The Problem of the Sixth Tone in Thai

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It is probably safe to say that most analysts of the Thai tonal system have preferred to describe that system in terms of five phonemic tones: high, mid, low, falling, and rising (for example, Haas 1964, Abramson 1962, Brown 1967). However, some (Noss 1964, and others) have proposed the existence of a sixth tone that (following Noss) may be transcribed /~/. This additional tone is comparatively rare, and it is very like the high tone; but it stands in clear contrast to it, for this rare high tone never terminates in glottal constriction or closure in the way its more common counterpart does. In fact, there are several cases in which the glottalized tone and the unglottalized stand in clear minimal contrast; for example, [*chán?*] (transcribed phonemically as /*chán*/ 'shelf') versus [*chán*] (phonemically /*chān*/) 'I, me', [*kháw?*] 'trace, image' versus [*kháw*] 'he, she, they', [*náa?*] 'mother's younger sibling' versus [*náa*], a variant of the desired-response particle /*ná*/.

I believe that Noss (1964) was the first—at least the first in print—to claim the existence of this extra tone; and since then, so far as I know, no one has attempted to refute his claim or to come up with an alternative explanation for the phenomena in question. In any event, the purpose of this paper is to show that contrasts of the type illustrated above may be accounted for without recourse to a hypothetical sixth tone. Instead, they can be explained in terms of the contrasting behavior of the terminal glottal in two different lexical-class contexts in the language: one, the context of mainstream lexical forms; the other, that of certain peripheral lexical classes.

Before I proceed with my discussion of the lexically conditioned behavior of the terminal glottal, however, I must point out that the above-mentioned two types of high-tone forms are not the only cases where presence versus absence of a terminal glottal gives rise to phonemic contrast. In fact, the same type of contrast occurs with falling-tone forms. Compare, for example, [*thôo?*] 'to be obvious' and [*thôo*] an exclamative of dismay, [*nâa?*] 'face' and [*nâa*] a variant of the desired-response particle /*ná*/, [*sîi?*] 'rib' and [*sîi*] a variant of the expectable-response particle /*sî*/.

Now, when one compares the glottal-nonglottal contrast in the context of the two types of tones, the high and the falling, it becomes apparent that the patterns of contrast are almost exactly parallel. In both types of

tones, the usual pattern in the language is for forms occurring in prepause position and ending in a long vowel or sonorant to terminate with glottal constriction or closure; and in both cases there are a few forms, all belonging to peripheral lexical classes, where the expected terminal glottal does not appear.

In view of the clear parallelism here, it makes sense to assume that in each case (whether with high or falling tone) the same kind of phonological process is taking place. Thus, if presence versus absence of the glottal proves the existence of two high tones, it must likewise prove the existence of two falling tones. Therefore, there is not just one tone to be added to the usual five, but two. This seems a little excessive. Not only does it appear counterintuitive (to me, at least), but it involves a multiplication of linguistic entities (two extra tones) when only one phonetic contrast (presence versus absence of the glottal) exists. It would seem preferable, therefore, to deal with both cases of contrast in terms of the behavior of terminal glottal stop, not in terms of additional tones.

If we then examine the behavior of the glottal, it becomes rather clear that forms belonging to the lexical mainstream of the language (that is, nouns, verbs, adjectives, and so on) differ significantly from forms belonging to certain peripheral lexical classes—namely sentence particles, exclamatives, and a few of the personal pronouns. To demonstrate this claim, I shall, therefore, summarize the relevant features of the occurrence of the terminal glottal both in mainstream and in peripheral-class lexical contexts. And in doing so, I shall orient my comments in terms of two types of syllables: those that have a terminal short vowel (with or without the glottal), which I will designate as TSV syllables, and those having a terminal long vowel or sonorant, designated as TLV/S syllables.

Mainstream patterns of terminal glottal occurrence may be summarized as follows:

When TSV syllables occur with normal stress (that is, when they do not have reduced or minimal stress), they will terminate in a clear, abrupt glottal closure, as in [*sàʔ´phŏmˀ*] 'to shampoo the hair', [*khɔ́ʔ´pratuuˀ*] 'to knock on the door', [*tìʔ´tian´*] 'to criticize', [*ŋuu´dùʔˀ*] 'vicious snake', [*thuráʔˀ*] 'business, errand'. However, when such syllables occur with minimal stress, they have no terminal glottal, as in [*ca kin´*] 'will eat', [*sabaay´*] 'to be well', [*kulàap ˀ*] 'rose', [*săntisùk ˀ*] 'peace', [*bɔrísùt ˀ*] 'to be pure', [*thurákìt ˀ*] 'business'. Note, further, that minimally stressed forms may become normally stressed when they occur in citation form or are pronounced with a somewhat artificial reading pronunciation, as in [*càʔ´kin´*] 'will eat', [*kùʔ´làapˀ*] 'rose'. And they will also become normally stressed when they occur as the final syllable in polysyllabic words and therefore bear the usual word-final stress, as in [*săntìʔ ˀ*], [*thuráʔ ˀ*].

