

## **TONE CORRESPONDENCES AMONG THE BODO LANGUAGES**

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### **INTRODUCTION**

Several decades ago, Burling suggested that the contrast between a glottal stop and its absence that is so characteristic of Garo is cognate to the two-way tone contrast of the closely related language that he called “Kachari”, a language that would probably be called “Boro” today (1959). More recently, Joseph has given fuller data that demonstrate the relation between the Garo glottal stop contrast and the tone contrast in Rabha, with additional confirming evidence for the correspondence with Boro. We can now offer data not only from these three languages, but from Kokborok and Tiwa (formerly known as “Lalung”) as well. The data from Kokborok are limited but those from Tiwa are particularly valuable because we believe we now have a better understanding of the Tiwa tone system than we have ever had for any other language of this group.

Garo, Boro, Rabha, Tiwa, and Kokborok all belong to the Bodo subgroup of Tibeto-Burman, a subgroup that has also sometimes been known as “Barish” or “Bodo-Garo”. All of these languages are found in Northeastern India. Garo is spoken in the western part of the state of Meghalaya, and Rabha just to the north. Boro speakers are scattered in the Brahmaputra valley, many north of the river and north of the area where Garos and Rabhas are concentrated. Tiwa is spoken further to the east, mostly south of the river, and Kokborok further south in the state of Tripura. Of the five languages, Boro, Tiwa, and Kokborok appear to be particularly closely related to each other, while Garo, Rabha (the largest member of the “Koch” group) and Boro-Tiwa-Kokborok may be approximately equidistant from one another. Until recently, the data available on the tones of these languages have not been sufficiently detailed to demonstrate their correspondence in a conclusive way. Indeed, it is only in the last few years that it has become clear that most of them are tonal. In addition to our richer understanding of Tiwa tones, we now have solid evidence that Rabha, Boro, and some dialects of Kokborok are tonal. All of them have a two-way tone contrast. Of the five languages that we consider, only Garo lacks

tones completely, but there can no longer be any doubt that its glottal stop contrast corresponds to the tone contrast of the other languages.

Data to demonstrate the correspondence are presented in Table 1. High tones in the four tonal languages are marked with an acute accent. Garo cognates of these high toned words have a glottal stop. Garo words that do not have a glottal stop correspond to words in the other languages that have the non-high tone. This second tone has been designated as either "low" or as "falling", in one language or another, and our transcription reflects the varied histories of work with the languages. In Tiwa, where this second tone is best described as "falling", we mark it with a circumflex, but in Kokborok we use a grave accent. The second tone is left unmarked in the Rabha and Boro examples. Garo cognates to this second tone lack a glottal stop, so they are unmarked in the Garo transcription.

TABLE 1: BODO COGNATES

*A: Minimal Pairs*

	<i>Tiwa</i>	<i>Rabha</i>	<i>Boro</i>	<i>Kokborok</i>	<i>Garo</i>
water	tí	chi-ka	dai	tòi	chi-
lay egg v.t.	tí-	chí-	dái-		chi?-
die v.i.	thí-	si-	tai-	thòi-	si-
blood	thí-	sí	tái	thói-	(an?-chi-) <sup>1</sup>
night	hôr	phar	hor	hòr	wal-
fire	hór	bár	ór	hór	wal?-
tie v.t.	khâ-	kha-	ka-	kà-	ka-
bitter v.i.	khâ-	khá-	ká-	khá-	ka?-

<sup>1</sup> It is tempting to wonder if the *chi* of *an?-chi* could be related to the words for 'blood' in the other languages. However, *chi* is the ordinary word for 'water, liquid' in Garo, while *an?* means 'body'. Hence *an?-chi* means 'body liquid' and the *chi* probably has no relation to the other words meaning 'blood'.

