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Summary:

Brian Stubbs offers findings that point to Hebrew as an ancestor language of the Uto-Aztecan language family. He discusses orthography and pronunciation, pre-Masorethic vowelings, sound correspondences, verb morphologies, and pronouns. He indicates that while there are similarities between the two languages, much non-Semitic morphology suggests that creolization is part of the history of most Uto-Aztecan languages.

Preliminary Report Research
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This FARMS preliminary report reflects substantial research but is not ready for final publication. It is made available to be critiqued and improved and to stimulate further research.
Abbreviations

adj. adjective
adv. adverb
Ak Akkadian
Ar Arabic
Aram Aramaic
C consonant
Ca Cahuilla
cf. compare
Cr Cora
Cu Cupeno
Eg Egyptian
Eth Ethiopic
Gu Guarijio
Hbr Hebrew
Hch Huichol
Hp Hopi
id. identical
impf. imperfect
intr. intransitive
K Kawaiisu
LHbr later Hebrew
Ls Luiseno
Mn Mono
Msr Masoretic
My Mayo
n. noun
NP Northern Paiute
NT Northern Tepehuan
perf. perfect
Pg Papago
pl. plural
prep. preposition
PS Proto-Semitic
PUA Proto-Uto-Aztec
Sem Semitic
sg. singular
Sh Shoshoni
s.o. someone
SP Southern Paiute
Sr Serrano
ST Southern Tepehuan
s.th. something
Tb Tubatulabal
Tbr Tubar
Tr Tarahumara
tr. transitive
V vowel
v. verb
UA Uto-Aztec
UACS Uto-Aztec Cognate Sets, Miller, 1967.
Introduction

The findings presented in this paper are a summary of the data to be included in a larger, more detailed work. These findings point to Hebrew as an ancestor language of the Uto-Aztecan language family. Many non-Semitic patterns also exist in Uto-Aztecan (UA), suggesting substantial creolization early in UA prehistory and perhaps additional creolizations or outside influences later in the history of specific groups or languages. But whatever their history, enough similarities with Hebrew emerge to justify sharing this information with linguists, Uto-Aztecanists, and Semitists, though many will think it not worth serious consideration strictly due to subject matter. Nevertheless, the quantity and types of similarities can hardly be ignored. As with any preliminary or working paper, further refinements are inevitable.

A quite consistent pattern of sound correspondences emerges; a substantial number of lexical similarities exist within that system of sound correspondences; more than 40% of the sets in Miller’s Uto-Aztecan Cognate Sets are referred to in the larger paper; a considerable amount of Hebrew morphology is apparent in UA, some of it still productive (nifal prefix, masculine plural suffix), but most of it fossilized (feminine plural suffix, perfect and imperfect verb forms, piq‘el, pugal, hif‘il, and hof‘al verb conjugations); some striking semantic correspondences emerge, as Semitic roots often include some rather diverse, not-obviously-related semantic dimensions, which dimensions are also found in the UA stems. In short, the lexical, morphological, and root-specific semantic similarities seem too many to attribute to chance.

The Uto-Aztecan (UA) language family consists of the following groups and languages: The Numic languages in the Great Basin--Northern Paiute (NP), Mono (Mn), Shoshoni (Sh), Southern Paiute (SP), and Kawaiisu (K); the Takic languages in Southern California--Serrano (Sr), Cahuilla (Ca), Cypeno (Cu), and Luiseno (Ls); Tubatulabal (Tb) in Southern California; Hopi (Hp) in Northern Arizona; the Pimic languages in Arizona and Mexico--Papago (Pg), Northern Tepehuan (NT), and Southern Tepehuan (ST); the Tara-Cahitic branch in Northern and Central Mexico--Tarahumara (Tr), Guarijio (Gu), Tubar (Tbr), Yaqui (Yq), and Mayo (My); the Corachol group--Cora (Cr) and Huichol (Hch); and Nahuatl or Aztec (Nah) near Mexico City.

The Semitic languages referred to in the discussion and lexical sets include Hebrew (Hbr), Arabic (Ar), Aramaic (Aram), Akkadian (Ak), Ethiopian (Eth), and Egyptian (Eg) which is more distantly related to Hbr.
Orthography and Pronunciation

The following may prove a helpful pronunciation guide for the non-
linguist: /c/ = /ts/ as in cats, /θ/ as in think, /ð/ as in the,
/ʃ/ = sh as in shoe, /ɡ/ last sound in sing, /kw/ as in quick.
The vowels are pronounced as in Spanish: /a/ as in raw, /e/ as in
raid, /i/ as in reed, /o/ as in road, /u/ as in rude. /ɔ/ is a
high central vowel not often occurring in English, /ʌ/ is a
mid front rounded vowel, and /œ/ is the shwa as in mutton.

Other consonants can hardly be described without linguistic
terminology: /x/ voiceless velar fricative, /ɣ/ voiced velar
fricative, /ʃ/ voiced pharyngeal fricative, /ʒ/ voiceless
pharyngeal fricative, /ɡ/ voiceless uvular stop, /ʒ/ the Semitic
emphatic voiceless stop.

In order to eliminate confusion, Semitic phonological variations
not pertinent to the UA-Sem connection will be simplified. For
example, almost all Sem languages have /g/ corresponding to PS /jg/
except Ar, which has /j/, though even some Ar dialects have
retained /g/; nevertheless, to eliminate readers having to
remember that Ar /j/ equals Sem or Hbr /g/, and since Ar /j/ was
originally /g/ anyway, Ar /j/ will be transcribed as /g/ in this
paper.

Another simplification will be the lack of spirantization for the
beged-kafat letters in Hbr. The vowelings and pronunciations in
the Biblical Text (which constitutes more than 90% of the existing
data for Biblical Hbr) show that the dialect of the Masoretes
(they who wrote the vocalizations into the ancient consonantal
text about 700 A.D.) had spirantized both the voiced (b,d,g) and
voiceless (p,t,k) non-emphatic stops when following a vowel. For
example, earlier or original forms such as /ṭab/, /napš/, /sakar/
became /ṭav/, /napš/, and /saxar/ respectively in Masoretic
pronunciation, the stops becoming fricatives after vowels. This
spirantization is apparent in some UA languages for bilabials
/b, p/, but not in all UA languages. Therefore, the Hbr forms will
not show the Masoretic spirantization, unless bilabials in the UA
forms are likewise spirantized, in which case both spirantized and
non-spirantized Hbr forms may be listed adjacently. Consistent
with that, Ar /f/ (from PS /p/) will also be written /p/.
Distinctions in vowel length will not be depicted since original
length seems to have nothing to do with retention, loss, or
quality change in UA.

One matter worth mentioning in connection with spirantization is
the behavior of Hbr /b/. The six spirantized stops, when written
with a dagesh (a dot in the middle), were not spirantized; without
the dagesh, they were pronounced as the corresponding fricative or
spirant. Hbr /b/ corresponds to UA /kw/ in dageshed, or non-
spirantized positions: word-initial /bašal/, following a consonant
/yilbaš/, or when doubled /dabber/. But Hbr /b/ is Masoretic /v/
and corresponds to UA /p,v/ when not in dageshed positions (when
spirantized in Masoretic pronunciation), that is, when following a
vowel: /?av/, /hivšiil/, /kaved/, /davar/.
Hbr emphatic /š/ will be transliterated /c/ for the following reasons: 1) It is pronounced /c/ in some dialects (Modern Hebrew and among the European Jews). 2) It corresponds to /c/ in UA languages. 3) There are already three or four other kinds of š's in Semitic that require special diacritical marks. 4) Using /c/ will eliminate the constant need for readers to remember which of the four š's corresponds to UA /c/. 5) and /c/ is also a reasonable average of the three Proto-Semitic consonants that merged to Hbr /c/. PS had three emphatics that merged in Hbr, but remained distinct in Ar as /š/, /ḏ/, and /ṯ/. Note that both fricatives and stops are represented. /c/ is an affricate, between a fricative and a stop, thus depicting something of a mean of the three merging consonants better than /š/ does.

A number of words from other Semitic languages are also compared with UA. One must keep in mind that the vocabulary of spoken Hebrew in Biblical times exceeded considerably what is found in the Biblical text. To pretend otherwise would be comparable to a claim that every use of every word in the English language can be found in the King James Old Testament. So if UA words are found to compare (in accordance with the sound correspondences) with words of other Semitic languages or later Hbr (LHbr), then it is not unreasonable that a cognate may well have existed in earlier spoken Hbr, though it may not exist in the Biblical text. One such example is the SP word for squirrel /šikko/. No word for squirrel exists in the Biblical text; however, Ar /šingab/ 'squirrel' would correspond to /šigob/ or /šigov/ in Hbr, though no such word is known in Hbr. With the usual devoicing of /g/ to /k/ and loss of the final bilabial after a round vowel, SP /šikko/ 'squirrel' is exactly as expected in UA for Hbr /šigob/.

