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The segmental and tonal structure of verb inflection in Babanki

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In this study we provide a comprehensive phonological and morphological overview of the complex tense-aspect-mood (TAM) system of Babanki, a Grassfields Bantu language of Cameroon. Our emphasis is on the competing inflectional tonal melodies that are assigned to the verb stem. These melodies are determined not only by the multiple past and future tenses, perfective vs. progressive aspect, and indicative vs. imperative, subjunctive, and conditional moods, but also affirmative vs. negative and "conjoint" (CJ) vs. "disjoint" (DJ) verbal marking, which we show to be more thoroughgoing than the better known cases in Eastern and Southern Bantu. The paper concludes with a ranking of the six assigned tonal melodies and fourteen appendices providing all of the relevant tonal paradigms.

Keywords: tonal melodies; grammatical tone; verb inflection; tonal paradigms; conjoint; disjoint

1 Introduction

The purpose of this paper is to provide a description of tense-aspect-mood marking in Babanki, a Grassfields Bantu language of the Ring subgroup spoken in Western Cameroon (Hyman 1980; Akumbu & Chibaka 2012). Similar to related Grassfields Bantu languages, we will show that Babanki distinguishes multiple past and future tenses as well as a progressive/non-progressive aspect distinction. Particularly striking is the discovery of a thoroughgoing conjoint-disjoint contrast similar to, but more pervasive than, the CJ/DJ distinctions which have been extensively documented in Narrow Bantu (see the papers in van der Wal & Hyman 2017 and references cited therein). The various tense aspect markers (TAMs) are expressed through an extensive system of multiple exponence, which may involve pre- and/or post-verbal particles, prefixes and suffixes, and tone. In the following sections we will first present preliminary aspects of Babanki morphology and tonology (§2), then describe the seven indicative tenses as they appear in the perfective (§3), the progressive (§4), and their corresponding negatives (§5). We then turn to the imperative, subjunctive, and conditional moods, first presenting their affirmative forms (§6), then the corresponding negative forms (§7). In our conclusion (§8) we present an analysis integrating all of the relevant morpho-syntactic features seen to determine the tonal patterns in the preceding sections.

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2 Preliminaries

As indicated, Babanki is a member of the Ring subgroup of Grassfields Bantu, with close relatives such as Kom, Bum and Men in Central Ring, Aghem and Isu in Western Ring, and Lamnso and Babungo in Eastern Ring, among others. Previous work on Babanki includes studies by Hyman (1979a, 1980), Mutaka and Chie (2006), Akumbu (2011, 2015, 2016), Akumbu & Chibaka (2012) and Chie (2014). Much of this work has centered around the morphology and tone of elements within the noun phrase, as Babanki has a full Bantoid-like noun class system. However, comparative lexical work has included verbs and especially the study of the verb extension system (Akumbu 2015; Hyman 2018). Only recently have we begun to look systematically at the verb inflection system, which we report on here. The current materials were compiled by the first author, a native speaker of Kejom Ketinguh (Babanki Tungo) dialect, which differs from the Kejom Keku (Big Babanki) dialect in only minor ways.[1] In order to facilitate the discussion of the tense-aspect system, a few preliminaries are in order.

First, since we will present sentences with both a subject and an object, it is important to note that Babanki is an SVO language, where the object, whether nominal or pronominal, follows the verb. Second, as seen in the following table, there is a subject-verb agreement marker (SM) which differs from subject pronouns (Pro) and is most visible in classes which have a Cə shape, since the schwa that marks other classes may completely fuse with a neighboring vowel.[2]

Table 1: Babanki subject pronouns and concords

class	Pro	SM	class	Pro	SM
1	ɣə̀	Ø	7	ká	ká
2	və́	ə́	8	və́	ə́
3	ghə́	ə́	9	zə̀	Ø
5	zə́	ə́	10	sə́	sə́
6	ghə́	ə́	13	tə́	tə́
6a	mə̀	Ø	19	fə́	fə́

An overt class 19 subject concord marker (SM) *fə́* is seen in the following example, agreeing with *fənyín* 'bird':

(1)	fə̀-nyín	fə́	n-lám	lí	kə̀-báyn	'A bird cooked fufu.'
	19-bird	19.PFV.P3	N-cook	P3	7-fufu	

As will be further discussed when we consider the different TAMs, in the above disjoint (DJ) form, the distant past (P3) is marked by a schwa which fuses with *fə́,* as well as by the prefix *n-* and the post-verbal particle *lí*. As we will see, a perfective morpheme /ə́/ also occurs between the SM and the verb, but fuses with *fə́* as well. In other tenses preverbal particles can have the shape CV, e.g. general past (P2) /tə/. While (1) clearly shows a SM, we will generally cite sentences where the subject is the name *búŋ* 'Bung' belonging to class 1, which does not have a SM.

[1] Only a few lexical items are different in the two dialects (examples to the left are from Kejom Keku while those to the right are from Kejom Ketinguh): *fə̀mváŋ vs. túbù* 'jigger'; *kə̀bwín vs. jì 'road'; wúŋ vs. fə̀làm* 'fishing net'. There are also a few sound differences: *kə̀bò**n**ə̀ vs. kə̀bò**l**ə̀* 'calabash'; *kə̀b**w**ə́' vs. kə̀b**y**ə́'* 'half'; *wàn vs. wà**y**n* 'child'; *kə̀n**sh**ɨ̀f vs. kə̀n**fy**ɨ̀f* 'blindness'.

[2] We have indicated the standard Bantu numbering since the noun classes that exist in Babanki correspond to those reconstructed in Proto-Bantu (Meeussen 1967). In transcribing Babanki forms, we recognize 26 consonants [b, t, d, k, g, ʔ, m, n, ny, ŋ, f, v, s, z, sh, zh, gh, pf, bv, ts, dz, ch, j, l, w, and y] and 8 vowels [i, ɨ, ʉ, u, e, o, ə, a]. Vowel length is not underlyingly contrastive in Babanki. We follow IPA transcription except that [ʃ, ʒ, ɲ, ɣ, j] are transcribed [sh, zh, ny, gh y], respectively, and [ʉ] represents IPA [ɯ].

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Turning to the structure of the verb, the verb root may have the shape CV or CVC, while the verb stem can be CV, CVC, CVCV, or CVCCV. The bisyllabic stem forms derive diachronically from a root + suffix, which may be either identifiable as a "verb extension" (e.g. causative, pluractional), or can be lexically frozen on the root. In Table 2, the verbs cited in our study are presented in their root, stem, infinitive, and imperative forms.

Table 2: Babanki verbs cited in this study

root tone	root	stem	infinitive	imperative	gloss	stem shape
H	zhí	zhí	ə́-↓zhí	zhí	'eat'	CV
H	lám	lám	ə́-↓lám	lám	'cook'	CVC
H	shí	shítə́	ə́-↓shítə́	shítə́	'collect'	CVCV
H	sə́ŋ	sə́ŋtə́	ə́-↓sə́ŋtə́	sə́ŋtə́	'sift'	CVCCV
L	lè	lè	ə́-lè	lèé	'lose'	CV
L	kùm	kùm	ə́-kùm	kùmə́	'touch'	CVC
L	shì	shìsə̀	ə́-shìsə̀	shìsə́	'remove'	CVCV
L	lɨ̀m	lɨ̀msə̀	ə́-lɨ̀msə̀	lɨ̀msə́	'heat'	CVCCV

As seen, verb roots contrast high (H) and low (L) tone, marked with an acute (´) vs. grave (`) accent. Suffixes are underlyingly toneless and take the same tone as the root unless a conflicting suffix tone is assigned by a specific TAM. In the examples *sə́ŋtə́* 'sift' has the pluractional suffix *-tə* (cf. *sə́ŋ* 'sift') while *lɨ̀msə̀* 'heat' has the causative suffix *-sə* (cf. *lɨ̀m* 'be hot'). Analyzing these (and more complex) forms requires further discussion of the tone system. The underlying /H/ and /L/ are subject to various tone rules which produce additional surface contrasts. The infinitive prefix *ə́-* in Table 2 causes a H tone root to be downstepped, marked by the down arrow (↓). We attribute this to a floating L which follows the schwa, i.e. /ə́ `/, and which also prevents the H of the prefix from spreading onto a L verb root. In addition, there is a third, derived surface-contrastive mid (M) pitch height, marked by a macron (¯). Falling HL (ˆ) and rising LH (ˇ) tones also occur, but are much more restricted. In the data to be presented they only occur on preverbal TAM particles and not on the verb stem itself.[3] M tones derive from two sources (cf. Hyman 1979; Akumbu 2019), illustrated in the following examples involving the H and L tone verb roots /lám/ 'cook' and /kùm/ 'touch':

(2) a. lám kə̄báyn 'cook fufu!' (imperative)
b. kùmə́ kə̄báyn 'touch fufu!'

(3) a. Búŋ tə̀ làm kə̄báyn 'Bung cooked fufu.' (P2 conjoint)
b. Búŋ tə̀ kùm kə̀báyn 'Bung touched fufu.'

In (2) we see that a noun class prefix, here /kə̀-/, raises to M between two H tones, the first of which is a H suffix on the verb (see below). As was also seen in Table 2, the L tone verb in (2b) has acquired an epenthetic schwa to avoid the rising tone that would otherwise result from combining the root L with the H suffix tone of the imperative (**kǔm*). Such register raising of L to M occurs only in TAMs which assign a H suffix to the verb.

The second source seen in (3a) owes its existence to a rule of L tone spreading (LTS), here applying from the P2 TAM marker /tə̀/ onto the H verb root /lám/ 'cook'. Since the language does not tolerate rising tones on lexical morphemes, the result in this case is to shift the H onto the prefix, producing an intermediate HL falling tone (*làm kə̂báyn*). The resulting L-HL-H sequence is then converted to L-M-H (cf. Hyman

[3] The only time a verb can have a HL tone is when it occurs clause-finally in certain non-indicative moods such as the hortative, e.g. *yúwù kûm* 'let's touch!' (see §6). Contour tones are also rare on nouns, occurring only on the first stem syllable, mostly limited to borrowings, lexicalized compounds, and reduplications, e.g. *lâm* 'lamp', *sǒ* 'saw', *ànkǔnyàm* 'pig', *bʉ̂bʉ̀* 'deaf (mute) person', *fə̀ndzǒnzdò* 'bird (sp.)'.

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1979; Akumbu 2019). Although beyond the scope of this paper, whether LTS will apply onto a monosyllabic verb depends on what follows it:

(4) a. *LTS applies*

with object:	Búŋ tə̀ làm kə̄báyn	'Bung cooked the fufu.'
	Búŋ tə̀ làm kə̀tɔ̀ʔ	'Bung cooked the snail.'
adverbial:	Búŋ tə̀ làm nántô	'Bung cooked too much.'
preposition:	Búŋ tə̀ làm nə̀ mbə̀sə̀	'Bung cooked with soup.'
WH-question:	Búŋ tə̀ làm ghɔ́	'What did Bung eat?'

b. *LTS doesn't apply*

Multiverb:	Búŋ tə̀ lám ə̀ mè	'Bung finished cooking/cooked completely.'
Y-N question:	Búŋ tə̀ lám à	'Did Bung cook?'
Final position:	Búŋ ɔ́ tə̂ lám	'Bung cooked.'

As seen in (4a), it is only a L-H noun which becomes M-H. In other cases the H of the verb /lám/ is lost – although /ghɔ̀/ 'what' has acquired the H (cf. *Búŋ tə̀ kùm ghɔ̀* 'what did Bung touch?'). In (4b) LTS does not apply when followed either by a consecutivized verb ('cook & finish') or the yes-no question marker /à/. The last example shows that LTS also will not apply if the monosyllabic verb is final. Since the conjoint verb form cannot occur finally in a main clause affirmative (MCA), the corresponding disjoint form is cited (where the L tone P2 marker /tə̀/ becomes HL [tə̂] by H tone spreading from the preceding DJ marker /ɔ́/ – see discussion in §3). Finally, it should be noted that a bisyllabic H-H verb undergoes LTS independent of what follows, hence finally: *Búŋ ɔ́ tə̂ sə̀ŋtɔ́* 'Bung sifted'.

In the following discussion we will almost exclusively cite forms where the verb is followed by the object noun *kə̀báyn* 'fufu' (a staple food) so that we can see whether the process of LTS occurs. In the following sections we first analyze the indicative tense-aspect contrasts starting with perfective (§3), then progressive (§4), and negative (§5), and then turn to non-indicative forms in (§6, §7). We end in §8 by outlining an analysis which ranks the TAM inflectional features seen to determine the different tonal patterns in the earlier sections.

3 Perfective forms

In this section we will introduce the temporal contrasts and describe their realization in the perfective aspect. As summarized in Table 3, Babanki distinguishes four present/past and three future tenses, which we refer to as P0–P3 and F1–F3. We indicate the pre-verbal segmental tense auxiliaries which are held constant across the perfective and progressive aspects as well as in the corresponding negatives. (F2 *nè* and F3 *lù* are also consistently present in non-indicative moods.)

Table 3: Babanki tense distinctions

Tense	AUX	Approximate time period
P0	`	present, a few minutes ago
P1	yì	today
P2	tə̀	yesterday to about 2 weeks ago
P3	ə̀ N-	more than 2 weeks ago
F1	à	not longer than in a few minutes
F2	nè	later today
F3	lù	from tomorrow on

As indicated, the P1, P2, F1, F2, and F3 tenses have L tone segmental auxiliaries. P0 does not have a segmental auxiliary and P3 requires a nasal prefix on the verb. Since tone is also involved, these markers

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tell only part of the story. In addition, in the perfective aspect there is a distinction between conjoint (CJ) and disjoint (DJ) forms in all seven tenses. We schematize the analysis of MCA perfective tense marking in Table 4, where ... refers to the position of the verb stem. The tonal marking is intended to be underlying, e.g. P1 DJ /ə́ yì/ and P2 DJ /ə́ tə̀/ which are however realized [ə́ yî] and [ə́ tə̂] by H tone spreading. Examples involving all of the verbs in Table 2 can be found in Appendix 1.

Table 4: Conjoint and disjoint tense marking

Tense	Conjoint	Disjoint
P0	` ...	ə́ ... ` lí
P1	yì ...	ə́ yì ...
P2	tə̀ ...	ə́ tə̀ ...
P3	ə̀ N ... (´)	ə́ N ... ` lí
F1	à ...	ə́ à ... ´
F2	nè ...	ə́ nè ... ´
F3	lù ...	ə́ lù ... ´

Since the CJ/DJ distinction is found only in MCA perfective forms, we can refer to these directly as "conjoint" and "disjoint" or CJ and DJ. The above contrasts have all of the properties of the CJ/DJ contrast reported in Bantu, e.g. in the studies in van der Wal & Hyman (2017):[4]

(i) The DJ is used with truth value focus, either contrastively ('Bung DID eat the fufu') or when the truth value is part of the assertion (i.e. not presupposed): 'Hey, guess what? Bung ate the fufu').

