PROTO-UTO-AZTECAN PHONOLOGY: EVIDENCE FROM TUBATULABAL NOUN MORPHOPHONEMICS[1]

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1.1. Introduction. Sapir (1913–14; 1933) and Whorf (1934; 1935) hinted at a contrast between open and closed syllables in Proto-Uto-Aztecan. However, at the time there was little evidence for this outside of the tightly knit Numic subgroup of Northern Uto-Aztecan languages (the most celebrated of which is Southern Paiute). To be sure, Sapir also cited some suggestive data from the Northern UA languages of California (which we commonly divided into the Takic and Kern branches),[2] while Whorf also pointed to evidence in the remaining Northern UA branch, Hopi. Unfortunately, neither author was able to provide compelling evidence that the distinctions in any two of the subfamilies (not to mention all four) were correlated, or that they were reflected in any way in the Southern UA languages.

Over the years, more data have become available about the individual UA languages. With the help of descriptions that were unavailable in Sapir and Whorf's day, I have sought, over the past few years, to marshall the evidence necessary to test their hypotheses.[3] In this paper, an attempt is made to show that Sapir was essentially right with regard to the stem-final consonants of at least one Californian language, the sole representative of the Kern branch, known to linguists as Tubatulabal. A crucial part of the argument involves the survival of stem-final consonants into mod-

[1] This paper was edited in part by Ralph Charles Blight. I would also like to express genuine gratitude for the comments and support of Kenneth Hill, Wick Miller, and an anonymous referee.

[2] However, Manaster Ramer (1992*c*) argues that Kern and Takic form a genealogical unit.

[3] It has already been shown (Manaster Ramer 1984) that such a contrast between medial single and geminate consonants existed in the ancestor of the sole surviving Kern language, Tubatulabal (Tb), which correlates very well with Southern Paiute. This would imply that it belongs at least at the stage of Proto-Northern-UA. More recently, Manaster Ramer (1991*a*) showed that the same contrast is reflected in Luiseño, one of the Takic languages. Furthermore, Manaster Ramer (1991*b*; 1992*b*; 1993) documents the existence of **-tw-*, **-ʔc-*, and **-ps-* clusters in PUA.

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ern times in Tubatulabal. Some of these are phonetically realized as such, or with relatively trivial changes such as *$k \rightarrow h$.

However, in the case of final *-t and *-$ʔ$ the evidence comes from a careful examination of Tubatulabal morphophonemics. It turns out that Tubatulabal noun inflection and derivation can best be understood on the assumption that certain stems ended in these two consonants until quite recently (and perhaps still do at the morphophonemic [or underlying] level, if one believes in such a construct).[4] It is because of the intricacy of the argument for these two Tubatulabal stem-finals that I decided to present the Tubatulabal data in a separate paper.

It should be noted that, in this paper, claims are only made with reference to what we may call Proto-Kern, some ancestral language of Tubatulabal. In order to identify Proto-Kern with Proto-Uto-Aztecan, we need comparative evidence, which is presented in Manaster Ramer (to appear; in preparation).

1.2. Tubatulabal noun classes. The starting point of this inquiry is Sapir's (1913–14) observation regarding the absolutive endings of nouns in the Californian languages, that is, in Tubatulabal and in the rather closely related Takic group (including such languages as Luiseño, Cupeño, Cahuilla, Serrano, Gabrielino, etc.). In each of these languages, this ending has at least two variants, occurring with different sets of stems.

One variant appears to contain the regular reflex of PUA intervocalic *-t- (-l- in Tubatulabal, Luiseño, Cupeño, and Cahuilla, -$ç$- in Serrano, -r- in Gabrielino, etc.).[5] The other variant appears to preserve the coronal stop -t- (in Tubatulabal sometimes with voicing). For convenience, I denote these two sets of variants with the cover symbols L and T.

Sapir suggested that the L forms occur after stems which originally ended in vowels (where the -t of the suffix *-ta would thus have been in intervocalic position), and that the T forms are found after stems which originally ended in consonants (so that the -t would have originally been part of a cluster).[6]

However, superficially the situation in Tubatulabal (and in the other Californian languages as well) is more complex. Following Voegelin (1935*a*), we classify Tubatulabal nouns according to the ending of the stem and the absolutive suffix. Classes A1 and A2 both take L endings, but A1 stems end in long vowels and A2 in short vowels. The B classes take T endings. Of these, B1 stems appear to end in long vowels and take

[4] Manaster Ramer (1992*a*) presents evidence for a Tubatulabal pronominal stem ending in a final *t.