When TLV/S syllables occur in prepause position and with high or falling tone, they will ordinarily terminate with glottal closure or constriction. Note, however, that glottalization is less prominent in TLV/S

syllables than in TSV. Furthermore, TLV/S syllables with falling tone are even less clearly glottalized than those with high tone. Nevertheless, it is clear that glottalization does occur rather consistently with both tones when they appear in prepause position. Examples: [*sú͡u lɛ́ɛ́w7*] 'bought already'; [*lɛ́ɛ́w sú͡u7*] 'then bought'; [*bâan mɛ̂ɛ̂7*] 'mother's house'; [*mɛ̂ɛ̂ bâan7*] 'housewife'. But compare other tones that have no glottal in prepause position: [*sú͡u mɛɛw*] 'bought a cat'; [*lɛ́ɛ́w thǔ͡u*] 'then held'; [*mɛ̂ɛ̂ ʔàan*] 'mother reads'.

We can say, then, that according to mainstream patterns, terminal glottal occurs predictably following normally stressed TSV syllables and following high or falling-tone TLV/S syllables in prepause position. But the pattern with certain peripheral lexical classes is quite different.

Here we find, first of all, that the majority of peripheral forms occur without a terminal glottal in those environments where mainstream forms would have one; for example, [*khá*] question form of the polite particles used by females; [*ʔé*] exclamative of surprise or dismay; [*náa*] particle variant expressing begging, pleading, or wondering; [*wáay*] exclamative of fright, dismay; [*chán*] 'I, me'; [*sîi*] particle variant expressing urging, [*thôo*] exclamative of bafflement or dismay. And note that unglottalized forms such as these never, under any circumstances, appear with the glottal—regardless of whether they are stressed or unstressed, medial or prepause.

At the same time, however, we find that a fair number of peripheral forms do in fact occur with a terminal glottal, much as mainstream forms do; for example, [*lɛ̀ʔ*] sole alternative particle; [*hɔ́yʔ*] 'hey!'; [*khâaʔ*] 'I, me' (speaking to inferior). Such occurrences will then, naturally enough, give rise to a phonemic contrast between peripheral forms that have the terminal glottal and those that do not; for example, [*háʔ*] informal polite particle, male speaking versus [*há*] question form of the informal polite particle, female speaking; and [*khâaʔ*] 'I, me' versus [*khâa*] lengthened variant of */khâ/* formal and polite particle, female speaking.

So the fact of glottal-nonglottal contrast between differing peripheral forms is clear; but certain details as to glottal-nonglottal occurrences are worth further consideration. First, then, let us consider the possibilities and frequencies of occurrence of various types of glottal and nonglottal forms as set forth in figure A. Here information is organized to show TSV syllable contexts in the upper portion of the chart and TLV/S in the lower, each portion being further differentiated in terms of tonal contexts. Vertical columns, then, reflect possibilities of occurrence with different lexical classes. Thus, the first three columns cover the three peripheral classes: sentence particles (S Part), exclamatives (Exclam), and personal pronouns (P Pron). A fourth column labeled generalized (Gen) combines occurrence information concerning the three lexical classes and condenses it into one column. And a fifth column summarizes mainstream occurrence patterns, here set forth for the sake of comparison. Each column is then divided into two subcolumns, the one on the left reflecting occurrences of the terminal

glottal and set forth under the heading '?', and the one on the right reflecting occurrences of terminal nonglottal under the heading 'ø'.

In the body of the chart, the numerals indicate the number of forms of each type that I have succeeded in collecting in a first-approximation inventory—the quantities being based on a fairly complete count of Thai particles and variants and of personal pronouns, and a more rough-and-ready count of exclamatives. (For a listing of forms in my inventory, see appendix.)