(ii) The CJ is used when the truth value is presupposed, either in answer to a question 'What happened?' (answer: 'Bung ate the fufu') or when focus is on another element of the utterance. This can be in answer to a WH question: 'Who ate the fufu?', answer: 'BUNG ate the fufu'; 'What did Bung eat?', answer: 'Bung ate the FUFU'; 'What did Bung do with the fufu?', answer: 'Bung ATE the fufu'. It can also be contrastive: 'Bung ate the FUFU, not the vegetables'.

(iii) The verb can occur at the end of a MCA sentence with DJ marking; it cannot occur at the end of a MCA sentence with CJ marking (there must be something following the verb).

(iv) There is no CJ/DJ contrast in negatives or relative clauses (where the verb can occur last).

(v) As we will see in subsequent sections, non-contrastive negative and relative clause marking of P (non-future) tenses looks like the CJ marking in main clause affirmatives (where one does not expect focus marking of truth value). While this is typical of CJ/DJ languages, the future tenses are different: their marking in negatives and relative clauses looks more like the DJ in main clause affirmatives.

(vi) The DJ forms are more segmentally marked than the CJ forms. As seen in Table 4, the DJ forms all involve a H tone schwa that precedes the TAM auxiliary. P0 and P3 also have a postposed marker /`lí/.

With this established, we now turn to consider the tonal patterns associated with each cell in the complex TAM system of Babanki. For this purpose we have prepared appendices of full sentences which are color-coded for tone pattern. Although we will cite a subset of these forms in the text, readers will be referred to

[4] Although they differ in form, the Babanki CD/DJ also parallels the contrast reported in non-future tenses in Aghem, a Western Ring Grassfields Bantu language (Anderson 1979; Watters 1979), as well as in certain other non-Bantu languages (Hyman & Watters 1984). More closely related within Central Ring, Kom also has a CJ/DJ contrast, again marked by different forms, as in the general past *Ngóŋ tí jùm mēnywín* (CJ) vs. *Ngóŋ tí mēn jùm mènywīn* (DJ) 'Ngong drove away the birds' (second author, personal notes).

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the relevant appendix for more examples. For ease of reference, we present an overview of indicative TA marking with color coding of the tone patterns in Table 5.

Table 5: Summary of indicative TA marking color-coded by tone pattern on the verb

	indicative aff.			indicative neg.	
	CJ	**DJ**	**PROG**	**PERF**	**PROG**
P0	`	ə́	`	ə́ kó `	ə́ kó `
P1	yì	ə́ yî	yǐ	ə́ kó yì	ə́ kó yǐ
P2	tə̀	ə́ tə̂	tə̌	ə́ kó tə̀	ə́ kó tə̌
P3	ə̀	ə́	ə̀	ə́ kó `	ə́ kó
F1	à	á `	á	ə́ kó `	ə́ kó
F2	nè	ə́ né `	ə́ né	ə́ kó ↓né `	ə́ kó ↓né
F3	lù	ə́ lú `	ə́ lú	ə́ kó ↓lú `	ə́ kó ↓lú

Since we will consider each TA separately we will identify the tone patterns as we go. In §8, a fuller paradigm with all TAM forms is provided in Table 6 and the tone patterns identified in Table 7. For now, note that five different tone patterns have been identified, with progressive aspect (PROG) always assigning the same tone pattern to the verb, colored in green.

3.1 Conjoint forms

We start with the CJ forms, since they are segmentally and tonally simpler. Representative forms of all seven CJ tenses are provided in the first data column in Appendix 1, color-coded for tone pattern. Except for the P3, all of the cells are gray, indicating that the verb is preceded by a L auxiliary indicated above in Table 4. (The P0 auxiliary is a floating L tone.) While the L tone auxiliary has no effect on L tone roots, it causes H tone roots to become L by LTS, as in the P2 forms in (5).

(5) a. Búŋ tə̀ zhɨ̀ kə̄-báyn ‘Bung ate the fufu.’
Bung P2 eat 7-fufu
b. Búŋ tə̀ làm kə̄-báyn ‘Bung cooked the fufu.’
Bung P2 cook 7-fufu
c. Búŋ tə̀ sə̀ŋtə́ kə̀-báyn ‘Bung sifted the fufu.’
Bung P2 sift 7-fufu

The L of P2 /tə/ spreads and delinks the underlying root H of /zhí/ ‘eat’, /lám/ ‘cook’, and /sə́ŋtə/ ‘sift’.[5] In (5a,b), where the verb stems are monosyllabic, this frees the H, which then joins the L of the following class 7 noun prefix /kə̀-/ to form a HL falling tone, subsequently simplified to M (*kə̂-* → *kə̄-*). In the case of bisyllabic /sə́ŋtə/ in (5c), the H delinks on the first syllable, with the suffix *-tə́* maintaining the (spread) H tone, i.e. /sə́ŋtə/ → *sə́ŋtə́* → *sə̀ŋtə́*). Since the H of bisyllabic verbs is not reassigned to the following noun, the /kə̀-/ noun prefix remains L, as it also is after a L tone verb.

(6) a. Búŋ tə̀ lè kə̀-báyn ‘Bung lost the fufu’
Bung P2 lose 7-fufu
b. Búŋ tə̀ kùm kə̀-báyn ‘Bung touched the fufu’
Bung P2 touch 7-fufu
c. Búŋ tə̀ lɨ̀msə̀ kə̀-báyn ‘Bung heated the fufu’
Bung P2 heat 7-fufu

[5] Recall that suffixes are toneless, taking their tone from the root. As we will see, some TAMs assign a L suffixal tone that may cause a bisyllabic H root stem to be realized H-L (as in progressive forms – see §4), while other TAMs assign a H suffix tone that may cause a bisyllabic L root stem to be realized L-H (as in the P3 CJ as well as the imperatives seen in Table 2.)

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A glance at the other CJ tenses in Appendix 1 will reveal that with the exception of P3 they all share the same tone pattern. P3 is also exceptional in being the only perfective tense that requires a nasal prefix on the verb (also in the DJ). The H tone verbs undergo LTS and have the same realization as the other CJ tenses:

(7)	a.	Búŋ	à	n-zhɨ̀	kā-báyn	‘Bung ate the fufu.’
		Bung	IPFV.P3	N-eat	7-fufu	
	b.	Búŋ	à	n-làm	kā-báyn	‘Bung cooked the fufu.’
		Bung	IPFV.P3	N-cook	7-fufu	
	c.	Búŋ	à	n-sə̀ŋtə́	kà-báyn	‘Bung sifted the fufu.’
		Bung	IPFV.P3	N-sift	7-fufu	

The L tone verbs, however, show a different pattern in P3:

(8)	a.	Búŋ	à	n-lèé	kā-báyn	‘Bung lost the fufu.’
		Bung	IPFV.P3	N-lose	7-fufu	
	b.	Búŋ	à	ŋ-kùmə́	kā-báyn	‘Bung touched the fufu.’
		Bung	IPFV.P3	N-touch	7-fufu	
	c.	Búŋ	à	n-lɨ̀msə́	kā-báyn	‘Bung heated the fufu.’
		Bung	IPFV.P3	N-heat	7-fufu	

First, the monosyllabic verbs acquire a second H tone schwa syllable seen most clearly after the CVC root in (8b), while the schwa assimilates to the vowel of a CV root, as in (8a). The H tone *-ə́* also conditions the class 7 prefix /kə̀-/ to become M. Given that the L verbs show this different pattern, we have encoded the P3 CJ cell blue.

3.2 Disjoint forms

We are now ready to consider the corresponding DJ forms in the second data column of Appendix 1. These all involve a DJ marker /ə́/ occurring between the subject and the verb (which however fuses with the /á/ auxiliary in the F1). Except for the spreading of the H of this /ə́/ onto the TAM auxiliaries /yì/ and /tə̀/, yielding [yî] and [tə̂], the P1 and P2 tone patterns are the same as CJ, hence shaded grey in Appendix 1. Again we illustrate with the P2 H and L verb forms in (9) and (10), respectively.

(9)	a.	Búŋ	ə́	tə̂	zhɨ̀	kā-báyn	‘Bung ate the fufu.’
		Bung	PFV	P2	eat	7-fufu	
	b.	Búŋ	ə́	tə̂	làm	kā-báyn	‘Bung cooked the fufu.’
		Bung	PFV	P2	cook	7-fufu	
	c.	Búŋ	ə́	tə̂	sə̀ŋtə́	kà-báyn	‘Bung sifted the fufu.’
		Bung	PFV	P2	sift	7-fufu	
(10)	a.	Búŋ	ə́	tə̂	lə̀	kà-báyn	‘Bung lost the fufu.’
		Bung	PFV	P2	lose	7-fufu	
	b.	Búŋ	ə́	tə̂	kùm	kà-báyn	‘Bung touched the fufu.’
		Bung	PFV	P2	touch	7-fufu	
	c.	Búŋ	ə́	tə̂	lɨ̀msə̀	kà-báyn	‘Bung heated the fufu.’
		Bung	PFV	P2	heat	7-fufu	

Both P0 and P3 work differently from the CJ and are shaded orange. First, they both acquire a post-verbal auxiliary /`lí/, represented by the P3 DJ forms in (11) and (12).

(11)	a.	Búŋ	ə́	n-zhɨ́	↓lí	kà-báyn	‘Bung ate the fufu.’
		Bung	PFV.P3	N-eat	P3	7-fufu	

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	b.	Búŋ	ə́	n-lám	↓lí	kə̀-báyn	‘Bung cooked the fufu.’
		Bung	PFV.P3	N-cook	P3	7-fufu	
	c.	Búŋ	ə́	n-sə́ŋtə́	↓lí	kə̀-báyn	‘Bung sifted the fufu.’
		Bung	PFV.P3	N-sift	P3	7-fufu	
(12)	a.	Búŋ	ə́	n-léè	lí	kə̀-báyn	‘Bung ate the fufu.’
		Bung	PFV.P3	N-lose	P3	7-fufu	
	b.	Búŋ	ə́	ŋ-kúmə̀	lí	kə̀-báyn	‘Bung touched the fufu.’
		Bung	PFV.P3	N-touch	P3	7-fufu	
	c.	Búŋ	ə́	n-lɨ́msə̀	lí	kə̀-báyn	‘Bung heated the fufu.’
		Bung	PFV.P3	N-heat	P3	7-fufu	

In (11) we see that the verbs are realized H followed by the downstep of *↓lí*, which we interpret as triggered by a floating L tone. In (12) the H of the DJ auxiliary /ə́/ spreads through the toneless nasal prefix onto the verb, creating a HL sequence. In (12a,b) an extra mora is observed which avoids the creation of a HL falling tone on the roots: *[lê], *[kûm]. Since /`lí/ is preceded by a L tone, there is no contrastive downstep, although Babanki is subject to automatic downstep or “downdrift”. In the above forms and elsewhere where present, a nasal prefix is underlyingly toneless, realized M between H tones, otherwise L if preceded or followed by L.[6] As seen in Appendix 1, the P0 DJ forms are identical to the P3 DJ except that they lack a nasal prefix.

This leaves the future DJ tenses, which have a still different tone pattern and hence are encoded yellow. As seen in Appendix 1, the H of the DJ marker /ə́/ spreads onto the future auxiliaries /à/, /nè/, and /lù/. Rather than creating a HL falling tone, the result is that the L of these markers is delinked. As seen in the F2 DJ forms in (13), the delinked L triggers downstep on H tone verbs.[7]

(13)	a.	Búŋ	ə́	né	↓zhɨ́	kā-báyn	‘Bung will eat the fufu.’
		Bung	PFV	F2	eat	7-fufu	
	b.	Búŋ	ə́	né	↓lám	kā-báyn	‘Bung will cook the fufu.’
		Bung	PFV	F2	cook	7-fufu	
	c.	Búŋ	ə́	né	↓sə́ŋtə́	kā-báyn	‘Bung will sift the fufu.’
		Bung	PFV	F2	sift	7-fufu	

The corresponding L tone verbs show that the future DJ forms also involve a post-verbal H which fuses with the L tone of the noun prefix /kə̀-/, converting it to M:

(14)	a.	Búŋ	ə́	né	lè	kā-báyn	‘Bung will lose the fufu.’
		Bung	PFV	F2	lose	7-fufu	
	b.	Búŋ	ə́	né	kùm	kā-báyn	‘Bung will touch the fufu.’
		Bung	PFV	F2	touch	7-fufu	
	c.	Búŋ	ə́	né	lɨ̀msə́	kā-báyn	‘Bung will heat the fufu.’
		Bung	PFV	F2	heat	7-fufu	

Although only tonal, the presence of a second post-verbal DJ marker is of course less surprising given the post-verbal DJ marker /`lí/ in the P0 and P3.

This completes our discussion of the CJ and DJ perfective forms. In the following section we examine the same tenses in the progressive aspect, provided in the third data column of Appendix 1.

[6] For discussion of the interaction of preconsonantal nasals with tone in the Babanki noun class system, see Akumbu & Hyman (2017).

[7] Since /à/, /nè/, and /lù/ are auxiliaries, we might expect them to tolerate a HL tone, as in the P1 DJ [yî] and P2 DJ [tâ]. We speculate that the reason the L delinks is that the F2 and F3 auxiliaries are less grammaticalized and hence retain some of their original lexical root status as earlier verbs (cf. *nè* ‘do, act’, *lù* ‘rise up, get up in the morning’). They are, however, apparently not “lexical” enough to lengthen their vowel to **néè* and **lúù*.

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4 Progressive forms

The first important thing to note is that the progressive forms do not distinguish CJ from DJ. There is only one form per tense which is marked by a nasal prefix except in the P0 and a /L/ schwa suffix on the verb. In most cases the L /-ə̀/ suffix is realized with the same tone as the verb root:

(15)	a.	Búŋ	lám-ə́	kə̀-báyn	'Bung is cooking fufu.'	(P0)
		Bung	cook-PROG	7-fufu		
	b.	Búŋ tə̌	n-lám-ə́	kə̀-báyn	'Bung was cooking fufu.'	(P2)
		Bung P2	N-cook-PROG	7-fufu		
	c.	Búŋ ə́ né	n-lám-ə́	kə̀-báyn	'Bung was cooking fufu.'	(F2)
		Bung PFV F2	N-cook-PROG	7-fufu		
(16)	a.	Búŋ	kùm-ə̀	kə̀-báyn	'Bung is touching fufu.'	(P0)
		Bung	touch-PROG	7-fufu		
	b.	Búŋ tə̌	ŋ-kùm-ə̀	kə̀-báyn	'Bung was touching fufu.'	(P2)
		Bung P2	N-touch-PROG	7-fufu		
	c.	Búŋ ə́ né	ŋ-kùm-ə̀	kə̀-báyn	'Bung was touching fufu.'	(F2)
		Bung PFV F2	N-touch-PROG	7-fufu		

It is however the H-L pattern of the CV(C)CV verb stems /sə́ŋtə/ 'sift' and /shítə/ 'collect' that shows that the suffix must be L:

(17)	a.	Búŋ	sə́ŋtə̀	kə̀-báyn	'Bung is sifting fufu.'	(P0)
		Bung	sift.PROG	7-fufu		
	b.	Búŋ tə̌	n-sə́ŋtə̀	kə̀-báyn	'Bung was sifting fufu.'	(P2)
		Bung P2	N-sift.PROG	7-fufu		
	c.	Búŋ ə́ né	n-sə́ŋtə̀	kə̀-báyn	'Bung was sifting fufu.'	(F2)
		Bung PFV F2	N-sift.PROG	7-fufu		

We therefore propose that the H of the root spreads and delinks the L of CV-ə̀ and CVC-ə̀ stems, producing an all H verb stem in (15), while H tone spreading is blocked when the verb stem has a suffix such as the /-tə/ in (17). In all cases the progressive L keeps the following /kə̀-/ suffix L. As seen in the above forms and in the third column of data in Appendix 1, what is significant is that all progressive forms have the same tonal pattern throughout all of the tenses, which overrides the distinctions found in other columns.[8] We have shaded this pattern green.

