 53, or 88.68%.

Semitic medial uvulars -q-, -x-, -ġ- > Takic uvular -q-:

315(1070) *na-qšab ‘what is perked up, i.e., the ear’ > Sr qävaač ‘ear, leaf’; Ca náq-al; Cp náq’a; Ls náq-la; and forms resembling *naka or *nakapa in every other UA language also. Besides q (not k), note again Sr -ä-. 4/4

437(1340) Arabic pqẖ / paqaẖa ‘to open the eyes, to blossom’; Syriac pqẖ ‘to bloom’; Hebrew pqẖ / paqaẖa ‘to open the eyes’: Ls páqa- ‘to sprout through the ground, of plants, v.i.’; Ca púqi ‘bloom’ 2/2

217(174) Egyptian sxt ‘field, pasture, willow, f’ > UA *sakat / *sakaC ‘willow (Tak, Num), grass (Hp, SUA)’ Cp sáxa-t; Ca sáxa-t; Ls ṣaxá-t; Sr **haqat**; Gb saxát/sakát (note Tak -t, not-l); in several other branches 1/1

286(298) Egyptian ʕbxn ‘frog’ > *wapkan > UA *wakaN/C(-ta) > *wakatta ‘frog’: Sr **waqät** ‘frog’; Cp wáxači-ly ‘frog’; Ca wáxačily ‘frog’; Ls waxáw’ki-la ‘type of frog’. 1/1

77(88) ʕlq ‘stick, adhere’: ʕalaqat ‘leech, anything clammy or sticky, n.f.’ > UA *walaka ‘snail’; Ls muví**laqa** 'snail’ 1/1

429(1402) Egyptian mx’ ‘make fast, tie, bind, fetter’> TO mako ‘connect, couple, hitch together’; Sr **möö̈q**-kin 'fold, wrap, vt’; NP mago'o 'bag'; WMU maĝwáy’ / moĝwé’ ‘blanket’; WMU has a very deep pharyngeal tap, and Sr -q- agrees. 1/1

233(515) Egyptian ’xi / i’xi ‘sweep together’ > UA *wak / *waq ‘sweep, comb’: Ls **wáqi** ‘sweep, brush, comb’; Cp wák ‘comb, sweep’; Ca wáka’an 'sweep, clean, comb, rake'; Hp laq-ta ‘sweep snow clear’; Sr **wöö̈q** 'sweep, brush, comb’. Among those 4 languages, 2 q and 2 k, and the original following -i may have triggered the two -k-. 2/4

Semitic qV… > Takic *qo… > qi (Ca/Cp), qe (Ls), qö (Sr)

148(630) Hebrew *xole ‘be sick, hurting’ > UA *koli ‘be sick, hurt, vi’ in many SUA languages: Cp qil^{y}íqa-t ‘hot, spicy, strong’; Cp qil^{y}íqtu’ni ‘hurt, sting, vt’; Ca qél^{y}a ‘feel sore, v’; Ca qél^{y}ak ‘peppery, pungent, creating a burning sensation’.

430(957) Arabic qarqađaan ‘squirrel’ > UA *koŋi 'squirrel': BH *qéŋic 'squirrel'; Munro.Cup122 *qéé̱ŋi-š 'ground squirrel': Cp qíŋi-š; Ca qíŋiš; Ls qéé̱ŋi-š; Gb xoŋít; Sr qöö̈ŋt; Ktn koŋit. *-rq- > -ŋ- is a change like another cluster *-rẖ- > -ŋ- of -r- plus low guttural also becaming -ŋ-.

30(864) Arabic quppat ‘large basket’; Later Hebrew quuppaa ‘basket, tub, ball’. The Hebrew plural would be *quuppoot > UA *koppot ‘basket’: Ls qéépiš ‘baby basket’; Sr qöpöt ‘round kind of basket’. Ls and Sr both show *-pp- also.

292(332) *-rẖ- > UA *-Nw- > -ŋ- in Takic, -ŋw- in one Nahuatl dialect, but -w- in most of UA:
Egyptian qrẖt ‘serpent’; Egyptian qrẖ ‘friend, partner’; *qVrẖat > UA *koNwa ‘snake, twin’: Cp qeqiŋi-ly ‘king snake’ and Ls qiqeŋ-la 'ring snake' < Tak *koŋo all reveal Tak -ŋ- from the -rẖ- cluster (a liquid-pharyngeal cluster), very natural.

27(1014) Syriac qədaal-aa’ ‘neck, nape of neck’; Arabic qađaal ‘occiput’; Aramaic qədaal-aa ‘neck’ has such a short 1st V to be heavily affected by the uvular: UA *kutaC / *kura ‘neck’: Mn kúta; Kw kura-vi; etc; and Cp qil^{y}’a ‘nape of the neck’; Ls qelá-t / qilá-t. (Num, Tb, Tak, Tr, Cah, Azt)

416(1248) Arabic qasaṭa ‘divide, measure’; Hebrew qəśiiṭaa ‘ancient weight, used as money, coin, n.f.’;
Syriac **qesṭ-aa** ‘measure, n.m’ > UA *koCta ‘bark, shell, money’: Ls qéš-la ‘seashell’; Ls qéš-la ka-š ‘skull’; Cp qíči-ly 'money, silver'; Ca qíč-ily 'money' (pl: qišlyam); Sr -qöč 'hide, bark'; Sr qöčaaviam 'money'.

317(594) Hebrew ’aẖoot (< *’axoot) ‘sister’ (Syriac ẖaat-aa ‘sister’ eliminates the first syllable also) > UA *ko(’)ti / *ko’ci ‘older sister’ > Tak *qoci: Cp qísma; Ca qis-ka; Ls qee’is; Gb óxo’; Sr -qöö^{r}r; Eu kócwa; Wr ko’cí; Tr go’čí; Tb kuudzin ‘older sister’; etc.

431(449) Egyptian qq / q’q’ ‘eat’ > UA *koki 'graze, v’: Cp qíxin 'graze, pull out (hair)'; Ls qéé̱xi 'graze’.

432(1163) Syriac qəpa’ ‘collect, gather in heaps, congeal, swim on the surface’; western variant is qap (qpp); Mandaic Aramaic qəpa ‘swim, float on the surface, assemble in a bunch’; Aramaic(CAL) qpy ‘to coagulate, to float’;

Aramaic(CAL) qpy' / qpee / qipy-aa 'floating stuff, n.m.' > UA *qoppV 'mark/stripe, float': Ca qípi / qíipi 'be marked (of line), float (as fish, bird)'; Cp qípe 'be striped'. 'Float' is the common semantic thread, amidst various else.

We see occasional doublets or alternate / variant forms in those four languages—such as Ca káwiya / qáwiya 'hire, employ'—perhaps due to contact with another language not having two options, like Ktn k, but no q, though the beginnnings of a transition from q > k, as Ktn underwent, is also possible. Below are more sets, which contain Tak x, which is often associated above with uvular q, and all of them align with Near-East x.

433(595) Aramaic 'axaat-aa 'sister-the' > UA *wakati 'younger sister': Ca -wáxalʸ; Cp -wáxalʸi
150(632) Semitic xnq 'put/wear around the neck' > Tak *qonxa 'necklace, s.th. around the neck'. In this, the initial x- does the expected q-, and the later medial -q- > -x-.
434(654) Arabic xarxara 'snore'; Arabic xrr / xarra 'snore' > Ls xaráá-ya 'snore'. Initial x-? Wow!
435(244) Egyptian nxx 'be old, vi; old age, n'; Egyptian nxx 'youth, boy'; Egyptian nxn 'young'; Egyptian nxnw 'child'; Egyptian nxnw 'youth (abstract n)'; for Egyptian nxx to mean both 'age' and 'youth', the common sememe is 'grow'—grow up / grow old—and UA *nakan has the same range—grow up / grow old; the stems nxx and nxn underlie a similar pair of alternate forms in Egyptian nxx.t / nxn.w 'kind of bread':
UA *nakana / *naxan 'grow': Sh nahnaC 'grow up'; Kw nahna 'grow'; SP nanna 'grow'; CU nana-pï 'grown, mature'; Cp naxánču've-l 'old man'; Ca náxaluvel 'old man'; Ls naxááčuu 'become an old man'.

7.5 Fifth, Why Some PUA *w > Hopi L but Other *w > w before a, e, ö

Uto-Aztecanists have long known that most Proto-Uto-Aztecan **w* change to Hopi *l* before the low vowels *a, e, ö* (group 3), but that PUA **w* remains Hopi *w* before high vowels *i, ï, o* (group 6). However, some *w remain w in Hopi even before the low vowels. Remember that the Semitic pharyngeal ʕ and glottal stop ' are two sources of UA w, and some Arabic speakers pronounce *ʕ* as *w* at times and as *r* (the other liquid) in certain environments. I heard a native speaker of Syrian Arabic say sabriina (< Arabic sabʕiina 'seventy') and other speakers doing similarly. Many UA sets substantiate Hopi *l* corresponding to UA *w in the rest of UA. However, many exceptions yield Hopi words with syllables like *wa* and *we*, which do show Hopi *w* before low vowels (groups 4, 5, 7). The UA tie to Near-East languages explains the exceptions, as follows:

First of all, Hopi *l* sometimes does come from Semitic *l*. Group one is examples of Semitic *l* > Hopi *l*. Next, the fact that the Semitic laryngeals (', ʕ) correspond to PUA *w underlies the solution. Those PUA *w and the would-be Hopi *w* from the Egyptian or Semitic laryngeals (', ʕ) do change to *l* in Hopi (groups 2 and 3) when before a low vowel, but when before a high vowel, PUA *w > w in Hopi (group 6) consistent with what Uto-Aztecanists have long known. However, when Hopi *w* comes from an actual *w*, whether from Egyptian *w* (group 4) or from Semitic *w* (group 5), then **w* remains *w*, even before low vowels (groups 4 and 5). In addition, doubled laryngeals remain *w*: *-''- > *-ww- > -w-. Or in the case of consonant clusters in which one consonant is a laryngeal, which in effect doubles the rounding effect similar to *-ww-, then those clusters or doubled *-ww- in effect also remain -w- (group 7). That is, Hopi taawa 'sun' < *tawwa < Egyptian raʕwa 'sun' and Hopi siwa < Semitic šipħaa, wherein p is absorbed to double the -w- effect of the pharyngeal keeps the w: *-pħ- > *-ww- > Hp -w-.

Group 1: Hebrew l > Hopi l
164(700) Hp loma 'good, etc' < Hebrew lummad 'trained'
158(695) Hp lööqö(k-) 'wedding' < Hebrew lqħ / laaqaħ 'take (to wife)'
167(1501) Hp salày-ti 'pleased, joyed, gratified' < Arabic slw / sly / salaa V tasalla 'to delight, take pleasure in'
436(6) Hp kwelo 'sample by tasting' < Hebrew blʕ / balaʕ 'swallow' (6) (for b > kw, see next paper)
168(1387) Hp pöönala 'thick (in size)' < Arabic pgl 'be thick' (for g > ŋ, see next paper)
165(698) Hp leŋi 'tongue' < Arabic lahgat 'tongue'

Group 2: Hebrew/Egyptian ʕ > Hopi l
437(37) Hp kwala ‘come to a boil, get angry’ < Hebrew II bʕy / baʕaa ‘bring to a boil’ (for b > kw, see next paper)
91(686) Hp löwa ‘vagina, vulva’ < Hebrew ʕɛrwaa ‘nakedness, genital area’ (the l)
438(685) Hp -laqvï in Hp kïk-laqvï ‘tracks all over’ < Hebrew ʕaaqeb ‘heel, footprint’
253(262) Hp ma-laci ‘finger’ < *ma-watti < ma- ‘hand’ + Egyptian **ʕnt** ‘nail, claw’
439(687) Hp lèesi- ‘horizontal’; Hopi lèe-ta ‘lay across’ < Arabic ʕarḍiy ‘cross- (in compounds), horizontal’
440(1473) Hp qölö ‘hole, a lot of’ < Hebrew tqʕ
441(239) Hp nàala(-k-) ‘change places/residence, move’ < UA *nawa/*nawi ‘go, move’ < Egyptian **nʕi** ‘travel, traverse’ (Num, Hp, Cah)
442(1380) Hp laaki ‘become dry, thin, v’ < Semitic ʕqr ‘uproot, barren’ (dried up); Arabic ʕaaqir ‘barren, sterile’

Group 3: Hebrew/Egyptian glottal stop ’ (> UA *w) > Hopi l
38(569) Hp löqö ‘pine’ < Hebrew ’egoz ‘nut’ > UA *woko ‘pine’
443(570) Hp löö(y) ‘two’ < Hebrew ’axar ‘follow/after’ (see next paper)
233(515) Hp laq-ta ‘sweep snow clear’; UA *wak ‘sweep’ < Egyptian **’xi** ‘sweep together’
444(514) Hp waala ‘gap, pass, saddle in ridge’ < Egyptian w’t ‘way, path, street’ (note w > w, but -’- (> -w-) > -l-)
399(328) Hp qaala ‘packrat’; Tb haawa-l ‘wood rats’; Ls qáw-la ‘woodrat’ < Egyptian q’r ‘bundle, pocket’
445(1514) Hp laŋa ‘be pulled taut’ < Hebrew ’rg ‘weave’; Hebrew ’ereg ‘loom’
446(465) Hp -pela in Hp tùupela ‘cliff wall’ < Egyptian bi’ ‘quarry’ (see explanation at 465 in Stubbs 2015, UACV-1268c)

Group 4: Egyptian w > Hopi w before a, e
447(229) Hp mowa ‘moist, wet’ < Egyptian mw ‘water’
444(514) Hp waala ‘gap, pass, saddle in ridge’ < Egyptian w’t ‘way, path, street’ (the initial w-)
448(469) Hp wehe ‘for liquid to spill out’ < Egyptian whi ‘go out, slip out, run/trickle out, pour out’
449(469) Hp wahi- ‘throw out pl objs’ < Egyptian whi ‘go out, slip out, run/trickle out, pour out’
450(516) Hp warani ‘s.th. reserved, saved for future use’ < Egyptian wdn ‘load, offer, bring, consecrate’
451(288) Hp wáŋway ‘summon, call’ < Egyptian wx’ ‘seek, want’ > UA *wi’wa / *wa’wa ‘seek, want, look for’:
Sr wii’wïn ‘want, like’; Tep gaaga ‘look for’ < *waawa. (Num, Hp, Tak, Tep, CrC)
452(517) Hp wayoŋ- ‘protection, windbreak’ < Egyptian wi’ ‘ward off, protect, turn away’ (for Hp ŋ, see next paper)
(Note Egyptian bi’ > UA *payu (see p. 43) same voweling as Egyptian wi’ > UA *wayuŋ (Hp o < *u)
453(518) Hp naawa ‘groan, moan’ (example given is old person groaning in death) < Egyptian nw ‘be weak (due to age)’
454(186) Hpi waho(-k-) ‘for particulate matter to spill’ < Egyptian wḫ’ ‘hew (stone), break (stone)’