Pre-Masoretic Vowelings

UA shows some vowelings older than those written in the Hebrew Bible. Consider the data below for the masculine plural suffix in Semitic languages and the plural suffix in UA languages:

<table>
<thead>
<tr>
<th>Semitic languages</th>
<th>UA languages</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arabic</td>
<td>Nah</td>
</tr>
<tr>
<td>Aramaic</td>
<td>SP</td>
</tr>
<tr>
<td>Akkadian</td>
<td>Hp</td>
</tr>
<tr>
<td>Ugaritic</td>
<td>Tbr</td>
</tr>
<tr>
<td>Hebrew, Msr.</td>
<td>Sr</td>
</tr>
<tr>
<td>reconstruction</td>
<td>Hch</td>
</tr>
<tr>
<td>for West Semitic</td>
<td>Ca</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Ca</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gu</td>
<td>-ima</td>
</tr>
</tbody>
</table>
Masoretic Hbr tended to drop short final vowels, thus Masoretic Hbr -im from an earlier *-ima. (1) Note that Nah, SP, Hch, and Gu all show a vowel after the /m/, 2 of the 4 being /a/ and the other two being higher. Note also that Ca, Yq, and Gu show high front vowels before the /m/. Vowel leveling would account for all the UA variations from a reconstruction of *-ima for Proto-UA, which agrees with the earlier form for West Semitic and Hbr. Uto-Aztecanists may disagree with the Gu form posited, but consider the following sg. and pl. forms, typical in Gu:

sg. suʔka-ni, pl. suʔki-ma ‘to sew’
sg. neha-ni, pl. nehi-ma ‘to hand over’
sg. cla-ni, pl. ori-ma ‘to shell corn’

The suffixes of sg. -ani and pl. -ima seem more likely, and both happen to be Semitic suffixes, though -ani not necessarily a singular suffix.

A second example of an early Hbr voweling is the nifqlal prefix. The nifqlal, as one of the seven verb conjugations in Hbr, is formed by prefixing ni- (in Msr Hbr) to the perfect stem to change an active or transitive verb to passive, and occasionally reciprocal or reflexive. However, the earlier form of the ni- prefix was na-, not ni-. (2) Many Uto-Aztecan languages have a passive, reflexive, reciprocal prefix na- (Hopi, the Numic languages, and the Taracahitic languages), but none have ni-, a second example of an early, pre-Masoretic voweling. Consider the following examples:

SP paqâ to bathe (tr.); SP na-vaqâ to bathe oneself;
SP wâ-ton?noi to shake (tr.); SP na-γwâ-ton?noi to shake oneself;
Hp ?qâla to greet s.o.; Hp naaʔqâla to cheer oneself up;
Hp wâisi brush, broom; Hp naaʔwâisi to comb one’s hair;
Hp qâ-y-ta to start a fire; Hp naqâ-y-na to burn oneself;
Tr co- to hit with the fist; Tr na-cô- to fight with each other;
Tr pâbâ- to stone, to throw rocks at; Tr na-pâbâ- to throw rocks at each other.

There does seem to have been a change in emphasis from Hbr to UA. In Hbr the meaning was mainly passive with some reciprocal and reflexive, while in UA the meaning is mainly reciprocal and reflexive with some passive; however, the difference between reflexive and passive is often a very fine line, if even discernible. For example, how much difference is there between ‘he burned himself’ and ‘he got burned?’

A third example of early voweling is the form of the perfect stem itself. Semitic verbs generally have three consonants; different voweling patterns, prefixes and suffixes form the various conjugations, tenses, persons, etc. The most common (3rd m.s.
qal) or basic form is CaCaC in Hbr, from PS *CaCaCa. (3) UA languages often show the final vowel of PS, though that final vowel was dropped in the Hbr of the Biblical text. Compare the Semitic and UA forms of the verb 'to sit or dwell':

<table>
<thead>
<tr>
<th>Language</th>
<th>Form</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arabic</td>
<td>waθaba</td>
<td>he jumped</td>
</tr>
<tr>
<td>Aramaic</td>
<td>yaθiv</td>
<td>he sat, dwelt</td>
</tr>
<tr>
<td>Hbr</td>
<td>yaθav</td>
<td>he sat, dwelt</td>
</tr>
</tbody>
</table>

**UA languages**

<table>
<thead>
<tr>
<th>Language</th>
<th>Form</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yq</td>
<td>yesa</td>
<td>to sit</td>
</tr>
<tr>
<td>Hp</td>
<td>yesiva</td>
<td>to sit, camp (pl.)</td>
</tr>
<tr>
<td>Tr</td>
<td>tasiba</td>
<td>to sit</td>
</tr>
<tr>
<td>Pg</td>
<td>dahiva</td>
<td>to sit</td>
</tr>
<tr>
<td>ST</td>
<td>daivo</td>
<td>to sit</td>
</tr>
</tbody>
</table>

Note that the Hp, Tr, and Pg forms show the PS final /a/ after the 3rd consonant, a third pre-Masoretic vowelization. Also worth noting is the fact that, except for the similarity of the middle vowel /i/ with Aramaic, the UA forms point to Hbr over other Semitic languages, in meaning and consonant correspondences. In addition, observe that some of the UA languages have spirantized /b/ as did Msr Hbr, but Tr (and others not in the list) have not.

**Sound Correspondences**

In studying language change, linguists have found that each sound will change to a certain other sound, whenever it is in the same phonological environment. This sound change is generally consistent throughout the language. (Example, PS /b/ changed to /v/ after vowels in Masoretic Hbr: PS waθaba > Hbr yaθav.) Therefore, the sounds of two related languages should correspond to each other in a consistent pattern. Establishing such a consistency in a system of sound correspondences between languages is necessary to prove relationship. Using the old sounds-like or looks-like method for comparing words does not hold water. Sound correspondences may establish the relationship of two words that sound or appear nothing alike to a non-linguist not familiar with the sound correspondences of the language family. For example, that Pg dahiva is related to Hp yesiva (and Hbr yaθav) can only be verified by the fact that in the Pimic branch (Pg, NT, ST) of UA, Pimic /d/ corresponds to UA /y/ and Pimic /h/ corresponds to UA /s/. Some of the basic sound correspondences within UA are given below. (4) One will notice that the Pimic branch is quite different phonologically from the rest of the UA language family.
There are further elaborations and refinements, and medial consonants have more variations than initial consonants, but the above are the basics as accepted by Uto-Aztecanists. A blank means agreement with PUA. Below are these Uto-Aztecan correspondences as they correspond to the PS and Hbr consonants:

### Basic Hbr-UA Sound Correspondences

<table>
<thead>
<tr>
<th>bilab.</th>
<th>PS/Ar</th>
<th>Hbr (dagesh)</th>
<th>UA</th>
<th>Pg</th>
<th>other exceptions</th>
</tr>
</thead>
<tbody>
<tr>
<td>b</td>
<td>b</td>
<td>b</td>
<td>kw</td>
<td>b</td>
<td>bw (Yq, My)</td>
</tr>
<tr>
<td></td>
<td>v/p</td>
<td>v/p</td>
<td></td>
<td>v/p</td>
<td></td>
</tr>
<tr>
<td></td>
<td>m</td>
<td>m</td>
<td></td>
<td>m</td>
<td></td>
</tr>
<tr>
<td>Alveol.</td>
<td>n</td>
<td>n</td>
<td>n</td>
<td>n</td>
<td></td>
</tr>
<tr>
<td></td>
<td>d</td>
<td>d</td>
<td>t</td>
<td>c</td>
<td></td>
</tr>
<tr>
<td>Sibil.</td>
<td>θ</td>
<td>s</td>
<td>h</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>s1</td>
<td>s</td>
<td>s</td>
<td>h</td>
<td></td>
</tr>
<tr>
<td></td>
<td>s3</td>
<td>s</td>
<td>s</td>
<td>h</td>
<td></td>
</tr>
<tr>
<td></td>
<td>z</td>
<td>t,c</td>
<td>c,s</td>
<td></td>
<td></td>
</tr>
<tr>
<td>emph.</td>
<td>ž</td>
<td>c</td>
<td>c</td>
<td>s</td>
<td></td>
</tr>
<tr>
<td></td>
<td>s</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>liq.</td>
<td>r</td>
<td>t</td>
<td>c</td>
<td>s</td>
<td>r (Tr)</td>
</tr>
<tr>
<td></td>
<td>l</td>
<td>l</td>
<td>d,j</td>
<td></td>
<td>r (TrCah)</td>
</tr>
<tr>
<td>vel.&amp;</td>
<td>k</td>
<td>k</td>
<td>k</td>
<td></td>
<td></td>
</tr>
<tr>
<td>uvular</td>
<td>g</td>
<td>g</td>
<td>g</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Phar.</td>
<td>x</td>
<td>h</td>
<td>ho,hu (init)</td>
<td>o,u,w,g</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>o,u,w (other)</td>
<td>o,u,w,g</td>
<td></td>
</tr>
<tr>
<td>gl.stop</td>
<td>?</td>
<td>?</td>
<td>?,o,w</td>
<td></td>
<td></td>
</tr>
<tr>
<td>glides</td>
<td>y</td>
<td>y</td>
<td>y</td>
<td>d</td>
<td></td>
</tr>
<tr>
<td></td>
<td>w</td>
<td>(initial /w/ merged with /y/)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Hbr /b/ in dageshed positions corresponds to UA /kw/ and Pimic /b/

The correspondence of labio-velars with bilabials is not uncommon. In Indo-European, Latin /kw/ corresponds to Greek /p/. In both Indo-European and UA, linguists point to *kw as being the proto- or original consonant. I know nothing about the arguments with regard to Indo-European, but in the Americas the following phenomena occur: 1) Within UA itself, UA /m/ sometimes becomes /gw/ in SP (see pl. suffixes on page 3), a bilabial nasal going to a labio-velar nasal, not the other direction. 2) In the Spanish dialects of the Argentine gauchos, which dialects were probably subject to considerable Native American influence, /w/ and /bw/ became /gw/: wevo > gwevo (huevo-egg), weso > gweso (hueso-bone), bueno > gweno, again bilabials becoming labio-velars rather than the other direction. (5)