To summarize thus far, while the input tense markers are the same as in Table 3, the following curious fact should be noted: the PST tenses show the same segmental marking as the CJ forms in column 1, while the FUT tenses have the same /ə́/ preceding the tense auxiliary as in the DJ forms in column 2. There are tonal differences, however.[9] First, except in the P3, the PST tenses have a H tone following the tense

[8] As will be seen in §5 and §6, the same tone pattern is also found throughout the negative progressive paradigm as well as in non-indicative moods.

[9] The *pre*verbal high tone effects in the future progressives seem to correlate with the *post*verbal high tones of the futures in the DJ paradigm. So on purely formal grounds one might come to think that actually the progressive future forms retain periphrastic traits in that the tense markers (two of which, F1 *nè* and F2 *lù*, have been identified as originating in erstwhile verbs) are inflected for the DJ (accounting for the tonal effects in the yellow cells of Appendix 1), whereas the verb itself is segmentally marked for the progressive by the marker combination *N*- … -*ə̀*. This leaves us with the (open) question of the semantic link between both categories, i.e. the progressive paradigm and the disjoint perfective paradigm in the future tenses. Taking this line of argumentation one step further and giving it a slightly different spin, one might as well see the quirky extra H tone in all progressive past tenses, except P3, in the same context, i.e. as taking part in a general progressive pattern of ˊ*N*- … -*ə̀*, possibly representing (relics of) an erstwhile periphrastic construction of an auxiliary plus nominalized main verb. Under this assumption, P0 and P3 stand out in

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auxiliary which produces a rising tone in the case of P1 and P2: /yì´/ → [yǐ], / tə´/ → [tə̌]. The same H tone accounts for the tonal differences between the P0 CJ and the corresponding progressive:

(18) a. /Búŋ ` lám kəbáyn/ → Búŋ làm kābáyn ‘Bung has cooked the fufu.’
b. /Búŋ ´ lám-ə̀ kəbáyn/ → Búŋ lámə́ kəbáyn ‘Bung is cooking the fufu.’

As seen in (18a), a L tonal morpheme precedes the verb in the P0 CJ which links to the verb, causing its H to delink. The delinked H then causes the following /kə̀-/ noun prefix to become M. In contrast, in (18b) a H tonal morpheme precedes the verb in the P0 progressive, and the verb is realized H-H with its schwa suffix. The /kə̀-/ noun prefix is therefore not affected.

5 Negative forms

From the summary in Table 5 and the forms in Appendix 2 it can be observed that negative indicative verb forms all involve the markers *ə́ kó`* preceding the tense auxiliaries, as in the following P2 Neg perfective forms:

(19)	a.	Búŋ	ə́	kó	tə̀	zhɨ̀	kā-báyn	‘Bung did not eat the fufu.’
		Bung	PFV	NEG	P2	eat	7-fufu	
	b.	Búŋ	ə́	kó	tə̀	làm	kā-báyn	‘Bung did not cook the fufu.’
		Bung	PFV	NEG	P2	cook	7-fufu	
	c.	Búŋ	ə́	kó	tə̀	sə̀ŋtə́	kā-báyn	‘Bung did not sift the fufu.’
		Bung	PFV	NEG	P2	sift	7-fufu	
(20)	a.	Búŋ	ə́	kó	tə̀	lè	kə̀-báyn	‘Bung did not eat the fufu.’
		Bung	PFV	NEG	P2	eat	7-fufu	
	b.	Búŋ	ə́	kó	tə̀	kùm	kə̀-báyn	‘Bung did not touch the fufu.’
		Bung	PFV	NEG	P2	touch	7-fufu	
	c.	Búŋ	ə́	kó	tə̀	lɨ̀msə̀	kə̀-báyn	‘Bung did not heat the fufu.’
		Bung	PFV	NEG	P2	heat	7-fufu	

As mentioned, there is no CJ/DJ distinction in the negative, although it is tempting to identify the omnipresent negative H tone schwa as the same *ə́* observed in the DJ, summarized above in Table 4.[10] Table 2 also shows that the progressives have the same tones as in the affirmative, again shaded in green. Thus compare the following sentences with those in (15) and (16).

(21)	a.	Búŋ	ə́	kó		↓lám-ə́	kə̀-báyn	‘Bung is not cooking fufu.’	(P0)
		Bung	PFV	NEG		cook-PROG	7-fufu		
	b.	Búŋ	ə́	kó	tə̌	n-lám-ə́	kə̀-báyn	‘Bung was not cooking fufu.’	(P2)
		Bung	PFV	NEG	P2	N-cook-PROG	7-fufu		
	c.	Búŋ	ə́	kó	↓né	n-lám-ə́	kə̀-báyn	‘Bung will not be cooking fufu.’	(F2)
		Bung	PFV	NEG	F2	N-cook-PROG	7-fufu		
(22)	a.	Búŋ	ə́	kó		kùm-ə̀	kə̀-báyn	‘Bung is not touching fufu.’	(P0)
		Bung	PFV	NEG		touch-PROG	7-fufu		
	b.	Búŋ	ə́	kó	tə̌	ŋ-kùm-ə̀	kə̀-báyn	‘Bung was not touching fufu.’	(P2)
		Bung	PFV	NEG	P2	N-touch-PROG	7-fufu		
	c.	Búŋ	ə́	kó	↓né	ŋ-kùm-ə̀	kə̀-báyn	‘Bung will not be touching fufu.’	(F2)
		Bung	PFV	NEG	F2	N-touch-PROG	7-fufu		

that they do not share the full package of markers, P0-PROG lacking N- and P3 lacking the preverbal H (and possibly also the progressive N-, since the nasal prefix might as well be interpreted as the ordinary P3 marker).

[10] It is well known that both DJ and negation involve an inherent focus, hence form a natural class (see Hyman & Watters 1984).

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The downsteps on *ˬlámə́* in (21a) and *ˬné* in (21c) show that there is a floating L following *kó*. One might have proposed that the underlying representation of the negative indicative marker is /kò/ which would undergo H tone spreading from the preceding /ə́/, exactly as the F2 auxiliary /nè/ undergoes after the DJ marker /ə́/ in (13) and (14), and similarly in other future tenses in Appendix 1. However, since the non-indicative negative marker is /kə́/, as in *kə́ nzhíí kəbáyn* 'don't be eating fufu!', it is equally likely that the negative indicative marker is /kó `/.

Before concluding this section, we should note that there are some tonal differences between the perfective affirmative and negative paradigms. What is curious is that the P tenses take the same tones as the corresponding affirmative CJ forms (shaded in gray except for P3 blue), while the F tenses take the same tones as the corresponding affirmative DJ forms (shaded in yellow). We will return to this in §8, where we propose a ranked set of morphosyntactic tone assignment rules.

6 Non-indicative affirmative forms

In the preceding sections we have seen that Babanki distinguishes seven tenses in indicative forms: P0-P3 and F1–F3. In this and the following section we describe the non-indicative forms which by their semantics are all future-oriented. As a result each of them has only three forms which correspond to indicative F1–F3. In addition, there is no CJ/DJ contrast. As we will see, only what we identify as F1 is really different from indicative marking in its tonal patterns.

We start with the singular imperative forms which were already shown in Table 2 above. As seen in Appendix 3, the bare F1 imperative has the same tone pattern as the indicative F1 DJ and negative, shaded yellow, while the F2 and F3 imperatives share the grey-shaded pattern of their corresponding CJ forms, as in (23b,c) involving the H tone verb /lám/ 'cook' and the L tone verbs /kùm/ 'touch' and /lɨ̀msə̀/ 'heat':[11]

(23)	a.	F1		lám	kə̄-báyn	'cook the fufu!'
				cook	7-fufu	
				kùm-ə́	kə̄-báyn	'touch the fufu!'
				touch-IMP	7-fufu	
				lɨ̀msə́	kə̄-báyn	'heat the fufu!'
				heat.IMP	7-fufu	
	b.	F2	nè	làm	kə̄-báyn	'cook the fufu!'
			F2	cook	7-fufu	
			nè	kùm	kə̀-báyn	'touch the fufu!'
			F2	touch	7-fufu	
			nè	lɨ̀msə̀	kə̀-báyn	'heat the fufu!'
			F2	heat	7-fufu	
	c.	F3	lù	làm	kə̄-báyn	'cook the fufu!'
			F3	cook	7-fufu	
			lù	kùm	kə̀-báyn	'touch the fufu!'
			F3	touch	7-fufu	
			lù	lɨ̀msə̀	kə̀báyn	'heat the fufu!'
			F3	heat	7-fufu	

As in the future indicative forms, L tone verbs acquire a H tone schwa, hence *kùmə́* 'touch!' in (23a). As seen in (24a), neither the F1 marker /à/ nor the H tone schwa suffix appear in the plural imperative.

[11] Full paradigms of the non-indicative forms discussed in this section can be found in Appendices 3–7.

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(24)	a.	F1	ghàŋ		lám	kā-báyn	‘you pl. cook the fufu!’
			2PL		cook	7-fufu	
			ghàŋ		kúm	kà-báyn	‘you pl. touch the fufu!’
			2PL		touch	7-fufu	
			ghàŋ		lɨ́m$^{\downarrow}$sə́	kā-báyn	‘you pl. heat the fufu!’
			2PL		heat	7-fufu	
	b.	F2	ghàŋ	nè	làm	kā-báyn	‘you pl. cook the fufu!’
			2PL	F2	cook	7-fufu	
			ghàŋ	nè	kùm	kà-báyn	‘you pl. touch the fufu!’
			2PL	F2	touch	7-fufu	
			ghàŋ	nè	lɨmsə̀	kà-báyn	‘you pl. heat the fufu!’
			2PL	F2	heat	7-fufu	
	c.	F3	ghàŋ	lù	làm	kā-báyn	‘you pl. cook the fufu!’
			2PL	F3	cook	7-fufu	
			ghàŋ	lù	kùm	kà-báyn	‘you pl. touch the fufu!’
			2PL	F3	touch	7-fufu	
			ghàŋ	lù	lɨmsə̀	kà-báyn	‘you pl. heat the fufu!’
			2PL	F3	heat	7-fufu	

However, the F1 plural imperative shows a H tone prefix, which links to a following L verb. As seen most clearly when the L verb is bisyllabic, a H-$^{\downarrow}$H downstep sequence is created: /ghàŋ ˊ lɨmsə́ kə̀báyn/ → *ghàŋ lɨ́m$^{\downarrow}$sə́ kā́báyn* ‘you pl. heat the fufu!’.[12] In the case of a monosyllabic verb a H$^{\downarrow}$H contour is expected on the one syllable. Instead, since such contours are not permitted, the second H is deleted, with the preceding L, now delinked, preserving the L on the prefix of ‘fufu’.[13] Finally, note that the F2 and F3 forms in (24b,c) are identical to the F2–F3 indicative forms in Appendix 1. The same is true of the corresponding hortative forms in (25), extracted from Appendix 5.

(25)	a.	F1	yúwù		lám	kā-báyn	‘let’s cook the fufu!’
			1PL		cook	7-fufu	
			yúwù		kúm	kà-báyn	‘let’s touch the fufu!’
			1PL		touch	7-fufu	
			yúwù		lɨ́m$^{\downarrow}$sə́	kə̀báyn	‘let’s heat the fufu!’
			1PL		heat	7-fufu	
	b.	F2	yúwù	nè	làm	kā-báyn	‘let’s cook the fufu!’
			1PL	F2	cook	7-fufu	
			yúwù	nè	kùm	kà-báyn	‘let’s touch the fufu!’
			1PL	F2	touch	7-fufu	
			yúwù	nè	lɨmsə̀	kà-báyn	‘let’s heat the fufu!’
			1PL	F2	heat	7-fufu	
	c.	F3	yúwù	lù	làm	kā-báyn	‘let’s cook the fufu!’
			1PL	F3	cook	7-fufu	
			yúwù	lù	kùm	kà-báyn	‘let’s touch the fufu!’
			1PL	F3	touch	7-fufu	
			yúwù	lù	lɨmsə̀	kà-báyn	‘let’s heat the fufu!’
			1PL	F3	heat	7-fufu	

[12] We color this pattern gold in the appendices.

[13] We find this analysis preferable to restricting the suffixal H to all forms except monosyllabic L verbs. Recall that the suffixal H is needed after H verbs as well in order for the noun prefix to be raised to M.

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Again the F1 has both a preceding H prefix and suffix, while the F2 and F3 forms are identical to those in the indicative in Appendix 1. (See Appendix 4 for more plural imperative examples.)

