

UTO-AZTECAN

STRUCTURAL, TEMPORAL, AND GEOGRAPHIC PERSPECTIVES

Papers in Memory of Wick R. Miller
by the friends of Uto-Aztecan

Edited by

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EL SABER DE MIS HIJOS
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Hermosillo, Sonora, Editorial UniSon, 2000

The Comparative Value of Tubar in Uto-Aztecan

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1. Introduction¹

In 1893 Carl Lumholtz and Carl Hartman visited the Tubar of the upper Rio Fuerte River near the border of Sinaloa and Chihuahua, Mexico. At that time fewer than 50 identifiable Tubar remained. This small surviving Uto-Aztecan (UA) language in the last century was geographically located in the midst of three larger UA languages: the Mayo to the west, the Tarahumara to the east and north, and the Tepehuan languages to the southeast. Unfortunately, Tubar is now extinct; fortunately, Lumholtz and Hartman recorded a sizable kernel of the Tubar language, and Lionnet has consolidated that core of data into a convenient presentation. (Lionnet 1978)

Though the quantity of that data may be small, its significance looms large in spots for comparative UA linguistics. A small language in the midst of larger languages, Tubar's lexicon is predictably laden with lexical loans; for that reason I am not sure that its place among Uto-Aztecan languages can be trusted to lexicostatistical determination alone. Regardless, Tubar provides some interesting and valuable etyma for the comparative Uto-Aztecanist, and serves as a useful springboard for comparative discussion.²

The more prominent sound correspondences of Tubar, relevant to subsequent discussion, are shown in Table 1:

PUA	*kw	*p	*s	*ʔ	*k	*w	*y	*l / r
Tubar	kw	w / p	s / h	h / ø	k / h	w / mw	y / ny	l / r
Tepiman	b	w / p	h	ø	k	g	d	l / D

Table 1

The position of Tubar in UA is not only central geographically, but is somewhat central phonologically as well. Tubar is a curious blend: it is one of the few Southern UA (SUA) languages showing *kw* for PUA **kw*, in agreement with most of the Northern UA (NUA) languages, and is otherwise something between core Sonoran and Tepiman phonologically, exhibiting several curious phonological affinities with the Tepiman branch of UA, while being lexically nearest Mayo (Lionnet 1978:83). The reasons for the latter fact could be as much geographic as genetic.

Tepiman is the most diverse branch of UA phonologically, and Tubar exhibits a number of phonological similarities to Tepiman:

- A. It shows initial **p* as *w* like Tepiman.
- B. The Proto-Uto-Aztecan (PUA) glides have leaned toward closure as nasalized glides (**w* > *mw*; **y* > *ny*), somewhat similar to Tepiman's closure of the glides to voiced stops (**w* > *g*; **y* > *d*).
- C. PUA **s* has softened to *h* in many cases, though not all.

The change of **s* > *h* is natural and common to many world languages (e.g. Greek and Hawaiian); the other similarities to Tepiman, however, are somewhat less natural, and one might wonder if they are due to contact with the not-too-distant Tepehuan languages or whether they are independent sound changes. Initial **p* > *w* (as well as **s* > *h*) could easily be due to Tepiman contact and influences; however, the nasalization of the glides is more difficult to attribute to Tepiman influence, since we might expect those sound changes to be more similar to the Tepiman sound changes if they were influenced by contact with them. For example, in contrast to the Tepiman change of **w* > *g*, a velar stop, the Tubar change of **w* > *mw* is marginally a velar and certainly not a stop, but rather a bilabial and a nasal. So even though Tubar shows a partial parallel to Tepiman in moving the glides toward consonantal closure, that closure is of an entirely different kind and direction, which suggests independent innovation rather than Tepiman influence. In fact, **p* > *w* may have motivated a subsequent chain-shift of **w* > *mw*, and analogically **y* > *ny* as well.

2. Main sound correspondences

2.1. Initial *p > w

Though PUA *p reflects *p* in most UA languages, the Tepiman languages exhibit *w* for initial *p, and Tubar likewise shows *w* for initial *p, as shown in (1)–(7). (For well-known cognate sets, only the proto form is listed with the Tubar form; for others, a few examples are listed.)

	<u>Gloss</u>	<u>(P)UA</u>	<u>Tubar</u>
(1)	'road'	*po	wo-ta
(2)	'older brother'	*paci	waci-r
(3)	'domesticated animal'	*puku	wokú-r
(4)	'reed'	*paka	waká- / wakó-t
(5)	'penis'	*pisa: Wr písá; Tr bisa / wisa; Od wiha	wisá-t
(6)	'believe'	*pici: Wr piciké; Tr bicí	wici-mwá
(7)	'fishhook'	My boʔaria My bóʔa 'to fish with a fishhook'	woha-t

Another similarity to Tepiman is that Tubar in reduplicated forms shows initial *p* as *w* but the second *p as *p*: Tbr *wi-pia* 'follow'; Tbr *wo-po-mwá-t* 'toad'; Tbr *wó-pora-li-t* 'pock mark, small pox'.

2.2. *w > mw

Tubar nasalized the PUA glides much of the time, but not always, as shown in (8)–(16).

	<u>Gloss</u>	<u>(P)UA</u>	<u>Tubar</u>
(8)	'horn'	*awa	hamoá-t
(9)	'name'	*tewa	temwa-ra
(10)	'leaf'	*sawa	samwa-t
(11)	'find, see'	*tewa	temo- / tema-
(12)	'maguey'	Tr čawiri	camwi
(13)	'make'	Tr newá	nemwa
(14)	'chest'	*tawi	tamoi-t 'chest, body, person, animal'
(15)	'root'	*nawa	namusi-r
(16)	'basket'	*wari (Eu,Wr,Tr)	moali-t

2.3. *y > ny

PUA *y reflects as *ny* (as well as *y*), as in (17)–(18).