Hbr /r/ became UA /y/ and Pimic /d/ in non-initial position

Hbr /r/, when not at the beginning of a word, became /y/ or /i/ in UA generally. This sound change is also common enough. In addition to UA, there is an /r/ and /y,i/ correspondence in Athapascan (6), Mayan (7), and some English creoles (8). Hbr /r/ and Hbr /y/ both merged to correspond to UA /y/ and Pimic /d/, except in the Taracahitic languages where /r/ often remains /r/. With those two basic sound changes in mind, Hbr /b/ > UA /kw/ and Hbr /r/ > UA /y,i/, consider the following words. In the Hbr verbs, only the 3 consonants will be listed unless there is reason to do otherwise. An asterisk identifies a proto-form that occurs in several UA languages; if it occurs in only one or two, the language(s) will be specified. (9)

<table>
<thead>
<tr>
<th>Hbr/Sem</th>
<th>UA</th>
<th>UACS#</th>
</tr>
</thead>
<tbody>
<tr>
<td>bəl     to boil, ripen</td>
<td>*kwasi to boil, ripen</td>
<td>UACS#152c</td>
</tr>
<tr>
<td>(This is the first word that caused me to suspect that UA /kw/ corresponded to Hbr /b/, as the UA forms had the same two meanings (boil and ripen) as Hbr /bəl/ did and the second consonant was /s/.)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>brz     defecate (Ar)</td>
<td>*kwita to defecate</td>
<td>UACS#126</td>
</tr>
<tr>
<td>(Semitic /z/ corresponds to UA /t/, and all 3 consonants fit.)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>brk     kneel,bless,praise</td>
<td>*kwika to sing</td>
<td>UACS#379</td>
</tr>
<tr>
<td>(Praises to God were often sung.) kwey? to stoop down (Ca)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>bcr     to enclose</td>
<td>kwɔcayai to wrap around (SP)</td>
<td></td>
</tr>
<tr>
<td>basar   flesh, penis</td>
<td>*kwasi penis, tail</td>
<td>UACS#430</td>
</tr>
<tr>
<td>dabber  speak</td>
<td>tɔkwì tell, say (Mn, SP)</td>
<td></td>
</tr>
<tr>
<td>šabber  break in pieces</td>
<td>sakwi break, tear down, ruin (Hp)</td>
<td>sakway to mess up (Ca)</td>
</tr>
<tr>
<td>mrr     to go (Ar)</td>
<td>*miya to go, travel, run</td>
<td>UACS#197</td>
</tr>
<tr>
<td>brr     land (Ar), field (Hbr)</td>
<td>*kwïya earth, land, dirt</td>
<td>UACS#151</td>
</tr>
<tr>
<td>grain</td>
<td>*kwïya, *kwì acorn</td>
<td>UACS #1</td>
</tr>
<tr>
<td>select, choose</td>
<td>kwiya, kwi keep, take (Nah)</td>
<td></td>
</tr>
</tbody>
</table>
Note the same pattern in 8 and 9 of doubled final /rr/ Æ /iya/. Note also the three corresponding meanings of the Semitic stem brr with UA *kwî(ya): (1) earth, (2) a kind of grain, and the verbal meaning of the stem (3) to select/take. What is the probability that the three divergent meanings of the Semitic stem would match the three meanings of the corresponding UA stem by coincidence and the sound correspondences match as well?

In 6 and 7 above, the medial doubled /bb/ corresponds to /kw/ as expected; for single /b/ we would expect UA /p,v/. Consider another example of medial doubled /bb/ which includes another interesting semantic correspondence:

10. ḍabb lizzard (Ar) cakwa lizzard (Ca)
    ḍabba to keep locked (Ar) cakwa to imprison (Nah)

Arabic /ḏ/, by the way, corresponds to Hbr /c/. The pharyngeals /ξ/ and /ḥ/ become back round vowels (o,u,w).

The voiceless pharyngeal /ḥ/ in initial position sometimes appears as ho-/hu-, but elsewhere and sometimes even initially, it appears as a round vowel or semivowel (w,o,u).

<table>
<thead>
<tr>
<th>Hbr/Sem</th>
<th>UA</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>11. ḥec arrow</td>
<td>*(h)u(c)</td>
<td>arrow UACS#9</td>
</tr>
<tr>
<td>12. ḥrk to move (Ar)</td>
<td>*hoyok</td>
<td>move UACS#296</td>
</tr>
<tr>
<td>13. ḥpp to rub, cleanse</td>
<td>*hupa</td>
<td>to bathe UACS#27</td>
</tr>
<tr>
<td>(LHbr,Aram)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>14. ḥmr to smear</td>
<td>humay</td>
<td>to smear, paint (Ca)</td>
</tr>
<tr>
<td>15. ḥaberet wife</td>
<td>*hupi</td>
<td>wife UACS#471</td>
</tr>
<tr>
<td>ḥaber companion</td>
<td></td>
<td></td>
</tr>
<tr>
<td>16. ḥll to play the pipe</td>
<td>?uluulu</td>
<td>to play the flute (Tb)</td>
</tr>
<tr>
<td>17. ḥṭṭ to cough (Ar)</td>
<td>*ḥocho</td>
<td>to cough (Hp,Tb,Ca) UACS#105</td>
</tr>
<tr>
<td>18. ḥṭṭ to spice</td>
<td>*ḥona</td>
<td>salt UACS#359</td>
</tr>
<tr>
<td>19. ḥṛḥ to cry, roar</td>
<td>ḥayau</td>
<td>to cry, yell (Tb)</td>
</tr>
<tr>
<td>20. ḥmḥ to sprinkle</td>
<td>ḥamaw</td>
<td>to grow (Nah)</td>
</tr>
<tr>
<td>21. ḥḥl sand</td>
<td>*ḥoq</td>
<td>sand, gravel (Pg) redupl.</td>
</tr>
<tr>
<td>22. ḥyl strong, able</td>
<td>wel</td>
<td>able (Nah)</td>
</tr>
<tr>
<td>23. ḥny to camp, settle at</td>
<td>*wînê</td>
<td>to stand, stop UACS#411</td>
</tr>
<tr>
<td>24. ḥlb milk, fat</td>
<td>*wîp</td>
<td>fat UACS#166</td>
</tr>
<tr>
<td>25. ḥšl overtake, obtain (Ar)</td>
<td>wacê</td>
<td>to catch up with (SP)</td>
</tr>
<tr>
<td>(Hbr=∗hcl)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>26. ḥrs earthenware</td>
<td>wayisma-l dish, pot (Ca)</td>
<td></td>
</tr>
<tr>
<td>27. ḥargol locust</td>
<td>urugi-pari grasshopper (Tr)</td>
<td></td>
</tr>
<tr>
<td>28. ḥrc yellow</td>
<td>hoya</td>
<td>yellowjacket (Hp)</td>
</tr>
<tr>
<td></td>
<td>ura-</td>
<td>yellow (Tr)</td>
</tr>
<tr>
<td>29. ḥṭṭ thread, cord (Ar xyt)</td>
<td>*wic</td>
<td>string UACS#419</td>
</tr>
<tr>
<td>30. ḥṭṭ? to miss, be wrong</td>
<td>*wci</td>
<td>false, misrepresent (Hp)</td>
</tr>
<tr>
<td>31. ḥṭṭab firewood (Ar)</td>
<td>puṣadbag</td>
<td>pitch, resin (Pg)</td>
</tr>
<tr>
<td>32. ḥcr to settle, dwell</td>
<td>?oṣad</td>
<td>to rest, lie down (Pg)</td>
</tr>
<tr>
<td>33. ḥrp to harvest</td>
<td>puṭd</td>
<td>to harvest (Pg)</td>
</tr>
<tr>
<td>34. ḥrm wife (Ar)</td>
<td>oerume, oorume woman (Gu)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>*-way- to take as wife, marry (Ca)</td>
<td></td>
</tr>
</tbody>
</table>
One can see that pharyngeal /h/ changes to o,u,w with an /h/ or glottal stop /ʔ/ sometimes perceptible when in initial position. The fact that many UA languages seem to provide a marked glottal stop for vowel initial words is interesting since many Semiticists claim that Semitic languages do not allow words to begin with a vowel either, but automatically provide /ʔ/ in what would otherwise be vowel initial positions.

Besides /h/, note the Semitic /r/ going to /y,i/ in most UA languages (12,14,15,19,26,28,34), going to /d/ in the Pimic languages (32,33), but remaining /r/ in the Taracahitic languages (27,28,34). Note the Hbr emphatic /t/ (29,30,31) corresponds to UA /c/ and Pimic /s,š/ as does the other Hbr emphatic /c/ (11,19,20,25,32).

The Semitic /ɛ/ is the voiced pharyngeal and also appears as back rounded vowels (w,o,u).