The same pattern is also found in the subjunctive forms in (26) and the future conditional forms in (27), extracted from Appendices 6 and 7:[14]

(26)	a.	F1	...	lá	yúwù		lám	kā-báyn	'(Bung wants) that we cook the fufu.'
				COMP	1PL		cook	7-cook	
			...	lá	yúwù		lám	kà-báyn	'(Bung wants) that we touch the fufu.'
				COMP	1PL		kúm	7-cook	
			...	lá	yúwù		lím↓sə́	kà-báyn	'(Bung wants) that we heat the fufu.'
				COMP	1PL		heat	7-cook	
	b.	F2	...	lá	yúwù	nè	làm	kā-báyn	'(Bung wants) that we cook the fufu.'
				COMP	1pl	F2	cook	7-fufu	
			...	lá	yúwù	nè	kùm	kà-báyn	'(Bung wants) that we touch the fufu.'
				COMP	1pl	F2	touch	7-fufu	
			...	lá	yúwù	nè	lìmsə̀	kà-báyn	'(Bung wants) that we heat the fufu.'
				COMP	1pl	F2	heat	7-fufu	
	c.	F3	...	lá	yúwù	lù	làm	kā-báyn	'(Bung wants) that we cook the fufu.'
				COMP	1pl	F3	cook	7-fufu	
			...	lá	yúwù	lù	kùm	kà-báyn	'(Bung wants) that we touch the fufu.'
				COMP	1pl	F3	touch	7-fufu	
			...	lá	yúwù	lù	lìmsə̀	kà-báyn	'(Bung wants) that we heat the fufu.'
				COMP	1pl	F3	heat	7-fufu	

(27)	a.	F1	sə́tsə̀n	Búŋ		lám	kā-báyn	'if Bung cooks the fufu ...'
			COND	Bung		cook	7-fufu	
			sə́tsə̀n	Búŋ		kúm	kà-báyn	'if Bung touches the fufu ...'
			COND	Bung		touch	7-fufu	
			sə́tsə̀n	Búŋ		lím↓sə́	kā-báyn	'if Bung heats the fufu ...'
			COND	Bung		heats	7-fufu	
	b.	F2	sə́tsə̀n	Búŋ	nè	làm	kā-báyn	'if Bung cooks the fufu ...'
			COND	Bung	F2	cook	7-fufu	
			sə́tsə̀n	Búŋ	nè	kùm	kà-báyn	'if Bung touches the fufu ...'
			COND	Bung	F2	touch	7-fufu	
			sə́tsə̀n	Búŋ	nè	lìmsə̀	kà-báyn	'if Bung heats the fufu ...'
			COND	Bung	F2	heat	7-fufu	
	c.	F3	sə́tsə̀n	Búŋ	lù	làm	kā-báyn	'if Bung cooks the fufu ...'
			COND	Bung	F3	cook	7-fufu	
			sə́tsə̀n	Búŋ	lù	kùm	kà-báyn	'if Bung touches the fufu ...'
			COND	Bung	F3	touch	7-fufu	
			sə́tsə̀n	Búŋ	lù	lìmsə̀	kà-báyn	'if Bung heats the fufu ...'
			COND	Bung	F3	heat	7-fufu	

Since the F2 and F3 forms are non-distinct from the corresponding indicative F2 and F3, it is reasonable to consider only F1 as a non-indicative. However, even the F1 non-indicative succumbs to the expected, green-shaded pattern that characterizes the progressive aspect throughout the verb paradigm:

[14] Since the past conditional forms take the same (yellow) tone pattern in both the affirmative and negative, they are treated together in the next section.

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(28)	a.	IMP.SG	ə́ nlámə̀ kə̀báyn	‘be cooking the fufu!’
	b.	IMP.PL	ghə̀ŋ ə́ nlámə̀ kə̀báyn	‘you pl. be cooking the fufu!’
	c.	HORT	yúwù ə́ nlámə̀ kə̀báyn	‘let’s be cooking the fufu!’
	d.	SBJV	...lá yúwù ə́ nlámə̀ kə̀báyn	‘(Bung wants) that we be cooking the fufu.’
	e.	COND	sə̀tsə̀n Búŋ dí? kə́ nlámə̀ kə̀báyn ...	‘if Bung is cooking the fufu...’

In the following section we will see that, with the exception of the conditional negative, the corresponding negative forms largely tell the same story.

7 Non-indicative negative forms

As seen first in the following singular imperative forms taken from Appendix 9, the negative markers are consistently different in indicative vs. non-indicative forms.

(29)	a.	F1	ká		↓lám	kā-báyn	‘don’t cook the fufu!’
			NEG.F1		cook	7-fufu	
			ká		kùm	kā-báyn	‘don’t touch the fufu!’
			NEG.F1		touch	7-fufu	
			ká		lɨ̀msə́	kā-báyn	‘don’t heat the fufu!’
			NEG.F1		heat	7-fufu	
	b.	F2	kə́	né	↓lám	kābáyn	‘don’t cook the fufu!’
			NEG	F2	cook	7-fufu	
			kə́	né	kùm	kā-báyn	‘don’t touch the fufu!’
			NEG	F2	touch	7-fufu	
			kə́	né	lɨ̀msə́	kā-báyn	‘don’t heat the fufu!’
			NEG	F2	heat	7-fufu	
	c.	F3	kə́	lú	↓lám	kābáy	‘don’t cook the fufu!’
			NEG	F3	cook	7-fufu	
			kə́	lú	kùm	kā-báyn	‘don’t touch the fufu!’
			NEG	F3	touch	7-fufu	
			kə́	lú	lɨ̀msə́	kā-báyn	‘don’t heat the fufu!’
			NEG	F3	heat	7-fufu	

Whereas we established /kó ˋ/ as the indicative negative marker, the forms in (29) show that the non-indicative marker is /kə́/, which however fuses with the F1 marker /à/ in (29a). The H of /kə́/ spreads onto the tense marker, delinking its L, which then triggers a downstep on a following H: /kə́ à/, /kə́ nè/, /kə́ lù/ → *ká* ˋ, *kə́ né* ˋ, *kə́ lú* ˋ. Finally, although /kùm/ ‘touch’ lacks the final H tone schwa seen in the affirmative imperative, it is clear that all of the above forms have a H suffix, hence a M tone on the prefix *kə̄-*.

The corresponding negative plural imperatives taken from Appendix 10 appear in (30).

(30)	a.	F1	kə́	ghə̀ŋ		lám	kə̄-báy n	‘you pl. don’t cook the fufu!’
			NEG	2PL		cook	7-fufu	
			kə́	ghə̀ŋ		kúm	kə̀-báyn	‘you pl. don’t touch the fufu!’
			NEG	2PL		touch	7-fufu	
			kə́	ghə̀ŋ		lɨ́m↓sə́	kə̀-báyn	‘you pl. don’t heat the fufu!’
			NEG	2PL		heat	7-fufu	
	b.	F2	kə́	ghə̀ŋ	nè	làm	kə̄-báyn	‘you pl. don’t cook the fufu!’
			NEG	2PL	F2	cook	7-fufu	
			kə́	ghə̀ŋ	nè	kùm	kə̀-báyn	‘you pl. don’t touch the fufu!’
			NEG	2PL	F2	touch	7-fufu	
			kə́	ghə̀ŋ	nè	lɨ̀msə̀	kə̀-báyn	‘you pl. don’t heat the fufu!’
			NEG	2PL	F2	heat	7-fufu	

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c.	F3	kə́	ghàŋ	lù	làm	kā-báyn		‘you pl. don’t cook the fufu!’
		NEG	2PL	F3	cook	7-fufu		
		kə́	ghàŋ	lù	kùm	kà-báyn		‘you pl. don’t touch the fufu!’
		NEG	2PL	F3	touch	7-fufu		
		kə́	ghàŋ	lù	lɨ̀msə	kà-báyn		‘you pl. don’t heat the fufu!’
		NEG	2PL	F3	heat	7-fufu		

This paradigm is exactly identical to that of the corresponding affirmatives in (24), except for the presence of *kə́* occurring before the subject, here the second person plural pronoun *ghàŋ*. The hortatives in (31) differ only in the presence of the first person plural pronoun *yúwù*, from Appendix 10, and similarly the subjunctives in (32) from Appendix 12 differ only in the presence of the complementizer *lá*:

(31) a.	F1	kə́	yúwù		lám	kā-báyn		‘let’s not cook the fufu!’
		NEG	1pl		cook	7-fufu		
		kə́	yúwù		kúm	kà-báyn		‘let’s not touch the fufu!’
		NEG	1pl		touch	7-fufu		
		kə́	yúwù		lɨ́m↓sə́	kā-báyn		‘let’s not heat the fufu!’
		NEG	1pl		heat	7-fufu		
b.	F2	kə́	yúwù	nè	làm	kā-báyn		‘let’s not cook the fufu!’
		NEG	1pl	F2	cook	7-fufu		
		kə́	yúwù	nè	kùm	kà-báyn		‘let’s not touch the fufu!’
		NEG	1pl	F2	touch	7-fufu		
		kə́	yúwù	nè	lɨ̀msə	kà-báyn		‘let’s not heat the fufu!’
		NEG	1pl	F2	heat	7-fufu		
c.	F3	kə́	yúwù	lù	làm	kā-báyn		‘let’s not cook the fufu!’
		NEG	1pl	F3	cook	7-fufu		
		kə́	yúwù	lù	kùm	kà-báyn		‘let’s not touch the fufu!’
		NEG	1pl	F3	touch	7-fufu		
		kə́	yúwù	lù	lɨ̀msə	kà-báyn		‘let’s not heat the fufu!’
		NEG	1pl	F3	heat	7-fufu		

(32) a.	F1	...	lá	kə́	yúwù		lám	kā-báyn	‘(Bung wants) that we not cook the fufu!’
			COMP	NEG	1pl		cook	7-fufu	
		...	lá	kə́	yúwù		kúm	kà-báyn	‘(Bung wants) that we not touch the fufu!’
			COMP	NEG	1pl		touch	7-fufu	
		...	lá	kə́	yúwù		lɨ́m↓sə́	kà-báyn	‘(Bung wants) that we not heat the fufu!’
			COMP	NEG	1PL		heat	7-fufu	
b.	F2	...	lá	kə́	yúwù	nè	làm	kā-báyn	‘(Bung wants) that we not cook the fufu!’
			COMP	NEG	1PL	F2	cook	7-fufu	
		...	lá	kə́	yúwù	nè	kùm	kà-báyn	‘(Bung wants) that we not touch the fufu!’
			COMP	NEG	1PL	F2	touch	7-fufu	
		...	lá	kə́	yúwù	nè	lɨ̀msə	kà-báyn	‘(Bung wants) that we not heat the fufu!’
			COMP	NEG	1PL	F2	heat	7-fufu	
c.	F3	...	lá	kə́	yúwù	lù	làm	kā-báyn	‘(Bung wants) that we not cook the fufu!’
			COMP	NEG	1PL	F3	cook	7-fufu	
		...	lá	kə́	yúwù	lù	kùm	kà-báyn	‘(Bung wants) that we not touch the fufu!’
			COMP	NEG	1PL	F3	touch	7-fufu	
		...	lá	kə́	yúwù	lù	lɨ̀msə	kà-báyn	‘(Bung wants) that we not heat the fufu!’
			COMP	NEG	1PL	F3	heat	7-fufu	

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It is clear that the plural imperative, hortative, and subjunctive F1 realize the same non-indicative mood which we can call subjunctive, while the F2 and F3 inflections are indistinguishable from the corresponding indicative forms. Not so with the negative conditional, which requires a more complex realization, the following from Appendix 13:

(33)	a.	F1	sətsɛ̀n	Búŋ		díʔ	ká	lám	kə̄-báyn	‘if Bung doesn’t cook the fufu ...’
			COND	Bung		COP	NEG	cook	7-fufu	
			sətsɛ̀n	Búŋ		díʔ	ká	kùm	kə̄-báyn	‘if Bung doesn’t touch the fufu ...’
			COND	Bung		COP	NEG	touch	7-fufu	
			sətsɛ̀n	Búŋ		díʔ	ká	lɨ̀msə́	kə̄-báyn	‘if Bung doesn’t heat the fufu ...’
			COND	Bung		COP	NEG	heat	7-fufu	
	b.	F2	sətsɛ̀n	Búŋ	nè	dìʔ	ká	lám	kə̄-báyn	‘if Bung doesn’t cook the fufu ...’
			COND	Bung	F2	COP	NEG	cook	7-fufu	
			sətsɛ̀n	Búŋ	nè	dìʔ	ká	kùm	kə̄-báyn	‘if Bung doesn’t touch the fufu ...’
			COND	Bung	F2	COP	NEG	touch	7-fufu	
			sətsɛ̀n	Búŋ	nè	dìʔ	ká	lɨ̀msə́	kə̄-báyn	‘if Bung doesn’t heat the fufu ...’
			COND	Bung	F2	COP	NEG	heat	7-fufu	
	c.	F3	sətsɛ̀n	Búŋ	lù	dìʔ	ká	lám	kə̄-báyn	‘if Bung doesn’t cook the fufu ...’
			COND	Bung	F3	COP	NEG	cook	7-fufu	
			sətsɛ̀n	Búŋ	lù	dìʔ	ká	kùm	kə̄-báyn	‘if Bung doesn’t touch the fufu ...’
			COND	Bung	F3	COP	NEG	touch	7-fufu	
			sətsɛ̀n	Búŋ	lù	dìʔ	ká	lɨ̀msə́	kə̄-báyn	‘if Bung doesn’t heat the fufu ...’
			COND	Bung	F3	COP	NEG	heat	7-fufu	

While the F1 doesn’t have an overt tense marker, the F2 and F3 markers *nè* and *lù* appear before another morpheme *díʔ* followed by the negative morpheme *ká*. Since *dìʔ* is identical to the copular verb /dìʔ/ ‘be’, we interpret the above historically as ‘if Bung will be not cook, touch, heat...’. The main verb lacks a H prefix in the F1, although the F1–F3 all have a H suffix. We have thus colored these cells yellow in Appendix 13, indicating that the tones are identical with the indicative future pattern, which is in turn the same in the affirmative and negative (see Appendices 1 and 2).

Finally, as seen in Appendices 8 and 14, the affirmative and negative past conditional forms all take the same (yellow) tone pattern. The following representative examples show that instead of the pre-subject complementizer *sátsɛ̀n*, the auxiliary form *tí* occurs after the tense marker in the past conditional:

(34)	a.	P0	Búŋ	tí	↓lám	kə̄báyn	‘if Bung had cooked the fufu ...’
			Bung	COND	cook	7-fufu	
			Búŋ	tí	kùm	kə̄báyn	‘if Bung had touched the fufu ...’
			Bung	COND	touch	7-fufu	
			Búŋ	tí	lɨ̀msə́	kə̄báyn	‘if Bung had heated the fufu ...’
			Bung	COND	heat	7-fufu	
	b.	P1	Búŋ yì	tí	↓lám	kə̄báyn	‘if Bung had cooked the fufu ...’
			Bung P1	COND	cook	7-fufu	
			Búŋ yì	tí	kùm	kə̄báyn	‘if Bung had touched the fufu ...’
			Bung P1	COND	touch	7-fufu	
			Búŋ yì	tí	lɨ̀msə́	kə̄báyn	‘if Bung had heated the fufu ...’
			Bung P1	COND	heat	7-fufu	
	c.	P2	Búŋ tə̀	tí	↓lám	kə̄báyn	‘if Bung had cooked the fufu ...’
			Bung P2	COND	cook	7-fufu	
			Búŋ tə̀	tí	kùm	kə̄báyn	‘if Bung had touched the fufu ...’
			Bung P2	COND	touch	7-fufu	

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	Búŋ	tə	tí	lɨmsə́	kəbáyn	'if Bung had heated the fufu ...'
	Bung	P2	COND	heat	7-fufu	
d. P3	Búŋ	ə	n-tí	↓lám	kəbáyn	'if Bung had cooked the fufu ...'
	Bung	P3	N-COND	cook	7-fufu	
	Búŋ	ə	n-tí	kùm	kəbáyn	'if Bung had touched the fufu ...'
	Bung	P3	N-COND	touch	7-fufu	
	Búŋ	ə	n-tí	lɨmsə́	kəbáyn	'if Bung had heated the fufu ...'
	Bung	P3	N-COND	heat	7-fufu	

Since *tí* takes a nasal prefix in the P3, it is likely that *tí* was once a verb, although its original meaning cannot be ascertained.[15] The corresponding negatives are provided in (35).