(17)	'agave'	*mayi
	Cr	mwaih
	Hu	mai
	NT	mai
	Tbr	manyí-t.
(18)	'fly (verb)' (UACS 182 *ya)	
	SP	yaaša
	Od	daʔa
	NT	daigigi
	Tbr	ha-nya

In (17) Tubar shows the existence of *y rather than a diphthong, as the other reflexes might suggest (*mayi* vs. *mai*). In fact, this touches upon another feature of PUA phonology: it seems probable that there were no diphthongs in PUA. So when a diphthong appears, it is probably an intermediate step from loss of a previously intervening consonant or some similar explanation.

2.4. *w > ny

Curiously, *w also becomes *ny* quite often, as shown in (19)–(22).

(19) 'pine'	*woko	Tbr	<i>nyokó-t</i>
(20) 'foot'	*woki (Yq, My)	Tbr	<i>nyokí-r</i>
(21) 'two'	*woka (Tepiman *goka)	Tbr	<i>nyoho-r</i>
(22) 'fall'	*wece	Tbr	<i>nyecé</i>

2.5. *s > h

Tubar often reflects PUA *s as *h*, though not always, as shown in (23)–(28).

(23) 'grass'	Na <i>saka-λ</i> Tr <i>sakará</i>	Tbr	<i>haka</i> 'straw'
(24) 'cut'	*sik (UACS:118)	Tbr	<i>isa- / ih-</i> 'cut'
(25) 'arm/armpit'	*seka	Tbr	<i>saka- / haka-</i> 'armpit'
(26) 'jackrabbit'	*suwi	Tbr	<i>owilá</i> 'rabbit'
(27) 'one'	*seme	Tbr	<i>hemé</i> 'one'
(28) 'cook'	Na <i>iska</i> 'bake'	Tbr	<i>hika</i> 'cook'

2.6. *ʔ > h

Opinions vary as to whether vowel-initial PUA etyma should include a glottal stop or really begin with the vowel. Regardless of one's opinion, that position often shows *h* in Tubar (though, again, not always). Tubar sometimes shows *h* preceding an initial vowel or corresponding to some PUA glottal stops, as shown in (7), (8) (repeated below) and (29).

(7) 'fishhook'	*poʔa	Tbr	<i>woha-t</i>
(8) 'horn'	*awa / ʔawa	Tbr	<i>hamoá-t</i>
(29) 'squash'	Yq <i>ʔayáʔawi</i> My <i>aayau</i> Na <i>ayoʔ-áí</i>	Tbr	<i>haya</i>

2.7. *k > h

Tubar also sometimes shows PUA *k as *h*, as shown in (30)–(31).

(30) 'cry'	*waka:	Tr <i>weke / oke</i>	Tbr <i>waha</i>
(31) 'deer'	*suka (in the Takic languages)	Tbr	<i>suha-t / suka-t</i>

With three PUA phonemes (*s, *ʔ, and *k) merging to *h* in Tubar, it is no wonder that *h* is much more prominent in the Tubar vocabulary than it is in most UA languages. Fully one eighth of the Tubar lexicon begins with *h*.

3. Lexical Loans

Being a small language in close proximity to surrounding larger languages, Tubar would understandably contain a number of loanwords from other UA languages. However, discerning loans from cognates is not always easy, and certain words provide unusual puzzles. The Tubar alternate forms for coyote in (32) are an example.

(32) 'coyote'	Yq	<i>wóʔi</i>
	My	<i>woʔi</i>
	Eu	<i>woi</i>
	Tbr	<i>woi / goi</i>

Tubar *woi* sets well with Cahitan *woʔi*; the Tubar variant *goi*, on the other hand, is perplexing because it shows the Tepiman reflex *g* of PUA *w. However, the pan-Tepiman word for 'coyote' is *ban, an

entirely different source than **woʔi*, and no Tepiman language shows *goi* or *goʔi*, nor does Tubar normally show *g* for **w*, but rather *m* or *w*. So where did Tubar *goi* come from? Is it a loan from a Tepiman word that has since been lost in Tepiman? Or has contact with the Tepehuan languages phonologically influenced **w > g* and the creation of this pair of alternate forms for Tubar 'coyote'? A similar example is found in the Tubar words for 'younger brother' shown in (33).

- (33) Tbr *woni* 'younger brother'; *goni-li-m* 'the little brothers' (constellation)
 Wr *poni* 'younger brother'
 Tr *boni* 'younger brother'

The first item (Tbr *woni*) contains the expected reflex in Tubar for PUA **poni* as both Tarahumara and Guarijío also suggest **poni*. However, the *g* rather than *w* in the name of the constellation creates something of an alternate pair curiously similar to the alternate forms in Tubar *woi / goi* 'coyote', when *w* and *mw* are the usual reflexes of **w* rather than Tepiman-like *g*. What's more, the fact that Tubar *woni / goni* relates to **poni* suggests that the change from *woni* (expected) to *goni* (curious) must have been later and probably internal to Tubar and perhaps due to Tepiman phonological influences. This may also be the explanation for (32). It may also be worth noting that for both of these words PUA **w* is followed by *o*; thus, **wo > go* may be related to the *kw*-phenomenon in which Tarahumara and Guarijío have some **wo > ko* (Stubbs 1995:412).

This item in (34) typifies Tubar borrowings from Tepiman.

- (34) 'leave, let' Tbr *akiró*
 Od *ðagito*
 NT *dagityo*

4. Consonant Harmony in Tubar and Uto-Aztecan

Consonant harmony in UA may be more prevalent than previously suspected. Consider the examples in (35) from Tubar, Guarijío, and Tarahumara.