[5] After *i and in some other cases, the Takic languages show various palatal reflexes instead, such as l^y, $č$, or $š$.

[6] The same idea is repeated by Voegelin (1939*a*:143).

-d, which devoices to *-t* in absolute-final position. The B2 stems, which end in short vowels, and the other B classes, which end in various consonants (B3 *-n*, B4 *-m*, B5 *-s*, *-p*, or *-h*), all take *-t*.[7]

	Nominative	Accusative
A1	*hanii-l* 'house'	*hanii-l-a*
A2	*čaami-l* 'acorn mush'	*čaami-l-a*
B1	*pičilii-t* 'squirrel'	*pičilii-d-a*
B2	*maasa-t* 'sack'	*maasa-t-a*
B3	*sulun-t* 'nail'	*sulun-d-a*
B4	*pom-t* 'egg'	*pom-d-a*
B5a	*muus-t* 'spear'	*muus-t-a*
B5b	*wip-t* 'fat'	*wip-t-a*
B5c	*moomooh-t* 'jimson weed'	*moomooh-t-a*

Synchronically, then, all consonant-final stems (B3–B5) take the *T* endings. However, at first glance, it appears that both *L* and *T* endings are used with vowel-final stems, e.g., *čaami-l*, *hanii-l* vs. *maasa-t*, *pičilii-t*. On the face of it, the very existence of classes B1 and B2 would thus appear to contradict Sapir's generalization, since these stems seem to end in vowels, yet take the *T* absolutive endings.

However, from a historical point of view, this is an illusion, for the apparently vowel-final stems that take *T* suffixes originally ended in *-ʔ* and *-t*. Evidence for this proposal will come from a detailed study of a number of apparently disparate phenomena.

2. The case for a final consonant in class B2.

2.1. Length alternations in nominal suffixes. The first argument comes from a consideration of the length alternations of the oblique suffix *-a*. This is always short when word-final (which is the way the accusative is formed), since all Tubatulabal vowels are shortened at the end of polysyllabic words. However, when followed by a further suffix (typically a locative one), it is short with some classes of stems and long with others.[8]

	Nominative	Accusative	Locative
A1	*hanii-l*	*hanii-l-a*	*hanii-l-a-p*
A2	*čaami-l*	*čaami-l-a*	*čaami-l-aa-p*[9]
B1	*pičilii-t*	*pičilii-d-a*	*pičilii-d-a-p*

[7] All Tubatulabal forms cited come from Voegelin's grammar (1935*a*:72, 86, 144–47, 151–53) unless otherwise noted.

[8] From now on, I usually omit B4 and B5 examples, allowing B3 to do duty for the whole range of consonant-final stems.

[9] This form is made up, based on such attested forms as *maawisul-aa-p* from *maawisu-l* 'pine nut pole'.

B2	*maasa-t*	*maasa-t-a*	*maasa-t-a-p*
B3	*sulun-t*	*sulun-d-a*	*sulun-d-a-p*

A comparison of *hanii-l-a-p*, *čaami-l-aa-p*, and *pičilii-d-a-p* suggests that the oblique *-a-* is long after a short stem-final vowel and vice versa (Voegelin 1935*a*:72). These forms would be consistent with a morphophonemic rule postulated by Swadesh and Voegelin (1939), according to which, going from left to right, every other short vowel lengthens unless next to a long vowel (rhythmic lengthening).

It should be noted that this rule, as stated by Swadesh and Voegelin, permits numerous kinds of apparent exceptions because it was designed to apply at a rather abstract level of morphophonemic representation. This representation included, in particular, a distinction between two classes of consonantal morphophonemes, one of which had the effect of shortening a preceding vowel, while the other had no such effect. Also, certain vowels which are always short were written as morphophonemically long. In such cases, the immediately following consonant would be one of the shortening morphophonemes, so the length would never surface. The advantage of such abstract long vowels was that they could be used to keep a preceding or following vowel from lengthening under the rhythmic lengthening rule.

In this system, for example, forms such as *pičilii-t* 'squirrel' and *sulun-t* 'nail', which appear to be counterexamples to rhythmic lengthening, could be accounted for by assuming that the *č* of *pičilii-t* and the *l* of *sulun-t* belong to the class of shortening morphophonemes (and the second vowel of *sulun-t* would have to have abstract length).