Group 5: Semitic w > Hopi w before a, e
102(13) Hp soniwa ‘beautiful, bright’ < Arabic snw ‘gleam, shine’; Ethiopic snw ‘be beautiful’
91(686) Hp löwa ‘vagina, vulva’ < Hebrew ʕɛrwaa ‘nakedness, genital area’ (the w)
370(1059) Hp tïŋwa ‘name’ < Arabic dʕw / daʕaa ‘to call, name’
89(681) Hp wïŋwa ‘grow up’ < Arabic ʕlw / Hebrew ʕly / ʕalaa ‘ascend, go up, grow’ (Hp 2nd w)
The last two are unique in having underlying Semitic -w as 3rd C and both show liquid or pharyngeal + w > -ŋw-

Group 6: Hebrew ʕ, ’, ḫ > Hopi w before high vowels i, o, ï or if doubled (next group, group 7)
89(681) Hp wïŋwa ‘grow up’ < Semitic ʕlw / ʕalaa ‘ascend, go up, grow’ (first w)
455(1516) Hp wiiki ‘take along, lead, escort’ < Semitic ’rk ‘long, make long (rope), stretch’ (see 1516 of Stubbs 2015)
456(660) Hp wiimi ‘religious rite, habit’ < Semitic ḫrm ‘dedicate’
457(652) Hp wi-hï ‘fat, oil, lard’ < Semitic ḫilb ‘fat’ (> UA *wip ‘fat’ in 7 UA branches)

Group 7: When clustered or doubled -ww- > Hopi -w- before a/e, whereas single -’- > -l-, or -ʕ- > -l-, not > -w-
53(1333) Hp meewan- ‘forbid, warn’ < Hebrew m’n ‘refuse’ (< *mi’’an) from geminated -ww- < *-’’-
248(163) Hp taawa ‘sun’ < *tawwa < Egyptian *raʕwa ‘sun’ (-ʕw- > -w-)

284(757) Hp siwa ‘younger sister’ < Semitic šipħaa ‘maiden’ (-pħ- > -w-)
91(686) Hp löwa ‘vagina, vulva’ < Hebrew ʕɛrwaa ‘nakedness, genital area’ (-rw- > -w-)
370(1059) Hp tïŋwa ‘name’ < Arabic dʕw / daʕaa ‘to call, name’ (-ʕw- > -w-)

7.6 Sixth, Why Some PUA *-w- > Luiseño -ŋ- but other *-w- > -w-

Sapir (1915) noticed one instance of UA *-w- > Ls -ŋ-, that is, UA *siwa ‘woman, girl’ > Ls ṣuŋáá-l. Munro (1973) listed a few more in a 1973 IJAL article, such as Ls túŋ-la ‘name’ (< UA *tïwa ‘name’), qiqéŋ-la ‘ring snake’ (< UA *koNwa ‘snake’), and Ls hiŋéé-ma-l ‘boy’. Munro also notes that this only occurs medially, not initially. She also knows that even medially, most UA medial *-w- remain Ls -w- (Stubbs 2011, UACV: 148, 150, 159, 165, 229, 251, 332, 328, 488, 570, 600, 835, 1031, 1044, 1163, 1523). Even in cases of Ls -ŋ- (UACV 757, 1059, 332, 1237, 411, 412, 413, 270), Ls is sometimes not alone in having *-ŋ-, as some sets (757, 1059, 332) show other NUA languages sharing -ŋ- with Ls. In 1059, Hopi -ŋw- and Tb -ŋw- have some nasalization like Ls túŋ-la, while the other Takic languages and the rest of UA all have -w- in *tïwa ‘name’. So what underlies the differences? As stated several times previously, any one of four Semitic phonemes—w, ʕ, ħ, or ’—can yield UA *w when initial or intervocalic. However, when a pharyngeal is clustered with almost anything else, the result is usually -ŋ- in Ls, and depending on the components of the cluster, sometimes -ŋ- in other NUA languages as well.

One of those four rounding phonemes as 2nd segment of a cluster yields -ŋ-: *-CW- > -ŋ- (W = w, ʕ, ħ, or ’)
284(757) Hebrew šipħaa ‘maid, maid-servant’ > UA *siwa / Tak *suŋa 'man's daughter, wife': **Ls ṣuŋáá-l** ‘woman, wife’; Cp ṣuŋáma ‘man's daughter’; Ca súŋama 'man's daughter’; Gb ásoŋ 'wife'; Sr ṣuuŋ 'man's daughter’; Ktn huŋ ‘descendant’ and Ktn nïmihuŋ ‘wife’. All Takic languages do as Ls in their reflexes.
370(1059) Arabic dʕw / daʕaa ‘to call, name’ > UA *tï(N)wa / *tïnwa (AMR) ‘name’: **Ls túŋ-la**; Hp tïŋwa ‘name, vt’; Tb ’ïndïŋwa-l ‘name’; Cp téw’a ‘name (n. poss’d)’; Ca téwa-l; Sr tïwan(č); Ktn tïw; TO čïïg ‘call by name’; Eu tewát; My tééwam; Tbr temwa-ra; Yq tea; and *tïwa in most other SUA languages. Semitic has an underlying *-ʕw-, convenient for Hp -ŋw-, Tb -ŋw-, and Ls -ŋ-. Even though the perfective daʕaa and other forms seldom reflect the underlying -w- or -y- of such verbs, UA exhibits those underlying consonants (daʕwa) more often than most Semitic languages do. (See also 482(1067) bʕy)
89(681) Semitic *ʕalaa / *ʕal(w)a ‘ascend, go up, grow’ > UA *wïla ‘grow’, but Hp wïŋwa ‘grow up’.
As in dʕw / daʕ(w)a above, ʕlw does the same in Hp as l > N often in NUA, and the pharyngeal helps *-lw- > -ŋw-:
292(332) Egyptian qrħt ‘serpent’; Egyptian qrħ ‘friend, partner’ > Aztecan *koŋwa ‘snake, twin’ or UA *koNwa ‘snake’ reflects a -rħ- cluster (< *qVrħat), as well as the feminine ending -at > -a. *-rħ- > UA *-Nw- > -ŋ- in Takic, -ŋw- in one Azt dialect, -w- in the 20 other UA languages: Cp qeqiŋi-ly ‘king snake’ and **Ls qiqeŋ-la** 'ring snake' < Tak *koŋo have Tak -ŋ- from the -rħ- cluster (liquid-pharyngeal cluster), very natural. UA *kowa is often reconstructed, yet Kaufman (1981) *konwa and Joe Campell (1976) *koŋwa, both predate me in reconstructing a nasal *koNwa. Furthermore, CN kooaa-tl ‘snake, twin’ has an odd pair of meanings, yet their Egyptian source-form also has both ‘snake’ and ‘partner’:
458(1237) perhaps unattested Semitic *roop’-aa ‘healer’ > UA *toŋa ‘cure, administer to’: **Ls téŋal** ‘to cure, doctor with herbs’; Ls téŋala-š ‘medicine’; Cp tíŋele; Ca tíŋ’ay ‘cure, doctor s.o.’ Note Tb dzowaa-l ‘shaman’ with -w-. Several other UA *towa ‘heal’ forms (*hitowa) at 1236 in Stubbs 2015. Like other clusters of bilabial and glottal stop, bilabial disappears and the second C does its rounding as in most of the above. And note Ca glottal stop in Ca -ŋ’-.

In the next three, the two successive pharyngeals (ħ and ʕ) seem to strengthen the 2nd enough to become -ŋ-:
459(412) Egyptian ħʕi ‘be glad, happy, rejoice’; Egyptian ħʕwt ‘joy, rejoicing’; Egyptian ħʕʕw ‘be happy’ > **Ls heŋča-wu-t** ‘cheerful, contented’. Ls e < UA *o, so UA *howV reflects the two pharyngeals well.
460(413) Egyptian ħʕ’ ‘child, boy’ > **Ls hiŋé’-ma-l** / hiŋéé-ma-l ‘boy’. UA *howo’ / hoŋo’ > Ls heŋé’-, then unstressed Ls e > i, and Ls even shows the 3rd consonant glottal stop in the one variant, besides the first two consonants matching in these three sets (459-461): Egyptian ħʕ > UA *how > Ls heŋ.
461(411) *-ʕw- > UA *-ŋ- > NUA -ŋ-, SUA -n-: Egyptian ħʕ / ħʕw ‘body’ > UA *hoŋa 'body’; Tepiman n corresponds to NUA ŋ, so UA *hoŋa 'body’ > TO hon ‘body’; Nv hona ‘body’; PYp hona ‘body’. Regardless whatever else may occur in these three (459-461), considering that ħʕ would correspond to UA *how and Ls heŋ-, and that the three Egyptian meanings are ‘happy’ and ‘boy’ and ‘body’, all quite different, and that the expected reflexes in UA/Ls have the same three meanings in UA is striking.

A cluster of a nasal plus pharyngeal / laryngeal in either order tends toward -ŋ- in NUA, as we also see in the four instances of the cluster *-m'- > NUA -ŋ- > SUA -n- (salt, lung, husband, left) and in which some Numic languages actually show -m- also, while Ls, with the rest of Tak and Hp and Tb have -ŋ-.

279(1246) *-m'- > -ŋ-: Old Canaanite hassim'al 'the-left' > Tb aašiŋan 'left side'

276(280) *-m'- > -ŋ-: Eg ḫm' / ḫm't 'salt' > UA *omwa > *oŋa 'salt' > **Ls 'éŋ-la**

277(281) *-m'- > -ŋ-: Eg sm' 'lung' > UA *somwo > *soŋo 'lung'

278(284) *-m'- > -ŋ-: Eg qm' 'create, beget' > UA *kumwa > *kuŋa 'husband' > **Ls kúúŋ**

282(940) *-mʕ- > -ŋ-: -mʕak 'squeeze, crush, rub' > UA *ŋaka/i 'grind, scrape, rub against'

283(941) *-nʕ- > -ŋ-: -nʕar 'shake, grunt, roar' > UA *ŋïy 'shake, be dizzy' / **Ls ŋóla** 'be dizzy'

Thus, the pharyngeal-plus-nasal cluster (*-ḫn-) in 462 behaves similarly:

462(462) Egyptian ṯḫn 'shine, gleam, sparkle' > UA *toŋo / *toŋa 'shine (of sun), be hot, heat (of) sun/day':
Sr töönava' '(in the) summer'; **Ls itéŋvu** 'hot spring'; Cp tíŋe 'be hot' (Cp i < UA *o); Ca tíŋma 'warm'; Hp töönï 'hot weather, heat of the day'; Ktn toŋava' 'August, summer'; TO toni 'be hot'; TO tonod 'shine, twinkle'; TO tonoliđ 'shine onto'; NT tonóli 'sunshine'; ST tanoolyiop 'in the sun'; Wr tono/i 'boil'; Eu tonó 'be hot, boil'; CN toonal-li 'warmth of the sun, summertime, day'.

Instances of UA *-w- remaining Ls -w- apparent in this tie are mostly from Egyptian or Semitic solitary -w- or intervocalic -w- or -'-, and not from clusters with a pharyngeal, as are the sources of Ls -ŋ- above:

447(229) Egyptian mw 'water'; Egyptian mwy 'watery' (Coptic mu) > UA *muwa/i 'wet': Hp mowa-ti 'be wet, moist'; **Ls páá-muwi**-š 'wet'.

246(165) Egyptian rwi 'dance, v' > UA *tawiya / *tuwiya > *tuya 'dance'; redupl *tu(w/v)tuwi:
AYq tatawiilo 'turn around, vi'; Sr tuhtu' 'dance, vi'; Ktn tuhtu' 'dance, vi'; Ktn tuhtuic 'dance, n'; Ktn tuhtuhyït 'dancer, n'; **Ls tóótuwi**-š 'guardian spirit, person who performs a certain dance, the tatahuila'.

232(322) Egyptian q'yt 'high-lying land, hill' from Egyptian q'i 'be high' > UA *qawi 'mountain, rock': Cp kawí-š 'rock'; Ca qáwi-š 'rock'; **Ls qawíí-ča** 'mountain, hill'; Gb xay 'sierra'; Sr qaiič; Ktn kay-c; and *kawi in many SUA languages.

55(600) Hebrew ro'e 'seer'; Hebrew r'y / raa'aa 'see, v' > UA *tïwa 'find, see': Hp tïwa 'find, perceive'; Tb tïwat~'ïïtïw; Cp tewa 'see'; Ca téew 'find, discover'; **Ls tów** 'see, look at'; **Ls tóówi** 'see by second sight, be clairvoyant'; TO cïïg(iđ); PYp teega 'find, see'; Eu téwa; Wr tewa; Tr ŕewa / tewa; My téwwa; Yq tea.

237(148) Egyptian t'yt 'shroud' > **Ls tawaayi-š** 'cape-like garment of twisted strips of rabbitskin formerly, but now any kind of cape' (Elliott); UA *tawayi, redupl UA *tatawayi > *talawayi 'wrap around': Eu hitárave / hitárawe 'put on, get dressed'; Tb talaawïš(-ït)~'atalaauš 'go around'; Tb talaaw~'atalaauš 'he encircles it'.

236(150) Egyptian t' 'earth, land, ground, country' (Coptic to) > UA *tïwa 'sand, dust': Hp tïïwa 'sand'; Hp compounds suggest an originally larger semantic range to include 'dust, earth': Hp tïïwa-nasave 'the center of the earth'; Hp tïïwaŋw-ti 'decompose, turn to dust, become part of the earth'; Tb tïïwï-t 'dust'; Cp tïw- 'dust'; **Ls toowu**-t 'dust in the air' (Ls o < *ï); Cp tewvaŋa 'where dust was'; Sr tiüva-ţ 'earth, ground, land, world, country, floor, dirt, dust'.