- | | |
|--|----------------------------|
| (35) Tbr <i>wawi</i> 'lion' | Tbr <i>wowi</i> 'lion' |
| Tbr <i>wawi-nal</i> 'wolf' (<'lion-cry') | Tbr <i>wowi-nál</i> 'wolf' |
| Wr <i>nala</i> 'cry' | Wr <i>worí</i> 'lion' |
| Tr <i>nara</i> 'cry' | Tr <i>kocĩ</i> 'dog' |
| Tr <i>narigocĩ</i> 'wolf' (<'cry-dog') | |

Beginning with Wr *worí* 'lion', it seems likely that the corresponding Tubar *wawi / wowi* 'mountain lion' is related to it by some kind of consonant harmony from something like Wr *worí* 'mountain lion' or PUA **waLi*, in which the second consonant (*l / r*) assimilated or harmonized with the first (*w*). In addition, etyma from other languages would suggest that Tubar *wawi / wowi-nal* 'wolf' is a compound of 'lion-cry(er)'. PUA **nala / nara* is a common Sonoran word for 'cry'; thus one Tarahumara word meaning 'wolf' (*narigocĩ*) also appears to be a compound of 'cry-dog' (*nara* 'cry' plus *kocĩ* 'dog'). Therefore, it should not be surprising that another Sonoran language (i.e. Tubar) compounded 'lion-cry' for 'wolf' as Tarahumara did with 'cry-dog'.

Consonant harmony periodically surfaces in other UA languages as well. In (36), whether the other Takic forms are related or not (due to vowel problems), the Serrano pair for 'get dizzy' could well be an example of consonant harmony.

- (36) Sr *ɲuuyk / yooyk* 'get dizzy'
 Cp *ɲéye* 'be dizzy'
 Cp *ɲéle* 'faint'
 Ls *ɲóla* 'dizzy'
 Ca *puš-ɲéy* 'dizzy' (< 'eyes-shake')
- (37) 'whip/hit' **wipa* (Hp, Tb, PB, NT, ST, Tr)
 Tbr **wewá / wiwá*
 Yq *béeba*

Though the original first and second consonants are *w and *p, respectively, Tubar harmonized both to w and Yaqui harmonized both to *p (b).

In (38) the Cahitan words for 'heel' (My *témpe?erim* and Yq *pémpe?im*) yield another example of consonant harmony. Tubar has a reflex related to the Cahitan pair, and though not so enlightening itself, Tubar *teoó-r* 'heel' brings us to all the UA words for 'heel', which as a group may be quite beneficial to consider.

- (38) Mn *tapiqó?*
 NP *ddabbi*
 Pn *tappiηko?o(cci)*
 Sh *tappikkon*
 Cm *tapiko?*
 Tb *tanapi-t*
 Eu *tenúka*
 Wr *talatémori*
 Sr *tamokpi?*
 Tbr *teoó-r*
 Od *čēemi*
 PYp *teema*
 My *témpe?erim*
 Yq *pémpe?im*
 Hp *kiktönsi*
 Tr *Ranígora, Raníkura*
 Tepiman **tikavo*

This set demonstrates well some phenomena typical of UA:

- A. Cluster and syllable reductions.
- B. Cowel hopping.
- C. Consonant harmony.

Though likely a historic compound, many of these reflexes align rather nicely with **tanapiko*. Beginning with Tubatulabal *tanapi-t*, syncope of the second vowel would create the cluster **np*, which shows nicely in My *tempe?erim*, after assimilation of the nasal (*n > m*) to the bilabial (*p*). In the Western and Central Numic reflexes (**tappiko* Mn, NP, Pn, Sh, Cm), all of which lost the nasal from the cluster, a former cluster (**np*) could also explain the existence of the stop *p* (instead of the frequent intervocalic spirantization to *v*), as well as the gemination shown in three of those five languages. In fact, whether the Numic intervocalic stops remain stops or spirantize may be explained by previous or underlying clusters or geminations, which kind of thing has been alluded to.³

The Tubatulabal reflex (*tanapi-t*) in combination with the Numic reflexes is good evidence for that behavior. In addition, the Numic reflexes show an extra syllable (*-ko*) not apparent in Tubatulabal; however, that syllable exists in the Tarahumara alternate forms *Ranígora / Raníkura* and is hinted at in some others. Tarahumara appears to have reduced the **np* cluster to *n*, instead of *p* as in Numic, or *mp* as in My, or *m* as in Wr, Od, PYp, but Tarahumara does show a final **ko / ku* syllable. Serrano *tamokpi?*, on the other hand, does compare well with Serrano *mokpi?* 'nose', as suggested by Hill (1994), in a logical compound of *ta-mokpi?* 'foot-nose=heel'.⁴

Another matter frequent in UA that this set exemplifies is what might be called vowel hopping; i.e. a sequence of vowels shifting in position relative to the sequence of consonants in a stem or root. In Tr *Ranígora* and Eu *tenuka*, the consonants match (**t-n-k*) and the two forms have a similar string of vowels (*i/e-u-a*) as well, but the vowel sequence has shifted one space relative to the consonants. Lest one doubt the frequency of this phenomenon in UA, consider the example in (39).

- (39) a. Tr *binói, boné* 'self'
 b. NT *kihónali*
 Wr *kenolá*
 Tr *ginorá* 'rainbow'

c.	Tr	<i>Ranikura</i>	
	Eu	<i>tenuka</i>	'heel'

Also showing reductionist behavior toward something similar to **temo* are Wr *talatémori* and Tbr *teóó-r*, while Od and PYP show **temV*, but with non-round vowels. In fact, Od shows the same vowel as Numic after the **np* cluster in Od *čēemi*.

The other forms may or may not be related. If they are, they are more difficult to explain. For example, the *-tön-* element of Hp could be a reduction of something like the **temo* element of Sr and Wr, given both vowel anticipation (**tVmo > tom*) and assimilation of *m > n* preceding alveolar *s*. As noted by Kenneth Hill, the morpheme *kik-* means 'foot-', and I still have no suggestion for *-si*. However, the *-tön-* element as a reduction of **temo* is possible, if not probable, and that would leave less of the word remaining a question mark: *kik-tön-si* 'foot-heel-?'