This rule of rhythmic lengthening does not explain, however, why the oblique suffix is short after a consonant-final stem. In such cases, although the preceding vowel is short, the oblique is not lengthened, e.g., *sulun-d-a-p* (Voegelin 1935*a*:152), *paaʔis-t-a-p* 'at the leaching place' (Voegelin 1935*b*:27:207), *tïkis-t-a-p* 'in the restaurant' (27:387), *alaawis-t-a-p* 'in the court house' (27:394), and *coohis-t-a-p* 'in jail' (27:384).[10]

Of course, abstract long vowels could be postulated in such cases, but that would be missing the obvious generalization that ALL consonant-final stems behave in this way. These examples thus suggest that lengthening is inhibited not just by a preceding long vowel but by a preceding heavy syllable.[11]

[10] In citations from the texts recorded by Voegelin (1935*b*), instead of page numbers, I give the text number, followed by the line number.

[11] In general, much of the abstractness postulated by Swadesh and Voegelin is rendered otiose by better formulations of the rules. To be sure, some cases of abstractness remain, but these all appear to involve synchronically deviant behavior of certain morphemes (sometimes ones of foreign origin). Such cases are probably handled by giving up the idea that the rules

The fact that syllable weight rather than vowel length is involved is confirmed by the behavior of the locative ending itself. Voegelin (1935*a*:72) notes that it is long when the vowel of the preceding syllable is short, and vice versa. This is confirmed by all the available examples of vowel-final stems: *uku-baa-n* 'on its peak' (Voegelin 1935*a*:72) vs. *hanii-ba-nï?ïŋ* 'in my house' (Voegelin 1935*a*:153), *wïgii-ba-n* 'on his tracks'[12] (Voegelin 1935*b*:3:32). But, again, after a closed syllable, this ending is short even though the preceding vowel is also short, e.g., *sapus-pa-n* 'in his stomach' (14:43) and *to?ogom-ba-n* 'in his mouth' (14:42). Thus, lengthening takes place after a light syllable but is inhibited by a preceding heavy one.

Having decided, pace Swadesh and Voegelin (1939), that the correct rule of rhythmic lengthening is based on syllable weight rather than vowel length, we now have to explain why there is no lengthening after B2 stems, which on the surface appear to end in short vowels. Thus, we get such forms as *maasa-t-a-p* (Voegelin 1935*a*:152) 'in the sack', *ku-t-a-p* 'into, by the fire' (1:67, 5:48), *weeli-t-a-p* 'in the open places' (22:13), and *yï-t-a-p* 'in the valley' (8:12, 23:19). In order to account for these forms, it is tempting to set up a consonant at the end of B2 stems, viz., *maasaC-t-a-p*. This would immediately explain the length facts, which would otherwise be exceptions to this formulation of rhythmic lengthening.

2.2. Apparent lexical exceptions to rhythmic lengthening. As noted, Swadesh and Voegelin (1939) permit numerous kinds of exceptions to rhythmic lengthening by stating the rule at a rather abstract level of morphophonemic representation. However, one case where the rule would have to apply without fail is in any CVCV stem with two short vowels and a medial voiced plosive. This is because in their system all voiced plosives belong to the class of morphophonemes which do not shorten preceding vowels. It is significant, therefore, that among the few exceptions to their rules are two nouns in the B2 class, *piga-t* 'stone knife' and *tïba-t* 'pine nut', and that there are no comparable exceptions in the other noun classes.

Under the Swadesh and Voegelin (1939) theory, these two stems should have a long vowel in one of their two syllables. Of course, if we accept the version of rhythmic lengthening just described, then we can solve the problem by postulating *pigaC-t* and *tïbaC-t*.

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in question are synchronically exceptionless. And, in any event, none of the cases of abstractness is relevant at the Proto-Kern stage. My proposals for this period are all to be interpreted as involving concrete superficial representations rather than abstract morphophonemic ones.

[12] Recorded as *wïgiyiban*.

We thus have two arguments for a final consonant in B2 stems, one based on the absence of vowel length in the suffixes following such stems, the other on the absence of lengthening in the stems themselves.

3. Identifying the final consonant.

3.1. The distribution of final consonants. As noted, Tubatulabal has a number of noun stems ending in consonants including *-p*, *-h* (from **-k*), *-n*, *-m*, and *-s*. However, no noun stems seem to have a final *-t*. If we assume a **-t* in B2 stems like *maasa-t*, then we would explain this apparent gap, which is all the more surprising given the fact that coronal stops are usually by far more frequent than other stops.