	<i>Tiwa</i>	<i>Rabha</i>	<i>Boro</i>	<i>Kokborok</i>	<i>Garó</i>
rot		so-	seo-		so-
burn v.t.	sú-	só-	sáo-	sáo-	soʔ-
hear	khôna <sup>2</sup>	na-	kə-na-		na- <sup>3</sup>
fish	ngá	ná	ná	á	naʔ-
peck v.t.	shû	su-	sou-		su-
pierce, pound	shú	sú-	sóu-		suʔ-
weave basket edge	khûi	kho-	kao-		ko-
draw water v.t.	khú	khó-	káo-		koʔ-
village		song			song-
cook v.t.	shóng-	sóng- <sup>4</sup>	sóng-		songʔ-
need, useful	nâng-	nang-	nang-		nang-
you (sg.)	ná	náng	nóng		nangʔ-, naʔ- <sup>5</sup>
tooth	hâso	pha-kham	haái		wa-gam
rain v.i.		pha-	ha-	wà	wa-
bamboo	wâ*	bá	oá, oúa	wá	waʔ-

<sup>2</sup> The tone of *khôna* is on the first rather than the second syllable, although it spreads to the second. We do not understand the significance of this placement of the tone.

<sup>3</sup> *Na-chil* means 'ear'. The Garó word for 'hear' is *kin-a-* or *kin-na-* (there would be no phonological difference between these), plausibly derived from an earlier *kə-na*. A second syllable would have lost any earlier glottal stop, so *kin-a-* can give no indication of the earlier stop. The first syllable of the word for 'ear' appears to be the same, however, and it has no glottal stop.

<sup>4</sup> *Rabha sŏng* means "to set on the stove".

<sup>5</sup> Garó has two forms of the first person singular pronoun: *naʔ-* is used only in the citation and nominative form, *naʔ-a*, while *nangʔ-* is used with all other case markers. Thus Garó seems to have cognates with the pronouns of both *Tiwa* and the other languages.

*B. Garo non-glottal / other non-high tone*

	<i>Tiwa</i>	<i>Rabha</i>	<i>Boro</i>	<i>Kokborok</i>	<i>Garo</i>
ache v.i.	shâ-	sa-	sa-		sa-
body		mang- <sup>6</sup>			mang- <sup>6</sup>
cane		re	raidəŋ	rái*	re-
dry v.t.		ram-	pə-rán		ram-
grass		sam	sam		sam-
I	âng	ang	ang	àng	ang-
look v.i.	nî-		nai-		ni-
mat	âm	dam	em		am-
name n.	mûŋ	mûŋ	mung		ming- <sup>7</sup>
nose	kûŋ	kumpak <sup>8</sup>	guntung <sup>8</sup>		ging-ting
paternal uncle		bang			wang-
rice, cooked	mâi	mai-			mi-
rice, husked	rôŋ	mairung	mairong		rong-chu <sup>9</sup>
road	lâm	ram	lama		ra-ma

<sup>6</sup> Garo *mang-* is a numeral classifier for animals. What is presumably the same morpheme is also found in *bi-mang*, a noun meaning 'body'. In the noun, however, the second syllable position of *-mang* means that it would have lost any earlier glottal stop, so it can give no evidence of the tone correspondence. As a numeral classifier, *mang-* is word initial and it does not have a glottal stop.

<sup>7</sup> *ming-* is a verb meaning 'to name'. The Garo noun for name is *bi-ming* or *bi-mung*, and the second syllable position of *-ming* makes it non-diagnostic for the correspondence.

<sup>8</sup> The labial and dental nasals of *kumpak* and *guntung*, we believe, result from assimilation to the following consonants.