Bascom correctly reconstructs Proto-Tepiman **tikavo* for a number of forms in the Tepiman languages. Though the severe juggling (metathesis) of both consonants and vowels needs explanation, the fact that similar consonants and vowels exist in both **tikavo* (Tepiman) and **tappiko < *tanapiko* (for several Numic and Sonoran languages), even if in different orders, may suggest we seek to explain these rather than discard them.

A summary of the phonological reductions is given in (40).

(40)	<i>*tanapiko</i>	>	<i>tanapi-</i>	(Tb)						
	>	<i>*tanpiko</i>	>	<i>*tappiko</i>	>	<i>tappiko</i> (Numic)				
			>	<i>*tikavo</i>	(Tepiman)?					
	>	<i>*taniku-</i>	>	<i>Raniku-ra</i>	(Tr)					
			>	<i>tenúka</i>	(Eu)					
	>	<i>*tampiko-</i>	>	<i>tempe-</i>	(My)	>	<i>pempe-</i>	(Yq)		
			>	<i>*temo</i>		>	<i>-temo-</i>	(Wr)		
						>	<i>temi</i>	(Tepiman)		
						>	<i>teóó-</i>	(Tbr)		
						>	<i>*tom</i>	>	<i>-tön-</i>	(Hp)

5. PUA Forms in Tubar

For a few etyma, Tubar forms may well be closer to PUA than those of other UA languages, as illustrated in (41).

(41)	'snake'	Tr	<i>sinówi</i>
		Wr	<i>sinói</i>
		Tbr	<i>sinawe</i> 'reptile'
	'fish'		<i>*kucu</i> (Eu, Yq, My)
		Tb	<i>kuyuu-l</i>
			<i>*kicu</i>
		Ca	<i>kiyul</i>
		Hp	<i>pa:-kiw</i>
		Tbr	<i>kicú-t</i>

In the word for 'snake' in (41) Tubar shows a vowel differing from Tr and Wr. A vowel change of *a > o* preceding *w* would be more natural than *o > a* preceding *w*; therefore, Tubar may exhibit the original vowel in **sinawi*, while Tr and Wr assimilated *a* to *o*, due to the rounding, raising, and backing influence of the following *w*. A similar correspondence exists in (35) above: Wr *wori* and Tbr *wawi / wowi*, wherein *a* was probably the original vowel also and for the same reasons, yielding something like **waLi*.

In the word for 'fish' in (41) we note the sound shift PUA **c > NUA y* described by Alexis Manaster-Ramer.⁵ In addition, we see that at least four languages show a vowel sequence of *u-u* in contiguous syllables, while three show *i-u*. Supposing that an original first vowel **i* assimilated to the second vowel *u* and that Tubar is the only SUA language showing both that original vowel sequence and PUA **c*, the result is that Tubar again is the only UA language showing the proto-form **kicu*.

A few Tubar items also suggest that for PUA we might want to reconstruct the vowel glide sequence **ay/ai* rather than **i/e* as occurs in the cognate forms in other UA languages. Though *i* is now the accepted

PUA vowel, I list both *i/e* since *e* is such a frequent reflex of *i*, especially in SUA, and is perhaps the original compromise of *ai/ay* for some etyma, such as those in (42).

(42)	'bee/fly'	Tbr	<i>sayvol</i>	
		Eu	<i>sébor</i>	
		PB	<i>saivori</i>	'bee'
		Wr	<i>seʔóri</i>	'bee'
		Tr	<i>seʔori</i>	'fly'
		My	<i>séʔebori-m</i>	'fly'
		Yq	<i>sevoʔi</i>	'fly'
		Na	<i>saayool-in</i>	'fly'

6. Consonant Clusters in Uto-Aztecan

A considerable amount of evidence in UA points to various kinds of reductions beyond initial CV, such as vowel syncope resulting in noninitial consonant clusters. In many cases these clusters have further reduced to single consonants. The presence of reduced clusters in daughter languages may partially explain the baffling variety of medial or non-initial consonant correspondences in UA.⁶

Since 13 proto-consonants could potentially create 169 cluster possibilities that would be likely to reduce in many more directions than 13, archaic clusters may underlie the enigma of noninitial consonant correspondences. As Miller (1983) states, "The PUA vowels and consonants of initial syllables can be reconstructed in considerable detail, but there are still many problems for noninitial syllables." Uto-Aztecanists are accustomed to a canonical shape of CVCV for UA stems; however, a number of these CVCV forms appear to be reductions from CVCCV or CVCVCV: (*CVCVCV >) *CVCCV > CVCV. Although many of the longer forms are undoubtedly archaic compounds, their existence in UA may be more pervasive than previously realized. In addition to the forms for 'heel' given in (38), various UA words for 'cave', given in (43), form another group of words for which the Tubar form suggests that consonant cluster reductions have taken place in other languages.

(43)	'cave'	Tbr	<i>te-veso-lí-t</i>	
		Od	<i>ciho</i>	
		NT	<i>tíhoi</i>	
		ST	<i>tyiov</i>	
		Yq	<i>téeso</i>	
		Wr	<i>tesó</i>	
		Tr	<i>Resó</i>	
		Na	<i>oostoo-λ</i>	
		Hp	<i>tíhsö</i>	'cave, rock shelter, cliff overhang'
		Hp	<i>pösö</i>	'interior corner, box canyon, cave'

Miller reconstructs **te-so* 'cave', which fits well with reflexes in Yq, Wr, Tr, Od, NT, and possibly with Hp *tíhsö*. However, other UA words hint of something more like *(*te*)-*poso*: Hp *pösö* is listed as 'cave, corner' in Voegelin, and as 'interior corner, box canyon' in Hill, and Hp *ö* does correspond to PUA **o*. Since Na drops initial **p*, Na *oos-* 'cave' also points to **poso*. Both Tbr *te-veso-lí-t* 'cave' and ST *tyiov* 'cave' may also show the bilabial of this etymon compounded with **tí* 'rock': assimilation of a vowel in Tubar (**te-poso* > **te-peso*) and metathesis (of **p* and **s*) in ST (**tí-poso* > **tíhopo* > **tiov*). The spirant *h* in the Hp form *tíhso* may also suggest an underlying consonant in a cluster reduction. In addition, all languages showing **teso* typically do not allow consonant clusters. Therefore, it is possible that all these words are really from **te-poso* 'rock-corner' or 'rock concavity', which compound then reduced in most languages—**tí-poso* > **tí-pso* > **tí-hso* (Hp) > **tíso* (Od, NT, Yq, Wr, Tr)—with a vestige of a bilabial in Tbr, ST, Hp, and Na. If that be the case, then Tbr *te-veso-* is the most complete form of that compound, with preservative assimilation in the subsequent vowel of the second morpheme to that of the first morpheme; and in addition to the Tubar form, Hp, ST, and Na show hints of the compound **te-poso* as well.