348(1031) Semitic qn' 'be jealous', impfv: -qna' > UA *nawa 'jealous': Cp náwe 'be jealous of'; Ca nawaan 'be jealous' **Ls nááwin** 'be jealous'.

399(328) Egyptian q'r 'bundle, pocket'; the similarity of UA *kawaC 'pocket, bag' and UA *kawaC 'packrat', and both semantically derivable from q'r 'pocket, bag' may point to q'r > *kawaC 'packrat' also: UA *kawaC 'rat, packrat': Tb haawa-l 'wood rats'; Sr qää-ţ; Gb xar; Ktn ka-č; **Ls qáw**-la 'woodrat'; Ca qáwa-l; Cp qáwe-l; Hp qaala 'packrat'; NP kawa 'packrat'.

A lone intervocalic pharyngeal -ʕ- usually remains its expected usual -w-:

463(488) Egyptian šʕt 'kind of bread/cake'; Egyptian šʕyt 'Schot biscuits or baked goods' > UA *sawa 'make tortillas or bread' and *sawiC-ta 'bread': Ca sáw 'make tortillas'; Ca sáwi-š 'tortilla'; Cp ṣáwi-š 'bread, acorn bread'; **Ls ṣáwa**/i 'singe, get singed'; **Ls ṣááwa**-kaa 'cook tortillas'; Sr ṣaawt 'bread, acorn bread'

423(1044) Aramaic ʕrʕyt' / ʕurʕyt' 'wasp'; Aramaic **ʕaaraaʕii**-taa 'wasp-the, n.f.' > UA *wa'wa 'wasp': **Ls wááwa**-la 'mud wasp'; Cp wá'walim 'yellowjacket'. We see from Aramaic ʕaaraaʕii- that UA *wa'wa results from a later cluster after sycopating the 2nd vowel, and that the cluster came after the rule was obsolete that *-rʕ- > Ls ŋ.

464(251) Egyptian sʕ'y 'tremble, v' > UA *sawi(ya) 'fear, v': CN iisawiaa 'be overawed, vrefl, frighten, outrage s.o., vt'; Eu sevíce 'be afraid' (*w > v); **Ls ṣuwó'** 'be afraid of' (if *sawi > suwï > Ls suwo'). The difference between 459-461 and 464 may be the double pharyngeal in 459-461 (above) vs. a single pharyngeal in 464.

442(1380) Semitic ʕqr ‘uproot, barren’ (dried up); Arabic ʕaaqir ‘barren, sterile’ > UA *waki ‘dry, shrivel, thin’:
Tb waagii’ït ~ ’awaagii’ ‘be dry, skinny'; Hp laaki ‘become dry, thin, v’; Cp wáxe 'dry, vt’; Ca wáx 'become dry, vi’; **Ls wáxa** 'dry up, heal, v.i’; Ls wáxni 'dry, vt’; Sr waak 'dry, vi’; Sr waaqan 'dry, vt’; *w > g in Tep: TO gaki 'be dry, skinny'; PYp gak; NT gáki; ST gak; Nv gaki; Nv gaku; Eu wáke; Yq waake; My wakía; Cr wahči 'dry, thin'; CN waaki. Of course, as Munro has said, *w > Ls ŋ does not occur in initial position, and as we see from the above several sets, that is mainly because clusters that trigger Ls ŋ do not occur initially. Thus, this initial w in Ls, like others, are not from the clusters that cause ŋ.

Two instances of glottal stop-plus-w remained as such (*-’w- > -’w-):
373(159) Egyptian t̲’w / t̲’y ‘take up, seize, steal, collect, gather/bring together’ (> Coptic jiwe) > UA *tï’wi / *tu’wi ‘gather seeds, harvest’: **Ls tó’wi** ‘gather (as seeds), harvest’; Numic tu’u ‘take (pl obj’s).
465(835) Sem *ya’xez / *ya’ħez ‘grasp, take’ > SP yaŋwi ‘carry’; CU yáa’way ‘carry, take by hand’; Cp yáwe ‘bring, carry’; Ca yáw ‘to catch, touch, have, hold, take care of’; **Ls yááw** ‘have, hold, take’; Sr yaa’ ‘take, carry’; Sr yaa(i) 'take, seize, catch'. Given UA -ŋw- / -’w- / -w-, this does belong, but merits thought. 465 (-’ħ-) and 373 (-’w-) contain clusters in which I would not have been surprised to see Ls -ŋ-, but what they have in common is glottal stop as 1st consonant, and neither 1st or 2nd C is a pharyngeal, though the glottal+uvular cluster in 835 *-’x- comes close, and we do see -ŋw- in SP and -’w- in CU.

The variety of consonant combinations is diverse enough that figuring percentages might be impractical, but a general pattern is that almost any cluster with a pharyngeal > ŋ (284, 370, 292, 461, 462) and clusters of nasal and laryngeal (N + ʕ or ’) > ŋ (276, 278, 283, 462). In contrast, single or intervocalic *-w- > -w- (447, 246). And like **36**(571) ya’ya’ / yaa’ayaa’ ‘(be) beautiful’ > Ls yawáywa, Sr yï’aayï’a’n ‘be pretty, beautiful’ wherein Ls -w- corresponds to Sr -’-, as well other single or intervocalic -’- go to -w- when not clustered (232, 55, 237, 236, 348, 399, 36). Even a lone -ʕ- > w (463,464, 442). However, sure explanations for 423 vs 459-460, as well as for 373 and 465, elude me (though possible ones exist). So 18 of 23 fit the pattern specified, while 5 remain rather enigmatic, for 78%.

7.7 Seventh, Why Some PUA *p > p but other PUA *p > b in Cahitan and Tarahumara

An interesting distinction exists in Cahitan (Cah), Tarahumara, and Eudeve. Proto-Uto-Aztecan *p is simply p in most UA branches, w/v in Tep, h in CrC, and ø in Azt. However, six languages/dialects—Tarahumara (Tr), Western Tarahumara (WTr), Eudeve (Eu), Mayo (My), Yaqui (Yq), Arizona Yaqui (AYq)—show both initial b and p for PUA *p. We shall only deal with the initial bilabials, because non-initial (later in a word) bilabials are easily voiced intervocalically or otherwise alterable due to word-internal environments. This dichotomy has been without explanation the last century since Sapir established UA as a language family, yet a good percentage of the time, items with initial b in these UA languages align with Semitic b or Egyptian b, and items with initial p in these UA languages align with Egyptian or Semitic p. In other words, for most UA languages, Semitic b and p merged to UA *p. However, in the six languages mentioned, they seemingly remain distinguished to a considerable degree? This does not involve PUA *kw, which is w in Tr and bw in Cahitan, but Tr and Cah have both b and p as well. Tr b and My b and Yq b < Semitic b, and p in those same languages < Semitic p; AYq shows v < b and p < p; and Eu shows both b/v < b vs. p < p. Wr never shows the distinction, but is closely related to Tr, and is often listed to show the difference.

Aligning with Semitic b
1(527) Semitic baraq ‘lightning’ > UA *pïrok / perok ‘lightning’: My berok-; Yq be’ok-; AYq ve’okte; Tbr virikí-t 3/3
10(528) Hebrew **bayit / beet** ‘house’; Arabic **byt / biit** ‘pass/spend the night’: Hebrew byt ‘to spend the night’ > Tr bete-ba-ma ‘spend the night’; Tr bete-či / biti-či ‘house-at’; Tr bete-ra ‘house’; Tr beté-re- ‘live, inhabit, dwell’; Tr peréame ‘inhabitants, residents’; Tr bití ‘various objects be in horizontal positions, vi pl’; WTr behte ‘live, v’ (Burgess 1984, 19); WTr bete-ba-ma ‘spend the night’; WTr bete-ra ‘house, n’; WTr bití ‘be lying down, pl’; WTr bite ‘dwell’ 3/4
17(529) Hebrew béged / baaged ‘garment, clothing’ > Eu vakaci ‘clothing’; Eu vakace ‘get dressed, vi’. 1/1
17(530) Hebrew béged / baaged ‘garment, clothing’ denominalized to be a verb ‘put on, enter’ > UA *pakiC ‘enter’: Eu vaké/baké; Wr pahki; Tr baki-mea; My kibake; AYq kivake. 4/4
2(531) Hebr **bw’** ‘come, v, way, n’ > UA *pow/po’ ‘road, way’: Eu bowé-t; Yq bóo’o; My boo’o; AYq voo’o; Tr bowé 5/5
7(532) Arb **baaṣir**at ‘eye’ (= Hebrew *booṣer) > **UA *pusi** ‘eye’; Eu vusít/busít; Tr busí; Yq púusi; My puúsi. 2/4

7(533) of the same root, Arabic **baṣṣara 'open** one's own **eyes**'; unattested Hebrew *buṣṣar > Eu busá 'awaken, vt'; Eu busú 'wake up, vi'; Tr busá-ma 'wake another, vt'; Tr busi-mea 'wake up, vi'; Tr busire 'be aware, conscious, awake'; My bussa; Yq busa; AYq vusa; AYq vusa'a 'awake, adj'. 5/5

6(535) Hebrew baaqaar 'cattle, livestock'; Aramaic bqwrh / **bəquuraa** > UA *puku 'domesticated animal, s.th. possessed': Tr bukú 'animal poseído'; Tr bukurú 'take ownership of'; Eu bukút 'slave'; My bukke 'raise (children or animals)]'; Yq búke 'have animals'; Yq buki 'slave'; Eu vuk 'possession': no vuk 'mio', amo vuk 'tuyo'. 5/5
bəquuraa > UA *puku has the 1st short schwa vowel assimilated to the 2nd long stressed vowel.

466(538) Arabic badda 'separate'; Arabic budd 'part of a thing'; Hebrew bad 'part, portion' and in phrases 'except, apart from' > Tr biré 'one/some' and 'negative particle'; Wr piré. Tr biré and NT parï both mean 'one/some' and both also act as a negative particle. The Hebrew meanings (part and except) > UA meanings (one, negative) is striking. 1/1

11(540) Hebrew bṭḫ 'trust, v'; Hebrew biṭḫa(t) 'trusting' > UA *pitiwa > *piciwa 'believe': Eu vícwaci 'believe'; Eu vicwaterá 'believe'; Tr biči 'believe, have faith'. 2/2

467(545) Arabic bd' 'begin, start', bad'a(t) 'beginning, n'; Arabic bdʕ 'start, do for the first time' (badʕ); Arb bidʕat 'innovation' > UA ***pïwa(t)** 'first, begin': Eu viwát 'first time' (Tep, Op, Azt) 1/1

468(548) Syriac bd' 'to invent, make up'; OSArabic bd'an 'loose talk'; Hebrew bada' 'to invent, devise' > AYq veewa 'non-sense, gibberish'; AYq veewa-tia hia 'brag, boast, complain, whine'. Both meanings, 'new, begin' and 'bad-talk', show the pattern *pïwa / *bïwa < bad'a, perhaps denominalized verbs. 1/1

469(549) Arabic blg / balaga 'to shine'; Arabic blg / baliga 'be happy, glad'; Hebrew hi-bliig 'cause to flash, become cheerful, brighten up' > Yq bále 'enjoy, rejoice'; Yq balí-ria 'joy, gladness'; Yq belohko 'bright, shining'; AYq vélohko 'bright, shining'; AYq valepo 'desire, will'. 2/2

5(550) Hebrew báášaar 'flesh, penis'; Aramaic **bəśár** 'flesh', biśr-aa 'flesh-the' > UA ***pisa** 'penis': Wr pisá; Tr bisa. 1/1

12(552) Arabic baṭuna (u) 'be paunchy, pregnant'; Arabic baṭn 'belly, womb'; Hebrew baṭṭen 'pregnancy'; Syriac bəṭin 'to conceive, be with child'; Hebrew bɛṭɛn 'belly (of man, of pregnant woman)' > UA ***poc(c)a / *putta** 'pregnant': Tr bocá 'be pregnant'; Eu púcika 'rebosar de lleno'. Tr aligns, while Eu does not—a loan from a non-distinguishing language? 1/2

13(553) Hebrew bṣq 'to swell'; Hebrew baaṣeq 'flour-dough' [what swells/rises]; Arabic basqat 'raised spot' > UA ***posa** 'swell': Hp pös-ti 'become swollen'; Wr posa- 'be full, sated'; Tr posá/bosá, bosawí (irreg pres) 'full from eating'; Eu vosve 'get full of food'; Eu vosáhtude- 'fill another with food'. Hp and Wr are included as examples that do not show the distinction, while Tr and Eu do, though Tr has alternate forms, one likely borrowed from nearby Wr which does not distinguish b vs. p. 2/3

470(554) Aramaic bəzar 'seed'; Aramaic biizr-aa / bazr-aa 'seed-the'; Arabic baðara 'sow'; Arabic baðr- 'seed, seeds'; Arabic baðra(t) 'a seed, pit' > UA ***paCci / *pa'ci** 'seed': My báči-a; Yq bací-a; AYq vačia 'seed, pit, stone'; Wr pahcí; Tr bací-ra 'squash seed' (Tr bací- 'squash'); Tr pačí 'seed'; Eu suváci (acc: subáta) 'seed' (su- another morpheme); Tr has both b and p, while My, Yq, AYq align. 4/5

14(556) Hebrew **bayṣa(t) / beeṣa(t)** 'egg'; Arabic **byḍ / baaḍa** 'lay eggs, be white': Arabic **bayḍat-** 'egg, testicle': Hebrew pl ***beeṣoot** > UA ***pïyso** 'testicle': Yq bíčo 'testicle'; Tr bičó/wičí 'testicle'; Eu vicó-puva- 'castrate' 3/3

16(562) Hebrew **-bbiiṭ** > UA ***pica/i** 'look, see': Eu vica/bica; My biča; Yq biča; AYq viča; Tr beči/peči. 5/6

470(1390) Semitic bə-tVxVt 'below' > My bétuku 'below'; Yq bétuku(ni) 'below, down'; AYq vétuku 'under'. 3/3

471(1394) Ugaritic bʕd 'behind'; OSArb baʕdu 'after, behind'; Arabic bʕd 'be distant'; Arabic baʕda 'after, behind'; Hebrew báʕad 'behind, through, round about, for' > Tr bo'ó / ko'ó 'from/at/on the other side of'. 1/1

472(1238) Hebrew **bayt-aa** 'inside-toward' > UA *paca 'to put into': Tr bač-á 'put in' 1/1
Wr pahcá; My kibáca 'meter'. Wr never shows the distinction, and My is intervocalic, so neither counts.