<table>
<thead>
<tr>
<th>Hbr</th>
<th>UA</th>
</tr>
</thead>
<tbody>
<tr>
<td>35. cɛɛ</td>
<td>to cry, cry out</td>
</tr>
<tr>
<td>36. cɛɛ</td>
<td>be modest, humble</td>
</tr>
<tr>
<td>37. ɛɡɛ</td>
<td>be mad, crazy</td>
</tr>
<tr>
<td></td>
<td>to rage (As.)</td>
</tr>
<tr>
<td>38. bɛɛ</td>
<td>break off</td>
</tr>
<tr>
<td>39. rɡɛ</td>
<td>(for, in) a moment</td>
</tr>
<tr>
<td>40. rɛɛ</td>
<td>be wicked, guilty</td>
</tr>
<tr>
<td>41. nɛɛ</td>
<td>plant (v.&amp; nouns)</td>
</tr>
<tr>
<td>42. sɛɛ</td>
<td>hair</td>
</tr>
<tr>
<td>43. nɛɛ</td>
<td>boy</td>
</tr>
<tr>
<td>44. ɛlɛ/ɛla</td>
<td>to go up</td>
</tr>
<tr>
<td>45. ɛsɛ/ɛsa</td>
<td>to do</td>
</tr>
<tr>
<td>46. ɛɡɛ</td>
<td>grow old (of women)</td>
</tr>
<tr>
<td></td>
<td>(Ar)</td>
</tr>
<tr>
<td>47. zɛɛ</td>
<td>to sow seed</td>
</tr>
<tr>
<td></td>
<td>seed, offspring</td>
</tr>
<tr>
<td>48. bɛɛ</td>
<td>to swallow</td>
</tr>
<tr>
<td>49. cɛɛ/ɛraɛɛ</td>
<td>leprosy</td>
</tr>
<tr>
<td>50. yɛɛ</td>
<td>wood, forest</td>
</tr>
<tr>
<td>51. cɛɛ/ɛraɛɛ</td>
<td>to stoop, bend</td>
</tr>
</tbody>
</table>

One might notice that the Hbr velars and uvular (k,g,q) all merged to UA /k/ generally (35,37,39), with some interesting exceptions that will be discussed later. However, Tr is an uninteresting exception that can be mentioned right now, Hbr /g/ often remaining /g/ in Tr (27,46). One will notice a general devoicing pattern for the voiced stops of Hbr (b > kw/p, d > t, g > k), by which they generally merge with the voiceless stops. Note also the examples of Hbr and UA /s/ corresponding to Pimic /h/ (37,50). 46 and 47 will be discussed later (Hbr /z/, p. 15).
Hbr emphatic /t/ corresponds to UA /c/

Hbr emphatic /t/ generally merged with the other Hbr emphatic /c/ to UA /c/, except in consonant clusters (cf. 41).

<table>
<thead>
<tr>
<th>Hbr</th>
<th>UA</th>
</tr>
</thead>
<tbody>
<tr>
<td>52. țll</td>
<td>colölö sprinkle, start raining (Hp)</td>
</tr>
<tr>
<td>53. țwy/țawa</td>
<td>cawa to spin (Nah)</td>
</tr>
<tr>
<td>54. țh/țaha</td>
<td>cewa to throw (Gu)</td>
</tr>
<tr>
<td>55. țrh</td>
<td>cayawi spill, fall (Nah)</td>
</tr>
<tr>
<td>56. țwh</td>
<td>ceriwe be sorry or sad (Gu)</td>
</tr>
<tr>
<td>57. țwl</td>
<td>cuh-ca to rub, put on clothes (Ca)</td>
</tr>
<tr>
<td>58. țhn</td>
<td>șul(i)g throw away (Pg)</td>
</tr>
<tr>
<td>59. țm</td>
<td>șon to pound, crack (Pg)</td>
</tr>
<tr>
<td>60. țrw/țry fresh, moist (Ar)</td>
<td>co?na-ni,co?ni-ma pound,crush (Gu)</td>
</tr>
<tr>
<td>61. țpl</td>
<td>șu?mi to slurp, sip (Gu)</td>
</tr>
<tr>
<td>62. țm?</td>
<td>șuddagi liquid (Pg)</td>
</tr>
<tr>
<td>63. țhr</td>
<td>weh-cori mud (Gu) weh=earth</td>
</tr>
<tr>
<td>64. matte</td>
<td>șp make contact with (Pg)</td>
</tr>
<tr>
<td>65. bațṭih</td>
<td>șomai(g) to catch a cold (Pg)</td>
</tr>
<tr>
<td>66. melon (Ar)</td>
<td>șa?ad- forked, forming a fork (Pg)</td>
</tr>
<tr>
<td>29. țy? thread, twine (Ar)</td>
<td>baci kindling wood (Hp) ko=fire</td>
</tr>
<tr>
<td>30. ț? to miss, be wrong</td>
<td>baci pumpkin (Tr)</td>
</tr>
<tr>
<td>31. ḥṭa?</td>
<td>șušabadag pitch, resin (Pg)</td>
</tr>
</tbody>
</table>

Again note the rounding nature of the pharyngeals (54,55,56,58,59,29,30,31). Note the consistency of the Pimic (Pg) correspondant /s/ with UA /c/ and Hbr /t/ (53,57,58,60,61,62,63,31). Note more examples of Taracahititic /r/ corresponding to Hbr /r/, UA /y/, and Pimic /d/ (55,60,63). Note the tendency of Gu to show a glottal stop along with a rounded vowel for pharyngeals in what may be consonant clusters (58,59). In 63 the connection is that the law of Moses considered animals with forked hoofs as ceremonially clean. The sound correspondences match (Hbr /h/=PUA /h/=Pg/?/).

Hbr /g/

Hbr /g/ provides some interesting peculiarities. In Hopi, it often corresponds to the velar nasal /ŋ/ rather than a velar stop.

<table>
<thead>
<tr>
<th>Hbr</th>
<th>Hp</th>
</tr>
</thead>
<tbody>
<tr>
<td>66. țbr/gvr</td>
<td>ho-ニュ strength</td>
</tr>
<tr>
<td>67. țghy/gaha be cured,healed</td>
<td>ʤa?hà medicine</td>
</tr>
<tr>
<td>ghy/gaha be freed &amp; to free (Aram)</td>
<td>ʤa?hà to untie</td>
</tr>
<tr>
<td>68. țgll</td>
<td>ʤölö coil, circle</td>
</tr>
<tr>
<td>69. țla?ga-t tongue (Ar)</td>
<td>leŋi tongue</td>
</tr>
<tr>
<td>70. țp?l</td>
<td>ponala thick</td>
</tr>
<tr>
<td>71. țpgr</td>
<td>piŋya to crack, break</td>
</tr>
<tr>
<td>72. țyğę</td>
<td>ʤįŋ-w-ta time of fasting</td>
</tr>
</tbody>
</table>
73. gnn surround  nào na collar
74. grr to saw  najaya to sway
    (a back and forth motion)

Another curious matter is that Hbr /g/ and /q/ in initial position in Pg disappear to a glottal stop when the 2nd consonant is a liquid /l/ or /r/.

<table>
<thead>
<tr>
<th>Hbr</th>
<th>Pg</th>
</tr>
</thead>
<tbody>
<tr>
<td>75. geled, gild- skin</td>
<td>7eldag skin (of person)</td>
</tr>
<tr>
<td>68. gll roll; gulla bowl</td>
<td>?ola ball, sphere (cf. Hp göla)</td>
</tr>
<tr>
<td>76. gly/gala naked, uncover reveal, make known</td>
<td>7el(i)d feel shame, decide</td>
</tr>
</tbody>
</table>
| 77. qereb/qerev inside, midst qerev bo in it qgarov near, soon  | ?eda in, inside | ?eda vko in the middle of (Tr) ayobe, ayowe soon (Tr)

(The semantic combination of Pg in 76 is unusual. One might wonder how the same word could mean two things so different as 'feel shame' and 'decide'; yet the Hbr meanings explain both: 'be naked, uncovered' > 'feel shame' and 'reveal, make known (thoughts on a matter)' > 'state a decision, decide.') In other environments, Hbr /g/ shows the usual velar reflexes.

<table>
<thead>
<tr>
<th>Hbr</th>
<th>UA</th>
</tr>
</thead>
<tbody>
<tr>
<td>78. gabha, gaba forehead (Ar)</td>
<td>kua forehead (Pg), kowa- (NT)</td>
</tr>
<tr>
<td>79. gabiš crystal el-gabiš hail</td>
<td>*kēpā snow UACS#400 giv (Pg)</td>
</tr>
<tr>
<td>80. gebim, gevim (pl.) locust</td>
<td>kivi- locust (SP)</td>
</tr>
</tbody>
</table>
| 66. gbr/gavur strong | g*iv-k strong (Pg), guvu- strong(NT) | ho-gvi strength (Hp)

Frequent loss of Hbr /k/ in initial position

Initial /k/ seemed prone to disappear.

81. kanap wing  *?anap wing UACS#465
82. kinnim gnat, gnats  *?ani mosquito UACS#288
83. klm address, talk to (Ar) ?alaw talk (Tb), ?iim greet (Pg)
84. kmr to be or grow hot  ?eme feel hot, get burned (Ca)
85. kng be humble  ikno be humble (Nah)  
    kinya bundle, pack  *?no carry, haul UACS#80

In connection with initial /k/ going to /ʔ/, look at the 2nd person pronoun forms in UA from the Hbr masculine suffix pronouns /ka/ sg. and /kem/ pl. One might keep in mind that /a/ often became the equivalent of the UA shwa, which is /a/.

11
Those UA forms above the line seem to derive both the sg. and pl. forms from the pl. as evidenced by an abundance of the pl. suffix /m/. (The same thing happened in English. 'Thou' was replaced by 'you' so that now both singular and plural are from the old 2nd person plural 'you'.) However, those below the line match fairly well with the sg./pl. distinction of Hbr sg. /ka/ 'you/your' and pl. /kem/ 'you/your'.