<sup>9</sup> Garo *rong-chu* means 'flattened rice'. The syllable *rong* also appears in *me-rong* 'husked rice', obviously a cognate of the Rabha and Boro words, but its second syllable position makes it useless for deciding whether it fits the usual correspondences with the other languages.

sell	phâl-	phar	pan-		pal-
skin, peel	kûr	khorthap	bigur		gil- <sup>10</sup>
sun, day	sâl	san	san	sâl	sal-
tree, trunk, stem	pháng*	phang-	bi-pang		pang-
warm by fire	hâng-	hang-	hang-		ang-
we	chîng	ching	jəng		ching-
wind	pâr	rampar	bar		bal-wa

*C. Garo glottal / other high tone*

	<i>Tiwa</i>	<i>Rabha</i>	<i>Boro</i>	<i>Kokborok</i>	<i>Garo</i>
bird	tú	tó	dáo	tôk*	do?-
body, flesh	hán	kán		hán	an?-
bug, insect		cóng		yóng	jong?-
cut v.t.	tán-	tán-	dán-	tán-	den?-
dry v.i.	rán-	rán-	rán-		ran?-
dung, stool	khé	jí	kí, ké	khí	ki?-
eat	chá-	sá-	já-		cha?-
far	chál-	ján-	ján-	chál-	chel?-
ghost		mé-mang			me?-mang
ground, earth	há	há	há	há	a?-
hot	túng	túng-	dúng-		ding?-
much, plenty	páng-	páng-	báng-		bang?-

<sup>10</sup> *gil-* is a numeral classifier for thin flat objects. The Garo word for 'skin' is *bi-gil*, clearly cognate with Boro, but its second syllable position in that word makes it useless for judging cognate status. The numeral classifier is presumably derived from the same morpheme, and it appears in word initial position without a glottal stop.

	<i>Tiwa</i>	<i>Rabha</i>	<i>Boro</i>	<i>Kokborok</i>	<i>Garó</i>
plant v.t.	<b>kái-</b>	<b>kái-</b>	<b>gái</b>	<b>kái-</b>	<b>geʔ-</b>
take, bring	<b>lá-</b>	<b>rá-</b>	<b>lá-</b>	<b>ná-</b>	<b>raʔ-</b>
tuber	<b>thá</b>		<b>tá</b>	<b>thá</b>	<b>taʔ-</b>
woman		<b>mí-chik</b>			<b>meʔ-chik</b>

The most convincing evidence for the correspondence comes from the dozens of cognate minimal pairs that are shown in Part A of Table 1. These are examples where both members of a minimal pair have cognates in two or more languages. Cognate sets with glottal stops and high tones are indented in order to set them off visually from the contrasting sets that have non-high tones or, in the case of Garo, no glottal stops. Parts B and C of Table 1 give additional cognate sets for which we do not have minimal pairs. The Garo examples are all written with a concluding hyphen because a glottal stop never occurs in the final syllable of a Garo word. This means that it is the “combining form” (the form to which suffixes are attached) that needs to be considered when looking for evidence of a glottal stop, but since suffixes are ubiquitous in Garo, there is rarely any problem about deciding whether or not a word has a glottal stop in the underlying form of its initial syllable. High tones can appear in the final syllables of words in the other languages, but verb bases are almost never used without a suffix, so these are also shown with a hyphen. Except for Kokborok where our data is limited, the blank spaces on the charts are places where the meaning is conveyed by a non-cognate.

We find very few counterexamples to the correspondences proposed, and some apparent exceptions can be readily explained. For example, Rabha *mín* ‘body hair’ with a high tone corresponds to the second syllable of Garo *ki-mil*, which has no glottal. Ordinarily a Rabha high tone should correspond to a Garo glottal stop, so this looks like an exception. Similarly, Rabha *sú* ‘thorn’, corresponds to the second syllable of Garo *bu-su*. The Garo words have picked up prefixes of some sort, and neither *\*mil* nor *\*su* ever appears without a prefix in contemporary Garo. Since Garo second syllables uniformly lose any underlying glottal stop, an earlier glottal stop would certainly have been lost once the prefixes pushed *-mil* and *-su* into second position. Whatever its earlier form, the syllable would lack a glottal stop in modern Garo. Thus the modern Garo words give no evidence, one way or the other, for the correspondence, and for this reason we do not include them in the Table. In the same way, the second syllable of Rabha *tu-pú* ‘snake’ corresponds to that of

the Garo *chip-bu*, but the high tone of the Rabha second syllable could not correspond to a glottal in the second syllable of a Garo word, so this pair also fails either to confirm or to contradict the correspondence.