324(823) **Hebrew ba-yyameey** 'in the year of, lit: days of' > ***payami** > UA ***pami** 'year': Tr bamí; bamíbari 'year'; Wr pamíbari 'year'; Wr pamíbame 'years'. Wr is included, but it does not do b > b. 1/1

473(811) Hebrew **-biin** / he-**biin** / yV-biin / tV-biin 'understand' > Tr biní-mea 'learn, study'; Tr bene- 'know, acquire habit or custom'; Wr peni 'learn'; Wr pené 'know how to do'; Op veni / Eu viné 'know/like (a place)'. 2/2

474(1277) Aramaic rbʕ 'lie down'; Syriac -rbaʕ 'lie down' > Eu voó 'lie down'; Eu voí 'lying down'; Wr po'í; Tr bo'í; My bó'o-ka 'acostado'; My boo'-te 'acostarse'; AYq vo'o-te 'lie down'; AYq vo'o-ka 'be lying down'. 4/4

475(1050) Hebrew ben 'son', pl: **bənee(y)** 'sons' > UA *poni 'younger brother': Eu bonwa/vónwa; Tr boní 'younger brother'. An AYq term shows how 'son' can come to mean 'younger brother': AYq pale 'son, younger brother' (both are smaller/shorter tag-alongs of the family, and either father or older brother can say 'this is my little boy'). Tr/Eu 2/2

476(1397) Hebrew bayin / been ‘between, among’; Syr bainai > Eu vené ‘to’; Eu vené-ri ‘together with, near’. 1/1

477(1398) Hebrew bə-panee ‘on the surface of’: Eu vepán ‘encima, sobre’; AYq vepa ‘on top of’. The two languages that show v < Semitic b (vs. p < Semitic p), show their consistent v, nd the -p- stays -p- inspite of being intervocalic. 2/2

478(1450) Arabic **ṣbb** ‘pour, gush, flow’; Arb ṣabiib ‘poured out, blood’ > CN espipika ‘blood flow out’; Eu vávika 'bleed' 1/1

479(1399) Semitic **bxr** ‘test, choose, be/make choice’: Syriac bḫr (< *bxr) ‘try, prove (as silver by fire)’; Hebrew bḫr (< *bxr) ‘choose’; Hebrew ni-bḫar ‘be tested (refined in fire, as metal), be preferable’; Hebrew baḫiir ‘choice’; Hebrew baḫuur ‘young man (i.e., choice, in prime of life)’; Amorite bexeru ‘elite soldier’: My behre ‘be costly’; My behri ‘opponent, enemy’; Yq behé’e ‘expensive’; AYq behe’e ‘1 betray, deceive, 2 cost, be expensive’. 3/3

480(1400) Syriac **baatar** ‘after, following’ < bə-’atar, cognate to Hebrew bə-’ašer); Hebrew ba’ašer ‘because’; Arabic ’aθar ‘track’; Arabic ’iθra ‘immediately after’; these 3 language forms are cognate in Semitic, and the UA/AYq form is phonologically like Hebr (**bə-’ašer**), but semantically like the more original meaning in Arabic and Syriac, i.e., ‘in the track of’ or ‘after, behind’ > AYq **veasi** ‘behind, beside, on the other side of’. 1/1

481(1401) Hebrew brḫ ‘flee, slip away, pass through, glide past’ > My bóroh-te ‘have diarrhea’ 1/1

421(1165) Arabic **baḫr**- ‘water (vs. land), sea, large river’ (Arabic baḫra(t) ‘pond, pool’) > UA ***paa** ‘water’ in nearly all UA languages, yet in Cahitan (My,Yq) *ba’we ‘sea’: My báa’a; My báawe ‘sea’; Yq báa’a; AYq vaa’am; Tr ba’wí ‘water, juice, stew, liquid’; Wr pa’wí; Wr pa’wé ‘sea’; Eu bat/báat; baú-dóno ‘fetch water’. The several hints of a final -ḫr- cluster are discussed at 421, but the languages that show the b vs p distinction, all agree with Semitic b. 5/5

482(1067) Hebrew bʕy / baʕaa ‘enquire, search’; Ugaritic bġy ‘wish’; Arabic bġy ‘seek, desire, wish for’; underlying Semitic *baġaya > UA ***paya** ‘call’ (loss of ġ in cluster): TO waiđ; Wr pa’é / paé ‘call’; Tr bayé/páe. 1/1

483(1351) Hebrew bqʕ ‘split, cleave’; biqʕaa ‘valley’ > Tr bakowá ‘ravine where water runs’ 1/1

484(1133) Aramaic baʕw-aa ‘(camel) hair/hide-the’ > Tr bo’wá / boa / bo’o / bó ‘hide’; My bowwa ‘hair’; Yq bóa ‘hair, feathers’; AYq voa ‘fur, down, body hair’. 4/4

Counter examples:

485(1260) Semitic brk ‘praise, bow’ > Yq po’ok-te ‘stoop over’; Yq po’ola ‘head bowed forward’ 0/1

486(537) Hebr bls ‘gather figs’; Arb balas ‘kind of fig’ > UA *paLasi '(wild) grapes': Yq páa’asim; My párasim; Gb pah-váhs-keet ‘wild grapevine’ (TrC; Tak) 0/2

In the six languages that show Semitic b > b, 85 of 95 of them in the above sets align with the b > b, and 10 do not, for 88.5% agreement. As for sets as a whole, in 33 sets the majority align, two are split half and half, so we won’t count them either way, and 2 do not. So 33 of 35 sets align, which is 94% agreement.

Egyptian b

209(138) Egyptian bši ‘to spit, vomit, v’; Egyptian **bšw** ‘spittle, vomit, n’ > UA ***piso-(ta)** ‘vomit, v’: My bísata; AYq visata; Yq bísata; My bísači ‘vomit, n’; Tr o’pésu ‘vomit, vi’; Tr ku’péso ‘vomit, vi’, Sr piiṣ ‘vomit’, Ca pípivis ‘vomit’, Tep wiho < *piso, TO wihot; ST viota. My, Yq, AYq are voiced b; Tr clustered with a voiceless stop (’) to cause devoicing b > p. The other 3 of 3 languages have b > initial b 3/3

211(139) Egyptian bnty ‘breasts’: Eu viít / biít; Yq pípim; My píppim. 1/3

212(141) Egyptian bit ‘bee, feminine noun’: some t’s survive in UA but many palatalize to c: Eu pica/pisat 'avispa'; Tr pičé 'avispa grande'; My bíica 'avispa'; AYq viiča ‘wasp’. 2/4

487(143) Egyptian bk’ ‘pregnant’ > Eu bokát ‘pregnancy’; Eu boké ‘pregnant’; Eu vokíma ‘stomach’. 1/1

488(241) Egyptian nb ‘any, every, all’ > Tr nabí ‘always, each, every, all’. Intervocalic b, not countable.

446(465) Egyptian bi’ / bi’t ‘ore, metal, sky, quarry, mine, rock breakage’ > UA *payu / *papayu > *papo ‘rock, cliff’ > UA *payu / *papayuC ‘ceremonial staff’: Ls pávyu-t and Cp pávyu-t ‘flint-tipped, shell-inlaid ceremonial staff’.
UA *ka-payu > *kapo ‘knife’: Ktn kavoč; Sr kavööţ, kävi / kävayu (acc.) ‘knife’; Hp poyo ‘knife’. Hp poyo and the latter *-payu of Sr accusative in Sr kavöö / kavayu (acc.) match well and both match Ca and Ls pávyu-t from reduplicated *papayu. From *-payu Hp assimilated the first vowel to the second: *…payu > *puyu > Hp poyo. After uniting the forms of (‘ceremonial staff’) and of (‘knife’), I read in Pauketat (2009, 139-42) that some plains tribes, the Aztecs, and other Mesoamericans chipped, from flint, large elaborate ceremonial knives, which were relatively large and meaningful. The Tepiman forms *papu / *papa likely derive from *papaya. Flint, obsidian, and sharp rocks used for knives are usually found on rocky hills and cliffs, and though the semantics are not identical, the reduplicated *papayu may well explain the two forms of *papa vs. *papo: TO waw ‘cliff, bedrock, a rock’; NT vávoi; ST vaapai; PYp vava ‘hill, cliff’; PYp vaves ‘rocky terrain’; Nv baba. The Cahitan forms—My baabu ‘barro [clay]’ and

AYq vaavu ‘clay’—vary semantically from Tepiman, but the phonological identity with Tepiman and a slight semantic shift to ‘clay’ deposit/place (quarry) from flint/ore/rock deposit/place (quarry) make it probable. My and AYq both show b 2/2

Of Egyptian terms, 9 reflexes of 13 show b, or 69%. Of sets, 3 align, one does not, and one is split half, so 3 ½ of 5, 70%.

Semitic p

489(724) Semitic prʕš ‘to jump’, parʕoš ‘flea (jumper)’ > UA *par’osi / *paro’osi ‘jackrabbit’ also a jumper
A semantic shift, yet we see all 4 consonants and 2 identical vowels in UA *par’osi / *paro’osi ‘jackrabbit’: Op paros; Yq páaros; My paaros; pl: paró’osim; Wr pa’loísi / pa’rowisi; Tr ba’loísi. On the strength of the My pl paró’os-im and the tendency of UA to anticipate glottal stops, reconstructing the glottal stop after the liquid, and later anticipated, is preferable. 2/3

346(640) Semitic psx ‘be lame, limp’ > Eu piopiioké ‘limping’ 1/1
The above Eu form agrees, but the following, including another Eu form, follow b-pattern, not p-pattern:
Semitic psx ‘lame’ > UA ***pisika** ‘gone bad, (become) rotten, infected’: Tb piškiš-(ït) ‘have pus’; Sr pişqa’ ‘rot’; Ktn piska’ ‘rotten’; Ca písa ‘spoil, rot’; Eu viíke ‘pus; Eu viikát ‘sore, pus’; Yq bikáa ‘rotten’; AYq viika ‘rot, spoil, decay, infected’; My biká; Tr biká / bi’ká. 0/5

490(812) Aramaic **pty / pt’** ‘be wide’ has two variant forms, one showing 3rd C -y, the other with 3rd C glottal stop -’, and interestingly UA has the same two 3rd consonants: UA *pïtiya and *pïtï’a ‘be heavy’; however, the languages with the b/p distinction suggest b. Aram **pty / pt’** ‘be wide’; Aram pətee(y) ‘be wide, open’; Syr pətaa(’) / pətiiy ‘be enlarged, increased, wide, broad’ > UA *pïtiya and *pïtï’a ‘heavy’: Sh pïttïn; Cm pïhtï; Kw pita’a; Ch pïtïya; WMU p*ïh*ttiye; CU pïtíyay; Hp pïtï; Tb pïlïï’ït~’ïpïlïï’; Sr pïţï’; Ktn pïčï’; Ca péle-ma; Eu bete’e-; Yq béte’a ‘pesar’; AYq vette; My bette; Wr pehté-ni; Tr be’té-re; TO weeč; Nv vïtï; PYp veete; NT vïïtï; ST vïït; (Cr & Wc h < PUA *p): Wc hee.té; CN etiya ‘become heavy’ (PUA *p > CN ø); CN etik ‘s.th. heavy’.
Eu bete’e-; Tbr --; Yq béte’a ‘pesar’; AYq vette; My bette; Tr be’té-re. 0/5

491(1392) Syriac p’y ‘be becoming, comely’; Syriac paayuut (< *pa’yuut) ‘beauty, comeliness, elegance’ > Tr ba’ó ‘beauty’; Tr ba’ó- / ba’óre- / bayóre- ‘be beautiful’. 0/1

492(1391) Hebrew pšţ ‘spread out, take off clothes, stretch oneself, remove (skin)’; Syriac pšţ / **pəšaţ** ‘stretch out, extend, spread out’; Syr pəšiiţ ‘straight, plain, flat’: Tr pe-, pesá (irregular present) ‘stretch, spread, spread a cover onto s.th., spread out a bed’. 1/1

109(852) Hebrew panee^{y} ‘on face/surface of’ > Tr paní ‘up’ 1/1

108(851) Hebrew panaa-w ‘face-his’ > Tr bana ‘cheek, face’ 0/1

493(1132) Hebrew pɛraʕ ‘hair on the head’; Arabic farʕ- < *parʕ- ‘long hair’; Syriac perʕ-aa ‘bud, shoot, blossom-the’; perhaps more likely Arabic farw-u < *parw-u (nom) / parw-a (acc) ‘fur, skin, pelt’ > UA *****pïwa ‘hair, hide, fur, body hair’: CN eewa-tl ‘skin, hide, husk, rind’ (*p > ø in Azt); Tb piiwii’l ‘down feathers’; Hp pïvïwpi ‘eyelashes’ (redupl of *-pïw-); My beewa ‘skin, hide, shell’; Yq béa ‘skin (of animal)’; AYq beá ‘skin, shell, bark, rind’; Eu vewá-t ‘hide, pelt’. Perhaps analogized voicing influenced by baʕw-aa > UA *po’wa 484(1133) above. 0/3

Only 4 of 9 sets show Semitic p > UA p, 44%.