At the same time we will have a simple explanation of why these stems seem superficially to be vowel-final. The stem-final **-t* and the suffix-initial *-t* of the absolutive would form a geminate, which at a later date would have ceased to be distinct from a simple *t*.[13] As for forms like *maasa-n* 'his sack' or *maasa-p* 'their sack', these will presumably have involved assimilation. Since there are no sequences like *-tp* or *-tn* in the modern language, there is no problem assuming such a development.

3.2. The reflexive and possessed oblique ending. So far we have been looking at noun forms built on the absolutive suffix. However, when a noun is possessed, this suffix is replaced by an entirely different morphology. Of interest here is the marker of the oblique which appears on possessed nouns. The order of morphemes is stem + oblique suffix + person/number suffix. In the case of the reflexive, there is no person/number suffix, i.e., stem + oblique marks the reflexive. The oblique ending that appears with possessed nouns is also different in form from the *-a* ending we have seen on absolutive nouns.

	Nominative	Reflexive Accusative	3sg/pl Accusative
A1	*hanii-l*	*hanii*	*hanii-yi-p*
A2	*čaami-l*	*čaami*	*čaami-yi-n*
B1	*pičilii-t*	*pičilii*	*pičilii-yi-p*
B2	*maasa-t*	*maasa-c*	*maasa-ci-p*
B3	*sulun-t*	*sulun*	*sulun-ini-p*
B4	*poom-t*	*poom*	*poom-iyi-n*[14]
B5a	*muus-t*	*muus*	*muus-i-p*
B5b	*wip-t*	*wip*	*wip-iyi-p*
B5c	*moomooh-t*	*moomoo-y-h*	*moomooh-yi-p*

[13] After the lenition of **-t-* to *-l-*.

[14] In his grammar, Voegelin (1935*a*) gives *poom-dᶻi-p* 'their eggs (obl.)', but the only textually attested form is *poom-iyi-n* (Voegelin 1935*b*:15:4).

We are thus dealing with an oblique ending for possessed nouns whose basic form would seem to be *-*yi*-. However, the problem with *-*yi*- is that then we would expect rhythmic length in class A2, which would yield the incorrect **čaami-yii-n*. So we probably need to assume that the vowel is epenthetic, and that the basic form of our ending was *-*y*-. The reflexive oblique ending is simply the same -*y* in absolute-final position.

In any event, all the synchronic forms can be derived by a number of additional processes, including *-*s-y*- changing to *s*, epenthesis after the labials *p* or *m*, and nasalization after *n*. In addition, in absolute-final position, we must invoke metathesis of *-*h-y* (in class B5)[15] and loss of the *-*y* after all other consonants.

With class B1, the facts are not clear. Voegelin (1935*a*:147) claims that the reflexive form here is zero, but the only example he cites, viz., *pičilii* 'one's own squirrel' (acc.), is not probative, because with a final high front vowel we would expect the *y* not to show up in any case. In class A1, where -*y* does appear, it nevertheless was not recorded after such stems, e.g., *hanii* 'one's own house' (acc.). Thus, we cannot be sure whether the reflexive of B1 nouns is basically zero or -*y*.

Finally, the point that interests us the most is that class B2 nouns take -*ci*- as the possessed oblique form (and, predictably, -*c* in absolute-final position, i.e., in the reflexive). This fits in nicely with the hypothesis that these stems ended in *-*t*, since then we can explain the -*ci*-/-*c* forms by assuming a rather natural change of *-*t-y*- to *-*c-y*- and thence to -*c*-.

3.3. The -*Vd*- element. A third argument for a stem-final *-*t* involves the element -*ʔVd*-, which appears in certain forms of B2 stems. Swadesh and Voegelin (1939) do not mention it, while Voegelin (1935*a*:131, 146–47) treats it as some kind of meaningless morpheme, which occurs with B2 stems when followed by -*ʔiŋ* '2 sg. possessive', -*ʔulu* '2 pl. possessive', -*ʔin* 'genitive reflexive', and -*ʔï*-, a derivational suffix used to transform nouns denoting articles of clothing into verbs denoting the putting on or the wearing of such articles.[16]

	Nominative	Reflexive Genitive
A1	*hanii-l*	*hani-ʔin*
A2	*čaami-l*	*čaami-ʔin*
B1	*pičilii-t*	*pičili-ʔin*

[15] This follows the general rule of metathesis for *h* + sonorant sequences described by Voegelin (1935*a*:86–87) and Swadesh and Voegelin (1939).