We do find a handful of exceptions for which we have no explanation: Rabha *gong-*, Garo *gong?*- 'be willing'; Rabha *nom-*, Garo *nom?*- 'soft'; Rabha *chai-rung-*, Garo *ring?*- 'sing'. With examples from these two languages only, we have no way of choosing between the two correspondences, so we do not include them in the Table. The very few words in Table 1 that appear to be cognates, but whose tones violate the expected pattern, are marked with an asterisk. The exceptions are vastly outnumbered by examples following the rule.

The data strike us as so unambiguous that we hardly need to argue in favor of the correspondence. However some discussion of the individual languages will clarify the relations among them, point to the remaining gaps in our knowledge, and suggest places where additional research should be fruitful. We will consider each language in turn.

## TIWA

Much of the motivation for this paper comes from our new understanding of the tone system of Tiwa, which we worked on together in April 1999. We feel that we can describe the main features of the Tiwa tone system with considerably more confidence than we can describe the tone system of Rabha, Boro, or Kokborok. While Tiwa tones pattern very differently from tones in most Tibeto-Burman languages, at least as they have been described, the Tiwa system suggests new questions to ask about the tone systems of Rabha, Boro, and Kokborok.

Each Tiwa word has one of two tones that are best described as "high level" and "falling". For one-syllable words, the contrast is straightforward. One group of words is pronounced with a high and level pitch. The high tones of monosyllables are relatively short, and when they are pronounced carefully and in isolation they often terminate abruptly with a glottal stop. This glottal stop raises the possibility that the correspondence between the glottal stop of Garo and the high tone of Tiwa (and Rabha and Bodo as well) is really nothing more than a correspondence between a glottal stop in both languages, hardly a dramatic finding. As will be shown shortly, however, there are good grounds for considering the pitch to be a more salient feature in Tiwa than the stop.

Monosyllables with the second tone are lower, longer, and not terminated with a glottal stop. On one-syllable words that have the tone we are calling "falling", the fall is actually quite modest, and a non-Tiwa speaker does not find the tones as easy to discriminate as this description may imply, but there can be no doubt whatsoever of the contrast. Several clear minimal pairs are shown in the top section of Table 2, and others are shown in Part A of Table 1.

Table 2. TIWA TONES

	<i>High Tone</i>		<i>Falling Tone</i>	
	<i>One-Syllable Words</i>			
	<b>ná</b>	'you'	<b>nâ</b>	'come out'
	<b>chú</b>	'top'	<b>chû</b>	'rice beer'
	<b>hór</b>	'fire'	<b>hôr</b>	'night'
	<b>táp</b>	'pocket knife'	<b>tâp</b>	'low (as a house)'
	<i>Two-Syllable Words</i>			
<i>Tone on first syllable</i>	<b>khú-jur</b>	'lip'	<b>khân-jur</b>	'ear'
	<b>hór-o</b>	'in the fire'	<b>hôr-o</b>	'at night'
	<b>khú-ni</b>	'hair'	<b>khû-ni</b>	'millet'
	<b>phá-gor</b>	'armpit'	<b>khûn-da</b>	'post, pillar'
	<b>tí-wa</b>	'sweet'	<b>pê-re</b>	'surround'
<i>Tone on second syllable</i>	<b>kojá</b>	'red'	<b>pang-sî</b>	'flute'
	<b>pe-ré</b>	'frog'	<b>khun-dâ</b>	'hurry'
	<b>yang-gúl</b>	'back'	<b>an-thû</b>	'knee'
	<b>ti-wá</b>	'lift'		
	<i>Three-Syllable Words</i>			
<i>Tone on first syllable</i>	<b>khú-jur-o</b>	'on the lip'	<b>khân-jur-o</b>	'on the ear'
	<b>thí-ju-gi</b>	'mango'	<b>pâ-du-li</b>	'bat' (animal)
	<b>thán-thi-gra</b>	'woodpecker'	<b>phû-di-ga</b>	'distilled liquor'
<i>Tone on second syllable</i>	<b>yang-gúl-o</b>	'at the back'	<b>pang-sî-na</b>	'for the flute'
			<b>po-hâ-ri</b>	'sister-in-law'
<i>Tone on third syllable</i>	<b>chang-gor-síng</b>	'big red ant'	<b>ma-ma-hûr</b>	'husband's uncle'
	<b>chor-ri-á</b>	'lime'	<b>che-la-râu</b>	'younger Si Hu'.
	<b>ku-ku-líng</b>	'dragon fly'		