Egyptian p

494(293) Egyptian **pds** ‘stamp flat, flatten, beat flat’ > Eu pitása ‘smash’; Yq pitta ‘smash’; AYq pitta ‘press (a surface), crush, smash’. 3/3

495(286) Egyptian **px’** ‘purge, clean’ > UA ***pi’wa** ‘clean’: Tr bi’wá-/ be’wá-/ be’wé- ‘clean, purify, wipe’; WTr bi’wí ‘become clean, vi’; WTr bi’wá ‘clean, vt’; Eu píwa-/pígwa- ‘clean, wipe, v’; Eu píwi-/pígwi- ‘clean’. 1/2
To add another example of the same cluster *-x’- > -’w-, wherein -x- becomes glottal stop as first C in the cluster and the glottal stop to its usual -w-, consider wx’ below:

496(288) Egyptian **wx’** ‘seek, desire’ > **UA *wi’wa / *wa’wa** ‘seek, want’ > Sr wii’wïn ‘want, like’; as in px’ above, also in wx’ did k > ’ and ’ > w, in other words, *-k’- > *-’w-. Hp and Tep lost glottal stop (and *w > Tep g):
Hp wïïwa / wïïwan ‘think (about), consider’ and *wa’wa > Tep gaaga: TO gaag; PYp gaaga; NT gáágai; ST gaaga;
And also Cr wáwawau! ‘look for it!’. In Numic below, the glottal stop was anticipated which then doubled the -kk-: *wak’a > wa’ka > wakka: **UA**/Num ***wakka(-y)** ‘search for’: Sh waikki/wakki ‘search, look for’; Cm wehkinitï;

Kw wuki ‘look for’; CU w*ə*qXáy ‘look for, seek’; WMU *wah*qxáy-y ‘search, look for’ (Num, Tak, Hp; Tep, CrC)

497(491) Egyptian p<u>h</u>rw ‘water’ > UA *parawa 'juice, soup, stew’: Hp paala 'juice, soup'; TSh paawa ‘juice’; Eu varáwa 'stew'; Wr pa’wíla; My bá’wa; My bá’awa; AYq va’awa; Yq bá’awa (*r > ’ in Cah); Tr ba’wi-rá ‘make stew’. This set may be influenced by the similarly *ba/pa* terms for water (b > b) and thus reversed (p > b). 0/4

In both the set above and the below, the -<u>h</u>- of the -<u>hr</u>- cluster goes to glottal stop or disappears:

498(289) Egyptian **p<u>hr</u>** ‘turn, turn about, revolve, surround, travel around’ > UA ***pi’ri-na > piyi(na)** 'to spin, twist (thread/rope)': Tr bi’rí ‘be twisted, rolled up’; My biirite 'spin, twist’; AYq vi’ita ‘twist, wind around, coil, vt’; Eu virá- ‘twist’; Eu vírana- ‘turn, roll over’; Sr viooro-k ‘be rolled up’. (Tep, CrC, TrWr, Cah) 0/4

499(319) Egyptian **psi** ‘cook’ (Coptic pise); Egyptian psw ‘cooking (verbal noun)’: UA ***pasu** > **poso**: Wr pasu ‘cook by boiling’; CN posooni ‘boil, be angry’; My poh-te ‘is boiling’; AYq poh-ta ‘boil’; Yq pohte ‘boil’. Wr may have the original vowels, which are leveled in the other UA languages, *pasu > poso. 3/3

Only half the sets show Egyptian p > UA p, 2 ½ of 5, for 50%.

Egyptian f (f has not so many occurences in UA nor in Egyptian, though Egyptian f > b 2 times, > p one time)

500(275) Egyptian f’i ‘lift up, carry’ > UA *po’iya ‘take, lift off’: Wr po’é-na 'take s.th. away’; ; Tr bo’e 'take, dispossess’; TO wooppo’ið ‘take away from, deprive of’; Nv vopoida ‘take from’ (Tep -d- < *y and w/v < *p, so the Tepiman languages (TO, Nv) are a good match for Egyptian f’y); Mn ca-po’a ‘lift off, open (lid)’; NP ci-pu’a ‘lift off lid with sharp obj’. (Num, Tep, TrWr)

501(279) Egyptian ftft / ftt ‘jump’ > Tr počí- ‘jump’;
Egyptian **ftft** ‘leap’; Egyptian **fttw** ‘jumpers, pl’; the latter would mean an unattested verb ***ftt** existed, which is what matches UA; and remember that NUA -c- is usually from UA *-tt- (or -Ct-), as *-c- > -y- in NUA (Cp, Ca, Sh). Also note the similarity between UA *potti ‘jump’ < Egyptian ftt and UA *yotti ‘fly’ < Egyptian itt ‘fly’ at 215 repeated below: UA *puCca/i / *puCta/i ‘jump’: Cp pučaqe ‘jump’; Ca pe-púčaq ‘jump’; Eu hapóca ‘jump, bound’; Tr počí- ‘jump’; Tr hibóči- ‘go along jumping’; Tr o’poči ‘freq and emph of počí-ma; Sh pocci ‘hop’ (Tak, Num, Op, Tr)

275(215) i<u>tt</u> ‘fly up’ > UA *yïtti (sg) / *yotti (pl) ‘fly, jump’
Numic -c- < *-tt-, because *-t- > -r- and *-c- > -y-: Mn yoci; NP yoci; TSh yïcï, pl: yotiC ‘jump, fly up, take off’; Sh yïcï, pl: yotiC ‘get up, fly’; Cm yïcï ‘fly, sg’; Kw yozi, pl: yori ‘jump, fly’; CU yïčí ‘fly’; Cp yutyút- ‘trot, v’.

502(277) Egyptian fx ‘loose(n), release, cast off, depart’ (infinitive fxt) > UA *puC-tV ‘loose(n), untie(d)’: My búttia 'untie'; Yq búta; Wr po’tá ‘become loose, untied’; Tr bo’tá; Tr o’ta- ‘bec slack, loose’ (Cah, TrWr, Tep)

So 36 ½ of 40 sets align with Near-East b > b in those languages distinguishing b vs. p, or 91%.
However, only 6 ½ of 14 align with the *p > p in those UA languages, or 46.4%. Combining the two gives us 43 of 54 sets, for 79.63 or nearly 80%, not as impressive as the *b > b at 91%.

8.0 Unique Semantic Combinations Preserved

These nine are among a number of unusual semantic combinations in Semitic or Egyptian also preserved in UA.

292(332) Egyptian qarḫat ‘serpent’, same root without fem -t is Egyptian qrḫ ‘friend, partner’ > UA koŋwa ‘snake, twin’
The Egyptian and UA terms both mean ‘snake’ and ‘partner/twin’

479(1399) Semitic bxr ‘test, choose, choice’; Amorite bexeru ‘elite soldier’ > UA *bïhïrï ‘expensive & opponent/enemy’
For both to share ‘choice/expensive’ and ‘elite soldier/enemy’ seems improbable by chance.

503(98) Hebrew rqʕ ‘stamp, beat (metal) out, spread out’; Hebrew raaqii^{a}ʕ ‘extended surface, expanse, sky’ > UA *tukuN-pa ‘sky’: Tb tuguumba-l ‘sky’; Cp túkva’aš ‘iron, sky’; Ca túkvaš / túkwiš / túkiš ‘sky’; Ca túkvaš / túkwaš / túkiš ‘iron, knife’; Sr tukuhp|ţ ‘sky, iron’; Ktn tukuhpa-č ‘bead, metal, sky’; Cr tehka ‘obsidian’; Tr ŕikibara ‘knife’; CN tekpa-tl ‘flint’. Cognates meaning ‘sky’ are in most UA languages, yet in the Takic languages Cp, Sr, and Ktn the term means both ‘sky’ and ‘metal’ while in Semitic are ‘metal beat out’ and ‘sky’ .

504(406) Egyptian b’ ‘ram, soul’ > UA *pa’a ‘mountain sheep, all living beings’. All living things having a soul is one semantic match, quite different from the other match of ‘ram’ and ‘mountain sheep’.

419(290,291) Egyptian p<u>h</u>r ‘turn, turn about, twist, revolve, surround’ > UA *puhaC ‘circle, look around’: Sr puah- ‘circle’; Sr puahkin ‘put in a circle, make a circle of’; Sr puahï’q ‘be in a circle’. Sh pohaiH ‘look around’; TSh pohai ‘look for, search for’; a derived noun is Egyptian p<u>h</u>rt ‘remedy, medicine’ < p<u>h</u>r probably in circular stirring to make medicine’ > UA *puha ‘medicine, supernatural/healing power’: Cm puha ‘medicine, spiritual power’; NP puha ‘supernatural power’; TSh puha; Sh poha; Cm puha ‘medicine, spiritual power’; Kw poha-vi ‘poison, power’; SP pua / poa; CU puwa-vï ‘medicine power, spiritual power’; Tb tïboohanat ‘apply medicine (to a person)’.
So Egyptian p<u>h</u>r ‘turn, revolve’ and ‘medicine’ > UA *puha ‘turn, circle’ and ‘medicine’.

505(1220) Semitic etqaraš ‘be cold’ and ‘what is fixed’ > Hopi hïkya ‘cool off, vi, be set in a fixed position, vi’
Another pair of unusual meanings and the same unusual pair of meanings in UA, after vowel loss and cluster collapse: (h)etqaraš > hetqraš > hïkya. Hebrew has the initial h- while Aramaic does not. At 310-312 are found three other examples of -qra-/-kra- > kya.

319(994) Ls qáya/i- ‘blow down (a tree)’, that is, ‘uproot’ and Ls qáya/i- ‘heal’ are listed as separate verbs in the Luiseño dictionary, though phonologically identical, yet the corresponding Syriac verb ʕqr also means both ‘uproot’ and ‘heal’ and the Syriac noun ʕᵊqaaraa ‘root, remedy’ has much the same two meanings.

506(1485) Semitic *rxm (> rħm) ‘have compassion’ and ‘be wide’ > UA *tïha ‘pity, have compassion for’ (in 4 Num languages), yet note the 2 meanings of CU tűaani ‘pitiful, pitiable’ and CU tűaa ‘open space, gap, area’ in light of Semitic rxm ‘compassion’ and ‘wide’ and intervocalic -x- > -h- usual in Num (see next paper).

435(329) Egyptian qd / qdd ‘wander around, sleep, surround’ > SP qarï ‘sit, dwell’ and SP qarï ‘protect’ (or ‘surround’)

The next items are not semantic combinations, but semantic alignments quite specific to ancient Israel:

507(800) Hebrew Yahwe ‘Yehovah, God of the Israelites’ > UA *ya’wV / ya’u ‘leader, deity’: Kw yaahwe’era ‘a supernatural being usually thought of as in bird form’; Cp yawe ‘god’ after subtracting temá-l / temat- ‘earth’ from Cp temáyawe-t ‘earth-god’; vowels reversed from Cp yawe, yet note also Cp yewáywe ‘pray’; Yq ya’ut ‘boss’; AYq ya’učiwa ‘leader, God’; My yá’ut ‘boss, authority’; Cr taya’u ‘God’; note h > ’ as 1st C in a cluster, both here and in 264 *nhp > UA *na’pa, and others. (Tak, Num, Cah, CrC)

54(583) Hebr ’epod ’ephod, priestly garment, shoulder cape’;
Aram ’epod-aa ‘ephod-the’ > UA *wipura/*wipula 'belt, sash, blouse' (Num, TrC, Tep, Azt)

9.0 Semantic Shifts

In addition to 1000 items that align both semantically and phonologically, consider a few semantic shifts that are reasonable. Numbers 100 and 226 below share the consistency of original ‘shoulder’ > ‘arm, hand’.

66(675) ħnp ‘be pigeon-toed, walk with toes pointing inward’ (like turtles, lizards, badgers, bears); built on that root are Arabic words for ‘tortoise’ and ‘chameleon’ > UA *hunaC/ *hunap- ‘badger’ and UA *huna-wïC ‘bear, badger-big’.

489(724) Semitic prʕš ‘to jump’, parʕoš ‘flea (jumper)’ > UA *par’osi / *paro’osi ‘jackrabbit’ also a jumper
a semantic shift, yet we see all 4 consonants and 2 identical vowels in UA *par’osi / *paro’osi ‘jackrabbit’: Op paros; Yq páaros; My paaros; pl: paró’osim; Wr pa’loísi / pa’rowisi; Tr ba’loísi. On the strength of the My pl paró’os-im and the tendency of UA to anticipate glottal stops, reconstructing the glottal stop after the liquid, then anticipated, is preferable.

173(720) Hebrew **nebɛl** ‘skin-bottle, skin’, Syriac nbl / **n’bl** > CN **no’pal** ‘cactus fruit made alcohol’ (even has Syriac ’)

40(575) kama’- ‘truffle(s)’ > UA *kamo’-(ta) ‘sweet potato’; truffles are also edible fleshy appendages to a root system, as are potatoes.

100(56) šɛkɛm / šikm-, Samaritan šekam ‘shoulder’ > UA *sïka ‘shoulder, arm, hand’, Numic *sikum ‘shoulder’

226(188) nħbt ‘nape of the neck, yoke’ > UA *nohopi > nopi ‘hand, arm’

One more example (508) of sibilants as 2nd C in a cluster, in which *-Cš- > -c- (as in 194, 304), note that 508, a common Semitic term, also has an underlying glottal stop-sibilant cluster (*-’š- > -c-).

508(93) Hebrew **rooš** ‘head’ (< *ra’š); Arabic **ra’s**- ‘head’ > NUA *toci / SUA *tuci ‘head’: Kw toci-vü; Ch tocí; SP tocci-vi; WMU č*ih*ččí-vi ‘head’; CU tüčí-vi. As in Kw pika-roci ‘bald’, the -rusi of Tr po-rusi ‘bald’ likely belongs also. Notice *o > ï in WMU and CU’s unaccented syllable and *o > i with palatalization of *t > č in WMU. All NUA forms show an underlying doubled consonant; otherwise, a lone *-t- > -r-, or *-c- > -y-. But in ***-’s- >** UA ***c,** an affricate (c / ts) is a stop (t) plus fricative (s); and a glottal stop is a stop plus s (a fricative) yielding the affricate c.