Figure A. Possibilities and Frequencies of Glottal and Nonglottal Occurrence

Syllable Type	Tonal Context	Peripheral Occurrences								Mainstream Occurrences	
		S Part		*Exclam*		*P Pron*		*Gen*			
		?	ø	?	ø	?	ø	?	ø	?	ø
TSV	Low	3						3		[++]	
	Mid	3	(1)					3	(1)		
	High	5	11	2	5			7	16	[++]	
	Falling	4	9					4	9		
	Rising		1						1		
TLV/S	Low		[2]		[2]		[1]				[++]
	Mid		[5]		[4]		[14]				[++]
	High		6	3	13	2	4	5	23	[++]	
	Falling	2	2		6	3		5	8		
	Rising		[4]		[4]		[1]				[++]

In figure A, the double-plus sign indicates that the number of occurrences of the type in question is indefinitely large. Square brackets indicate that a given occurrence is the only permissible alternative, and, therefore, the figures are not relevant with respect to the issue of contrast. Parentheses indicate that the occurrence in question reflects the use of a limited number of speakers.

On the basis of the information provided in figure A, we can make the following general observations:

1. Peripheral forms show a contrast between terminal glottal and nonglottal forms where mainstream forms show none.
2. Peripheral forms allow terminal nonglottal in several contexts where mainstream forms do not, such as with TSV high-tone forms and TLV/S high- and falling-tone forms.
3. Peripheral TSV forms occur on all five tones whereas mainstream forms of this type ordinarily occur only on low tone or high, or else on mid tone in nonfinal minimally stressed syllables.

4. Peripheral forms show a contrast between terminal glottal and nonglottal only in the context of high or falling tones.
5. Terminal nonglottal peripheral forms occur much more frequently than glottal peripheral forms. (Note that if we exclude the figures in square brackets, where the issue of contrast is irrelevant, we find that there are fifty-eight nonglottal occurrences to twenty-seven glottal, or more than two to one. And if we include only the high- and falling-tone forms, which are the ones most relevant for our purpose, the figures are fifty-six to twenty-one, or nearly three to one.)
6. Peripheral nonglottal TSV forms are almost entirely restricted to the context of high and falling tones. Exceptions are the mid-tone form */si/*, which occurs in the speech of some speakers but not others, and the rising-tone form */lɜ̌/*, which is obviously derived from the long-vowel form */lɜ̌ə/*.
7. There are no TSV personal pronoun forms.
8. TSV exclamatives occur only with high tone.
9. The sentence particle inventory includes no TLV/S glottalized high-tone forms.
10. The exclamative inventory includes no glottalized falling-tone forms.
11. The personal pronoun inventory includes no unglottalized falling-tone forms.

Further light will be shed on some of these generalizations in the discussion below; but on the basis of the above information, we can see two rather striking facts: one, that peripheral forms behave very unlike mainstream forms in many respects; and two, that the three peripheral classes seem to differ significantly from each other—and it seems unlikely that all the differences are simply due to the accidental limitations of a small inventory.

Now let us take a closer look at some of the distinctive characteristics of each of the three peripheral classes and see how these characteristics may bear upon the issue of glottalization.

Sentence Particles. These are distinctive, first of all, in that they ordinarily occur unstressed even in prepause position. They may in fact occur stressed; but whether stressed or unstressed, the distinction between glottal and nonglottal remains. Mainstream forms, on the other hand, will appear stressed in prepause position; and in such occurrences the glottal will automatically appear in TSV and in relevant TLV/S contexts.

Sentence particles are also distinctive with respect to certain subphonemic values that are associated with tones, and these seem to be conditioned by presence or absence of the glottal.

High tone. Apart from the fact that they occur with weak stress, glottalized TSV high tones are pronounced much like their mainstream counterparts. Unglottalized TSV high tones, however, tend to trail upward (though they do not always do so), while mainstream forms tend to be more level. And TLV/S high tones—all of them unglottalized—are usually pronounced with fairly level pitch, while mainstream forms occurring in prepause position often trail upward, or upward, and then down. On the other hand, stressed TLV/S high tones are usually pronounced with an exaggerated up-down contour.

Falling tones. All falling tones are pronounced with considerably lowered pitch when unstressed. That is, the drop in pitch begins below the mid-tone level. But stressed low-tone forms drop in pitch from the high-tone level or higher in much the same manner as with mainstream forms. Glottalized falling-tone forms usually have a rather weak glottal, the one exception being the proximate-reference particle /*nîa?*/.