Two-syllable words can have one of four possible tone patterns, and our first conjecture was that each syllable could have either tone, making four possible combinations in all. It proved more revealing, however, to consider the tone to be a feature of the entire word, while recognizing that either tone can occur on either the first or the second syllable. This is reminiscent of the pattern of pitch-accent languages such as Japanese, where the pitch contour varies according to the location of accent (McCawley 1978) and, for that matter, it recalls the pattern of English stress, which can fall on any syllable of a word. Unlike Japanese and English, however, Tiwa has two possible tones, and either tone can occur on any syllable. Tiwa words, that is, are distinguished not only by the contrast in tones, but by a contrast in the position at which the tones occur. It would be possible to describe Tiwa as being characterized by accent as well as tone, and to say that the tone is attracted to the accented syllable. This seems only to introduce an extra and unneeded complication, however, and we will content ourselves with saying that the tone can appear on either syllable of a two-syllable word. As will be described just below, a tone can appear on any syllable of a three-syllable word as well.

When a two-syllable word has its tone on the first syllable, the tone "spreads" to the right so that the second syllable participates in the tone of the first. When a high tone on the first syllable spreads across the word it yields a uniformly high pitch. The first syllable will not have a glottal stop, but a glottal stop may occur at the end of the word, although it is generally weaker than the stop of a one-syllable word with high tone. When a high tone is on the second syllable, the first syllable has a mid or neutral pitch, and the high pitch is established only on the second syllable. In this case, the vowel of the second syllable is short and the syllable often terminates with a glottal stop.

As with a high tone, a falling tone on the first syllable spreads to the right, and disyllabic words have a clearer fall than do monosyllables. On disyllables, the fall in pitch stretches across the entire word and this clear fall justifies our use of the word "falling" to describe this tone. A falling tone on the second syllable first jumps up from the mid or neutral pitch of the first syllable, but then falls decisively. Falling tones on the first and second syllable respectively result in pitch contours that are quite similar to English disyllables that are stressed on the first or second syllables, such as *clúmsy* and *áwful* on the one hand and *beháve* or *eclíipse*, on the other. Tiwa examples of the various possible tone patterns of disyllables are shown in the middle portion of Table 2.

Three-syllable words clinch this analysis. Three-syllable words allow six possible tone patterns, as would be expected if each of the two tones could be fitted to any of the three syllables. Minimal pairs are difficult to find for three syllable words, but the examples at the bottom of Table 2 seem clear. The

general pattern of pitch contours found in two-syllable words is also found with three-syllable words. All syllables before the position of the tone are mid or neutral in pitch. They are lower than the high tone, but lack the falling quality of the falling tone. Either a high tone or a falling tone spreads to all the syllables that follow. Thus a falling tone on the first syllable results in a gentle fall that crosses all three syllables. A high tone on the first syllable yields uniformly high pitch contour--a monotone. Once again, words with a falling tone remind an English speaker of English words with stress on the various syllables: *difficult*, *contribute*, *understand*. Words with high tones sound unlike anything in English. An abrupt jump to high pitch marks the syllable where the tone resides, and the pitch stays very level until the end of the word.