A small piece of evidence for a primary split between NUA and SUA is given by the words for 'rainbow', which show reduction (or loss) of entire syllables in some languages. Almost all SUA words for

'rainbow' appear related to each other in complex ways, while none of the NUA words for 'rainbow' appear related to the SUA set. Consider the SUA words for 'rainbow' in (44).

- (44) Tbr *oráwi*
 Tr *k/gonimí*
 Tr *ginorá*
 Wr *kenolá*
 NT *kihónali*
 Od *gihonali*
 Od *kiohod*
 PB *kiuhur*
 ST *kiʔoor*
 Yq *kurués*
 My *kurués*
 Cr *kúʔušái*
 Na *ko:samaalo:-ʔ*

Some of the above forms have undoubtedly been borrowed from neighboring languages. Both Tr and Od have two words for 'rainbow'. The one Tr form *ginorá* and Wr *kenolá* may be a loan in one direction or the other. Od also has two words for 'rainbow', one of which (*gihonali*) is nearly identical to NT *kihónali*, the other (*kiohod*) very similar to PB *kiuhur*. Again borrowing is probable, though I defer to the specialists in those branches of UA to decide the direction. Regardless the direction, however, the interesting phenomena of vowel hopping is clearly apparent in these words for rainbow. For Od and NT **kihónali* as compared to Wr and Tr **kinola*, the latter has lost one syllable or second consonant *h* early in the word, but has kept the first three vowels perfectly intact *-i-o-a-*, simply shifting them one place toward the front of the word, as shown in (45).

- (45) **kihónali* (Od, NT)
**kinola* (Wr, Tr)

This phenomenon happens often in UA as mentioned above in (39).

The Cahitan forms (Yq/My **kurués*) appear to reflect a severe reduction from an earlier form more similar to the Tepiman form **kiuhur* (*kiuhur* > *kur-*). At least there is a consistency in (44) above and (50) below in that the Cahitan languages (Yq, My) are the ones that undergo the greatest losses or reductions.

Tubar 'tortilla' in (46) contributes another example of syncope leading to a consonant cluster, which cluster is then almost reduced to a single consonant in the Cahitan languages.

- (46) a. Tbr *tasekali-t* 'tortilla'
 Na *ʔaʂkal-li* 'tortilla'
 Yq *tahkaʔi* 'tortilla'; *tahkae* 'to make tortillas';
 My *táhkarim* 'tortillas'; *táhkare* 'to make tortillas'
- b. Tbr *isa- / ih-* 'cut'

In (46a) the match of Tbr *-sek-* with Na *-ʂk-*, and Yq and My *-hk-* suggests that a syllable reduced to a cluster, then *s > h* in that cluster of the Cahitan pair. The Tubar forms in (46b) are another example of *s > h* when forced into a cluster.

A middle syllable *-ki-* that is very clearly a part of the Western Numic forms (Mn, NP) has been lost from both Central (Cm) and Southern Numic (CU), as shown in (47).

- (47) P-Numic **sikipata* 'flat/level'
 Mn *sikibadagi*
 NP *sikipatađi*
 Pn *hippatta*
 Cm *süpeti*
 CU *sipáʔni*

The resyllabification of an intervocalic back glide (*w*), with the subsequent loss of a stressed vowel which occurs in the Tarahumara form in (48), has resulted in a new vowel sequence in the Guarijío form, which also shows that stress moved leftwards as one part of the overall process.

- (48) Tr *nawésa* 'speak'
Wr *naósa* 'talk'

Set (49) illustrates some additional consonant reductions in this branch of Uto-Aztecan.

- (49) PUA **soʔop̄ici* 'bat (flying mammal)'
PYp *hoʔopisa*
Eu *zikur-sop̄ic*
Yq *sóoc̄ik*
My *sóc̄ik*
Wr *soʔp̄eci*
Tr *soʔp̄ec̄i*

Whether this form was a compound historically or not, all segments of **soʔop̄ici* are clearly reconstructable: all languages show initial **so*; three show a glottal stop; four show **p*; all of them show **c*; and these consonants occur in the same order in all the languages. The Tepiman form *hoʔopisa* is especially helpful since Tepiman *h* < **s*, and Tepiman *s* < **c*. Note that this reflex of **soʔop̄ici* is the only non-reduced form in this set. Substantial reductions are apparent in the Yaqui and Mayo forms (nearly two syllables), and lesser reductions are seen in those of Eudeve, Guarijío, and Tarahumara.

In (50) we note additional reductions in the set associated with the PUA forms for 'pus'.