(35) a. P0	Búŋ		tí	dìʔ	kə́	↓lám	kəbáyn	'if Bung hadn't cooked the fufu ...'
	Bung		COND	COP	NEG	cook	7-fufu	
	Búŋ		tí	dìʔ	kə́	kùm	kəbáyn	'if Bung hadn't touched the fufu ...'
	Bung		COND	COP	NEG	touch	7-fufu	
	Búŋ		tí	dìʔ	kə́	lɨmsə́	kəbáyn	'if Bung hadn't heated the fufu ...'
	Bung		COND	COP	NEG	heat	7-fufu	
b. P1	Búŋ	yì	tí	dìʔ	kə́	↓lám	kəbáyn	'if Bung hadn't cooked the fufu ...'
	Bung	P1	COND	COP	NEG	cook	7-fufu	
	Búŋ	yì	tí	dìʔ	kə́	kùm	kəbáyn	'if Bung hadn't touched the fufu ...'
	Bung	P1	COND	COP	NEG	touch	7-fufu	
	Búŋ	yì	tí	dìʔ	kə́	lɨmsə́	kəbáyn	'if Bung hadn't heated the fufu ...'
	Bung	P1	COND	COP	NEG	heat	7-fufu	
c. P2	Búŋ	tə	tí	dìʔ	kə́	↓lám	kəbáyn	'if Bung hadn't cooked the fufu ...'
	Bung	P2	COND	COP	NEG	cook	7-fufu	
	Búŋ	tə	tí	dìʔ	kə́	kùm	kəbáyn	'if Bung hadn't touched the fufu ...'
	Bung	P2	COND	COP	NEG	touch	7-fufu	
	Búŋ	tə	tí	dìʔ	kə́	lɨmsə́	kəbáyn	'if Bung hadn't heated the fufu ...'
	Bung	P2	COND	COP	NEG	heat	7-fufu	
d. P3	Búŋ	ə	n-tí	dìʔ	kə́	↓lám	kəbáyn	'if Bung hadn't cooked the fufu ...'
	Bung	P3	N-COND	COP	NEG	cook	7-fufu	
	Búŋ	ə	n-tí	dìʔ	kə́	kùm	kəbáyn	'if Bung hadn't touched the fufu ...'
	Bung	P3	N-COND	COP	NEG	touch	7-fufu	
	Búŋ	ə	n-tí	dìʔ	kə́	lɨmsə́	kəbáyn	'if Bung hadn't heated the fufu ...'
	Bung	P3	N-COND	COP	NEG	heat	7-fufu	

The same auxiliary + negative sequence *dìʔ kə́* is used as in the future negative conditional.

This completes our survey through the different verb paradigms which we have been able to consider in our study. We conclude in §8 by outlining an integrative analysis followed by discussion.

8 Towards an integrated analysis

In the preceding sections we have presented the different Babanki tense, aspect, and mood distinctions, both affirmative and negative. While we have presented a subset of examples of each, a full and systematic presentation of all of the forms we have considered is found in Appendices 1–14. While we have given partial interpretations and analyses, we have yet to pull it all together into one coherent picture. This is our first goal in this section. Our second goal, however preliminary, will be to comment on what we think is the most promising conceptualization of the Babanki verb inflectional system and others like it.

[15] It is not clear if or how the past conditional auxiliary could derive from the present day Babanki verb *tí* 'make a bed (from bamboo)' or the lexicalized causative verb *tísə́* 'arrange'.

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We begin by recapping the preverbal "auxiliaries" in Table 6, where the different cells in the paradigm are also color-coded for tone pattern.[16]

Table 6: Preverbal segmental and tonal marking in the Babanki verb paradigm

	indicative.aff			ind.neg		imp.aff		imp.neg		imp.pl.aff. hort.aff sbjv.aff cond.aff.		imp.pl.neg hort.neg sbjv.neg		cond.neg
	CJ	**DJ**	**PR**	**PF**	**PR**	**PF**	**PR**	**PF**	**PR**	**PF**	**PR**	**PF**	**PR**	**PF, PR**
P0	`	á	`	á kó `	á kó `					tí `				tí dìʔ ká
P1	yì	á yî	yǐ	á kó yì	á kó yǐ					yì tí `				yì tí dìʔ ká
P2	tə̀	á tə̂	tə̌	á kó tə̀	á kó tə̌					tə̀ tí `				tə̀ tí dìʔ ká
P3	ə̀	á	ə̀	á kó `	á kó					ə̀ ntí `				ə̀ ntí dìʔ ká
F1	à	á `	á	á kɔ́ `	á kɔ́	Ø	ə̀	ká `	ká	´	á	ká...´	ká...á	díʔ ká
F2	nè	á né `	á né	á kó ↓né `	á kó ↓né	nè	né	ká né `	ká né	nè	né	ká...nè	ká...né	nè dìʔ ká
F3	lù	á lú `	á lú	á kó ↓lú `	á kó ↓lú	lù	lú	ká lú `	ká lú	lù	lú	ká...lù	ká...lú	lù dìʔ ká

As seen most clearly in the F2 and F3 indicative negative sequences, *á kó ↓né`* and *á kó ↓lú`*, there is a maximum of three segmental slots, which we can label as FOCUS, NEGATION, and TENSE. The only filler of the focus slot is the DJ marker /á/, which we assume is the same morpheme as the [á] that precedes the indicative negative marker /kó`/, but does not occur with the non-indicative negative marker /ká/.[17] This leaves the P0–P3 and F1–F3 tense markers which were presented in Table 1 above and are held constant throughout the paradigm. Except for the unassociated L tones, the intention in Table 6 is to show the output forms, including tonal variations that were discussed in earlier sections, e.g. P1 *yì*, *yî*, and *yǐ*. We have proposed that the underlying forms of the tense markers are as they appear in the first (CJ) column, where they all have underlying L tone. Although the L tone does not appear in the P0 or P3 DJ (whose tone pattern is irregular), it is only the F1 that is inconsistent in its segmental marking: /à/ appears only in the indicative affirmative and the singular imperative negative, where *ká`* is the realization of /ká/ + /à/. Otherwise the variations in tense marking are largely tonal: While the P1 and P2 markers /yì/ and /tə̀/ become HL falling tone [yî] and [tə̂] after the DJ marker /á/, the future auxiliaries /nè/ and /lù/ instead become H tone [né] and [lú] plus a delinked L tone which, except in the progressive, causes a following H to become downstepped. In the progressive H and L tone verbs begin with their base tone, hence without any interaction with what precedes. This might be attributable to the fact that, except in the P0, progressives take a nasal prefix that may effectively block any tonal interaction with what precedes.[18]

The progressive is in fact quite special in the paradigm. As discussed in §4, progressive forms are consistent in their tone pattern: Except in the P0, the verb takes a toneless nasal prefix, and all progressives assign a L tone *-ə̀* suffix, which however assimilates to the H of a monosyllabic H tone verb: /n-lám-ə̀/ 'cook.PROG' → *n-lám-á*. Outside the progressive, it is only the P3 that also takes a nasal prefix. Curiously, the P3 also assigns a schwa suffix, but only to L tone monosyllabic verbs, e.g. to /kùm/ 'touch' in *Búŋ ə̀*

[16] In Table 6, PF stands for perfective and PR for progressive. The three dots (...) in the non-indicative columns indicate the position of the subject, which follows the negative marker *ká* but precedes the tense marker. Note also that the yellow non-indicative P0–P3 cells refer exclusively to conditional clauses, which receive the same auxiliary markers in the corresponding empty green progressive cells to their right.

[17] Note that /á/ is not restricted to main clause indicatives, as it can also occur in a relative clause, e.g. *kə̀báyn á Búŋ á kó ↓né ↓lám* 'the fufu that Bung will not cook (F2)'.

[18] There are potentially two problems with this idea. First, as we have said, the P0 doesn't take a nasal prefix, but is tonally identical to the other progressive forms. Second, although the tone patterns are irregular, P3 non-progressives also place a nasal prefix on the verb, but do allow a tonal interaction with the preceding auxiliary: L tone spreading occurs in the P3 CJ and negative, while H tone spreading occurs in the P3 DJ, e.g. *ə̀ + nshítə́* → *ə̀ nshìtə́* 'collected', *á + nshìsə̀* → *á nshísə̀* 'removed'.

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ŋkùmə́ kābáyn (CJ) and *Búŋ ə́ ŋkúmə̀ lí kàbáyn* (DJ), both meaning 'Bung touched the fufu'. The same pattern is found only in one other cell, the affirmative singular imperative, which again assigns the schwa suffix only to monosyllabic L tone verbs: *kùmə́* 'touch!'.

Finally, there is the issue of assigning prefixal and suffixal tones. In accounting for the surface realizations it is necessary to control for whether the verb stem is mono- or bisyllabic. Recall that we have analyzed bisyllabic verbs as having an underlyingly toneless second syllable which will take the same tone as the tone of the root unless overriden by a suffixal tone. With this in mind, Table 7 characterizes the six color-coded stem-tone patterns in terms of their preceding and following tonal environments. (T stands for the base /H/ or /L/ of the verb root.)

Table 7: Summary of Babanki stem-tone patterns in tonal context

	pre-verb	verb tone	suffix	tone on noun prefix kə-
Grey	L	L-T	Ø	L except M after 1σ /H/ stem
Orange	ə́	H-T	-ə̀ only on 1σ L verbs	L throughout
Yellow	(L)	T-H	-ə́ after L verbs in aff.imp.sg.	M throughout
Blue	L	L-H	-ə́ after L verbs	M except after /H-Ø/ stem
Gold	H	H-(T)-H	-H except after 1σ L verbs	M except after 1σ /L/ stems
Green	H except P3	T-L	-ə̀ except -ə́ after 1σ H verbs	L throughout

Only the grey pattern lacks a suffix. The P0 and P3 orange DJ cells are unique in requiring a non-suffixal formative /`lí`/ following the verb. What is striking is that four of the six rows show an agreement between the pre-verb tone and the first tone of the verb stem: grey and blue L vs. orange and gold H. In the first group L tone spreading causes a H-H verb to be realized as L-H, while in the second group H tone spreading causes a L-L verb to become H-L. The (L) of the yellow row indicates that a L is sometimes present, but does not interact with the verb stem other than to cause a H verb to become downstepped, e.g. *kə́ + à + lám + kàbáyn* → *ká ` lám kàbáy*n → *ká ꜜlám kābáyn* 'don't cook the fufu!' Finally, concerning the last row, shaded green, we have already seen that there is no tonal interaction between the auxiliary and the verb stem in progressives.

Turning to suffixes, both the P3 (orange) and progressives (green) assign a L, while yellow, blue and gold assign a H. Except for the gold pattern a schwa suffix also appears, although with the restrictions that are indicated. The H tone schwa is only found after L verbs – and is only discernible when the verb is monosyllabic. This is because a schwa would merge with the second vowel of a CV(C)CV verb stem. In fact, among the 757 verbs in Akumbu (2008), 323 verb stems are bisyllabic. Of these all but 19 have the shape CV(C)Cə. Of these 19, all but five have the shape CVʔV where the vowels are identical, and three are clearly compounds. This leaves the following two verbs: *báŋlí* 'be ripe', *bóbó* 'carry (child) on back', on which a surface schwa does not accompany the suffixal L in the progressive: *Búŋ yĭ mbóbò kàbáyn* 'Bung was carrying the fufu' (P1). While this accounts for why the schwa is visible only on monosyllabic verbs, e.g. directly on CVC roots or as an assimilated extra mora on CV roots, it does not explain why only the progressive assigns a schwa to both H and L roots. A clear generalization is that monosyllabic H tone roots never take a schwa outside the progressive. Our intuition has been that the schwa appears in contexts where a contour tone would otherwise arise. Derivations with the verb /kùm/ 'touch' representating the orange and blue patterns show this relation in (36).

(36) a. Búŋ ə́ ŋkúmə̀ lí kàbáyn 'Bung touched the fufu.' (P3 DJ)
/ə́ ŋkùm/ → ə́ ŋkûm → ə́ ŋkúmə̀

b. Búŋ ə̀ ŋkùmə́ kābáyn 'Bung touched the fufu.' (P3 CJ)
/ə̀ ŋkùm ´/ → ə̀ ŋkŭm → ə̀ ŋkùmə́

In (36a) the H tone of the /ə́/ DJ marker spreads onto the verb, creating an intermediate HL falling tone. Since falling tones are not allowed on roots, the "repair" is to insert a schwa to take the L part of the contour.

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Similarly, in (36b), when the suffixal H is assigned to the verb, this creates an intermediate LH rising tone. Again, a schwa is inserted, this time to take the H part of the LH contour.

Whether the schwa is epenthetic, as we have represented it in (36), or whether it represents a historical retention, there is a potential problem with the assumption that schwa appears as an automatic response to avoiding contours. Recall that the yellow pattern also introduces a schwa, but only in the affirmative singular imperative, exemplified in (37a).

(37) a. kùmə́ kəbáyn 'touch the fufu!'
/kùm ˊ/ + /kəbáyn/ → kŭm kəbáyn → kùmə́ kəbáyn

b. Búŋ ə́ né kùm kəbáyn 'Bung will touch the fufu.' (F2)
/kùm ˊ/ + /kəbáyn/ → kùm + kə̂báyn → kùm kəbáyn

While we have given the same derivation in (37a) as was seen in (36b), the question is why we get a different result in (37b) and every other yellow cell. In this derivation the suffixal H does not get assigned to the verb root, but rather to the following prefix *kə̀-*, thereby producing an intermediate HL falling tone. As shown by Hyman (1979) and Akumbu (2019), a L-HL-H sequence is simplified to L-M-H by a general contour simplification process.[19] What this shows is that the appearance of a schwa appears to be partly phonologically and partly morphologically conditioned. One way to accomplish this is via a "co-phonology" approach (Inkelas & Zoll 2007). In the P3 and the affirmative singular imperative, inserting a schwa is chosen as a better repair to the constraint against contours on root morphemes, while in the future (yellow) pattern, assigning the H to the prefix is the chosen resolution.

We suspect that other morphologically conditioned responses will be needed elsewhere, perhaps to account for why H tone spreading converts the P1 and P2 markers /yì/ and /tə̀/ to *yî* and *tə̂* by H tone spreading, while the F2 and F3 markers /nè/ and /lù/ instead become *né*` and *lú*`. We leave this issue for now to consider the more general question of how to assign the appropriate morphological marking to the right cells in the paradigm. Since much of the segmental marking is largely consistent (e.g. tense markers, negative markers, progressive nasal prefix, and schwa suffix), we will concentrate on tone, i.e. on the six color-coded patterns. We begin by noting that we have two extremes: Blue and orange cells are quite restricted, while green cells are quite general. It would seem therefore that we need to do two things. First, we need to isolate those cells for which a special statement will be needed. These can be considered the equivalent of tonal "exceptions". Second, we can also isolate all of the green cells since their tone pattern is totally predictable. In previous work by the second author (e.g. Hyman 2016) the strategy pursued has been to first assign the general patterns, here the progressive (green), then look at the remainder to assign the next most general pattern among the non-progressives, then assign the next most general pattern, and so on. The idea is that by going from general to specific, the assignments may be simpler to state, the last assignment being the elsewhere case. The opposite strategy is also possible, where the most specific and unpredictable patterns are first assigned, leaving the more and more general ones to be accounted for next. In this approach the progressive would become the default tone pattern.[20]

It seems to us that the most likely approach would be an OT-style account ranking the tone assignments by morphosyntactic feature combinations. This too is not an easy task, but at least it is coherent: while the

[19] This same process is responsible for the M tone prefix found after monosyllabic /H/ verbs in the grey pattern: /Búŋ yì lám kəbáyn/ → *Búŋ yì lăm kəbáyn* → *Búŋ yì làm ˊ kəbáyn* → *Búŋ yì làm kə̂báyn* → *Búŋ yì làm kəbáyn* 'Bung cooked the fufu' (P1). We are not proposing that so many steps are needed in such a derivation, only that the H of /lám/ has to shift onto the L prefix to derive the M tone. Bisyllabic H tone verbs do not raise the L prefix to M in the grey pattern: *Búŋ yì sə̀ŋtə́ kəbáyn* 'Bung sifted the fufu'.