Other tones. Low, mid, and rising tones are usually pronounced much like their mainstream counterparts.

On the basis of the above, we can say that sentence particles have tones readily differentiated in terms of the usual five tones that mark mainstream forms. It appears, however, that absence of glottalization seems to condition minor, subphonemic changes in the pronunciation of high and falling tones; but these changes mostly do not occur when a given particle is stressed.

One further characteristic of sentence particles is also worth noting—the fact that a large number of the glottalized forms seem to have been derived from other forms by a process of reduction. Thus, for example, /*há?*/ (informal polite form, male speaking) seems to be derived from /*khráp*/ (formal polite form, male speaking); and /*la?*/ and /*lá?*/ (turning point reached) evidently come from /*lɛ́ɛw*/ 'already' (pronounced [*lɛ́ɛw?*]); and /*thə̀?*/, /*thə?*/ and /*thə́?*/ from /*thə̀ət*/; *nâ?*/ (nonproximate reference) from /*nân*/ 'that, that one' (pronounced [*nân?*]); /*nî?*/ (proximate reference) from /*nîi*/ 'this, this one' (pronounced [*nîi?*]); /*nîa?*/ (proximate reference) from /*nîi*/ 'this' plus /*nân*/ 'that'. In each of these cases, the glottal of the particle form evidently reflects the terminal stop or glottal of the form from which it is derived. Not all sentence-particle terminal glottals can be accounted for in this way; but most can, and such examples serve to reinforce the notion that terminal glottalization is not fully typical of particle forms.

Exclamatives. Apart from the fact that exclamatives possess greater possibilities of intonation than mainstream forms, their tone, vowel-length, and stress features are much like those of the latter. Note, however, that all forms with terminal glottal signal some sort of abruptness or sense of the speaker's being brought up short; for example, /*?á?*/ 'whoa!', /*?úy?*/ 'woops', /*hə́əy?*/ or /*hə́y?*/ 'hey!', 'whoa!'. Apart from these cases, all exclamatives, whether TSV or TLV/S forms, terminate with a nonglottal. In this respect, then, they are very unlike mainstream forms.

Personal pronouns. These pattern somewhat differently from other peripheral forms in that most members of this class are exactly like mainstream forms in every respect. The only exceptions are the four pronouns, */chán/*, */dichán/*, */kháw/*, and */phǒm/*. Furthermore, these forms are all alike in that they seem to reflect a special phonological process in which an underlying rising tone shifts to high.

Actually, this high-to-rising tone pattern is a reflection of a more general, though rare, pattern in which certain minimally stressed and very commonly used forms shift from an underlying rising tone to a high tone in the context of ordinary rapid speech. For example, */khɔ̌ŋ khray/* 'whose, of whom' becomes */khɔ́ŋ khray/*, and */mɯ̌ankan/* 'likewise, same' becomes */mɯ́ankan/*. Typically this process affects syllables followed by another syllable that is stressed, there being no intervening pause; but pronoun forms of the type under consideration differ from these other derived high-tone forms in that the former, like sentence particles, frequently occur unstressed even in prepause position. Furthermore, the forms */chán/*, */dichán/*, and */kháw/* retain the high tone without the expectable terminal glottal even when they are stressed.

Professor Gedney has suggested (personal communication) that the absence of glottalization in forms of the type just described is a function of weak stress. And this is an attractive hypothesis, for it would allow us to tie in this unusual phenomenon with more general mainstream rules involving absence of stress. But it seems clear that an explanation of this sort will work only for the form */phǒm/* and not for the other three high-tone pronouns, for the latter remain unglottalized even in the context of stress, for example, [*khɔ̌ŋ chán*´! *mây chây khɔ̌ŋ kháw*]: 'It's *mine*, not his!' In fact, I am pretty sure that the forms */chán/*, */dichán/*, and */kháw/* will rarely, if ever, be pronounced with rising tone in the normal flow of speech even when stressed, the rising tone forms being reserved for a somewhat artificial reading pronunciation or perhaps for isolated citation contexts. So the underlying rising tone in such cases has become a sort of "semi-relic"—not quite obsolete, but no longer a part of normal spoken language. It appears, therefore, that these three forms have taken on the nonglottal characteristics of peripheral forms; but the form */phǒm/* has only gone part way in this peripheralization process, for it shifts to high tone only under weak stress, and even then not invariably. Other personal pronoun forms, however, evidently behave exactly like mainstream forms.