[16] The basic form of this suffix would appear to be -*ʔï*-, but it assimilates to -*ʔo*- after a stem ending in -*o*. Illustrative forms of the latter suffix occur in Voegelin (1935*a*:131–32). It is not attested with class B1 stems.

B2	*maasa-t*	*maasa?ad-in*
B3	*sulun-t*	*sulun-?in*

While Voegelin made no attempt to figure out any generalization behind this phenomenon, it so happens that these are all the *?*-initial suffixes that can follow a noun stem. If we assume that B2 stems actually end in **-Vt* rather than in *-V*, we may postulate the following chain of developments:

**maasa-t-?in*	
**maasa?t-in*	(Metathesis)
**maasa?d-in*	(Voicing)
maasa?ad-in	(Epenthesis)

Of these developments, the epenthesis which produces the vowel after the glottal stop in the last step is not a new idea. It was postulated, for certain other cases, by Swadesh and Voegelin (1939). Specifically, there exists a large class of verbs of the form *CV?VCV-*, reduplicated *VCV?VCV-*, e.g., *yu?umV-* 'to get worn out'. Without going into the reasons for this proposed derivation here, I note that this verb class has an important accentual anomaly which is shared by noun forms with the *-?Vd-* element.

In Tubatulabal, the stress falls on all long vowels and on alternate short vowels from the end of the word. However, the epenthetic *-V?V-* sequences are treated as a single long vowel and stressed on the first of the two short vowels, e.g., *uyú?um* 'it got worn out', **úyu?úm* (Voegelin 1935*a*:76–77; this accentual phenomenon is ignored by Swadesh and Voegelin 1939). Crucially, the *V-?Vd* sequences that arise in B2 stems behave the same way, e.g., *máasá?adulú*, rather than **máasa?ádulú* (Voegelin 1935*a*:147). This confirms the idea that epenthesis is involved here as well.

3.4. The suffix *-u-l* 'tree'. Additional evidence for **-t* in B2 stems is found in the form *tïbaadu-l* 'pine tree' (Harrington 1981 and Lamb and Seiler 1954). This is related to *tïba-t* 'pine nut'. The suffix here is clearly *-u* (cf. *yumuk-t* 'acorn' vs. *yumuug-u-l* 'oak tree'), so we need to assume that *tïba-t* represents **tïbat-t*, in order to be able to explain the *-d-* in *tïbaadu-l*.

Specifically, the original form of the suffix was probably **-hu* (which happens to be a Proto-Uto-Aztecan root for 'tree'). We cannot assume **-?u*, because then we would expect **tïba?adul* via metathesis and epenthesis. It is also unlikely that it was simply **-u*, since then we would expect the final **-t* of the root to lenite to *-l-*, yielding the incorrect **tïbalu-l*. But from **tïpat-hu-tV* we can derive *tïbaadu-l* without any difficulty.

4. Class B1 nouns. Once we decide that B2 stems originally ended in **-t*, then the (very few) B1 stems become the sole counterexamples to the

hypothesis that the *-d* absolutive ending originally appeared in complementary distribution with *-l*, depending on whether the preceding stem ended in a consonant or a vowel. If we assume that the B1 stems actually originally ended in a consonant too, we remove the last objection to that hypothesis.

Now, we have to identify the consonant. Since we have already mentioned stems ending in *-p*, **-t*, *-h* (from **-k*), *-n*, *-s*, and *-m*, that leaves *-l*, *-c*, *-č*, *-ŋ*, *-w*, *-y*, and *-ʔ* as the only candidates (where pre-Tubatulabal **ʔ* can come from PUA **h* or from PUA **ʔ*).

What is perhaps most telling is the fact that before suffixes beginning with *-ʔ*, B1 stems do not show any trace of an original consonant, unlike B2 stems. Thus, while B2 *maasaʔad-in* has a *-d-* which reflects the original stem-final **-t* in **maasat-ʔin*, B2 *pičili-ʔin* exhibits no trace of the hypothesized consonant in **pičiliC-ʔin.*

If the stem-final consonant were anything other than *-ʔ*, we would expect the same pattern as with B2 stems. Thus, if the stem were originally **pičiliw*, say, we might expect **pičiliw-ʔin* to yield **pičiliʔiwin* or **pičiliiwin*. On the other hand, if the original form of the stem were **pičiliʔ*, then the expected reflex of **pičiliʔ-ʔin* would be precisely *pičiliʔin*, the form we find attested (with the double glottal stop degeminated).