[20] Babanki does not appear to lend itself to an assignment based on a layered morphological structure as Inkelas (2011: 75) proposes for Hausa. In that kind of approach, the tonal patterns would be assigned first to the innermost brackets, then to the next set of brackets, erasing the earlier assignment in case of conflict. Babanki seems rather to be more like the other cases discussed by Hyman (2016), where there is a paradigm of tone patterns dependent on combinations of features.

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single feature PROG(ressive) assigns an undominated tone pattern, overriding all others, certain morpho-syntactic feature combinations will be very restricted, e.g. those requiring the blue and orange tone patterns. To show how this might be done we adopt the following "marked" privative features:

(38) PROG : progressive
DJ : disjoint
NEG : negative
PST : past
FUT : future
SBJV : subjunctive (includes imperative plural, hortative, conditional)
IMP : imperative (singular)

To these we need to add the tenses: P0, P1, P2, P3, F1, F2, F3. In order to see how these features might be applied to the Babanki data, consider the following table, where we indicate which feature combinations receive which tone pattern:

Table 8: Tone patterns by features (first attempt)

Green	Orange	Blue	Gold	Yellow	Grey
PROG	P0 DJ P3 DJ	P3	SBJV F1	FUT DJ FUT NEG [-sbjv] IMP F1 IMP NEG PAST SBJV	PAST FUT

In Table 8 the six patterns are ordered with the intended ranking such that green is highest ranked and grey is lowest. In fact, the intention is for grey to be the default or elsewhere case. Thus, everything to the right of the first column is non-progressive. As a result of the ranking, once orange has assigned its pattern to the P0 DJ and P3 DJ, the blue pattern can now be assigned without regard to any feature other than P3. Similarly gold has targeted only the F1 subjunctive, leaving the F2 and F3 subjunctives untouched. This leaves us with yellow and grey. Here we meet a problem that will require a choice. Since we have ranked yellow higher than grey we have to be sure that it doesn't misappropriate certain cells, particularly the negative (non-progressive) subjunctive F2 and F3. These must remain grey. In Table 8 we put a [-sbjv] place holder, which violates the privativity of the features in (38). If we had changed the rankings, as in Table 9, we run into a different problem:

Table 9: Tone patterns by features (second attempt)

Green	Orange	Blue	Gold	Grey	Yellow
PROG	P0 DJ P3 DJ	P3	SBJV F1	PST IND FUT CJ SBJV IMP F2, F3	FUT IMP F1 IMP NEG PAST SBJV

Since SBJV F1 has already been assigned to gold, we can designate grey for the remaining affirmative and negative F2 and F3 subjunctives. However, we now need to refer to the "unmarked" value CJ in order not to assign grey to future DJ tenses. Since DJ was needed to assign the orange tone pattern, we have the equivalence of [±DJ].

Both analyses thus have problems.[21] Two potential solutions seem possible. One is to change the feature values. If we could refer to the DJ, indicative and imperative negatives as having a special feature [+F], this

[21] We also haven't addressed the conditional negative which takes the same yellow tone pattern as the non-DJ indicative and imperative negatives.

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could be required in assigning the yellow pattern to them (as well as to the conditional negative), thereby eliminating the [-sbjv] in Table 7. Similarly, if we assigned a special feature to the future CJ and the F2 and F3 imperatives affirmative and subjunctive affirmative and negative, we could use that feature in Table 8. Perhaps there are other such ad hoc moves one could consider.

Another solution is to split up one or more of the columns. Since we would like to keep grey as the default, let's try modifying Table 9 by treating the CJ-like F2 and F3 non-indicatives as receiving their grey pattern first:[22]

Table 10: Tone patterns by features (third attempt)

Green	Orange	Blue	Gold	Grey	Yellow	Grey
PROG	P0 DJ P3 DJ	P3	SBJV F1	IMP F2, F3 SBJV F2, F3	FUT DJ FUT NEG IMP F1 PAST SBJV	PST FUT

While perhaps not as aesthetic, splitting the grey pattern in two does allow us to simplify the yellow assignment considerably. Not only do we not need the [-sbjv], but also IMP NEG: This feature combination will be taken care of by IMP F1 (which will cover affirmative and negative) and FUT NEG (which will cover the IMP F2 and F3). The one detail we haven't accounted for is the yellow pattern of the conditional negative which, recall, is a periphrastic construction whose main verb could be considered non-subjunctive.[23]

To conclude, we should perhaps mention still another strategy: Conflate two of the colors! As we have tried to indicate, the tonal patterns on the verb stem are very much determined by their tonal surroundings. The yellow and gold patterns look very similar except that the latter has a preverbal H tone prefix, which is lacking in the yellow pattern. The above tables are designed only to account for the tones, not for the markers that occur before or after the verb stem. While we haven't pursued this or other conceivable approaches, we point this out for anyone who would like to try their hand at coming up with a more comprehensive account that includes these markers. Since we include all of the data we have considered in the appendices, we hope we have provided enough to work on there – but invite others to expand the coverage both in Babanki and in related languages in the future.

Abbreviations and Symbols

↓ Downstep, 1PL First person plural, 2PL Second Person Plural, 3p Third Person Plural, 7, 19 Noun Classes, AFF Affirmative, AGR Agreement, C Consonant, CJ Conjoint, COMP Complementizer, DJ Disjoint, F1 Immediate Future Tense, F2 Hodiernal Future Tense, F3 Distant Past Tense, FUT Future, H High Tone, HORT Hortative, IMP Imperative, IND Indicative, IPFV Imperfective, L Low Tone, LTS Low Tone Spread, M Mid Tone, MCA Main Clause Affirmative, N Nasal, NEG Negative, P0 Present/Perfect tense, P1 Immediate Past Tense, P2 Hodiernal Past Tense, P3 Distant Past Tense, PFV Perfective, PL Plural, PRO Pronoun, PROG Progressive, PST Past, SBJV Subjunctive, SG Singular, SM Subject Marker, T Root tone (H or L), TAM Tense Aspect Mood, V Vowel.

[22] The reasons for favoring grey to be the default are, first, that it realizes the unmarked feature values "indicative" and "CJ", and second, that it is morphologically unmarked, being the only pattern not to involve a suffix (cf. Table 6).

[23] Note that the H tone of *dí?* from in the F1 suggests a H marker preceding the input verb *dì?* 'be', thus making it fall into line with the gold subjunctive cells. The F2 and F3 *nè dì?* and *lù dì?* look like they carry the grey pattern. Thus, while the auxiliary verb shows the expected subjunctive pattern, the main verb shows a different (yellow) one.

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Appendix 1. Affirmative indicative verb forms

	1. Perfective (CJ)	2. Perfective (DJ)	3. Progressive	Glosses
	L+L-T	**ə́+H-T+`lí**	**H+T-ə̀**	
	Búŋ zhɨ̀ kābáyn	Búŋ ə́ zhɨ́ ↓lí kə̀báyn	Búŋ zhɨ́ɨ́ kə̀báyn	Bung has eaten/is eating fufu
	Búŋ làm kābáyn	Búŋ ə́ lám ↓lí kə̀báyn	Búŋ lámə́ kə̀báyn	... has cooked/is cooking ...
P0	Búŋ shìtə́ kə̀báyn	Búŋ ə́ shítə́ ↓lí kə̀báyn	Búŋ shítə̀ kə̀báyn	... has collected/is collecting ...
	Búŋ sə̀ŋtə́ kə̀báyn	Búŋ ə́ sə́ŋtə́ ↓lí kə̀báyn	Búŋ sə́ŋtə̀ kə̀báyn	... has sifted/is sifting ...
	Búŋ lè kə̀báyn	Búŋ ə́ léè lí kə̀báyn	Búŋ lèè kə̀báyn	... has lost/is losing ...
	Búŋ kùm kə̀báyn	Búŋ ə́ kúmə́ lí kə̀báyn	Búŋ kùmə̀ kə̀báyn	... has touched/is touching ...
	Búŋ shìsə̀ kə̀báyn	Búŋ ə́ shísə́ lí kə̀báyn	Búŋ shìsə̀ kə̀báyn	... has removed/was removing ...
	Búŋ lɨ̀msə̀ kə̀báyn	Búŋ ə́ lɨ́msə́ lí kə̀báyn	Búŋ lɨ̀msə̀ kə̀báyn	... has heated/is heating ...
	L+L-T	**L+L-T**	**H+T-ə̀**	
	Búŋ yì zhɨ̀ kābáyn	Búŋ ə́ yî zhɨ̀ kābáyn	Búŋ yǐ nzhɨ́ɨ́ kə̀báyn	Bung ate/was eating fufu
	Búŋ yì làm kābáyn	Búŋ ə́ yî làm kābáyn	Búŋ yǐ nlámə́ kə̀báyn	... cooked/was cooking ...
P1	Búŋ yì shìtə́ kə̀báyn	Búŋ ə́ yî shìtə́ kə̀báyn	Búŋ yǐ nshítə̀ kə̀báyn	... collected/was collecting ...
	Búŋ yì sə̀ŋtə́ kə̀báyn	Búŋ ə́ yî sə̀ŋtə́ kə̀báyn	Búŋ yǐ nsə́ŋtə̀ kə̀báyn	... sifted/was sifting ...
	Búŋ yì lè kə̀báyn	Búŋ ə́ yî lè kə̀báyn	Búŋ yǐ nlèè kə̀báyn	... lost/was losing ...
	Búŋ yì kùm kə̀báyn	Búŋ ə́ yî kùm kə̀báyn	Búŋ yǐ ŋkùmə̀ kə̀báyn	... touched/was touching ...
	Búŋ yì shìsə̀ kə̀báyn	Búŋ ə́ yî shìsə̀ kə̀báyn	Búŋ yǐ nshìsə̀ kə̀báyn	... removed/was removing ...
	Búŋ yì lɨ̀msə̀ kə̀báyn	Búŋ ə́ yî lɨ̀msə̀ kə̀báyn	Búŋ yǐ nlɨ̀msə̀ kə̀báyn	... heated/was heating ...
	L+L-T	**L+L-T**	**H+T-ə̀**	
	Búŋ tə̀ zhɨ̀ kābáyn	Búŋ ə́ tə̂ zhɨ̀ kābáyn	Búŋ tə̌ nzhɨ́ɨ́ kə̀báyn	Bung ate/was eating fufu
	Búŋ tə̀ làm kābáyn	Búŋ ə́ tə̂ làm kābáyn	Búŋ tə̌ nlámə́ kə̀báyn	... cooked/was cooking ...
P2	Búŋ tə̀ shìtə́ kə̀báyn	Búŋ ə́ tə̂ shìtə́ kə̀báyn	Búŋ tə̌ nshítə̀ kə̀báyn	... collected/was collecting ...
	Búŋ tə̀ sə̀ŋtə́ kə̀báyn	Búŋ ə́ tə̂ sə̀ŋtə́ kə̀báyn	Búŋ tə̌ nsə́ŋtə̀ kə̀báyn	... sifted/was sifting ...
	Búŋ tə̀ lè kə̀báyn	Búŋ ə́ tə̂ lè kə̀báyn	Búŋ tə̌ nlèè kə̀báyn	... lost/was losing ...
	Búŋ tə̀ kùm kə̀báyn	Búŋ ə́ tə̂ kùm kə̀báyn	Búŋ tə̌ ŋkùmə̀ kə̀báyn	... touched/was touching ...
	Búŋ tə̀ shìsə̀ kə̀báyn	Búŋ ə́ tə̂ shìsə̀ kə̀báyn	Búŋ tə̌ nshìsə̀ kə̀báyn	... removed/was removing ...
	Búŋ tə̀ lɨ̀msə̀ kə̀báyn	Búŋ ə́ tə̂ lɨ̀msə̀ kə̀báyn	Búŋ tə̌ nlɨ̀msə̀ kə̀báyn	... heated/was heating ...
	L+L-ə̀	**ə́+H-T+`lí**	**H+T-ə̀**	
	Búŋ ə̀ nzhɨ̀ kābáyn	Búŋ ə́ nzhɨ́ ↓lí kə̀báyn	Búŋ ə̀ nzhɨ́ɨ́ kə̀báyn	Bung ate/was eating fufu
	Búŋ ə̀ nlàm kābáyn	Búŋ ə́ nlám ↓lí kə̀báyn	Búŋ ə̀ nlámə́ kə̀báyn	... cooked/was cooking ...
P3	Búŋ ə̀ nshìtə́ kə̀báyn	Búŋ ə́ nshítə́ ↓lí kə̀báyn	Búŋ ə̀ nshítə̀ kə̀báyn	... collected/was collecting ...
	Búŋ ə̀ nsə̀ŋtə́ kə̀báyn	Búŋ ə́ nsə́ŋtə́ ↓lí ə̀báyn	Búŋ ə̀ nsə́ŋtə̀ kə̀báyn	... sifted/was sifting ...
	Búŋ ə̀ nlèé kābáyn	Búŋ ə́ nléè lí kə̀báyn	Búŋ ə̀ nlèè kə̀báyn	... lost/was losing ...
	Búŋ ə̀ ŋkùmə́ kābáyn	Búŋ ə́ ŋkúmə́ lí kə̀báyn	Búŋ ə̀ ŋkùmə̀ kə̀báyn	... touched/was touching ...
	Búŋ ə̀ nshìsə́ kābáyn	Búŋ ə́ nshísə́ lí kə̀báyn	Búŋ ə̀ nshìsə̀ kə̀báyn	... removed/was removing ...
	Búŋ ə̀ nlɨ̀msə́ kābáyn	Búŋ ə́ nlɨ́msə́ lí kə̀báyn	Búŋ ə̀ nlɨ̀msə̀ kə̀báyn	... heated/was heating ...
	L+L-T	**L+T-H**	**H+T-ə̀**	
	Búŋ à zhɨ̀ kābáyn	Búŋ á ↓zhɨ́ kābáyn	Búŋ á nzhɨ́ɨ́ kə̀báyn	Bung will eat/be eating fufu
	Búŋ à làm kābáyn	Búŋ á ↓lám kābáyn	Búŋ á nlámə́ kə̀báyn	... will cook/be cooking ...
F1	Búŋ à shìtə́ kə̀báyn	Búŋ á ↓shítə́ kābáyn	Búŋ á nshítə̀ kə̀báyn	... will collect/be collecting ...
	Búŋ à sə̀ŋtə́ kə̀báyn	Búŋ á ↓sə́ŋtə́ kābáyn	Búŋ á nsə́ŋtə̀ kə̀báyn	... will sift/be sifting ...
	Búŋ à lè kə̀báyn	Búŋ á lè kābáyn	Búŋ á nlèè kə̀báyn	... will lose/be losing ...
	Búŋ à kùm kə̀báyn	Búŋ á kùm kābáyn	Búŋ á ŋkùmə̀ kə̀báyn	... will touch/be touching ...
	Búŋ à shìsə̀ kə̀báyn	Búŋ á shìsə́ kābáyn	Búŋ á nshìsə̀ kə̀báyn	... will remove/be removing ...
	Búŋ à lɨ̀msə̀ kə̀báyn	Búŋ á lɨ̀msə́ kābáyn	Búŋ á nlɨ̀msə̀ kə̀báyn	... will heat/be heating ...