## RABHA

We cannot describe the tone system of Rabha with the same confidence that we describe that of Tiwa, but the pattern in monosyllables seems clear. In Rabha, syllables that are cognate to Garo syllables with glottal stops almost always have high tones (Joseph 1998). As in Tiwa, these are not only high, but short, and in word final position they are often terminated with a glottal stop. Once again, it might be supposed that the correspondence with Garo shows nothing more than the relations between glottal stops in the two languages, but in Rabha, as in Tiwa, the most salient characteristic of the high tone is its pitch, and to some extent its length, rather than the stop as such. The stop appears only at the end of a word, so the first syllable of a polysyllabic word is not terminated with a glottal stop even when its tone is high. Tones, either high or low, tend to spread to the right, however, so that a polysyllabic word whose initial syllable has a high tone will also have a high pitch on later syllables. The word may even terminate with a glottal stop although it is generally less strong than when it completes a one-syllable word that is spoken in isolation. In fast running speech, moreover, the glottal may not be pronounced at all, and it appears most clearly in utterance final, not merely word final, position. The stops are clearest when words are pronounced carefully and in isolation, as when demonstrating for a curious linguist. In all these respects, it seems clear that the pitch difference is the most salient characteristic of the Rabha contrast, while it is certainly the stop that gives the contrast in Garo.

## BORO

More accounts of Boro phonology have been published than for any of the other tone languages considered here, and it is the only one of the languages that, until very recently, has been reported to be tonal. Given this attention, it may be inevitable that there has been more disagreement about it than about the

other languages. Burton-Page (1955) described Boro as having three tones, and Bhattacharya (1977) proposed four. However, Halvorsrud (1959) allows for just two tones, and this is all that either of us have found to be necessary.

In the 1950's, Burling worked with a man who called his language "Kachari", but, today, he would probably call it "Boro" (Burling 1959). Some words in that language ended in a glottal stop but Burling was surprised to find that when a suffix was added to such a word the stop disappeared while the *suffix* was pronounced with a high pitch. When the same suffix was added to a word that did not end in a glottal stop, the suffix had a distinctly lower pitch. It seemed that a feature of one syllable was expressed on the next. Perhaps because Burling was hearing Kachari through ears already attuned to Garo, which has glottal stops but no tone contrasts, he interpreted the glottal stop as the distinguishing feature of the unsuffixed words, and, if they were pronounced with a higher pitch than unstopped syllables, he did not detect that fact. The only way he knew to describe what he heard was to say that a phonemic contrast between a glottal stop and its absence had an allophone in which the contrast was expressed by a pitch difference in the following syllable. At the time, Burling did not quite trust his own observations of what struck him as a very peculiar system, but the relation of glottal stops to tone was later confirmed by Weidert (1987), and the pattern, obviously, is very reminiscent of the tone spreading found in both Rabha and Tiwa.

Joseph has recently worked more extensively with Boro than Burling ever did with Kachari. Possibly because Joseph was hearing Boro through ears that had been attuned to Rabha, he interpreted the syllables ending in a glottal stop as having a high tone. There is no conflict in our phonological interpretations, merely a difference in the phonetic feature that we focused on. Like Burling and Weidert, Joseph recognized that high and low tones spread, or perhaps move, to the right. Our transcription of Boro words is taken from Joseph's data rather than Burling's, so the glottal stops, which in any case disappear whenever another syllable follows, are not marked.

It should be obvious that the situation in Boro is very much like that in Rabha and Tiwa, where tones spread to the right and where the glottal stop disappears before another syllable in the same word. Whether Boro and Rabha tones can be attached to different points in the word, as they can in Tiwa, we do not know. Neither of us had encountered Tiwa at the time when we worked with Boro and Rabha, and a "solution" parallel to the one we worked out for Tiwa did not occur to either of us as a possibility. Obviously we have some more work to do. The main point, now, is that there is a consistent relationship between the glottal stops of Garo and the high tones of the other languages.