In addition, it seems natural that forms like **pičiliʔ-tV* should yield ones like **pičilii-t*, because the replacement of a syllable-final glottal stop by an additional mora on the preceding vowel is a common process in languages of the world.

To be sure, we must be careful about this last point, because above I showed that clusters of glottal stop plus consonant in forms like *maasaʔadulu* 'your (pl.) sack' undergo epenthesis and the glottal stop survives. However, in this case we were dealing with clusters that themselves arose as a result of metathesis. We are thus free to assume that original sequences of glottal stop plus consonant, arising apparently only at boundaries, lose the glottal stop and lengthen the preceding vowel instead.

All this is somewhat speculative, but we do find support for this theory in the pair of forms *tugaa-wa-yi-n* 'deep (oblique)' (Voegelin 1935*b*:19:2) and *tugaʔ-* 'deep' (Voegelin 1958). We can thus explain *tugaa-wa-yi-n* as derived from **tugaʔ-wa-yi-n*, but thus far this is the only attested form within the language that shows this alternation.

It may not be out of place, however, to note that there exists some comparative support for this analysis. To be sure, it involves none of the forms cited so far, and indeed none of the B1 stems. What is documented, however, is that a sequence of glottal stop plus consonant does indeed lose the glottal stop with compensatory lengthening of the preceding vowel.

The best examples are *aamaa-yu-* (nominative), *aamaa-k-* (oblique) 'with'. The synonymous Southern Paiute cognates *-ma?ai-* and *-ma?qqu-* clearly come from earlier **-ma?-yu-* and **-ma?-qqu* (Sapir 1931). Hence, we derive the Tubatulabal forms from **a-ma?-yu-* and *a-ma?-kku.* Another set of examples are the two kinship terms *paadᶻii-* 'older brother' and *kuudᶻii-* 'older sister', which derive from PUA **pa?-ci* and **ko?-ci* (Manaster Ramer 1992*b*).

The reader should note, however, that all that we have shown is that it is POSSIBLE to derive the B1 stems from forms ending in a glottal stop, and that it is DESIRABLE to do so in order to explain the last remaining counterexamples to the theory that *T* endings come after originally consonant-final stems. However, unlike in the case of class B2, there is apparently no independent evidence for a final consonant in B1 stems, other than the very fact that they take the *T* absolutive endings. Still, it seems that this is enough to justify the proposed internal reconstruction, inasmuch as this yields the simplest overall theory. Thus, it seems reasonable to assume that B1 stems did originally end in a consonant, which more likely than not was a glottal stop.

5. Conclusion. We can henceforth write Tubatulabal B2 and B1 stems with final **-t* and **-?*. This in turn confirms Sapir's conjecture that in Tubatulabal **-t-* yielded *-l-*, but that the stop survived in **-Ct-* clusters (with subsequent voicing in certain environments, such as after a nasal or a long vowel). Thus, the *L* absolutive in Tubatulabal (and its analogues in the Takic languages) occurs after originally vowel-final stems and the *T* absolutive after originally consonant-final ones.

However, there is an interesting anomaly regarding the final consonants that we can recover on the basis of Tubatulabal data. At the ends of monosyllabic stems, we see the reflexes of **-p*, **-t*, **-k*, **-n*, (rarely) **-m*, and **-?*, but in polysyllables we do not find **-p* or **-k*. It turns out that PUA polysyllables that originally ended in these two consonants lenited and lost them in Tubatulabal and the other Californian languages early enough so that these stems fell together with the original vowel-final ones. In fact, this turns out to be the source of disyllabic Tubatulabal class A2 stems. Neither Tubatulabal internal reconstruction nor even comparison with the other Californian languages yields anything other than final (long) vowels in these A2 stems. It is only by looking at UA languages spoken outside of California (see Manaster Ramer, to appear; in preparation) that we can make this case.

Thus, Sapir was wrong about a certain class of examples but right that, in general, the *L* allomorphs of the absolutive suffix are derived from intervocalic **-tV*, whereas the *T* allomorphs come from **-tV* after a consonant.

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