- (50) **piska* / **pisVka* 'pus, infection, rot(ten), spoil(ed)'
Mn *pihi* 'rot'; *pihika* 'be infected'
NP *pihi* 'rot'
Pn *pisi-s* 'rot'; *pisippi* 'pus'
Sh *pisi-ppi* 'rotten'
Cm *pisi(ppi)* 'pus, infection'
K *piki* 'rot'; *piki-pi* 'pus'
Ch *piki* 'rot'
CU *piki* 'rot'
Hp *peekye* 'pus, pus-filled infection; get infected, rot, decay'
Cr *pihc̄iraʔa* 'it's bloated'; *peʔec̄iraʔa* 'it's rotten'
Tb *pic̄kiš-(it)* 'have pus'
Sr *pišqa* 'rot'
Ca *pisa* 'spoil, rot'
Cp *pisáʔe* 'rot, go sour'
Ls *pisaʔ(a)* 'rot'
Eu *viikát* 'pus, sore'
Yq *bikáa* 'rotten'; *viika* 'infected'
My *biká* 'pus'; *bikára* 'rotten'
Wr *piga-ní* 'rotten'; *pigapá-ni* 'rot'
Tr *biká* 'pus, rotten'; *biká-mea* 'rot'

Clearly **pi* is reconstructable as the first syllable in this set. Beyond that, several languages show **s* and several show **k*; however, some show both (Sr, Tb, perhaps Mn), and others show hints of both. For example, the glottal stop in some Takic languages (Cp, Ls) aligns with *k*. In addition, the word-final gemination in the Central Numic languages (Pn, Sh, Cm) suggests an underlying third consonant, and *k* is a good guess, judging by the other forms (perhaps *pisi-ppi* < **pistik-pi*). Therefore, **s* is clear and **k* a definite possibility in Central Numic.

The Hp form is extremely interesting in that the palatalization of the *k* (*ky*) is natural for a possible underlying *sk* cluster, with a near palatal plus velar reducing to a palatalized velar. In addition, Hp vowel leveling of *i-a* or *a-i* combinations to *e-e* is apparent elsewhere (Hp *kelę-vosna* 'kidney'; SP *kani* 'kidney').

Hopi *e* is alone among Hopi's six vowels in not aligning clearly with the five vowels of PUA; thus, vowel leveling of *i-a* and *a-i* combinations is one possible source of *e*. Kenneth Hill (personal communication) also mentions reductions of *ai* diphthongs as a possible source of *e*, which also is a form of vowel leveling. So of the 20 languages represented, 10 show *s* as the onset of the second syllable, 13 show *k*, 2 or 3 show both, and 7 display phonological hints of both (Hp, Pn, Sh, Cm, Mn, Cp, Ls). Only the Tubatulabal form shows a cluster. Thus, the forms in this set give another example of the eventual loss of a syllable in many of the languages, though the languages are fairly split as to which syllable is lost—second or third. They are all in agreement that the syllable loss never affects the first syllable. This set, along with others like it, may help trace UA accent patterns.

In (51) we see that the *L* in Tubar aligning with the geminated consonant in Pn is another example of a cluster that possibly underlies some instances of gemination.

- (51) Tbr *tepalá-t* 'testicle'
Pn *tapa(ppih)* 'testicle'

In the excerpt from "A Comparative Vocabulary of Uto-Aztec Languages" (Stubbs n.d.) given in (52), the complete pervasiveness of PUA **pusi* 'eye' is evident in all UA languages except Tubar.

- (52) English 'eye'; Spanish 'ojo'
- | | | | | | |
|----|----------------|-----|----------------------------|-----|------------------------|
| Mn | <i>púsi?</i> | Hp | <i>poosi</i> | Eu | <i>busít</i> |
| NP | <i>bui</i> | Tb | <i>punzi-l</i> | Tbr | <i>telú-r / tilú-r</i> |
| Pn | <i>pui</i> | Sr | <i>hovaaT / hovaac̣</i> | Yq | <i>púusi</i> |
| Sh | <i>pui</i> | Ca | <i>púč-ily</i> | My | <i>puúsi-m</i> |
| Cm | <i>pui</i> | Ls | <i>púš-la; títwi-la-ṣ</i> | Wr | <i>pusí</i> |
| K | <i>puʔi-vi</i> | Cp | <i>puš</i> | Tr | <i>busí</i> |
| Ch | <i>puʔi-vi</i> | Od | <i>wuhi</i> | Cr | <i>hiʔisi</i> |
| SP | <i>puʔi-</i> | PYp | <i>vuhi</i> | Hu | <i>hišie</i> |
| WM | <i>pui-</i> | NT | <i>vúhi</i> | Na | <i>iiṣ-ʔi</i> |
| CU | <i>pUʔi-vU</i> | ST | <i>vui</i> | | |

Being unlike **pusi* and all other UA words for 'eye', we might ask where the Tubar word for 'eye' came from. Consider some UA words, given in (53), that may provide hints.

- (53) Tbr *telú-r / tilú-r* 'eye'
Wr *tehula* 'a black rock for polishing pots';
Na *ʔil-li* 'blackness, soot, black ink'
Na *ʔilloa* 'become black'.

Since the Tubar word for 'eye' is not similar to other UA words for 'eye', but is phonologically similar to other UA words for black and little black things, it is not unlikely that the Tubar word for 'eye' originally meant something approximating 'little black thing'. In this case we have an extension based on the association of a commonly perceived, perceptually salient entity with a salient location of an entity which also has a particularly salient role in perception.

The forms shown in (54) may be a borrowing from Tarahumara; however, Tubar *k* corresponding to Tarahumara *h* is curious, though it is possible that *k* was the original consonant in Tarahumara, later changing to *h*, but not in the receiving language Tubar.

- (54) Tr *čohóbari / čohówari* 'dove'
Tbr *cokoa-rá* (sg.), *cokoa-rí-m* (pl.) 'quail'

In "The Labial Labyrinth in Uto-Aztec" (Stubbs 1995) I suggest that some *kol/ku* syllables in UA may derive from PUA **kwo/kwu* rather than **kol/ku*. Evidence for this *kwo*-phenomenon was therein presented, one feature of which is PUA **kwo/kwu* > *kol/ku* in the *kw*-languages, but > *bo/bu* in the Cahitan languages (Yq and My), whose reflex for **kw* is *bw*. The Sonoran words for 'bewitch/witch' in (55) are another among many examples I have noticed since writing that article.