## KOKBOROK

The final tone language for which we have data is Kokborok. Matisoff (personal communication) reports that a dialect of Kokborok with which he worked was not tonal,<sup>11</sup> but there is no question that Mr. P. Jamatia, originally from Tripura, the man with whom Burling worked, had tones.<sup>12</sup> He was well aware of them, volunteered several minimal pairs even before Burling had noticed them, and described them as "as special feature of our language". Our data for Kokborok is thinner than for any of the other languages, but even our limited material shows clearly that the high tone corresponds to a Garo glottal stop and to the high tones of the other languages. The low tone corresponds to other low or falling tones and to the absence of a glottal stop. Kokborok differs in one respect from the other languages, however: the high tones are *not* characterized by glottal stops. Indeed, Kokborok lacks glottal stops entirely.<sup>13</sup> For this, our final language, therefore, it would be impossible to argue that the correspondence does no more than show the relationship of glottal stops in the various languages.

<sup>11</sup> The consultant for the Kokborok dialect I worked on in a field methods class in 1987-88 was from Bangladesh. Upon rereading my notes, I see that my p.c. to Burling was wrong and that I did eventually learn to mark certain words as 'high' tone. Although the overall functional load of the tonal contrast seemed quite low, I did find a number of minimal pairs including:

<b>čà</b>	'good'	/	<b>čá</b>	'eat'	(see Table 1C above)
<b>khà</b>	'tie'	/	<b>kəkhá</b>	'bitter'	(see Table 1A above)
<b>wà</b>	'tooth'	/	<b>wá</b>	'bamboo'	
<b>phà</b>	'father'	/	<b>phá</b>	'sweep'	
<b>khnà</b>	'hear'	/	<b>khná</b>	'tomorrow'	
<b>nò</b>	'massage'	/	<b>nó</b>	'move'	
<b>thàŋ</b>	'alive'	/	<b>tháŋ</b>	'go'	
<b>yòŋ</b>	'uncle'	/	<b>yóŋ</b>	'bug'	
<b>šà</b>	1. 'speak'	/	<b>šá</b>	'spread/scatter'	
	2. 'hurt'				
<b>kà</b>	'rise'	/	<b>ká</b>	'enough'	
<b>bò</b>	'wood'	/	<b>bó</b>	'plant (v.)'	
<b>kàu?</b>	'throw'	/	<b>káu?</b>	'language'	
<b>bàŋ</b>	'carrying pole'	/	<b>báŋ</b>	'exceed'	
<b>šlây</b>	'tongue'	/	<b>šláy</b>	'exchange'	
<b>phây</b>	'come'	/	<b>pháy</b>	'bend off/break off'	

To make up for all the inaccurate information I gave Burling, I will undertake to publish all the Kokborok lexical data I have in a future issue of LTBA! [Ed.]

<sup>12</sup> The dialect described in Karapurkar (1972:30-31) has two tones, one with 'normal' pitch (unmarked) and one with 'louder than average' pitch, marked by a grave accent, e.g. **hór** 'night' vs. **hòr** 'fire'. See Table 1A, above. [Ed.]

<sup>13</sup> This is different from my Bangladesh Kokborok dialect, where glottal stop is frequent (cf. 'throw' and 'language' above), although it is not a feature of the high tone. [Ed.]