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	L+L-T	**L+T-H**	**H+T-ə̀**	
	Búŋ nè zhɨ̀ kə̀báyn	Búŋ ə́ né ˩zhɨ́ kə̀báyn	Búŋ ə́ né nzhɨ́ɨ́ kə̀báyn	Bung will eat/be eating fufu
	Búŋ nè làm kə̀báyn	Búŋ ə́ né ˩lám kə̀báyn	Búŋ ə́ né nlámə́ kə̀báyn	... will cook/be cooking ...
F2	Búŋ nè shìtə́ kə̀báyn	Búŋ ə́ né ˩shítə́ kə̀báyn	Búŋ ə́ né nshítə̀ kə̀báyn	... will collect/be collecting ...
	Búŋ nè sə̀ŋtə́ kə̀báyn	Búŋ ə́ né ˩sə́ŋtə́ kə̀báyn	Búŋ ə́ né nsə́ŋtə̀ kə̀báyn	... will sift/be sifting ...
	Búŋ nè lè kə̀báyn	Búŋ ə́ né lè kə̀báyn	Búŋ ə́ né nlèè kə̀báyn	... will lose/be losing ...
	Búŋ nè kùm kə̀báyn	Búŋ ə́ né kùm kə̀báyn	Búŋ ə́ né ŋkùmə̀ kə̀báyn	... will touch/be touching ...
	Búŋ nè shìsə̀ kə̀báyn	Búŋ ə́ né lɨ̀msə́ kə̀báyn	Búŋ ə́ né nshìsə̀ kə̀báyn	... will remove/be removing ...
	Búŋ nè lɨ̀msə̀ kə̀báyn	Búŋ ə́ né lɨ̀msə́ kə̀báyn	Búŋ ə́ né nlɨ̀msə̀ kə̀báyn	... will heat/be heating ...
	L+L-T	**L+T-H**	**H+T-ə̀**	
	Búŋ lù zhɨ̀ kə̀báyn	Búŋ ə́ lú ˩zhɨ́ kə̀báyn	Búŋ ə́ lú nzhɨ́ɨ́ kə̀báyn	Bung will eat/be eating fufu
	Búŋ lù làm kə̀báyn	Búŋ ə́ lú ˩lám kə̀báyn	Búŋ ə́ lú nlámə́ kə̀báyn	... will cook/be cooking ...
F3	Búŋ lù shìtə́ kə̀báyn	Búŋ ə́ lú ˩shítə́ kə̀báyn	Búŋ ə́ lú nsə́ŋtə̀ kə̀báyn	... will collect/be collecting ...
	Búŋ lù sə̀ŋtə́ kə̀báyn	Búŋ ə́ lú ˩sə́ŋtə́ kə̀báyn	Búŋ ə́ lú nshítə̀ kə̀báyn	... will sift/be sifting ...
	Búŋ lù lè kə̀báyn	Búŋ ə́ lú lè kə̀báyn	Búŋ ə́ lú nlèè kə̀báyn	... will lose/be losing ...
	Búŋ lù kùm kə̀báyn	Búŋ ə́ lú kùm kə̀báyn	Búŋ ə́ lú ŋkùmə̀ kə̀báyn	... will touch/be touching ...
	Búŋ lù shìsə̀ kə̀báyn	Búŋ ə́ lú shìsə́ kə̀báyn	Búŋ ə́ lú nshìsə̀ kə̀báyn	... will remove/be removing ...
	Búŋ lù lɨ̀msə̀ kə̀báyn	Búŋ ə́ lú lɨ̀msə́ kə̀báyn	Búŋ ə́ lú nlɨ̀msə̀ kə̀báyn	... will heat/be heating ...

Appendix 2. Negative indicative verb forms

	Perfective NEG	Progressive NEG	Glosses
	L+L-T	**H+T-ə̀**	
	Búŋ ə́ kó zhɨ̀ kə̀báyn	Búŋ ə́ kó ˩zhɨ́ɨ́ kə̀báyn	Bung has not eaten/is not eating fufu
	Búŋ ə́ kó làm kə̀báyn	Búŋ ə́ kó ˩lámə́ kə̀báyn	Bung has not cooked/is not cooking fufu
P0	Búŋ ə́ kó shìtə́ kə̀báyn	Búŋ ə́ kó ˩shítə̀ kə̀báyn	Bung has not collected/is not collecting fufu
	Búŋ ə́ kó sə̀ŋtə́ kə̀báyn	Búŋ ə́ kó ˩sə́ŋtə̀ kə̀báyn	Bung has not sifted/is not sifting fufu
	Búŋ ə́ kó lè kə̀báyn	Búŋ ə́ kó lèè kə̀báyn	Bung has not lost/is not losing fufu
	Búŋ ə́ kó kùm kə̀báyn	Búŋ ə́ kó kùmə̀ kə̀báyn	Bung has not touched/is not touching fufu
	Búŋ ə́ kó shìsə̀ kə̀báyn	Búŋ ə́ kó shìsə̀ kə̀báyn	Bung has not remove/is not removing fufu
	Búŋ ə́ kó lɨ̀msə̀ kə̀báyn	Búŋ ə́ kó lɨ̀msə̀ kə̀báyn	Bung has not heated/is not heating fufu
	L+L-T	**H+T-ə̀**	
	Búŋ ə́ kó yì zhɨ̀ kə̀báyn	Búŋ ə́ kó yɨ̌ nzhɨ́ɨ́ kə̀báyn	Bung did not eat/was not eating fufu
	Búŋ ə́ kó yì làm kə̀báyn	Búŋ ə́ kó yɨ̌ nlámə́ kə̀báyn	Bung did not cook/was not cooking fufu
P1	Búŋ ə́ kó yì shìtə́ kə̀báyn	Búŋ ə́ kó yɨ̌ nshítə̀ kə̀báyn	Bung did not collect/was not collecting fufu
	Búŋ ə́ kó yì sə̀ŋtə́ kə̀báyn	Búŋ ə́ kó yɨ̌ nsə́ŋtə̀ kə̀báyn	Bung did not sift/was not sifting fufu
	Búŋ ə́ kó yì lè kə̀báyn	Búŋ ə́ kó yɨ̌ nlèè kə̀báyn	Bung did not lose/was not losing fufu
	Búŋ ə́ kó yì kùm kə̀báyn	Búŋ ə́ kó yɨ̌ ŋkùmə̀ kə̀báyn	Bung did not touch/was not touching fufu
	Búŋ ə́ kó yì shìsə̀ ə̀báyn	Búŋ ə́ kó yɨ̌ nshìsə̀ kə̀báyn	Bung did not remove/was not removing fufu
	Búŋ ə́ kó yì lɨ̀msə̀ kə̀báyn	Búŋ ə́ kó yɨ̌ nlɨ̀msə̀ kə̀báyn	Bung did not heat/was not heating fufu
	L+L-T	**H+T-ə̀**	
	Búŋ ə́ kó tə̀ zhɨ̀ kə̀báyn	Búŋ ə́ kó tə̌ nzhɨ́ɨ́ kə̀báyn	Bung did not eat/was not eating fufu
	Búŋ ə́ kó tə̀ làm kə̀báyn	Búŋ ə́ kó tə̌ nlámə́ kə̀báyn	Bung did not cook/was not cooking fufu
P2	Búŋ ə́ kó tə̀ shìtə́ kə̀báyn	Búŋ ə́ kó tə̌ nshítə̀ kə̀báyn	Bung did not collect/was not collecting fufu
	Búŋ ə́ kó tə̀ sə̀ŋtə́ kə̀báyn	Búŋ ə́ kó tə̌ nsə́ŋtə̀ kə̀báyn	Bung did not sift/was not sifting fufu
	Búŋ ə́ kó tə̀ lè kə̀báyn	Búŋ ə́ kó tə̌ nlèè kə̀báyn	Bung did not lose/was not losing fufu
	Búŋ ə́ kó tə̀ kùm kə̀báyn	Búŋ ə́ kó tə̌ ŋkùmə̀ kə̀báyn	Bung did not touch/was not touching fufu
	Búŋ ə́ kó tə̀ shìsə̀ kə̀báyn	Búŋ ə́ kó tə̌ nshìsə̀ kə̀báyn	Bung did not remove/was not removing fufu
	Búŋ ə́ kó tə̀ lɨ̀msə̀ kə̀báyn	Búŋ ə́ kó tə̌ nlɨ̀msə̀ kə̀báyn	Bung did not heat/was not heating fufu

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	/kò/+L-ə́	H+T-ə̀	
	Búŋ ə́ kó nzhɨ́ kəbáyn	Búŋ ə́ kó nzhɨ́ɨ́ kə̀báyn	Bung did not eat/was not eating fufu
	Búŋ ə́ kó nlàm kəbáyn	Búŋ ə́ kó nlámə́ kə̀báyn	Bung did not cook/was not cooking fufu
P3	Búŋ ə́ kó nshìtə́ kəbáyn	Búŋ ə́ kó nshítə̀ kə̀báyn	Bung did not collect/was not collecting fufu
	Búŋ ə́ kó nsə̀ŋtə́ kə̀báyn	Búŋ ə́ kó nsə́ŋtə̀ kə̀báyn	Bung did not sift/was not sifting fufu
	Búŋ ə́ kó nlèé kəbáyn	Búŋ ə́ kó nlèè kə̀báyn	Bung did not lose/was not losing fufu
	Búŋ ə́ kó ŋkùmə́ kəbáyn	Búŋ ə́ kó ŋkùmə̀ kə̀báyn	Bung did not touch/was not touching fufu
	Búŋ ə́ kó nshìsə́ kəbáyn	Búŋ ə́ kó nshìsə̀ kə̀báyn	Bung did not remove/was not removing fufu
	Búŋ ə́ kó nlɨ̀msə́ kəbáyn	Búŋ ə́ kó nlɨ̀msə̀ kə̀báyn	Bung did not heat/was not heating fufu
	L+T-H	**H+T-ə̀**	
	Búŋ ə́ kó ↓zhɨ́ kəbáyn	Búŋ ə́ kó nzhɨ́ɨ́ kə̀báyn	Bung will not eat/be eating fufu
	Búŋ ə́ kó ↓lám kəbáyn	Búŋ ə́ kó nlámə́ kə̀báyn	Bung will not cook/be cooking fufu
F1	Búŋ ə́ kó ↓shítə́ kəbáyn	Búŋ ə́ kó nshítə̀ kə̀báyn	Bung will not collect/be collecting fufu
	Búŋ ə́ kó ↓sə́ŋtə́ kəbáyn	Búŋ ə́ kó nsə́ŋtə̀ kə̀báyn	Bung will not sift/be sifting fufu
	Búŋ ə́ kó lè kəbáyn	Búŋ ə́ kó nlèè kə̀báyn	Bung will not lose/be losing fufu
	Búŋ ə́ kó kùm kəbáyn	Búŋ ə́ kó ŋkùmə̀ kə̀báyn	Bung will not touch/be touching fufu
	Búŋ ə́ kó shìsə́ kəbáyn	Búŋ ə́ kó nshìsə̀ kə̀báyn	Bung will not remove/be removing fufu
	Búŋ ə́ kó lɨ̀msə́ kəbáyn	Búŋ ə́ kó nlɨ̀msə̀ kə̀báyn	Bung will not heat/be heating fufu

Appendix 3. Affirmative imperative singular verb forms

	Perfective	Progressive	Gloss
	L+T-H	**H+T-ə̀**	
	zhɨ́ kəbáyn	ə́ nzhɨ́ɨ́ kə̀báyn	eat/be eating fufu!
	lám kəbáyn	ə́ nlámə́ kə̀báyn	cook/be cooking fufu!
F1	shítə́ kəbáyn	ə́ nshítə̀ kə̀báyn	collect/be collecting fufu!
	sə́ŋtə́ kəbáyn	ə́ nsə́ŋtə̀ kə̀báyn	sift/be sifting fufu!
	lèé kəbáyn	ə́ nlèè kə̀báyn	lose/be losing fufu!
	kùmə́ kəbáyn	ə́ ŋkùmə̀ kə̀báyn	touch/be touching fufu!
	shìsə́ kəbáyn	ə́ nshìsə̀ kə̀báyn	remove/be removing fufu!
	lɨ̀msə́ kəbáyn	ə́ nlɨ̀msə̀ kə̀báyn	heat/be heating fufu!
	L+L-T	**H+T-ə̀**	
	nè zhɨ́ kəbáyn	né nzhɨ́ɨ́ kə̀báyn	eat/be eating fufu!
	nè làm kəbáyn	né nlámə́ kəbáyn	cook/be cooking fufu!
F2	nè shìtə́ kə̀báyn	né nshítə̀ kə̀báyn	collect/be collecting fufu!
	nè sə̀ŋtə́ kə̀báyn	né nsə́ŋtə̀ kə̀báyn	sift/be sifting fufu!
	nè lè kə̀báyn	né nlèè kə̀báyn	lose/be losing fufu!
	nè kùm kə̀báyn	né ŋkùmə̀ kə̀báyn	touch/be touching fufu!
	nè shìsə̀ kə̀báyn	né nshìsə̀ kə̀báyn	remove/be removing fufu!
	nè lɨ̀msə̀ kə̀báyn	né nlɨ̀msə̀ kə̀báyn	heat/be heating fufu!
	L+L-T	**H+T-ə̀**	
	lù zhɨ́ kəbáyn	lú nzhɨ́ɨ́ kə̀báyn	eat/be eating fufu!
	lù làm kəbáyn	lú nlámə́ kəbáyn	cook/be cooking fufu!
F3	lù shìtə́ kə̀báyn	lú nshítə̀ kə̀báyn	collect/be collecting fufu!
	lù sə̀ŋtə́ kə̀báyn	lú nsə́ŋtə̀ kə̀báyn	sift/be sifting fufu!
	lù lè kə̀báyn	lú nlèè kə̀báyn	lose/be losing fufu!
	lù kùm kə̀báyn	lú ŋkùmə̀ kə̀báyn	touch/be touching fufu!
	lù shìsə̀ kə̀báyn	lú nshìsə̀ kə̀báyn	remove/be removing fufu!
	lù lɨ̀msə̀ kə̀báyn	lú nlɨ̀msə̀ kə̀báyn	heat/be heating fufu!