- (55) PUA **sikwu* / *sikwo*- 'witch/bewitch'
 Tbr *sigú-l* 'hechicero';
 Tr *suku-* 'hechizar';
 My *sisibo* 'hechizar';
 My *sibori* 'hechizado=bewitched'

It is difficult to say what happened in Tubar word meaning 'tail', shown in (56), although it is undoubtedly in some way related to the pan-UA word **kwasi*. Tubar is a *kw*-language (i.e. Tbr *kw* < PUA **kw*), but as discussed in "Labial Labyrinth," initial **kw* are sometimes **p* when in noninitial position. That being so, Tbr *bakusi-r* could be a metathesis of a reduplication: **kwVpasi* > *kwVbasi* > *bakwsi* > *bakusi*. The presence of the initial voiced stop in this form also supports the hypothesis that a metathesis of segments resulting from a process of reduplication is involved. This is the only word in the Tubar lexicon beginning with *b*, and for a consonant to change from voiceless to voiced in medial position is more likely than in initial position, as can also be noted in the derivation *kwu* > *ku* > *gu* in the word for 'witch' in (55), even though medial voicing is not a productive process in Tubar. Therefore, an intervocalic *p* voicing to *b*, then metathesizing with initial *k* basically produces Tubar *bakusi*.

- (56) PUA **kwasi* 'tail'
 Tbr *bakusi-r* 'tail'

7. Conclusions

Considering the number of important contributions of Tubar to comparative UA, we can only mourn the loss of this language and lack of a fuller investigation of its lexicon and grammar before its demise. On the other hand, we can be grateful to Lumholtz, Hartman, and Lionnet for what we do have; for even those data provide key details valuable for more accurate reconstructions in certain etyma, such as those in (41)–(43) and (46a). The Tubar lexicon also highlights phenomena frequent in UA, providing a good basis for discussion about consonant harmony, as in (35)–(38); vowel shifts in relative position to consonants, as in (38), (39), and (44); and evidence of syllable and cluster reductions, as in (38) and (43)–(51). As any language does for its language family, Tubar creates new perspectives for a few UA sets, adding a dimension of reflection otherwise lost.

Notes

1. My years as a graduate student in the University of Utah linguistics program under Wick Miller and the other excellent faculty members were a very enjoyable and rewarding experience. During that time, Wick asked me to take a copy of Andres Lionnet's then recently published book *El idioma tubar y los tubares* and do something of a comparative study of Tubar in Uto-Aztecan. This is a reworked reduction of that paper. However, before launching into the comparative value of Tubar in Uto-Aztecan, I feel it appropriate to reflect on the personal value of Wick Miller. After all, outside of family, who knows a scholar better than his graduate students in graduate school, which collective group and setting foster many trying moments in a professor's life.

Among the exceptionally cordial faculty at the University of Utah, Wick sometimes acquired the reputation of being more difficult or brusque than others, but those who knew him well saw more gentleness and kindness than brusqueness, and were aware of an underlying sensitivity not always immediately obvious on the surface. Like individual languages, we all have our unique sets of transformations that we hope might hold some explanatory power for the differences between our deep structures (essence or deep feelings) and surface structures (momentary reactions). Wick was magnanimous. He genuinely cared about people and did not like to see them hurt. I remember one incident typical of the sensitivity inherent in him. While reading in a graduate class, I mispronounced a word that everyone else seemed to know; I was embarrassed. Wick could see how I felt and smoothed the moment masterfully. Wick never belittled. That was not his nature. Even in disagreement, he was considerate of the other person's feelings, and in discussions that might make others grow heated, I never saw Wick get angry. He could be exasperated and/or exasperating, but never with ill feeling. He exuded a camaraderie and friendship. He was enthusiastic and fun-loving, and he loved people. The name of the organization he authored says it well: "Friends of Uto-Aztecan." He was a friend. Wick having asked me to look at Tubar comparatively speaking, I should like to do so in his memory.

2. Though some reading the articles in this volume will be Uto-Aztecanists, others may not be familiar with the branches and languages of the Uto-Aztecan language family. Following is a list of the abbreviations of the languages to be used in this paper and a schema of the branches of UA.

Language name abbreviations: Cahuilla (Ca), Chemehuevi (Ch), Comanche (Cm), Cupeño (Cp), Cora (Cr), Colorado Ute (CU), Eudeve (Eu), Huichol (Hu), Hopi (Hp), Kawaiisu (Kw), Luiseño (Ls), Mono (Mn), Mayo

(My), Nahuatl/Aztec (Na), Northern Paiute (NP), Northern Tepehuan (NT), O'odham/Papago (Od), Pima Bajo/Lower Pima (PB), Panamint (Pn), Yepáchic Mountain Pima (PYp), Shoshoni (Sh), Southern Paiute (SP), Serrano (Sr), Southern Tepehuan (ST), Tubatulabal (Tb), Tubar (Tbr), Tarahumara (Tr), White Mesa Ute (WM), Guarijio (Wr), Yaqui (Yq).

Uto-Aztecan branch divisions: Numic Western (Mn, NP), Numic Central (Pn, Sh, Cm), Numic Southern (Kw, Ch, SP, WM, CU), Takic (Sr, Ca, Ls, CP), **Tepiman** (Od, PB, NT, ST), Sonoran (Eu, Tbr), Sonoran Cahitan (Yq, My, Wr, Tr), Sonoran Corachol (Cr, Hu), **Aztecan** (N), single-language branch (Hp, Tb).