In sum, then, we can say that peripheral forms have varying characteristics, and that there are gaps and ambiguities in their patterned behavior. Nevertheless, it is clear that peripheral occurrence patterns allow for the absence of a terminal glottal in phonological environments where mainstream forms require its occurrence; and it is equally clear that peripheral patterns show evidence of a phonemic contrast between presence and absence of the glottal that cannot be found elsewhere in the language. In short, the dif-

ferences between mainstream and peripheral patterns are obvious and inescapable.

It is conceivable, nevertheless, that these differences might still be explainable on strictly phonological grounds—that is, by means of across-the-board phonological rules that exclude any appeal to lexical class as a conditioning factor. And if we are to do this, it would seem that we must either state the phonological conditions under which an underlying form with no glottal acquires one or those under which an underlying glottal disappears. Let us then examine each alternative and see what emerges.

Rules for the appearance of glottal stop would, I think, have to look something like the following:

1. Syllable-final short vowel is followed by a terminal glottal when it occurs stressed or prepause, unless the syllable has tone 6 or 7 (that is, unglottalized high or falling tone).
2. Syllable-final long vowel or sonorant consonant in syllables having high or falling tone (but not those having tone 6 or 7) will be followed by a terminal glottal when it occurs in prepause position.

Now, if we apply these rules, it becomes clear that rule 1 allows the necessary contrast between forms such as [*há*], female-speech particle, and [*há?*], male speech particle; for we could assume that [*há*] has the sixth tone (which, following Noss, could be transcribed /*hā*/), and it would, therefore, be excluded from the rule requiring the addition of a terminal glottal. Similarly, the same rule would allow for the contrast between the desired-response particle variant [*nâ*] and the nonproximate-reference particle [*nâ?*], for the former would be assumed to have the seventh tone (and might be transcribed /*nà ˆ*/).

And rule 2 would allow for contrasts such as that between the desired-response particle variant [*nâa*] (transcribed /*nàâ*/) and the form [nâa?] (/nâa/) 'face', or that between another particle variant [*náa*] (/*nāa*/) and [*náa?*] (/*náa*/) 'mother's younger sibling'.

Furthermore, these rules reflect (to me) the intuitively convincing sense that the glottal produced under rule 1 really *is* a feature of the stressed short vowel, and that produced under rule 2 really *is* a feature of the tone. But in order for this rule to work in all contexts, one has been forced to postulate two extra tones—tones whose sole raison d'être is to prevent the more general rule from allowing glottal stop to appear in certain peripheral forms. This seems to me too great a price to pay for adhering to strictly phonological rules to account for what actually takes place.

If, on the other hand, we reverse our approach and set up phonological rules for the disappearance of the underlying glottal, the following rule would suffice:

3. Syllable-final glottal disappears following an unstressed short vowel or following a long vowel or a sonorant when any of these appear in nonpause position.

Now this rule has the virtue of handling glottal-nonglottal contrast without recourse to the postulation of extra tones. Thus forms like */sàʔ/* 'to shampoo', */háʔ/* (male speaker), */nâaʔ/* 'face', and */náaʔ/* 'mother's younger sibling' would simply be assumed to have an underlying glottal (which disappears under certain conditions), whereas forms like */há/* (female speaker), and the desired-response particle variants */nâa/* and */náa/* do not. But on the other hand, this rule does violence to the intuitive sense (shared, I suspect, by most scholars) that in most cases throughout the language the glottal really *is* a feature of the short vowel or of the falling or high tone. Once more, it would seem, we have carried our search for strict phonological rules too far.

A third alternative would be to set up rules going in opposite directions. Thus, for example, we could say that TSV forms lose an underlying glottal (as in rule 1), but that TLV/S forms acquire one (as in rule 3). In fact, this seems like rather a nice compromise in some ways. But it still does not account for the absence of the glottal in the case of many peripheral-class TLV/S forms.

In short, we cannot set up across-the-board phonological rules for the occurrence of glottal stop as a subordinate feature of vowel length or tone unless we are willing to postulate two additional tones. And we cannot insist that its appearance necessarily reflects the presence of an underlying phonemic glottal unless we abandon the notion that the stop is, at least in part, a feature of the short vowel and of the high and falling tones.