For /k/ to become /ʔ/ or disappear in a consonant cluster is common in many languages—Navajo, English, etc. UA languages are no exception. In looking at the following words for metate (a mortar or grinding stone), note the glottal stop in Tr.

87. Hbr makteṣ 'a mortar or hollow for pounding' from the verb katas 'to pound fine.' UACS #283 (metate): mata- (SP); manaa-1 (Tb); mata (Hp); macqu (Pg); maʔtə (Tr:Brambila); matta (My); mata (Yq); mwaata (Cr); maaata (Hch); meta-t (Nah); mahta (Gu).

Hbr /e/ is generally from PS /i/, thus maktes < *makiʔə; but *maktaš is a much more common vowelizing pattern for nouns and UA showing /a/ for Masoretic Hbr /i/ is evident elsewhere: na- p.4, #82, 87, 158, 159). So with a vestige of /k/ in the consonant cluster showing itself in Tr and the possible older vowelizing, we have everything except the 4th consonant: Hbr maktaš > UA *maʔtə. The final consonants in Tb, Nah, and probably Pg are noun suffixes that are not part of the stem. Consider another word in Tr as the lone revealer of /g/ in a cluster.

88. Hbr zaqan chin, beard. (Other Semitic vowelings are dąqan, dąqan, dąqan, zıqnu.) UACS #293 (mouth) *ṭen has all but the Numin branch (which is a compound) agreeing with *ṭen; however, Tr again shows a glottal stop: reʔna 'mouth.' (Hbr /z/ corresponds to UA /t/ and UA /t/ corresponds to Tr /r/ in initial position.)

Devoicing of Hbr stops (example: Hbr /d/ > UA /t/)

As mentioned before, the Hbr voiced stops were generally devoiced: b > kw, d > t, g > k. Consider the following examples of Hbr /d/ > UA /t/ = Pg /c/.
89. degel standard, banner  tekela stripe, hatband, pole at the bottom edge of the roof (Gu)
90. dayeq siege-wall  tīyāqa- wall (Hp)
91. dky/daka to crush  tex- to grind (Ca)
                        (Ca /k/ = UA non-initial /k/)
92. dga daq'a to call, name (Ar) *tewa name (n. & v.) UACS#300
93. dqk to go out (of fire) *tuk to go out (of fire) UACS#172
cuk to burn out, die out (Pg)
94. dIg to leap, spring  celko(n) to skip (Pg)
95. dopi blemish, fault  cecpa(i)mag(i) be dotted, have dots
                       cecpa?avi immoral woman (Pg)
96. dqq pulverize, make fine  cu?ā reduce to powder, pulverize(Pg)
cu?i powder, flour (Pg)
97. dqr to poke, pierce  cekid vaccinate, put a stake in (Pg)
teki to cut (Nah)
98. degel palm tree (LHbr)  takko palm tree (Yq)
diqla (Aram) daqal (Ar)  raku palm tree (Tr)
99. dese? grass  tisiv grass (Ch), tiisi weed (Hp)
6. dabber to speak  tikwi to tell, say

The initial consonant is reduplicated in 95 and the Hbr meaning 'blemish, fault' is a perfect connection for the two Pg meanings 'spotted' and 'prostitute' that would otherwise be hardly reconcilable. In 94 the doubled /q/ may have created the glottal stop, as the two make a cluster and /q/ and /k/ tend toward /ʔ/ in consonant clusters. As for 98, /l/ often goes to the high central vowel /u/; however, being clustered with the uvular /ql/ may have caused the high vowel to move back (u > a). The first two consonants match perfectly and the semantic correspondence is so specific. Note the examples of Pimic /c/ (93, 94, 95, 96, 97) corresponding to UA /t/ and Hbr /d/.

The rounding tendency in UA of the Hbr glottal stop /ʔ/

A rounding tendency for the Hbr ?aleph or glottal stop /ʔ/ is apparent in both Sem and UA languages. A couple of examples exist within Sem. (1) Hbr and Arabic occasionally show a correspondence of Hbr /ʔ/ with Ar /w/ rather than the usual Hbr /ʔ/=Ar /ʔ/ and Hbr initial /y/=Ar /w/.


However, Hbr: ?acal, ?azan
Ar: wašala, wazana

(2) Within Ar, the V form of Ar /saʔala/ is sometimes /tasawwala/. The fact that medial /aʔ/ in Ar corresponds to a long /o/ in Hbr (Ar raʔs, Hbr roḥ) and Ar daʔn, Hbr con; Ar yaʔkulu, Hbr yokal; Ar yaʔmur, Hbr yomar) is due to a sound change of /aʔ/ > /aa/ > /oo/, all PS and Ar /aa/ corresponding to Hbr /oo/.
100. ?ak yet, surely, but
101. ?ar?ak, ?arok long
102. ?ari lion
103. ?ad?am man
104. ?bd/?abad be wild,
    startle easily (Ar)
105. pl?/pala? be wonderful
    or extraordinary
106. nb? tell, inform (Ar)
107. qr? call, cry (&Ar)
108. g?p buy, redeem
109. ṭ?p gasp, pant
110. peʔa corner, sideburn
    *poʔa, powa, po
111. pʔr be beautiful (*qal)
112. kam? truffle (Ar)
    *kuha truffle (Med)
113. tirmania truffle (Med)

'Tirmania' (113) is a Mediterranean word (probably of Greek or
other non-Semitic origin) for a truffle of fair size native to
North Africa. (10) Truffles, like potatoes, grow under ground as
fleshy, edible appendages of a root system. Having two Mideast
words for truffle that correspond so well with two UA words for
potato is worth noting and should encourage further investigation.

With regard to 111, Pg/p/ is /v/ in initial position; for example,
the reduplicated plural of 'vuda' is 'vupuda' (bundles). Note
that the correspondences for /r/ are all as expected (101,102,107,
111). As in Hbr, the ?aleph in UA sometimes tends toward rounding
and sometimes does not. The matter needs further consideration.
Below are instances of ?aleph without rounding.

114. ?ap (denotes addition)
    also, even, yea
115. ?epoʔd ephod, garment,
    shoulder cape
116. ?aʔar, ?ahor behind,
    remain behind, back
    part, backwards
117. ?z/?aza make hot(Aram)
    ?zzz kindle, burn (Ar)

    ?ep again, also, another (Pg)
    Pipuḍ skirt, dress (Pg)
    ?ahoyi go back (Hp)
    Poid to follow (Pg)
    wari back (Cr,Hch) cf. UACS #16
    owena backwards (Tr)

    *?ete hot UACS#236
With 117 showing Hbr /z/ > UA /t/., consider some further examples.

2. brz defecate (Ar) *kwita defecate UACS#126
88. zqnr chin *t*?n mouth UACS#293
117. çaza make hot *?ete hot UACS#236
118. ç?eb wolf *t*i?eb wolf UACS#469
d?b wolf (Ar) however, Pg ?ee?e wolf
119. çg cry out toq- to yell, whistle (Hp)
120. zakar male, man *taka man UACS#272
czar blue (Ar) ceadag blue, green (Pg)
122. zny/zana be a harlot cona have fun in an exhibitionistic
zona a harlot, act way (Hp)
as a harlot cocona to kiss (Hp)
cinda- to kiss (Pg)

With regard to this consonant correspondence, there are some
problems within UA itself, as well. Note that in 118 the Pg
cognate should show /c/, not /?/, corresponding to UA /t/.
122 is
as expected. 122 is interesting in that the 3rd underlying
consonant of the Hbr stem is /y/ (zny), which is not apparent in
most Hbr conjugations, but does appear as the expected /d/ in Pg.
However, Pg /?/ should correspond to Hp /c/, or Hp /t/ should
correspond to Pg /c/. Below are some words wherein Hbr /z/
appears to correspond to UA /c/ rather than /t/. Part of the
problem may be related to the fact that Hbr /z/ is a merger from
Ps /d/ and Ps /z/. In Arabic they did not merge. The distinction
between UA /t/ and /c/ for Hbr /z/ somewhat matches the
distinction between Ps /d/ and /z/ respectively, but not quite.
This is a matter that needs to be looked at more carefully.

Consider the following.

123. zepet pitch cohpi a kind of pine (Gu)
47. zr? to sow seed, cayawa to sow seed (Nah)
seed, offspring cayo child (Hp)
46. qg zg grow old (of women) wegaca grow old (of women) (Tr)
?oks old woman (Pg, NT)
124. zh? to crawl cawa- to crawl (Ca),
zhp to crawl (Ar)

In the last two groups we have 12 words dealing with Hbr /z/.
Below, one can see that the Ps distinction between /d/ and /z/
matches the UA distinction between /t/ and /c/ 8 of the 12 times.
A possibility that comes to mind is that a certain Hbr dialect had
not yet fully merged the two Ps consonants. Finding forms older
than the Biblical text and closer to Ps is consistent with other
matters already discussed (-im(a), CaCaC(a), and na-).
Another possible PS distinction in UA is /γ/ and /ξ/, both of which merged to /ξ/ in Biblical Hbr. However, the first is not a pharyngeal, like the second is, and does not usually cause rounding in the few instances available in UA, consistent with what we would expect. It appears as a glottal stop, if at all.

125. yrš to plant (Ar) ʔsyis early summer, planting time
         ʔsyi a plant (Hp)
126. yršl to wash, clean (Ar) ʔʔas,ʔasi to bathe UACS#26
         ʔası to wash hair (Hp)
127. ɛrb evening, sunset
         ʔırb (Ar, PS) ʔıwə become evening (Tr)
         ʔıwə evening (Gu)
128. ñym, ñama, ñyüm, etc. ʔamaʁwɨ, ʔoma cloud (Hp)
         clouds, to cloud up (Ar) (wɨ=big and may be that affix)

UA /kw/ combined with a back round vowel /o, u/ becomes /ko, ku/.