3. Alexis Manaster-Ramer (1992b) summarizes nicely how these kinds of consonant processes have been alluded to by Sapir, Whorf, Voegelin, and Manaster-Ramer, and cites an example in the absolutive suffix of Tubatulabal *-t > -l in historical intervocalic position, but remaining -t possibly due to an original final consonant causing an underlying cluster, though synchronically opaque. See also McLaughlin (this volume).
4. Kenneth Hill (personal communication) reports that the Serrano form *ta-mokpi* may well belong to the 'foot-nose' set, possibly being a folk etymology. However, in that both parts of that etymology are identical to the common UA element **ta-* 'foot' and Sr *mokpi* 'nose', I am not sure we want to give up such a clean etymology too quickly, so we both agree that the matter should remain open for the time being.
5. Stubbs (n.d., *A Comparative Vocabulary of Uto-Aztecan Languages*) is in preparation. It contains the information from all major cognate collections, including Miller (1988). All this cognate information is attached to a framework of several hundred sets of synonyms in some 30 UA languages, which sets of basic vocabulary are designed to facilitate UA comparative research for Uto-Aztecanists.
6. See the medial vs. initial consonants sound correspondences in Miller (1967:8-9)

References

- Anonymous. 1981. *Arte y vocabulario de la lengua dohema, heve, o eudeve*, C.W. Pennington, ed. Mexico City: Instituto de Investigaciones Filológicas, Universidad Nacional Autónoma de México.
- Bascom, Burton William, Jr. 1965. *Proto-Tepiman*. Ph.D. dissertation, University of Washington.
- Brambila, David. 1976. *Diccionario Tarahumara-Castellano*. Mexico City: Buena Prensa.
- Bright, William. 1968. *A Luiseño Dictionary*. Berkeley: University of California.
- Collard, Howard, and Elisabeth Scott Collard. 1974. *Castellano-Mayo, Mayo-Castellano. Serie de Vocabularios Indígenas 6*. Mexico City: Instituto Lingüístico de Verano.
- Dayley, Jon P. 1989. *Tümpisa (Panamint) Shoshone Dictionary*. Berkeley: University of California.
- Givón, T. 1979. *Ute Dictionary*. Ignacio, Colorado: Ute Tribe.
- Hill, Jane H., and Rosinda Nolasquez. 1973. *Mulu'wetam, The First People: Cupeño Oral History and Language*. Banning, California: Malki Museum.
- Hill, Kenneth C. 1994. *Serrano Dictionary*. Ms.
- . 1995. *Hopi Dictionary*. Ms.
- Johnson, Jean B. 1962. *El idioma yaqui. Departamento de Investigaciones Antropológicas, Publicaciones 10*. Mexico City: Instituto Nacional de Antropología e Historia.
- Karttunen, Francis. 1983. *An Analytical Dictionary of Nahuatl*. Austin: University of Texas.
- Lionnet, Andres. 1977. *Los elementos de la lengua cahita*. Mexico City: Universidad Nacional Autónoma de México.
- . 1978. *El idioma tubar y los tubares*. Mexico City: Universidad Iberoamericana.
- . 1985. Relaciones internas de la rama sonoreña. *Amerindia* 10:25-58.
- Manaster Ramer, Alexis. 1992a. A Northern Uto-Aztecan Sound Law: *-c- > -y-. *International Journal of American Linguistics* 58: 251-68.
- . 1992b. Proto-Uto-Aztecan Phonology: Evidence from Tubatulabal Noun Morphophonemics. *International Journal of American Linguistics* 58:436-446.
- Mathiot, Madaleine. 1976. *A Dictionary of Papago Usage*. Tucson: The University of Arizona.
- Miller, Wick R. 1967. *Uto-Aztecan Cognate Sets*, University of California Publications in Linguistics 92. Berkeley: University of California.
- . 1983. Uto-Aztecan Languages. *Handbook of North American Indians* 10, gen. ed. William C. Sturtevant, vol. ed. Alfonso Ortiz. Washington, D.C.: Smithsonian Institution.

- . 1988. Computerized Data Base for Uto-Aztecan Cognate Sets. Ms.
- . 1997. *Guarijio: gramática, textos y vocabulario*. Mexico City: Universidad Nacional Autónoma de México.
- Molina, Felipe S., and David Leedom Shaul. 1993. *A Concise Yoeme and English Dictionary*. Tucson, Arizona: Tucson Unified School District Bilingual Education and Hispanic Studies Department.
- Pennington, Campbell W. 1979. *Vocabulario en la lengua neovome*, vol. 2, *The Pima Bajo*. Salt Lake City: University of Utah.
- Robinson, Lila Wistrand, and James Armagost. 1990. *Comanche Dictionary and Grammar*. Dallas: Summer Institute of Linguistics and University of Texas at Arlington.
- Sapir, Edward. 1930. Southern Paiute: A Shoshonean Language. *American Academy of Arts and Sciences, Proceedings* 65.1-296.
- Saxton, Dean, Lucille Saxton, and Susie Enos. 1983. *Dictionary: Papago & Pima to English: English to Papago & Pima*, 2nd ed., R.L. Cherry, ed. Tucson: University of Arizona.
- Seaman, P. David. 1985. *Hopi Dictionary*. Northern Arizona University Anthropological Paper 2. Flagstaff: Dept. of Anthropology, Northern Arizona University.
- Seiler, Hansjakob, and Kojiro Hioki. 1979. *Cahuilla Dictionary*. Banning: Malki Museum.
- Shaul, David Leedom. 1994. A sketch of the structure of Oob No ʔok (Mountain Pima). *Anthropological Linguistics* 36.3.
- Stubbs, Brian D. 1995. The labial labyrinth in Uto-Aztecan. *International Journal of American Linguistics* 61:394-420.
- . N.d. A Comparative Vocabulary of Uto-Aztecan Languages. Ms.
- Voegelin, C.F. and F.M. Voegelin. 1957. *Hopi Domains: A Lexical Approach to the Problem of Selection*. Indiana University Publications in Anthropology and Linguistics. *International Journal of American Linguistics* Memoir 14.
- . 1958. A working dictionary of Tübatulabal. *International Journal of American Linguistics* 24:221-228.
- Zigmond, Maurice L., Curtis G. Booth, and Pamela Munro. 1991. *Kawaiisu: A Grammar and Dictionary with Texts*. Berkeley: University of California.