10.0 Other Consistencies

Egyptian 3rd consonant i (or y) consistently reflects UA -iya:
222(180) ḫbi ‘be / make festival’ > UA *hupiya ‘sing, song’
230(147) m’i ‘lion’ > UA *mawiya ‘mountain lion’
246(165) rwi ‘to dance’ > UA *tawi / *tuwiya > *tuya ‘dance’
500(275) f’i ‘lift up, carry’ > UA *po’iya ‘take, lift off’

Both Egyptian and Semitic feminine nouns end in *-at or *-aa (as final -t drops in Coptic and many Semitic languages as well), resulting in -aa > UA -a:
276(280) Egyptian ḫm’t / ḫam’at ‘salt’ (> Coptic hmu) > UA *omwa > *oŋa ‘salt’ (SUA ona)
59(889) Aramaic rikbaa ‘upper millstone’ > UA *tïppa ‘mortar (and/or) pestle’
217(174) Egyptian sxt ‘field, pasture, willow, n.f.’ > UA *sakat / *sakaC ‘willow (Tak, Num), grass (Hp, SUA)’
218(178) x’yt ‘disease, slaughter, corpse-heap’ > UA *ko’ya ‘die, pl subj; kill, pl obj’ (all branches except Tb, Cah)
204(339) t’-ḫimat ‘the-wife’; Coptic hime > UA *tïhima 'spouse' (Wr tehimá ‘spouse’; Ls to’ma 'wife’)
300(404) ḫ’dt ‘basket’ > UA *huCta ‘basket’ (Num, Tbr)
393(433) Egyptian p’qt ‘fine sheetmetal or metal plate’ > UA *pikkat (AMR) ‘knife’

Fossilized Aramaic masculine definite article ‘the’ suffix -aa > UA -a:
The feminine suffix -taa remained somewhat productive as it became a common absolutive suffix in UA, fossilized in some languages, like Tr -ri, but masculine -aa ‘the’ is also fossilized in several terms, the below being among them:
33(617) Aramaic diqn-aa ‘beard / chin-the’ > UA *tï’na ‘mouth’
34(618) Aramaic di’b-aa ‘wolf-the’ > UA *tï’pa ‘wolf’
54(583) Aramaic ’epod-aa ‘ephod-the’ > UA *wipura 'belt, sash, blouse'
57(604) Aramaic rə’emaan-aa / reemaan-aa ‘antelope-the’ > UA *tïmïna 'antelope’: Ktn tïmïna-č ‘antelope’
61(601) Aramaic *rawwaan-aa ‘drunk one-the’ > UA *tawana 'drunk': Azt *taawaana ‘get drunk’; Cr tawá ‘drunk’
105(1409) Aramaic kuuky-aa’ ‘spider-the’ > UA *kuukya(ŋw) ‘spider’; Hopi kòokyaŋw ‘spider’
310(1130) Aramaic pagr-aa ‘corpse-the’ > Hopi pïïkya ‘skin, fur’
311(1403) Syriac šigr-aa ‘drain, ditch, gutter-the’ > Hopi sikya ‘small valley, ravine, canyon with sloped sides’
313(743) *tamar; Aramaic tuumr-aa ‘palm tree-the’ > UA *tu’ya ‘palm tree, sp’
416(1248) Aramaic **qesṭ-aa** ‘measure, ancient weight, money, n.m’ > UA *koCta ‘bark, shell, money’

Denominalized verbs:
Most languages make nouns from verbs and verbs from nouns, though some do so to a greater degree than others. In English we have ‘hoof it’ for ‘walk’; and ‘she mirrors her mother’s mannerisms’ from the noun ‘mirror’; and ‘he bicycled to Bluff’ for ‘he rode/pedaled a bicycle to Bluff’. Even ‘pedal’ is a denominalized verb from the noun ‘pedal’. UA has made many Near-East nouns serve as verbs:
92(876) dʕk ‘fire go out’, duʕkaa ‘extinguishing’ > UA *tuka/i 'fire go out, dark, black, night’
141(772) ṭame’ ‘(be) unclean’, ṭum’a(t) ‘uncleanness, filthy mass’ > UA *co’ma ‘mucus, have a cold’
174(958) Hebrew qiynaa ‘funeral song, dirge’ > Hopi kïyna ‘begin singing a song, start a song’
185(1201) Hebrew təmuuraa ‘exchange, n.f.’ > UA *tïmïrï 'buy, trade, exchange’
218(178) x’yt ‘disease, slaughter, corpse-heap’ > UA *ko’ya ‘die, pl subj; kill, pl obj’ (all branches except Tb, Cah)
302(1274) Aramaic kaukb-aa’ / kookb-aa’ ‘star-the’ > UA *kuppaa’ > Sr kupaa’ ‘to shine (as of the stars)’
301(614) Hebrew makteš ‘mortar, grinding stone’ (< ktš ‘grind’) > *mattaš > Ca mataš ‘to crush, squash’
280(1144) Hebrew ’almaanaa ‘widow’ (from Sem/Arb ’lm ‘experience grief’) > **UA *o’mana** ‘be sad, suffering’
33(617) Aramaic diqn-aa ‘chin-the’ > Tr teté’na- / ŕe’na- ‘yawn, open mouth’ (denominalized verb)
In the next two Egyptian terms, the verb ends in -i, while the noun ends in -w. Note that UA reflects the noun forms:
214(170) txi ‘be drunk, drink’, **txw** ‘drunkard’ > UA ***tïku** 'drunk’
209(138) bši ‘spit, vomit, v’, **bšw** ‘vomit, vomiting, n’ > UA ***piso**-(ta) ‘vomit’

Uto-Aztecan Often Preserves Egyptian Phonology Better Than Coptic Did

Coptic	<	Egyptian	>	Uto-Aztecan	
še	<	šm	>	*sima	(195)
Sobek	<	sbk	>	*supak	(188)
sobt	<	sbty	>	*sapti	(206)
mui	<	m'i	>	*mawiya	(230)
siu	<	sb'	>	*sipu'i / *si'pu / *su'	(210)
ji	<	i<u>t</u>'	>	*itu'i	(234)
sooše	<	sxt	>	*saka	(217)
		ẖbi	>	*hupiya	(222)
		ẖnqt	>	*hunaqa	(223)
hotpe/hotep	<	ẖtp	>	*huppi	(224)
tebi	<	<u>d</u>b'	>	*si'pu (< *sipu'i)	(242)
too'be	<	<u>d</u>bt	>	*supa	(241)
neme	<	nbi	>	*napi	(488)
soote	<	s<u>t</u>'	>	*sutu'i	(239)
šopš	<	xpš	>	*kapsi	(215)

Egyptian, like its Afro-Asiatic parent language, originally had three basic vowels—a, i, u. Most languages, with time, would naturally develop more than three, like Classical Hebrew did its seven or so, but notice in the list above how often the UA reconstructions show only the same three basic vowels of Aftro-Asiactic—a, i, u—as opposed to Coptic's variety.

11.0 Conclusions

Of the 9 previously unresolved comparative issues in UA, which were listed in the opening paragraph, this tie provides data that rather nicely explain at least 7, if not 8, of the 9. As for the first paragraph's number (4), why some PUA *s > h in Sr and Ktn, while others remain s, I have no idea; probably something in Takic's prehistory after it became a separate branch. As for (8), Semitic and Egyptian b > b in Tr, My, Yq, AYq, and Eu ranges around 90% and 70%, respectively, but Near-East *p > UA p in those languages is an unimpressive 50%. So even though the two combined do explain about 80% of cases, that matter is not as strong as for the other 7 issues, in which the Near-East data explain 91%, 95%, nearly 100%, 97%, nearly 100%, 78%, and so many laryngeal-plus-nasal/liquid clusters explan so many ŋ.

The DNA in Stephen Jett's (2017, 345-55) recent book of evidence for pre-Columbian oceanic crossings is not necessarily proof of anything very specific, but is sufficient justification to keep an open mind for considering these language and DNA possibilities as they may continue to unfold, rather than immediately prejudging the whole as impossible. Can so many hundreds of lexical alignments with sound correspondences and fossilized morphology and unique semantic combinations and other consistencies be pushed aside as preposterous by the presently prejudiced paradigms. That often happens in academia.

After Sapir (1913, 1915) established Uto-Aztecan as a viable family of related languages, Voegelin, Voegelin, and Hale (1962) produced the first numbered list of 171 cognate sets. Klar (1977) brought the Chumash languages to clarity with 168 sets. Taylor (1963) established Caddoan, assembling 107 cognate sets. Hale (1962, 1967) did the definitive study for Kiowa-Tanoan with 99 sets. This work's proposal may better compare to tying two distant language families, as did Haas (1958) by ending four decades of controversy in uniting Algonkian-Ritwan, an eastern U.S. family with a west coast family, by means of 93 sets. Thus, the going rate is between 80 to 180 sets to establish most Native American language families. So the 500 sets in this paper and the 1500 sets in the book (Stubbs 2015) merit proportionate consideration.

As for lexicostatistics and UA's bandied-about time-depth of 5,000 years, keep in mind that glottochronological estimates are often viewed like colds—they eventually pass with little permanent damage. Campbell and Poser (2008,

167) say “It [glottochronology] has been rejected by most linguists, since all its basic assumptions have been challenged.” Furthermore, glottochronology can hardly apply to language mixtures. The 15% of Semitic in Yiddish would calculate to its separation from Palestinian Semitic 8,000 years ago, though we know it was nearer 2,000-2,500 years ago. UA is also a language mix, yet this Near- East infusion, mixed with whatever else, appears to be about 40% or more of the UA cognate sets, larger than Yiddish’s Semitic component (15%), and it yields an even higher percentage of the basic vocabulary (more than 50%, see next paper). In Yiddish, the pronouns and most body parts, animals, nouns of nature, etc, are from German and other languages, yet in UA, most pronouns, and many body parts, animals, and nouns of nature match the Near-East components. Also just as other language mixes often have their vocabulary from one language and grammar from the other, so also UA’s sizable Near-East vocabulary has been subject to whatever other grammar, though a great amount of Semitic fossilized morphology and some productive morphology are found in UA.

If valid, these new findings suggest an overhaul of the PUA phonemes or phonology as we know it or thought we knew it: q vs. k, t vs. r, many clusters clarified, progress in unraveling much about the nasal-liquid spectrum, and pharyngealization. Ken Hill, perhaps alone, has mentioned the word pharyngeal in Serrano phonology, and in White Mesa Ute many pharyngeals also occur. In fact, WMU has deeper clearer pharyngeals than produced by many native Arabic speakers. To reiterate, if this proposed tie is valid, then to ignore it is tantamount to finding written records of Proto-Indo-European and ignoring them in comparative Indo-European studies.

Appendix A: Uto-Aztecan Languages, Branches, and Abbreviations

Mn	Mono	Hp	Hopi	Eu	Eudeve
NP	Northern Paiute	Tb	Tübatülabal	Op	Opata
		Ls	Luiseño	Tbr	Tubar
TSh	Tümpisha Shoshoni	Ca	Cahuilla	Yq	Yaqui
Sh	Shoshoni	Cp	Cupeño	AYq	Arizona Yaqui
WSh	Western Shoshoni	Sr	Serrano	My	Mayo
Cm	Comanche	Gb	Gabrielino	Wr	Guarijio
		Ktn	Kitanemuk	Tr	Tarahumara
Kw	Kawaiisu	TO	Tohono O'odham	WTr	Western Tr
Ch	Chemehuevi	UP	Upper Pima/Pima Alto	Cr	Cora
SP	Southern Paiute	Nv	Nevome	Wc	Huichol
WMU	White Mesa Ute	LP	Lower Pima/Pima Bajo	CN	Classical Nahuatl
NU	Northern/Uintah Ute	PYp	Pima de Yepáchic	Pl	Pipil
CU	Colorado Ute	PYc	Pima de Yécora	HN	Huastec Nahuatl
		NT	Northern Tepehuan		
		ST	Southern Tepehuan		

The Branches of the Uto-Aztecan Language Family and Their Abbreviations

Mn	Western Numic (Num/WNum)	Hp	single-language branch	Eu	Opatan (Op)
NP	Western Numic	Tb	single-language branch	Op	Opatan (Op)
		Cp	Takic, Cupan (Cup within Tak)	Tbr	single-language branch
TSh	Central Numic (Num/CNum)	Ca	Takic, Cupan (Cup within Tak)	Yq	Cahitan (Cah)
Sh	Central Numic	Ls	Takic, Cupan (Cup within Tak)	AYq	Cahitan (Cah)
Cm	Central Numic	Sr	Takic (Tak)	My	Cahitan (Cah)
		Gb	Takic (Tak)	Wr	TaraWarihio (TrWr)
Kw	Southern Numic (Num/SNum)	Ktn	Takic (Tak)	Tr	(TrWr)
Ch	Southern Numic	TO	Tepiman (Tep)	WTr	(TrWr)
SP	Southern Numic	Nv, UP	Tepiman (Tep)	Cr	Corachol (CrC)
WMU	Southern Numic	PYc	Tepiman (Tep)	Wc	Corachol (CrC)
NU	Southern Numic	PYp	Tepiman (Tep)	CN	Aztecan (Azt)
CU	Southern Numic	LP	Tepiman (Tep)	Pl	Aztecan (Azt)
		NT, ST	Tepiman (Tep)	HN	Aztecan (Azt)

Other abbreviations:

AMR	Alexis Manaster-Ramer	Arb	Arabic	Aram	Aramaic		
C	consonant	CAL	Comprehensive Aramaic Lexicon				
emph	emphatic	f	feminine	freq	frequentive		
Hebr	Hebrew	IJAL	International Journal of American Linguistics				
impfv	imperfective	m	masculine	n	noun	prtcpl	participle
OSArb	Old South Arabic	Phn	Phoenician	Sem	Semitic		
s.o.	someone	s.th.	something				
UACV	Uto-Aztecan Comparative Vocabulaary (Stubbs, 2011)			V	vowel		
vi	verb, intransitive	vt	verb, transitive				

Appendix B: Consonant and Vowel Correspondences within Uto-Aztecan (from Stubbs 2011)

Uto-Aztecan Consonant Correspondences in Initial Position, -C- for Medial Position

PUA	*p	*t	*k	*kw	*m	*n	*c	*s	*w	*y	*’	*h
Num	p, -v-	t,-r-/-d-	k,-ġ-/-x-/-h-	kw	m,ŋw, w	n	c,-y-	s	w	y	’	h
Hp	p, -v-	t	k,q	kw	m	n	c,-y-	s	w,l	y	’	h
Tb	p	t,-l-	h,k	w	m	n	c,-y-	š	w	y	’	h
Sr	p, -v-	t	k,q	kw	m	n	c,-y-	ş,h	w	y	’	h
Ca,Cp	p, -v-	t,-l-	k,q, -x-	kw,w	m	n	c,-y-	s	w	y	’	h
Ls	p, -v-	t,-l-	k,q, -x-	kw	m	n	c,-y-	s,š	w	y	’	h
Tep	w,v	t,c	k	b	m	n,ñ	s, š	h,ø	g	d,j	ø,’	ø,’,h
Eu, Op	p	t	k	b	m	n	c, č	s	w	d	ø,’	h
Tr,Wr	p	t, r (Tr)	k	w,-’w-	m	n	c, č	s	w	y	ø,’,h	h
Yq,My	b,p	t	k	bw	m	n	c, č	s	w	y	’	h
Tbr	w,-p-	t	k	kw	m	n	c, č	s,h	mw, ñ	y,ñ	ø,h	h
Cr	h	t	k,č	kw,čw	m,mw	n	c, č	s	w	y	’	’
Wc	h	t	k	kw	m	n	c, č	s,z	w	y	ø	ø
CN	ø, p	t	k	kw	m	n	c, č	s,š	w	y	ø,’,h	ø