## GARO

Garó is the only one of these languages that lacks real tone, but it has highly salient glottal stops. As is characteristic of many Tibeto-Burman languages, glottal stops are not significant as syllable initials, but they can close a syllable that has no other final consonant. In Garó, glottal stops can also cooccur with syllable final *-m*, *-n*, *-ŋ*, or *-l*. Garó has scores, probably hundreds, of minimal pairs that differ only in the presence or absence of a glottal stop. A small sample of these are included in Part A of Table 1. Initial syllables and third syllables can have glottal stops, but neither second syllables nor word final syllables can ever have one. Morphemes that have glottal stops when occurring as the first syllable of a word, uniformly lose the stop in second position, but retain it in third: *pilʔ-a* 'return', *kat-pil-a* 'run back', *kat-ba-pilʔ-a* 'run back in this direction'. This coming and going is only one of several ways in which glottal stops differ from the fully segmental consonants of Garó. Other consonants are notably stable, rarely changing by assimilation, let alone disappearing. In this, and in a number of other respects, the Garó glottal stop is best seen as a feature of the syllable rather than as an ordinary segmental consonant (Burling 1992).

## WHERE NEXT?

Like any interesting research, our results raise more questions than they answer. Our data is limited in several ways and this limits our understanding of the history of tones and glottal stops. We note three areas where more work is needed.

First, our tables include no words that end in *p*, *t*, or *k*, although most of the languages have such words. We have left these out because tones appear to work rather differently in stopped syllables than elsewhere, and our limited data do not give us the confidence to include them. Tiwa does have a two-way tone contrast in stopped syllables (*tóp* 'pond, lake'; *tóp* 'banana flower') just as it does in unstopped ones. Rabha, however, does not, and we do not know about Kokborok or Boro. Contemporary Garó does not allow a contrastive glottal stop in syllables already stopped with *p*, *t*, or *k*, although hints can be found that syllables with both a glottal and a *p*, *t*, or *k* might be reconstructed for an earlier stage of the language. However, data from contemporary Garó cannot be compared with the contrasting tones of Tiwa stopped syllables, simply because Garó does not have a corresponding contrast.

One thing, however, is clear. There is a tendency in both Boro and in Tiwa for final stops, especially final *-k*, to be lost. Garó words with final *-k* generally have Boro and Tiwa cognates with an open syllable rather than a *-k*. In both Boro and Tiwa, a lost final consonant always leaves behind a high tone:

Garó *nok*, Tiwa and Boro *nó* 'house'; Garó *kok*, Tiwa *khó*, Boro *kó* 'basket'; Garó *wak*, Tiwa *wá* 'pig'; Garó *git-chak*, Boro *já*, Tiwa *ko-já* 'red'.

Second, we still have much to learn about the tone patterns of longer words. Do the tone systems of the other languages resemble Tiwa in allowing tones to be attached to different syllables? Do compounds, which are plentiful in all these languages, carry evidence of the original tones of both their constituents, or does a compound, like a monomorphemic word, have just one tone? What happens to tones when suffixes are added? In Tiwa, where we understand the tonal system best, some suffixes seem to leave the tone of the word unchanged, but other suffixes may not. The examples shown in Table 2 include a number of compounds, and also a number of words with a suffixed *-o*, the locative case marker, or *-na*, the dative marker. None of these words shows any sign of having more than one tone, and the locative and dative case markers receive their pitch from the tone that spreads from earlier syllables. These case markers seem to have no influence of their own on the tone contour. Whether that is true of all suffixes, we do not know. The influence of suffixes on tone has hardly even been thought about in the other tone languages. Much work is still needed to understand the full workings of the tone system in the individual contemporary languages, to say nothing about attempts to refine the reconstruction.

Finally, since Garó lacks the tones of the other languages, we must wonder which pattern is older, tones or the contrastive glottal stop. Four languages have tone and only one does not, so the majority rule might suggest that Garó has lost an earlier tone contrast, preserving only the associated glottal stop. Duanmu (1992), however, has advanced an interesting argument in favor of Garó being a pre-tonal, rather than a post-tonal, language. We need to know more about all the languages before we can have confidence about the history of any of them.

We believe that the question of whether the Garó glottal stop is cognate to the tone distinction of the related languages is now settled, yet so many questions remain that have no fear of being put out of work.

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