If, however, we are willing to recognize the fact that mainstream forms behave differently from certain peripheral forms, and allow for the possibility of different—even conflicting—phonological rules between different classes of forms, our problem melts away. The resulting rules, then, would look something like the following:

4. Mainstream rules:
   a. Syllable-final short vowel is followed by a terminal glottal when it occurs stressed or prepause.
   b. Syllable-final long vowel or sonorant in a syllable having high or falling tone will be followed by a terminal glottal when it occurs prepause.
5. Peripheral rule: Syllable-final glottal disappears in nonpause position. (This rule assumes, then, that forms which allow the glottal have an underlying glottal, whereas other forms do not.)

If this solution causes raised eyebrows, it might be worth noting that the phonological differences between mainstream and peripheral forms are,

in any case, something that must be recognized and described. In fact, a careful examination of sentence particles and exclamatives would certainly reveal other phonological features other than those described above—features not necessarily related to the behavior of the glottal, but ones differentiating these classes from mainstream forms in yet other ways. And these special features are necessarily a part of our definition of these lexical classes.

Nor should it surprise us that such lexical classes should have such distinctive phonological features. Even in English, for example, we find certain unique phonological phenomena that characterize the peripheral class of exclamatives; for example, the nasalization following initial /h/ as in 'huh!', 'huh?', but not in 'ha!', and the appearance of a seemingly phonemic glottal in forms such as the negative expression 'hu-uh' [*hə?ə*] or the mild alarm exclamative 'oh-oh' [*?ɔ?ɔ*].

Obviously, then, peripheral forms in a given language may be quite different from mainstream forms in their phonological characteristics and behavior. And given this difference, it should not surprise us to find that peripheral forms will not always fit into the phonological rules that govern mainstream behavior. In other words, lexical class may indeed condition phonological behavior; and if we insist on strict phonological conditioning in the rules we set up, we run the risk of distorting the facts.

Appendix: A Working Inventory of Peripheral-Class Glottal and Nonglottal Forms

Below are listed the glottalized and nonglottalized peripheral-class forms that have formed the data base for this paper. The information here is arranged in somewhat the same fashion as that in figure A, above. That is, the forms are arranged in terms of syllable type (TSV or TLV/S), tone, and glottalization; but actual forms are listed rather than mere numbers. For the sake of brevity, glosses are not provided. Duplicated forms (such as /*la?*/ and /*la?*/) are homonyms. Note, too, that variants of given particles are here listed as separate forms. Thus, /*lè?*/ and /*lé?*/, intonational variants of /*lè?*/, are both included in the listing, as are the six variants of:

/*ná*/ /*nâ*/ /*náa*/ /*nâa*/ /*naa*/ /*nàa*/

Sentence particles:

TSV forms	**Glottalized**	**Nonglottalized**
Low tone	*là? lè? thà?*	
Mid	*la? la? thə?*	*si*
High	*há? lá? lá? lé? thó?*	*cá há khá wá yá hɛ́ lɔ́ ná nɔ́ ní sí*

Falling	*nâ? nâ? nî? nî?*	*câ hâ khâ wâ yâ lâ nâ nê sî*
Rising		*lǎ*

TLV/S forms

Low tone		*nàa wàa*
Mid		*maŋ naa ŋay sii waa*
High		*lə́ə máŋ máy náa nɔ́ɔ wáa*
Falling	*nîa? nîi?*	*nâa sîi*
Rising		*căa khăa wăa lǎə nǎɔ*

Exclamatives:

TSV forms	**Glottalized**	**Nonglottalized**
High tone	*ʔá?*	*ʔé chá chó há thó*

TLV/S forms

Low tone		*hèɛ thòɔ*
Mid		*ʔee ʔəə ʔôohoo ʔooy*
High	*ʔúy? hə́y? hə́əy?*	*ʔáay ʔée ʔə́ə ʔôohóo ʔóoy ʔúy háa hə́ə hə́əy thúy wáay wúu wúy*
Falling		*ʔâaw ʔôo ʔɔ̂ɔ ʔɔ̂ɔy nêɛ thôo*
Rising		*ʔɔ̌ɔ ʔɔ̌y hăa mĕɛ*

Personal Pronouns:

TLV/S forms	**Glottalized**	**Nonglottalized**
Low tone		*lɔ̀n*
Mid		*ʔay ʔeŋ kɛɛ khun kuu man mɯŋ naay raw riam thəə tua yoom yuu*
High	*ʔúa? lɯ́ɯ?*	*chán dichán kháw phóm*
Falling	*câaw? khâa? thân?*	
Rising		*phǒm*

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