This sound change is natural enough. What is interesting though is that even in Pimic (which has /b/ = UA /kw/) /bo, bu/ became /ko, ku/. Consider the number of words in Saxton’s Pg dictionary for each initial CV combination:

<table>
<thead>
<tr>
<th>C</th>
<th>vowels</th>
<th>a</th>
<th>i</th>
<th>ñ</th>
<th>o</th>
<th>u</th>
<th>totals</th>
</tr>
</thead>
<tbody>
<tr>
<td>b</td>
<td>24</td>
<td>3</td>
<td>12</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>37</td>
</tr>
<tr>
<td>w/v</td>
<td>60</td>
<td>20</td>
<td>38</td>
<td>27</td>
<td>22</td>
<td>167</td>
<td></td>
</tr>
<tr>
<td>k</td>
<td>22</td>
<td>15</td>
<td>8</td>
<td>52</td>
<td>48</td>
<td>145</td>
<td></td>
</tr>
<tr>
<td>totals</td>
<td>106</td>
<td>38</td>
<td>58</td>
<td>79</td>
<td>70</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

One can quickly see that there are no initial /bo/ or /bu/ syllables in Pg, while the number of /ko/ and /ku/ syllables are more than double the other kv combinations: 52 & 48 vs. 22, 15, & 8. (11) Additional evidence is the two forms for the name of a plant in Pg: bihul & hikul (metathesis of 1st and 2nd consonants). I do not think Uto-Aztecans have yet considered that UA /kw/ is also /kw/ in Pimic, rather than the usual /b/, when before back round vowels. A few examples of Hbr /bo, bu/ > UA /ko, ku/ are in order.

129. boʔer, bor well (Hbr)  teʔori well (Tr) (te=rock)
    buʔra hole (Ar)  koʔre fence, box, trap (Gu)
                     teʔteʔkore stone fence, ditch (Gu)
                     koyoʔk well (Nah)
                     koʔysi hole-in-the-ground oven (Hp)
130. bo in it, in something  -ko inside, in, at (Nah)
     at a place  ko in it (Pg) see #75
131. bwɛ be white  bo, po in (Yq, My: /bw/=UA /kw/)
     white linen  kuʔa light gray, ashes (SP, Ch)
132. bər to burn *kuu fire UACS #170
göy- to start a fire (Hp)

133. ben (Hbr), ibn (Ar) son kone- child, offspring (Nah)
134. ?eqbaγ finger (Hbr) ciko five (Nah)
?išbaγ, šubaγ (Ar) civot five (Hp)

The Hbr word for finger (134) is an oddly voweled noun from the root /cbγ/. A vowel is prefixed which necessitates initial glottal stop /ʔ/, and the /b/ is dageshed when not following a vowel. The CVCV tendency of UA may have encouraged a metathesis of /icbaγ/ to /cibaγ/, the two forms plugging /b/ in a dageshed and non-dageshed position, respectively. Here we have both forms in UA. Hp shows the spirantized form, suggesting that the spirantization rule was still productive in Hp through the metathesis; and Nah has the dageshed form, suggesting the phoneme was set before the metathesis. Thus, the two UA words for five show the two possible forms that could result from a metathesis toward a CVCV pattern: the pharyngeal (+ perhaps fem. pl. -ot) provides /o/, then Hp /ʊ/ and Nah /kw/ show the expected forms of non-dageshed and dageshed /b/ respectively, with /kw + o/ becoming /ko/ in Nah. Uto-Aztecanists, without admitting the above, would not be able to explain the two forms, outside of suggesting different morphemes suffixed to /ci/. Hp /civot/ (and perhaps Nah) is probably the fossilized Hbr pl. /?eqbaγot/. In 133 the vowel is so short (or non-existent in Ar) that /kw + n/ becomes /kon/. Another example of /kw + u/ > /ku/ is a word for navel in Hbr and six UA languages:

135. ṭabbur,ṭibbur navel *siku(r) navel (SP,Sr,Pn,Nah,Tr,Tbr) ṭibbura (Aram) sikura navel (Tr)

The only problem is that Hbr /t/ normally corresponds to UA /c/, not /s/, though /c/ vs. /s/ problems are as common among UA languages themselves as in the Hbr/UA connection. Outside of that, the semantic correspondence is so specific and all other sound correspondences are as expected.

Hbr non-initial /r/ in the Tarahumara languages

As stated earlier, medial /r/ is /y,i/ in most UA languages, /d/ in the Pimic languages, but often is /r/ in the Tarahumara languages (Tr, Gu, Tbr, Yq, My).

136. baraγ lightning berok, beʔok lighting (Yq,My)
                   bebedki thunder (Pg) cf. UACS#262
                   vĭp̥ád oxudami lighting (NT)
137. ?ereγ land uri lowland (Tr)
138. tor turtle dove tori chicken (Tr)
139. ruŋ spirit, soul arewa spirit, soul (Gu)
    riŋ wind (Ar) (a- perhaps def. art. prefix)
140. ʕeq feel, perceive (Ar) sura heart (Tr) UACS #222a
    ʕequr feeling, sentiment huŋ heart (Pg)
| 135. tibbura | navel | *siku(ra) navel (Tr) UACS#301 |
| 55. ṭrḥ | be burdened | ceriwe be sorry, sad (Gu) |
| 129. bɔr | well | kori (Tr), kore (Gu) |
| 28. hrc | yellow | ura- yellow (Tr) |
| 34. brm | wife | orume woman (Gu) |
| 27. hargol | locust | urugi-pari a kind of grasshopper (Tr) |
| 102. Pari | lion | wori mountain lion (Gu) |
| 9. brr | land, field | *kwinya land, earth UACS#151 |

Initial Hbr /r/ corresponds to UA /t/ and Tr /r/ |

| 141. rbb | to shoot | tokwa snap (of bow), shoot (SP) |
| 142. rnn | to ring, echo, resound (Ar) | tōna voice, trachea (Hp) |
| 143. ṭe | sun (Eg) | *tawa sun UACS#423a (in 7 UA lang's) |
| 144. ṭe | thunder v. & n. | rawe sun (Tr) |
| 145. ṭb | to tie up, bind | *tapic to tie UACS#438 |
| 146. ṭb | be hungry (PS:ṛbb) | tiyi hunger (SP) |
| 147. ṭbl | ewe (PS:ṛxl) | tiyia deer (SP) cf. UACS#123 deer |
| 148. ṭq | spit, spittle | *taw spit UACS#405 (Mn,Cm,Tb,Hp) |
| 149. ṭaqi | sky | *tuku sky UACS#383 SP,Pn,Ca,Sr,Hp,Ch |
| 40. ṭe | wicked | tiśawiin cause evil (Tb) |
| 150. rbc | to lie down | rasewa to fornicate (Tr) |
| 151. rajul, ragul | man (Ar) | *tihoi man UACS#273d |
| | | tosaa (Yq,My), tuʔa(Cr), tweso (Tbr) |
| | | tapasol-li (Nah), kos (Pg) all=nest |
| 152. rʔy raʔa | to see | *tewa to see UACS#365 |
| 153. roš | head | tocci- head (SP) |
| 154. rukab | knees (Ar) | *takap knee UACS#245 |

There are other examples of /m/ /v, w/ when in a consonant cluster as in 144. Note that all the Tr cognates begin with /r/ (143,144,40,151), while the other UA languages begin with /t/, except for Pimic with its expected /c/ (151). The SP reflexes (146,147) are two more examples of velar fricatives in PS (Proto-Semitic) corresponding to velar fricatives in UA, even though the PS velar fricatives merged with the pharyngeals in Biblical Hbr (See 125-128 above and discussion.)

Similarities of sound change between UA *w and Arabic /ʕ/

One more matter needs to be presented with regard to the pharyngeal /ʕ/. Before the Hp non-high vowels /a,e & ə/, PUA (Proto-Uto-Aztecan) /w/ became /l/ in Hp, giving the correspondence: UA /w/, Pimic /g/, and Hp /l,w/. This is accepted
by Uto-Aztecanists. Such an array of correspondences fits well the Semitic ħain. For the ħain to become /w,l & g/ in UA is significant since the ħain is sounded as the other liquid /r/ and as /w/ in some Arabic dialects. As well, I have heard ħains as pharyngeal as any Arabic ħain in the Ute dialect of White Mesa. Consider some examples of Hp /l/ corresponding to Hbr /ʕ/.

155.  eql bend, crooked gakol- crooked (Pg)
156.  qeb/qagw heel, foot- gooki track, footprint (Pg)
         print, to deceive *wok foot, tracks UACS#257b
         kâk-laqvi tracks (Hp) (kâk=foot)
         ħeqev deceiver lâlôqaqâw snake (Hp)
157.  erwa pudenda lôwa vulva, vagina (Hp)
158.  ḫbryt/qivrit (LHbr) lavayi-t language (Hp)
         Hebrew language ?îvîlû- Cahuilla language (Ca)

/ʕivrit/ (Msr pronunciation from consonants: ḫbryt) for 'Hebrew language' is only verifiable in later Hebrew (not existing in the Biblical text), but may have been part of the spoken vernacular. Accordingly, the Hp and Ca words for 'language' are worth noting. Hp /lavayit/ portrays exactly as expected the five consonants of Hbr /ʕ b ryt/ though the vowel is different than the Masoretic pronunciation, which is nothing new, as we have seen many times. Also included are a couple of examples of the Pg reflex /g/ (155,156). It is unclear why the final /b/ went toward /kw/ instead of the expected /v/ in 'snake' (156), unless it was the backing effect of a reduplicated ħain and an uvular; and other examples do exist for final Hbr /b/ becoming /gw/ in Hp. All else is as expected. Hbr /r/ in 157 (Hbr /r/ being a fronted vowel in Hp) probably is the fronting of the front round vowel /o/, or is at least assimilated within it; therefore, it is there, but not obviously so. There are other examples of Hbr /ʕ/ > Hp /l/, but the explanations are complex. As a rest from complex examples, consider the following.