Vowel Correspondences within Uto-Aztecan

PUA	*i	*a	*u	*o	*ï	*-L-
Num	i	a	u	o/ö	ï	-n-
Hp	i	a	o	ö	ï	-n-,-l-,-r- (Shaul 1985)
Tb	i	a	u	o	ï	-n-
Sr	i	a	u	ö	ï	-n-,-r-
Ca	i	a	u	i	e	-n,-l-
Cp	i	a	u	i	ə (written e)	-n-,-l-
Ls	i	a	u	e(i)	o(u)	-n-,-l-
Gb	i,e	a	u,o	e,o	o	-n-
Tep	i	a	u	o	ï	-l-, -D-, -r-
Tr,Wr	i	a	u,o	o	e,i	-l-,-r-
TrC	i	a	u	o	e	-l-,-r-
CrC	i	a	ï	u	e	-l-,-r-
CN	i	a	i	o	e	-l-

APPENDIX C: Sound Correspondences of the Semitic / Egyptian Component in Uto-Aztecan:
C- (initial), -C- (medial), C (all environments)

Semitic, Egyptian		in UA terms from Semitic	in UA terms from Egyptian
b	>	p (b in some lang's)	p (b in some lang's)
p	>	p	p
ʾ	>	w/ʾ	w/ʾ
ẖ	>	hu /w/o/u	hu /w/o/u
x (> ẖ Phn)	>	k/h (q in 4 lang's)	k (q in 4 lang's)
ʕ	>	w/o/u	w/o/u
ġ (> ʕ Phn)	>	k/h (q in 4 lang's)	-- (not in Egyptian)
ṣ/d	>	s	s
ṭ	>	t/c	-- (not in Egyptian)
t	>	t-, -r-/-l-	t-, -r-/-l-
d	>	t-, -r-/-c-	t-, -r-/-l-
k	>	k	k
g	>	k	k
q	>	k (q in 4 lang's)	k (q in 4 lang's)
h	>	h/ʾ/ø	ʾ/ø
m	>	m	m
n	>	n	n
l	>	l	-- (not in Middle Egyptian)
r	>	t-, -r-/-y-	t-, -r-/-y-
đ (Aram d)	>	t	-- (not in Egyptian)
z	>	c	-- (not in Egyptian)
θ (> š Phn)	>	s	s
s_1 (> š)	>	s	s
s_2 (> ś)	>	s	s
s_3 (> s)	>	s	s
y/i	>	y/i	y/i
w	>	w	w

Appendix D: Fortition in Uto-Aztecan

While lenition (weakening in sound change) is the more common direction of change (-t-/-d- > -r-, -k-/-g- > -x-/-h-), fortition (strengthening in sound change) also occurs in world languages, UA being among them. Examples include
Initial r- > t-: A fortition parallel to initial **r- > t-** in UA, is in the Cushitic language Iraqw, in which *d has lenited to /r/ between vowels, but *r has undergone fortition to /d/ word-initially, very parallel to initial Semitic/Egyptian r- > t- in UA. In fact, mixing with a group who could not say initial r- may have helped the change r- > t-.
Fricatives becoming stops occur in Semitic: *θ > t, and *đ > d in Aramaic; also Arabic x > Aramaic k in some loanwords. Interdental fricatives becoming stops occurs in most continental Germanic languages, in some English dialects, and in several Uralic languages. Likewise, Semitic and Egyptian x > k in UA.
Fortition of w/f > b occurs in loanwords in Scottish Gaelic: Scots werwane > bearbhain; Middle English wall > balla; Latin fundus > bonn 'foundation'; Norse θræll > traill 'slave'.
In the creaole Tok Posin f > p: fashion > pasin; fight > pait (McWhorter 2003, 210), not unlike Egyptian f > UA p. Besides *y > ž/j in several Spanish dialects and other languages, even stronger fortitions occur in UA: *y > d and *w > g in the Tepiman branch. Such fortitions occur especially in loans and language mixes wherein speakers do not have the phonological repertoire to accurately reproduce the sounds in the language being borrowed (Wikipedia.org, fortition), and that may be why UA fortitions (mainly in initial position) include r- > t-, x- > k-, f- > p-.

References

Uto-Aztecan Cognate Collections in Chronological Order and Their Abbreviations
(Branch cognate collections are abbreviated as the initial(s) of author surname(s) dot branch; only the six in bold address the whole language family)

Sapir	**Sapir's "Southern Paiute and Nahuatl: a Study in Uto-Aztecan" (1913, 1915)**
VVH	**Voegelin, Voegelin, and Hale's *Typological and Comparative Grammar of UA* (1962)**
B.Tep	Burton Bascom's *Proto-Tepiman* (1965)
M67	**Wick Miller's *Uto-Aztecan Cognate Sets* (1967)**
BH.Cup	William Bright and Jane Hill's "The Linguistic History of the Cupeño" *IJAL* 33 (1967)
HH.Cup	Jane Hill and Kenneth Hill's "Stress in the Cupan Languages" *IJAL* 34 (1968)
I.Num	David Iannucci's *Numic Historical Phonology* (1972)
CL.Azt	Campbell and Langacker's "Proto-Aztecan Vowels," *IJAL* 44 (1978)
Fowler83	Catherine Fowler's "Lexical Clues to UA Prehistory" *IJAL* 49 (1983) and her fieldnotes
L.Son	Andrés Lionnet's *Relaciones Internas de la Rama Sonorense* (1985)
M88	**Wick Miller's 1988 Computerized Database of Uto-Aztecan Cognate Sets (1988)**
Munro.Cup	Pamelo Munro's "Stress and Vowel Length in Cupan Absolute Nouns" *IJAL* 56 (1990)
KH.NUA	Kenneth Hill's *Serrano Dictionary*, with comparative notes relevant to NUA (2001)
KH/M06	**Kenneth Hill's *Miller's Uto-Aztecan Cognate Sets*: *revised and expanded by KCH* (2006)**
UACV	**Brian Stubbs' *Uto-Aztecan: A Comparative Vocabulary* (2011)**

Other Uto-Aztecan and other non-Near-East sources (in addition to the cognate collections above)

Brambila, David, and José Vergara Bianchi. 1953. *Gramática Raramuri*. Editorial Buena Prensa: México.

Burgess, Don H. 1984. Western Tarahumara [Grammar]. In *Studies in Uto-Aztecan Grammar,* vol. 4*: Southern Uto-Aztecan Grammatical Sketches*, Ronald W. Langacker, ed., 1-149. Dallas, TX: Summer Institute of Linguistics.

Campbell, Lyle, and William John Poser. 2008. *Language Classification: History and Method*. Cambridge: Cambridge University Press.

Casad, Eugene H. 1984. Cora. In Ronald Langacker (ed.), *Southern Uto-Aztecan Grammatical Sketches*, vol. 3: 153-475. Arlington: The Summer Institute of Linguistics and the University of Texas at Arlington.

Charney, Jean Ormsbee. 1993. *A Grammar of Comanche*. Lincoln: University of Nebraska Press.

Collard, Howard, and Elisabeth Scott Collard. 1984. *Vocabulario Mayo*. Serie de vocabularios indígenas, no. 6. Mexico, D.F.: Instituto Lingüistico de Verano.

Crapo, Richley H. 1976. *Big Smokey Valley Shoshoni*. Desert Research Insitute Publications in the Social Sciences, number 10. Don D. Fowler, ed.

Dakin, Karen. 1979. Phonological Changes in Nahuatl: The Tense/Aspect/Number Systems. *IJAL* 45/1:48-71.

Dakin, Karen. 1982. *La Evolución Fonológica del Protonáhuatl*. México: Universidad Nacional Autónoma de México.

Dayley, Jon P. 1989. *Tümpisa (Panamint) Shoshone Grammar*. *UCPL* 115. Berkeley: University of California Press.

Estrada Fernández, Zarina, Crescencio Buitimea Valenzuela, Adriana Elizabeth Gurrola Camacho, Maria Elena Castillo Celaya, and Anabela Carlon Flores. 2004. *Diccionario Yaqui-Español y Textos: Obra de Preservación Lingüística*. Mexico, D.F.: Editorial Plaza y Valdez.

Givon, Talmy, ed., and the Southern Ute Tribe. 1980. *Ute Reference Grammar*. Ignacio, Colorado: Ute Press.

Gordon, Cyrus H. *Before Columbus: Links between the Old World and Ancient America*. New York: Crown Publishers, 1971.

Haas, Mary. 1958. Algonkian-Ritwan: the end of a controversy. IJAL 24:159-73.

Hale, Kenneth. 1962. Jemez and Kiowa correspondences in reference to Kiowa-Tanoan. IJAL 28:1-5.

Hale, Kenneth. 1967. Toward a reconstruction of Kiowa-Tanoan phonology. IJAL 33:112-120.

Hill, Jane H. 2010, March 16. New evidence for a Mesoamerican homeland for Proto-Uto-Aztecan. Proceedings of the National Academy of Sciences of the United States of America 107(11): E33.

Hill, Kenneth C., Emory Sekaquaptewa, and Mary Black, eds. The Hopi Dictionary Project. 1998. *Hopi Dictionary/Hopìikwa Lavàytutuveni*: *A Hopi English Dictionary of the Third Mesa Dialect*. Tucson: The University of Arizona Press.

Hill, Kenneth C. 2010. *Tübatulabal Dictionary*. Draft manuscript.

Hilton, Kenneth Simón. 1993. *Diccionario Tarahumara de Samachique*. 2nd ed. Serie de vocabularios indígenas, no. 101. Tuscon: Instituto Lingüistico de Verano.
Jett, Stephen C. 2017. *Ancient Ocean Crossings*. Tuscaloosa: University of Alabama Press.
Kaufman, Terrence. 1981. *Comparative Uto-Aztecan Phonology*. Ms.
Klar, Kathryn Ann. 1977. Topics in historical Chumash grammar. Ph.D dissertation, University of California, Berkeley.
Langacker, Ronald W. 1977. *Studies in Uto-Aztecan Grammar I: An Overview of Uto-Aztecan Grammar*. Dallas: Summer Institute of Linguistics.
Lionnet, Andrés. 1986. *Un Idioma Extinto de Sonora: El Eudeve*. Mexico City: Universidad Nacional Autónoma de México.
MacBain, Alexander. 1911. An Etymological Dictionary of the Gaelic Language. Stirling: Eneas MacKay.
Manaster Ramer, Alexis. 1992a. A Northern Uto-Aztecan Sound Law: *-c̲- > *-y̲-. *IJAL* 58/3:251-268.
Manaster Ramer, Alexis. 1992b. Uto-Aztecan Phonology: Evidence from Tubatulabal Morphophonemics. *IJAL* 58/4: 436-446.
Manaster Ramer, Alexis. 1992c. Tubatulabal /k/ before low vowels. Folia Linguistica Historica 11(1-2): 183-186.
Manaster Ramer, Alexis. 1993a. Blood, Tears, and Murder. In *Historical Linguistics 1991: Papers from the 10th International Conference on Historical Linguistics*, J. van Marle, ed., 199-209. Amsterdam and Philadelphia: John Benjamins.
Manaster Ramer, Alexis, and Ralph Charles Blight. 1993b. Uto-Aztecan *ps (and *sp, too?). *IJAL* 59:38-43.
Manaster Ramer, Alexis. 1993c. On Lenition in Some Northern Uto-Aztecan languages. *IJAL* 59:334-341.
Manaster Ramer, Alexis. 2004. Ontology. A draft in preparation
McWhorter, John. 2003. *The Power of Babel.* New York: Perennial.
Miller, Wick R. 1983. Uto-Aztecan Languages. In William C. Sturtevant, (ed), *Handbook of North American Indians*, Alfonso Ortiz (vol. ed.) of vol. 10, *Southwest*, Washington DC: Smithsonian Institute, 113-124.
Miller, Wick R. 1985. Lionnet's Article on the Intensive in Tarahumara. *IJAL* 51:502-04.
Miller, Wick R. 1996. *Guarijio: Gramática, Textos, y Vocabulario*. Mexico, D.F.: Universidad Nacional Autónoma de Mexico: Instituto de Investigaciones Antropológicas.
Miller, Wick R., Dirk Elzinga, and John E. McLaughlin. 2005. Preaspiration and Gemination in Central Numic. *IJAL* 71/4:413-44.
Munro, Pamela. 1973. Proto-Uto-Aztecan *w—One Source for Luiseño ŋ. *IJAL* 39/2: 135-36.
Munro, Pamela, and William E. Mace. 1995. *A New Tübatulabal Dictionary*. (Revised preliminary version) UCLA.
Pauketat, Timothy R. 2009. Cahokia: Ancient America's Great City on the Mississippi. New York: Penguin Books.
Press, Margaret L. 1979. *Chemehuevi: A Grammar and Lexicon*. UCPL 92. Berkeley: University of California Press.
Sapir, Edward. 1913, 1915. Southern Paiute and Nahuatl: a study in Uto-Aztecan, parts 1 and 2. Part 1, 1913 in *Journal de la Société des Américanistes de Paris* 10:379-425. Part 2, 1915 in *American Anthropologist* 17:98-120, 306-328, reprinted 1919 in JSAP 11: 443-88. Parts 1 and 2 reprinted 1990 in *The collected works of Edward Sapir 5: American Indian Languages*, William Bright, ed., 351-444. Berlin: Mouton de Gruyter.
Sapir, Edward. 1930. Southern Paiute, A Shoshonean Language. *Proceedings of theAmerican Academy of Arts and* Sciences, 65: 1-296.
Seiler, Hansjakob. 1977. *Cahuilla Grammar*. Banning, California: Malki Museum Press.
Shaul, David Leedom. 1990. Teguima (Opata) Inflectional Morphology. *IJAL* 56/4: 561-73.
Shaul, David Leedom. 2003. Proto-Uto-Aztecan partials and Opata. In *Studies in Uto-Aztecan*, Luis M. Barragan and Jason D. Haugen, eds., 21-40. MIT Working Papers on Endangered and Less Familiar Languages, no. 5.
Shaul, David Leedom. 2014. A Prehistory of Western North America: The Impact of Uto-Aztecan Languages. Albuquerque: University of New Mexico Press.
Shaul, David Leedom, and David Yetman. 2007. *Opata and Eudeve Languages.* Ms.
Stubbs, Brian D. 2000. "More Palatable Reconstructions for Uto-Aztecan Palatals." *International Journal of American Linguistics* 66 (2000): 125-137.
Stubbs, Brian D. 2003. New Sets Yield New Perspectives for Uto-Aztecan Reconstructions. In *Studies in Uto-Aztecan*, Luis M. Barragan and Jason D. Haugen, eds., 1-20. MIT Working Papers on Endangered and Less Familiar Languages, no. 5, 2003.
Stubbs, Brian D. 2011a. *Uto-Aztecan: A Comparative Vocabulary.* Flower Mound, Texas: Shumway Family History Services and Rocky Mountain Books.
Stubbs, Brian D., Mary Jane Yazzie, Aldean Ketchum, and Loretta Posey. 2011b. *White Mesa Ute: Dictionary and Lessons*. First preliminary edition. Sponsored and published by the White Mesa Ute Council, 2011b.
Stubbs, Brian D. 2015. *Exploring the Explanatory Power of Egyptian and Semitic in Uto-Aztecan.* Jerry D Grover Publications.
Sullivan, Thelma D. 1988. *Compendium of Nahuatl Grammar*. Translated from the Spanish by Thelma D. Sullivan and Neville Stiles; Wick R. Miller and Karen Dakin, eds. Salt Lake City: University of Utah Press.
Taylor, Allan R. 1963. "Comparative Caddoan." *IJAL* 29:113-31.

Voegelin, Charles F. 1935. *Tübatulabal Grammar*. University of California Publications in American Archaeology and Ethnology, 34/2, 55-190. Berkeley: University of California Press.
Voegelin, Charles F. 1958. A Working Dictionary of Tübatulabal. *IJAL* 24/3: 221-28.
Voegelin, C. F., and F. M. Voegelin. 1957. *Hopi Domains: A Lexical Approach to the Problem of Selection*. *IJAL* Memoir 14.
Whorf, Benjamin L. 1935. The Comparative Linguistics of Uto-Aztecan. *American Anthropologist* 37:600-608.
Whorf, Benjamin L. 1937. The Origin of Aztec TL. *American Anthropologist* 39:265-274.
Zigmond, Maurice L., Curtis G. Booth, and Pamela Munro. 1991. *Kawaiisu: A Grammar and Dictionary with Texts*. UCPL 119. Berkeley: University of California Press.

Egyptian and Coptic sources

Allen, James P. 2010. *Middle Egyptian: An Introduction to the Language and Culture of the Hieroglyphs.* 2nd ed. Cambridge: Cambridge University Press.
Allen, James P. 2000. *Middle Egyptian: An Introduction to the Language and Culture of the Hieroglyphs.* 1st ed. Cambridge: Cambridge University Press.
Allen, James P. 2013. *The Ancient Egyptian Language: An Historical Study*. Cambridge: Cambridge University Press.
Bendjaballah, Sabrina, and Chris Reintges. "Ancient Egyptian Verbal Reduplication: Typology, Diachrony, and the Morphology-Syntax Interface." Online www-classic.uni-graz.at. July 30, 2014.
Cerny, Jaroslav. 1976. *Coptic Etymological Dictionary*. Cambridge: Cambridge University Press.
Cerny, Jaroslav, and Sarah Israelit Groll, assisted by Christopher Eyre. 1993. *A Late Egyptian Grammar*. 4th ed. Studia Pohl: Series Maior 4. Roma: Editrice Pontificio Istituto Biblico.
Hannig, Rainer. 1995. *Die Sprache der Pharaonen: Grosses Handwörter Buch: Ägyptisch – Deutsch*. Band 64. Mainz: Philipp von Zabern.
Hannig, Rainer. 2000. *Die Sprache der Pharaonen: Grosses Handwörter Buch: Deutsch – Ägyptisch*. Band 86. Mainz: Philipp von Zabern.
Faulkner, Raymond O. 1962. *A Concise Dictionary of Middle Egyptian*. London: Griffith Institute at the Oxford University Press.
Gardiner, Alan H. 1969. *Egyptian Grammar*. London: Oxford Universtiy Press.
Gee, John. 2004. Personal communication via email.
Lambdin, Thomas O. 1983. *Introduction to Sahidic Coptic*. Macon, GA: Mercer University Press.
Loprieno, Antonio. 1995. *Ancient Egyptian: A Linguistic Introduction*. Cambridge: Universtiy of Cambridge Press.
Satzinger, H. "Types of consonant reduplication in Egyptian roots." Online: homepage.univie.ac.at. July 30, 2014.
Smith, Richard. 1983. *A Concise Coptic-English Lexicon*. Grand Rapids, Michigan: William B. Eerdsman Publishing Company.
Takács, Gábor. Etymological Dictionary of Egyptian. Brill, 2007. Available online 2012.

Comparative Semitic sources

Bennett, Patrick R. 1998. *Comparative Semitic Linguistics: A Manual*. Winona Lake, Indiana: Eisenbrauns.
Ehret, Christopher. 1995. *Reconstructing Proto-Afroasiatic (Proto-Afrasian): Vowels, Tone, Consonants, and Vocabulary*. University of California Publications in Linguistics: volume 126. Berkeley: U of C Press.
Goldenberg, Gideon. 2013. *Semitic Languages: Features, Structures, Relations, Processes*. Oxford, United Kingdom: Oxford University Press.
Izre'el, Shlomo, Ed. 2002. *Semitic Linguistics: The State of the Art at the Turn of the 21st Century*. Israel Oriental Studies XX, Tel-Aviv University. Jerusalem: Graphit Press Ltd and Eisenbrauns.
Kapeliuk, Olga. 2002. "Languages in Contact: The Contemporary Semitic World." In *Semitic Linguistics: The State of the Art at the Turn of the 21st Century*, 307-340. Shlomo Izre'el, Ed. Israel Oriental Studies XX, Tel-Aviv University. Jerusalem: Graphit Press Ltd and Eisenbrauns.
Lipinski, Edward. 2001. *Semitic Languages: Outline of a Comparative Grammar*. Leuven, Belgium: Peeters Publishers & Department of Oriental Studies.
Moscati, Sabatino, Anton Spitaler, Edward Ullendorff, and Wolfram von Soden. 1964. *An Introduction to the Comparative Grammar of the Semitic Languages: Phonology and Morphology*, edited by Sabatino Moscati. Porta Linguarum Orientalium n.s. 6. Wiesbaden: Harrassowitz.
Rubin, Aaron D. 2010. *A Brief Introduction to the Semitic Languages*. Piscataway, New Jersey: Gorgias Press.

Hebrew sources

Blau, Joshua. 1976. *A Grammar of Biblical Hebrew*. Wiesbaden: Otto Harrassowitz.

Blau, Joshua. 1998. *Topics in Hebrew and Semitic Linguistics*. Jerusalem: Magnes Press.

Blau, Joshua. 2010. *Phonology and Morphology of Biblical Hebrew*. Winona Lake, Indiana: Eisenbrauns.

Brown, Francis, S. R. Driver, and Charles A. Briggs. 1975. *A Hebrew and English Lexicon of the Old Testament*. Oxford: Clarendon Press.

Gesenius, Wilhelm. 1910. *Gesenius' Hebrew Grammar*. German edition edited and enlarged by E. Kautzsch; 2nd English edition revised and edited from the 28th German edition (1909) and translated by A. E. Cowley. London: Oxford University Press.

Gesenius, Wilhelm. 1949. *Gesenius' Hebrew and Chaldee Lexicon*. Translated and edited by Samuel Prideaux Tregelles. Grand Rapids: Eerdmans.

Klein, Ernest. 1987. *A Comprehensive Etymological Dictionary of the Hebrew Language*. Ed. Baruch Sarel. Jerusalem: Carta.

Koehler, Ludwig, and Walter Baumgartner. 1994. *The Hebrew and Aramaic Lexicon of the Old Testament*. Revised by Walter Baumgartner and Johann Jakob Stamm; translated and edited under the supervision of M.E.J. Richardson. Leiden: E. J. Brill.

Kutscher, Eduard Yechezkel. 1982. *A History of the Hebrew Language*. Jerusalem: Magnes Press, The Hebrew University, E.J. Brill.

Rendsburg, Gary A. 1997. Chapter 5 "Ancient Hebrew Phonology." Online offprint from *Phonologies of Asia and Africa*. Alan S. Kaye, ed. Eisenbrauns. Read online December 12, 2013.

Rendsburg, Gary A. 2003a. "Hurvitz Redux: On the Continued Inattention to a Simple Principle of Hebrew Philology." In Ian Young, ed., *Biblical Hebrew: Studies in Chronology and Typology*, 104-128. London: T & T Clark.

Rendsburg, Gary A. 2003b. "A Comprehensive Guide to Israelian Hebrew: Grammar and Lexicon." Orient 38, pp. 5-35.

Rendsburg, Gary A. 2006. "Aramaic-like Features in the Pentateuch." Hebrew Studies 47, pp. 163-176.

Sáenz-Badillos, Angel. 1993. *A History of the Hebrew Language*. Cambridge: Cambridge University Press.

White, Marsha. 1997. Review of *Diversity in Pre-Exilic Hebrew*, by Ian Young. In *Journal of Biblical Literature*, vol. 116, no. 4.

Young, Ian. 1993. *Diversity in Pre-Exilic Hebrew*. Tübingen: J.C.B. Mohr-Siebeck.

Arabic sources

Badger, George Percy. 1967. *English-Arabic Lexicon*. Beirut: Librairie de Liban.

Biella, Joan Copeland. 1982. *Dictionary of Old South Arabic: Sabaean Dialect*. Harvard Semitic Studies, no. 25. Frank Moore Cross, Jr., ed. Chico, CA: Scholars Press.

Johnstone, T.M. 1987. *Mehri Lexicon and English-Mehri Word-List*. School of Oriental and African Studies, University of London. Printed and bound in Great Britain by Biddles Ltd. Guildford and King's Lynn.

Lane, Edward W. 1863-1893. *An Arabic-English Lexicon*. Online. London: Williams and Norgate.

Ricks, Stephen D. 1989. *Lexicon of Inscriptional Qatabanian*. Studia Pohl: Dissertationes Scientificae de Rebus Orientis Antiqui. Roma: Editrice Pontificio Instituto Biblico.

Wehr, Hans. 1976. *A Dictionary of Modern Written Arabic*. Ed. J. Milton Cowan. New York: Spoken Language Services, Inc.

Wright, W. 2005. Arabic Grammar. Third edition revised by W. Robertson Smith and M.J. de Goege. Mineola, New York: Dover Publications, Inc. Translated from the German of Caspari and edited with numerous additions and corrections by W. Wright, and published in two volumes by Cambridge University Press, 1896-1898. Originally published in Latin, 1844-1848.

Aramaic / Syriac sources

Comprehensive Aramaic Lexicon. Cincinnati: Hebrew Union College and Jewish Institute of Religion. Online database. Searched 2012-13.

Smith, R. Payne, and J. Payne Smith. 1999. A Compendious Syriac Dictionary. Founded on the Thesaurus Syriacus of R. Payne Smith. Edited by J. Payne Smith (Mrs Margoliouth). Ancient Language Resources. Previously published by Oxford University Press, 1902. Republished in Eugene, Oregon: Wipf and Stock Publishers, 1999.

Sokoloff, Michael. 2009. *A Syriac Lexicon*: A Translation from the Latin, Correction, Expansion, and Update of Carl Brockelmann's *Lexicon Syriacum*, first published in 1895 and later expanded 1923-1928. Winona Lake, Indiana: Eisenbrauns, and Piscataway, New Jersey: Gorgias Press.

Jastrow, Marcus. 1971, 2004. Dictionary of the Targumim, Talmud Bavli, Talmud Yerushalmi, and Midrashic Literature. Judaica Treasury.

Sokoloff, Michael. 2002. A Dictionary of Jewish Babylonian Aramaic of the Talmudic and Geonic Periods. Baltimore and London: John Hopkins University Press and Ramat-Gan, Israel: Bar Ilan University Press.

Koehler, Ludwig, and Walter Baumgartner. 1994. *The Hebrew and Aramaic Lexicon of the Old Testament*. Revised by Walter Baumgartner and Johann Jakob Stamm; translated and edited under the supervision of M.E.J. Richardson. Leiden: E. J. Brill.
Thackston, Wheeler M. 1999. *Introduction to Syriac*. Bethesda, Maryland: Ibex Publishers, Inc.
Awde, Nicholas, Nineb Lamassu, & Nicholas Al-Jeloo. 2007. Modern Aramaic (Assyrian/Syriac). New York: Hippocrene Books, Inc.

Ugaritic sources

Gordon, Cyrus H. 1947. *Ugaritic Handbook I: Revised Grammar, Paradigms*. Rome: Pontificum Institutum Biblicum.
Huehnergard, John. 1987. *Ugaritic Vocabulary in Syllabic Transcription*. Ed. Frank Moore Cross. Atlanta: Scholars Press.
Segert, Stanislav. 1984. *A Basic Grammar of the Ugaritic Language*. Berkeley: Universtiy of California Press.

Yiddish Sources

Harshaw, Benjamin. 1990. *The Meaning of Yiddish*. Berkeley: University of California Press.
Kerler, Dov-Ber. 1999. *The Origins of Modern Literary Yiddish*. Oxford Modern Languages and Literature Monographs. Oxford: Oxford University Press.
Kriwaczek, Paul. 2006. *Yiddish Civilization: The Rise and Fall of a Forgotten Nation*. New York: First Vintage Books Edition.
Spolsky, Bernard. 2014. *The Languages of the Jews: A Sociolinguistic History*. Cambridge University Press.
Weinreich, Max. 1980. *History of the Yiddish Language*. Translated by Shlomo Noble, with Joshua A Fishman. Chicago: The University of Chicago Press. First published in Yiddish as *Geshikhte fun der Yidisher shprakh*, By YIVO Institute for Jewish Research, 1973.
Wexler, Paul. 1993. *The Ashkenazic Jews: A Slavo-Turkic People in Search of a Jewish Identity*. Slavica Publishers, Inc.