159.  kilya,*kalya kidney kele-vosna kidney (Hp);kani- kidney (SP)
160.  Katep shoulder kotva shoulder (Pg)
         katpa shoulder (Aram)
161.  qane stalk, reed *kana willow UACS#461
162.  hiskal- be prudent iskal train, be discrete, prudent (Nah)
         make wise, teach
163.  ûekim shoulder *seka shoulder UACS#375
         *seka arm UACS#7 (also probably)
164.  ûoq leg so- foot, leg (Nah)
         soki hoof, fingernail (Hp)
165.  snw be beautiful(Eth) soniwa look good, fine (Hp)
         shine (Ar)
         sonwayo? be beautiful (Hp)
166.  *šiggob squirrel sikko squirrel (SP)
         (=Ar singaab squirrel)
167.  šippa to plane off *sipa to scrape UACS#364
         (LHbr pišel, from:
         špy/šapa to make level, smooth, bare)
168. snw twins (Ar)
    (Ar ʂ=Hbr  c/čnw)
169. cemer/camr wool
170. nsʔ/nasaʔ lift, carry
    na + nasa? (nifgaʔ)
to be lifted in vision
171. nsʔ/nasaʔ to lend
172. nsp be noon, half (Ar)
    nasi-moki borrowed thing (Hp)
naasaveʔ be in the middle (Hp)
tawa-nasave noon, mid-day (Hp)
nasipa half (Tr)
    (UA /s/ for /c/ is problematic)
173. cəvi gazelle
174. sʔləw quail
175. š:mm to close, be deaf
    d:mm to draw together
    (both Ar; both would=Hbr *cmm)
176. cll tingle, quiver,
    clink, rattle
    cilcal whirring, buzzing
177. cwd to hunt (Ar ʂyd)
cayid hunted game,
    provision, food
178. nar fire (Ar)
179. qeren horn
180. qarg gourd (Ar)
181. qama standing grain
    (from qwm 'stand')
182. qyʔ to vomit
183. qeq to leap, jump (Ar)
    kapadva to dance the leaping dance (Pg)
184. qaswa-t basket of palm
    leaves (Ar)
    qaswa, qəsot (pl.) jar, jug
185. ksr to break (Ar)
    kasi to break (Tr)
186. yayaʔ/yen- wine
    yena strong (of liquor) (Gu)
187. mdʔ chew (Ar)
    (would=Hbr mc)
188. moh, moḥa (Aram)
    *moʔo head, brains UACS#218
    marrow, brain
189. mšʔ to feel, grope
190. mol, mul front
    mulu- go ahead, be first (Ca)
    mo- front (Hp)
191. mwg to melt, soften
    məkəy- thaw out; məki hot (Hp)
192. npl 1. fall 2. be born
    nopidva trip (Pg)
    -pulι- 1. fall 2. be born (Ca)
The Gu form in 189 is probably a fossilized imperfect verb form. For Hbr /npl/, the perfect stem is /napal/ and the imperfect stem is /-pol/. In addition, it has the two meanings of the Hbr verb 'fall' and 'be born.'

193. ḍši to vomit (Eg) *pis to vomit UACS#450
194. nmi to wander (Eg) *nemi to wander, walk UACS#263
195. *m to go, depart (Eg) *simi to go UACS#198

Similar Semantic Combinations between Hbr and UA (cf. also 9 & 10)

196. The Hbr root pny/pana 1. to turn 2. to look has a pl. noun form of panim face & constr. used prepositionally paney/*pani (on) the face of

SP pēnni see, look; Ca peni-pis appear; Ch puunii see, look Ca puni spin, whirl; Hp ponila turn s.th. around; Hp ponivma to go around

Tr pana cheek; Gu pana cheek
Nah pani on, on the surface of

The Hbr pl. /panim/ means 'face'; the meaning of the sg. form *pane/*pana is not known. The Tr and Gu forms /pana/ for 'cheek' are interesting. The two verbal meanings and the prepositional meaning are also found in UA languages.

197. Hbr /l/ becoming UA /θ/ or disappearing in consonant clusters has not been treated, but there are a number of examples of the phenomenon (1,24,25,151,197,204), this being one. With that in mind, consider

Hbr kly to be complete, finished Hbr kli,koliy 1. tool,article 2. weapon 3. vessel, receptacle
Hp k.setXyi emerge, complete one's appearances
Hp k.Xyiya ceremony concludes
Hp kyi liquid in a container, kyiapi a dipper
Tb kyi arrowhead

Three diverse meanings of Hbr (to complete, weapon, container) are also apparent in UA (conclude ceremony, arrowhead, liquid in a container).

198. Hbr tQē 1. thrust, drive (weapon or s.th.) into (s.th.) 2. blow a horn Tbr takoa injured, damaged; Tbr -tako- palm of the hand Nah takoa to harm, damage, sin; UA *taka palm of the hand UACS#314 (NT,Tr)

Tr tokowa to crow, cackle Pg ma-tk palm (ma=hand)
Tr tekowa master, lord, owner Hp map-q610 palm of the hand
Nah teku- lord, nobleman Hp kā-k-q610 soul of foot
SP tuttuua- supernatural helper, manitou

21
For Tbr to have basically the same word (takoa) to mean both 'injured' and 'palm of the hand' would arouse the curiosity of any believer in the Book of Mormon (the final /a/ of the noun probably dropping due to added suffixes). In addition, the Nah cognate seconds the verbal meaning 'injure' and the other UA words for 'palm' would reconstruct to PUA *takaw/takawa also. Most of the reflexes for 'palm' show only the first two consonants, but Tbr (takoa) and Hp (-qëlō) point to /ξ/ as the third consonant. Along with the obvious allusion to the crucified Lord, note the Tr, Nah, and SP reflexes for 'lord' that also agree with PUA *tkw/Hbr tqe. Also note the Tr reflex 'crow, cackle' in connection with the other verbal meaning 'blow a horn.' While on the subject of Christ's visit to ancient Americans, consider the following:

199. Hbr mšn to anoint; mašiah/mašiḥ Anointed One or Messiah Hp mašaww supreme deity, supernatural judge

With the three consonants agreeing, the Hp word is strong. Nahuatl 'Mešiko' is another possibility, though weaker in having two conflicting etymologies—one, that it is a compound of mecmoon, sik- navel, and -ko at the place of, equaling 'in the middle of the moon'; the second, that 'meši-' is the name of a god.<(13) If the latter were correct, then Hbr mašiah is a fair possibility, in which case 'meši-ko' would mean '(at) the place of the Messiah,' or more literally 'Messiah in it/thereat' (mašiah-bo).

Fossilized Hbr verb morphology

200. Hbr yacab & yacaξ to set, lay, put mocib & mociξ (corresponding hifgil participles)
Gu yahca to set, place seated; mociwa to set, place seated
Pg daax to set, put; Gu mocipa to sit down

The morphological similarities of this verb in Hbr and UA are striking. When Hbr /y/ is the first of the three consonants, it appears as the original PS /w/ in the hifgil participle. That is, even though the perfect of the qal /CaCaC/ regularly has a hifgil participle of /maCCiiC/, the patterns for initial /y/ verbs are /yaCaC/ and /moCiiC/ (from underlying /maawCiiC/). Gu yahca and Pg daax correspond to the qal perfect and Gu mocipa and mociwa correspond to the hifgil participle, though not all such forms happen to occur in the Biblical text.

152. Hbr ra?a to see; ro?e a seer (as a prophet, one who sees)
UACS#365 *tew to see (Ls,Ca,Pg,ST); Ls towi 'see supernaturally' also Hp tewa to find; Yq & My teuwa to find; Tbr temo to see, find (UA/w/=Tbr/mw/).

Here we have eight languages with reflexes for the qal form of the verb, and one with a reflex for 'supernatural seeing.' Now
consider the following reflexes for the nifgal. Remember that Hbr /r/ is /t/ in initial position but /y/ (or Pg /d/) elsewhere.

SP nayava to seem, look like (Sapir correctly attributes initial na- to the UA recipr./reflex. prefix na-)
Pg neid to see, be seen, appear (cf. UACS#366 *ne to see)

Not only do we have the na- prefix in both the SP and Pg forms, but they also have passive meanings of the active */tewa/*. The sound correspondences also match.

201. The Hbr root /nky/ is used almost exclusively in the hifgil and hofgal to mean ‘smite, kill’ and ‘be smitten, killed’ respectively, the hofgal being the passive of the hifgil. The participles for these are makke ‘smite’ and mukke ‘be smitten.’ The passive (mukke ‘be smitten’) is one of the most frequent words in UA with no less than 13 UA languages having reflexes of PUA *muki ‘die, be sick’ (UACS #128a), one of these being the well known Hp word *moki* (Hp moki ‘dead, dead ones’). However, most interesting is the Cahuilla pair: -muk- get sick, die & -mek- kill.

All the vowels in PUA rose a notch (mukke > muki & makke > meki), except for the high vowel /u/ which could not rise any more, and the hifgil molding and meaning is plainly contrasted from the molding of the hofgal, with the help of Ca.

202. Hbr naps/nefeš spirit, soul, breath (v. to breathe) hinnapeš to take breath, refresh oneself (nifgal inf.)
Yq hiapsi heart, soul (/n/ missing)
My " "
Pg ?i?ih-hiopa catch one’s breath (Pg /h/ = UA /s/)
SP aspi ci evil spirit, ghost (Hbr/s/ often = SP/c/)
Hp hiikwis to breathe
Ca hikus to breathe, take a rest
Hp pa-newsi fog, mist

In Hp hiikwis and Ca hikus, the /n/ has been absorbed by the next consonant to double it, which causes /pp/ > /kw/. The form fits the pattern of a hifgil verb /hippis/. In UA, bilabials often become /w/ as first consonant in a cluster, which is what happened in Hp pa-newsi. ‘Pa’ means water; therefore, the compound /pa-newsi/ conveniently yields ‘water-spirit’ for ‘fog, mist.’

As for bilabials to /w/ in clusters, another example follows.

203. Hbr šipha/sifha maid, maid-servant
Nah siwa female, girl, wife UACS #470
Yq siwwa "
Hp siwa younger sister

The bilabial becomes /w/ as first consonant of a cluster, and the pharyngeal also becomes /w/, so the doubled consonant in Yq is interesting.

23
In connection with 202 above and 204 below, both of which have examples of /n/ or /l/ being absorbed to double an adjacent consonant, a few examples from Hbr itself may be in order. The perfect and imperfect forms of regular verbs are /CaCaC/ and /yICCaC/ or /yICCoC/. As one can see, the imperfect puts first and second consonants in a cluster. When the first consonant is /n/ or /l/, it often assimilates so as to double the next consonant: laqañ/yiqqañ; nasaq/yissaq; nafal/yippol (192). Also in nouns: Ar ?anfuñu/ Hbr ?appo; Ar bint/Hbr batt; Ar ?anta/ Hbr ?atta; and 'squirrel' on page 3. The /l/ of the definite article behaves similarly, in Ar assimilating some of the time, in Hbr always: hal+davar > haddavar. With that, consider 204.

204. Hbr lëβ/lavañ/yilbañ(impf.) to dress, clothe, wear, put on
Ch -kwasu-ntu to dress, put on clothes
Hp kwasa dress
Pg ?ikus cloth, to wear a piece of cloth
Hp yâwsï clothing & put on clothes

The first three UA forms (Ch,Hp,Pg) show the /b/ as doubled, as it would be in the imperfect. The fourth form, Hp yâwsï, has /b/ going to /w/ in a cluster with /s/ and also shows the imperfect prefix /yi-/ fossilized into the verb form. Of considerable interest are forms like Ch -kwasu- and Gu -imasu- (189). The final /-u/ may be the short final vowel of the PS and Ar imperfect indicative, which again was lost in Masoretic Hbr.

205. Hbr yâšb/yâšav to sit, dwell
The various UA forms of the perfect of this verb were introduced on p.5, all meaning 'sit' and some also meaning 'liye' or 'camp.' Compare also SP yokwi 'sit' (pl.) with Hbr yoñbim (the qal plural participle. With a reinterpretation of shwa mobile to shwa quiescent or with assimilation of /y/ to double the /b/, either would produce UA yokwi from Hbr yoñbi-m, given the UA tendency toward the construct plural (i.e., dropping /m/). Mn and Cm also have reflexes like SP, and with the pl. meaning only:

**Table:ニュース**

<table>
<thead>
<tr>
<th>Hbr</th>
<th>yañab/yañav (sg.perf.)</th>
<th>Hbr yoñbi-m (pl. participle)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yq</td>
<td>yese</td>
<td>SP yokwi sit (pl.)</td>
</tr>
<tr>
<td>Hp</td>
<td>yesiva sit,camp (pl.)</td>
<td>Mn yñkwi &quot; (pl.)</td>
</tr>
<tr>
<td>Tr</td>
<td>?asiba</td>
<td>Cm yñkwi &quot; (pl.)</td>
</tr>
<tr>
<td>Pg</td>
<td>dahiva</td>
<td></td>
</tr>
<tr>
<td>NT</td>
<td>daivo</td>
<td></td>
</tr>
</tbody>
</table>

206. For another example of /ɔb/ to /kw/ after a round vowel, cf. SP ukwi 'grass' and Ar ëuɔb 'grass.'
Pronouns
The Hebrew pronouns are spottedly apparent in UA, along with much that is non-Semitic. Most UA languages have some form of /-n/ for the 1st person singular pronoun, and Langacker’s tentative reconstruction is PUA *-n*. Compare Hbr 7ani, -ni. On the other hand, 1st person plural pronouns do not agree with Hbr. The 2nd person singular and plural suffix pronouns were cited on p. 12, and Langacker’s reconstructions of *-?* and *-?m* agree with the conclusion on p. 12. (14) Hbr 3rd person masc. pronouns, sg. hu,-o and pl. hum,hem, -am appear in some UA languages, often as parts of an enlarged demonstrative system; for some UA languages, the demonstrative system has replaced or incorporated whatever 3rd person pronouns there may have been.

Conclusions
Much more could be presented. This summary constitutes less than half the data. There are more than 250 additional Sem roots with apparent reflexes in UA. More phonological rules could be presented with examples. There are more examples of Hbr verb morphology in UA. Besides the masculine plural (-ima), a few UA words show fossilization of the Hbr feminine plural (-ot).

In contrast to similarities, one must keep in mind that a lot of non-Semitic morphology and vocabulary exists in UA, suggesting creolization as part of the history of most UA languages. Beyond morphology and vocabulary, creolization would also explain another matter—the possible objection to the existence of a 2500-year-old Hbr base for UA on the grounds that UA supposedly has a 5000-year time depth according to glottochronology. First, many questions are being asked with regard to glottochronology. And second, if a primary ancestor language were to spread and mix with a variety of other languages, so that many of the descendant languages were approximately 50/50 creoles, would not that group of 2500-year-old, 50/50 creoles appear to have a time depth of 5000 years?

Something similar to that is what I suggest is the case for Uto-Aztecan. There appear to be more similarities with Hebrew than could be attributed to chance. A quantity of vocabulary fits a fairly consistent system of sound correspondences. More than 40% of the lexical sets in Miller’s UACS are referred to in a larger work to be produced (not a bad percentage for 50/50 creoles). A number of morphological similarities present themselves, though most are not productive, but are fossilized, which one would expect as a result of time and creolization. A number of striking semantic combinations in Hbr that also appear in UA only add more credence to the thesis. The phonological, morphological, and semantic correspondences point quite specifically to Hbr over other Semitic languages, and the consonant distinctions and pre-Masoretic vowelings suggest an early dialect phonologically closer to PS than is Masoretic Hbr. Though I expect these findings will eventually prove significant, they raise as many questions as they answer and are only the foundation for further investigation.
Notes

1. Sabatino Moscati, An Introduction to the Comparative Study of the Semitic Languages, 1964, pp. 88,97. East Semitic masculine plural forms were -u (nom.) and -i (oblique). The West Semitic languages, however, have the shared innovation of an additional -m(a) or -n(a): Ar -ina, Aram -in, Hbr -im, and Ugaritic -ima. The fact that a final (a) appears after n (nunation) or m (mination) makes an early Northwest Semitic form of *-ima not unlikely. The accent pattern on -im also suggests that an earlier short, final vowel has been dropped. (Blau, p. 30)


5. My wife, Silvia Canelo Stubbs, is from Argentina and informs me that such was the dialect where she grew up in Tucuman of the northwest corner of Argentina, and that such pronunciations (gw for Spanish /w/ and /bw/) are common to the Gauchos and various dialect areas in western Argentina.

   Ingalik: sruň ‘bear’; srar ‘summer’; zruŋ ‘black’.
   Kutchin: sý ‘bear’; syín ‘summer’; żre ‘black’.
   Navajo: šaš ‘/bear’; ši ‘summer’; žin ‘black’.


8. Derek Bickerton, Roots of Language (Ann Arbor: Karoma Publishers, Inc., 1981), p. 61. Bickerton lists three English creoles in which English 'for' became /fo/, /fi/, and /foe/ . The first loses /r/ as the last segment. The two which did not drop the /r/ both show it as a high front vowel.

9. Lexical sets followed by UACS are listed in Wick Miller's Uto-Aztecan Cognate Sets under the number following UACS. Most of the reconstructed forms (UA words preceded by an asterisk) are those listed in Miller's UACS, though a few of the asterisked forms are my own reconstructions, which reflect evidence in the reflexes that I feel suggest an additional consonant or syllable. Any words not taken from UACS are taken from the respective dictionaries or grammars listed in the bibliography.

11. These statistics were compiled by myself from initial /b-/ and initial /k-/ words in Saxton's Papago dictionary listed in the bibliography.

12. I have heard native speakers of Arabic from Syria and Libya pronounce the /a/ as /r/ in certain environments. One example I specifically remember is a Syrian saying repeatedly /sabriina/ for /sabrjina/ (the word for seventy). The following high front vowel may be involved because he did not consistently pronounce all /a/ ins as /r/. Likewise have I heard /w/ for the /a/ in the speech of some speakers in some phonological environments.


Bibliography


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