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Appendix 4. Affirmative imperative plural verb forms

	Perfective AFF	Progressive AFF	Gloss
F1	**H+T-H**	**H+T-L**	
	ghàŋ zhí kābáyn	ghàŋ á nzhíɨ́ kàbáyn	eat/be eating fufu!
	ghàŋ lám kābáyn	ghàŋ á nlámá kàbáyn	cook/be cooking fufu!
	ghàŋ shítá kābáyn	ghàŋ á nshítà kàbáyn	collect/be collecting fufu!
	ghàŋ sáŋtá kābáyn	ghàŋ á nsáŋtà kàbáyn	sift/be sifting fufu!
	ghàŋ lé kàbáyn	ghàŋ á nlèè kàbáyn	lose/be losing fufu!
	ghàŋ kúm kàbáyn	ghàŋ á ŋkùmà kàbáyn	touch/be touching fufu!
	ghàŋ shíˡsá kābáyn	ghàŋ á nshìsà kàbáyn	remove/be removing fufu!
	ghàŋ límˡsá kābáyn	ghàŋ á nlɨ̀msà kàbáyn	heat/be heating fufu!
F2	**L+L-T**	**H+T-ə̀**	
	ghàŋ nè zhɨ kābáyn	ghàŋ né nzhíɨ́ kàbáyn	eat/be eating fufu!
	ghàŋ nè làm kābáyn	ghàŋ né nlámá kābáyn	cook/be cooking fufu!
	ghàŋ nè shìtá kàbáyn	ghàŋ né nshítà kàbáyn	collect/be collecting fufu!
	ghàŋ nè sàŋtá kàbáyn	ghàŋ né nsáŋtà kàbáyn	sift/be sifting fufu!
	ghàŋ nè lè kàbáyn	ghàŋ né nlèè kàbáyn	lose/be losing fufu!
	ghàŋ nè kùm kàbáyn	ghàŋ né ŋkùmà kàbáyn	touch/be touching fufu!
	ghàŋ nè shìsà kàbáyn	ghàŋ né nshìsà kàbáyn	remove/be removing fufu!
	ghàŋ nè lɨ̀msà kàbáyn	ghàŋ né nlɨ̀msà kàbáyn	heat/be heating fufu!
F3	**L+L-T**	**H+T-ə̀**	
	ghàŋ lù zhɨ kābáyn	ghàŋ lú nzhíɨ́ kàbáyn	eat/be eating fufu!
	ghàŋ lù làm kābáyn	ghàŋ lú nlámá kābáyn	cook/be cooking fufu!
	ghàŋ lù shìtá kàbáyn	ghàŋ lú nshítà kàbáyn	collect/be collecting fufu!
	ghàŋ lù sàŋtá kàbáyn	ghàŋ lú nsáŋtà kàbáyn	sift/be sifting fufu!
	ghàŋ lù lè kàbáyn	ghàŋ lú nlèè kàbáyn	lose/be losing fufu!
	ghàŋ lù kùm kàbáyn	ghàŋ lú ŋkùmà kàbáyn	touch/be touching fufu!
	ghàŋ lù shìsà kàbáyn	ghàŋ lú nshìsà kàbáyn	remove/be removing fufu!
	ká ghàŋ lù lɨ̀msà kàbáyn	ghàŋ lú nlɨ̀msà kàbáyn	heat/be heating fufu!

Appendix 5. Affirmative hortative verb forms

	Perfective AFF	Progressive AFF	Gloss
F1	**H+T-H**	**H+T-ə̀**	
	yúwù zhí kābáyn	yúwù á nzhíɨ́ kàbáyn	let's eat/be eating fufu!
	yúwù lám kābáyn	yúwù á nlámá kàbáyn	let's cook/be cooking fufu!
	yúwù shítá kābáyn	yúwù á nshítà kàbáyn	let's collect/be collecting fufu!
	yúwù sáŋtá kābáyn	yúwù á nsáŋtà kàbáyn	let's sift/be sifting fufu!
	yúwù lé kàbáyn	yúwù á nlèè kàbáyn	let's lose/be losing fufu!
	yúwù kúm kàbáyn	yúwù á ŋkùmà kàbáyn	let's touch/be touching fufu!
	yúwù shíˡsá kābáyn	yúwù á nshìsà kàbáyn	let's remove/be removing fufu!
	yúwù límˡsá kābáyn	yúwù á nlɨ̀msà kàbáyn	let's heat/be heating fufu!
F2	**L+L-T**	**H+T-ə̀**	
	yúwù nè zhɨ kābáyn	yúwù né nzhíɨ́ kàbáyn	let's eat/be eating fufu!
	yúwù nè làm kābáyn	yúwù né nlámá kābáyn	let's cook/be cooking fufu!
	yúwù nè shìtá kàbáyn	yúwù né nshítà kàbáyn	let's collect/be collecting fufu!
	yúwù nè sàŋtá kàbáyn	yúwù né nsáŋtà kàbáyn	let's sift/be sifting fufu!
	yúwù nè lè kàbáyn	yúwù né nlèè kàbáyn	let's lose/be losing fufu!
	yúwù nè kùm kàbáyn	yúwù né ŋkùmà kàbáyn	let's touch/be touching fufu!

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	yúwù nè shìsə̀ kə̀báyn	yúwù né nshìsə̀ kə̀báyn	let's remove/be removing fufu!
	yúwù nè lɨ̀msə̀ kə̀báyn	yúwù né nlɨ̀msə̀ kə̀báyn	let's heat/be heating fufu!
	L+L-T	**H+T-ə̀**	
	yúwù lù zhɨ̀ kə̄báyn	yúwù lú nzhɨ́ɨ́ kə̀báyn	let's eat/be eating fufu!
	yúwù lù làm kə̄báyn	yúwù lú nlámə́ kə̄báyn	let's cook/be cooking fufu!
F3	yúwù lù shìtə́ kə̀báyn	yúwù lú nshítə̀ kə̀báyn	let's collect/be collecting fufu!
	yúwù lù sə̀ŋtə́ kə̀báyn	yúwù lú nsə́ŋtə̀ kə̀báyn	let's sift/be sifting fufu!
	yúwù lù lè kə̀báyn	yúwù lú nlèè kə̀báyn	let's lose/be losing fufu!
	yúwù lù kùm kə̀báyn	yúwù lú ŋkùmə̀ kə̀báyn	let's touch/be touching fufu!
	yúwù lù shìsə̀ kə̀báyn	yúwù lú nshìsə̀ kə̀báyn	let's remove/be removing fufu!
	ká yúwù lù lɨ̀msə̀ kə̀báyn	yúwù lú nlɨ̀msə̀ kə̀báyn	let's heat/be heating fufu!

Appendix 6. Affirmative subjunctive verb forms

	Perfective AFF	Progressive AFF	Gloss
	H+T-H	**H+T-ə̀**	
	... lá yúwù zhɨ́ kə̄báyn	... lá yúwù ə́ nzhɨ́ɨ́ kə̀báyn	... that we eat fufu!
	... lá yúwù lám kə̄báyn	... lá yúwù ə́ nlámə́ kə̀báyn	... that we cook fufu!
F1	... lá yúwù shítə́ kə̄báyn	... lá yúwù ə́ nshítə̀ kə̀báyn	... that we collect fufu!
	... lá yúwù sə́ŋtə́ kə̄báyn	... lá yúwù ə́ nsə́ŋtə̀ kə̀báyn	... that we sift fufu!
	... lá yúwù lé kə̀báyn	... lá yúwù ə́ nlèè kə̀báyn	... that we lose fufu!
	... lá yúwù kúm kə̀báyn	... lá yúwù ə́ ŋkùmə̀ kə̀báyn	... that we touch fufu!
	... lá yúwù shí↓sə́ kə̄báyn	... lá yúwù ə́ nshìsə̀ kə̀báyn	... that we remove fufu!
	... lá yúwù lím↓sə́ kə̄báyn	... lá yúwù ə́ nlɨ̀msə̀ kə̀báyn	... that we heat fufu!
	L+L-T	**H+T-ə̀**	
	... lá yúwù nè zhɨ̀ kə̄báyn	... lá yúwù né nzhɨ́ɨ́ kə̀báyn	... that we eat fufu!
	... lá yúwù nè làm kə̄báyn	... lá yúwù né nlámə́ kə̀báyn	... that we cook fufu!
F2	... lá yúwù nè shìtə́ kə̀báyn	... lá yúwù né nshítə̀ kə̀báyn	... that we collect fufu!
	... lá yúwù nè sə̀ŋtə́ kə̀báyn	... lá yúwù né nsə́ŋtə̀ kə̀báyn	... that we sift fufu!
	... lá yúwù nè lè kə̀báyn	... lá yúwù né nlèè kə̀báyn	... that we lose fufu!
	... lá yúwù nè kùm kə̀báyn	... lá yúwù né ŋkùmə̀ kə̀báyn	... that we touch fufu!
	... lá yúwù nè shìsə̀ kə̀báyn	... lá yúwù né nshìsə̀ kə̀báyn	... that we remove fufu!
	... lá yúwù nè lɨ̀msə̀ kə̀báyn	... lá yúwù né nlɨ̀msə̀ kə̀báyn	... that we heat fufu!
	L+L-T	**H+T-ə̀**	
	... lá yúwù lù zhɨ̀ kə̄báyn	... lá yúwù lú nzhɨ́ɨ́ kə̀báyn	... that we eat fufu!
	... lá yúwù lù làm kə̄báyn	... lá yúwù lú nlámə́ kə̀báyn	... that we cook fufu!
F3	... lá yúwù lù shìtə́ kə̀báyn	... lá yúwù lú nshítə̀ kə̀báyn	... that we collect fufu!
	... lá yúwù lù sə̀ŋtə́ kə̀báyn	... lá yúwù lú nsə́ŋtə̀ kə̀báyn	... that we sift fufu!
	... lá yúwù lù lè kə̀báyn	... lá yúwù lú nlèè kə̀báyn	... that we lose fufu!
	... lá yúwù lù kùm kə̀báyn	... lá yúwù lú ŋkùmə̀ kə̀báyn	... that we touch fufu!
	... lá yúwù lù shìsə̀ kə̀báyn	... lá yúwù lú nshìsə̀ kə̀báyn	... that we remove fufu!
	... lá yúwù lù lɨ̀msə̀ kə̀báyn	... lá yúwù lú nlɨ̀msə̀ kə̀báyn	... that we heat fufu!

Appendix 7. Affirmative conditional verb forms

	Perfective AFF	Progressive AFF	Gloss
	H+T-H	**H+T-ə̀**	
	sə́tsə̀n Búŋ zhɨ́ kə̄báyn ...	sə́tsə̀n Búŋ ə́ nzhɨ́ɨ́ kə̀báyn ...	If Bung eats fufu ...!
	sə́tsə̀n Búŋ lám kə̄báyn ...	sə́tsə̀n Búŋ ə́ nlámə́ kə̀báyn ...	If Bung cooks fufu ...!
F1	sə́tsə̀n Búŋ shítə́ kə̄báyn ...	sə́tsə̀n Búŋ ə́ nshítə̀ kə̀báyn ...	If Bung collects fufu ...!
	sə́tsə̀n Búŋ sə́ŋtə́ kə̄báyn ...	sə́tsə̀n Búŋ ə́ nsə́ŋtə̀ kə̀báyn ...	If Bung sifts fufu ...!
	sə́tsə̀n Búŋ lé kə̀báyn ...	sə́tsə̀n Búŋ ə́ nlèè kə̀báyn ...	If Bung loses fufu ...!
	sə́tsə̀n Búŋ kúm kə̀báyn ...	sə́tsə̀n Búŋ ə́ ŋkùmə̀ kə̀báyn ...	If Bung touches fufu ...!
	sə́tsə̀n Búŋ shí↓sə́ kə̄báyn ...	sə́tsə̀n Búŋ ə́ nshìsə̀ kə̀báyn ...	If Bung removes fufu ...!

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	sətsèn Búŋ lím↓sə́ kə̄báyn ...	sətsèn Búŋ ə́ nlɨ̀msə̀ kə̀báyn ...	If Bung heats fufu ...!
	L+L-T	**H+T-ə̀**	
	sətsèn Búŋ nè zhɨ̀ kə̄báyn ...	sətsèn Búŋ né nzhɨ́ɨ́ kə̀báyn ...	If Bung eats fufu ...!
	sətsèn Búŋ nè làm kə̄báyn ...	sətsèn Búŋ né nlámə́ kə̀báyn ...	If Bung cooks fufu ...!
F2	sətsèn Búŋ nè shìtə́ kə̀báyn ...	sətsèn Búŋ né nshítə̀ kə̀báyn ...	If Bung collects fufu ...!
	sətsèn Búŋ nè sə̀ŋtə́ kə̀báyn ...	sətsèn Búŋ né nsə́ŋtə̀ kə̀báyn ...	If Bung sifts fufu ...!
	sətsèn Búŋ nè lè kə̀báyn ...	sətsèn Búŋ né nlèè kə̀báyn ...	If Bung loses fufu ...!
	sətsèn Búŋ nè kùm kə̀báyn ...	sətsèn Búŋ né ŋkùmə̀ kə̀báyn ...	If Bung touches fufu ...!
	sətsèn Búŋ nè shìsə̀ kə̀báyn ...	sətsèn Búŋ né nshìsə̀ kə̀báyn ...	If Bung removes fufu ...!
	sətsèn Búŋ nè lɨ̀msə̀ kə̀báyn ...	sətsèn Búŋ né nlɨ̀msə̀ kə̀báyn ...	If Bung heats fufu ...!
	L+L-T	**H+T-ə̀**	
	sətsèn Búŋ lù zhɨ̀ kə̄báyn ...	sətsèn Búŋ lú nzhɨ́ɨ́ kə̀báyn ...	If Bung eats fufu ...!
	sətsèn Búŋ lù làm kə̄báyn ...	sətsèn Búŋ lú nlámə́ kə̀báyn ...	If Bung cooks fufu ...!
F3	sətsèn Búŋ lù shìtə́ kə̀báyn ...	sətsèn Búŋ lú nshítə̀ kə̀báyn ...	If Bung collects fufu ...!
	sətsèn Búŋ lù sə̀ŋtə́ kə̀báyn ...	sətsèn Búŋ lú nsə́ŋtə̀ kə̀báyn ...	If Bung sifts fufu ...!
	sətsèn Búŋ lù lè kə̀báyn ...	sətsèn Búŋ lú nlèè kə̀báyn ...	If Bung loses fufu ...!
	sətsèn Búŋ lù kùm kə̀báyn ...	sətsèn Búŋ lú ŋkùmə̀ kə̀báyn ...	If Bung touches fufu ...!
	sətsèn Búŋ lù shìsə̀ kə̀báyn ...	sətsèn Búŋ lú nshìsə̀ kə̀báyn ...	If Bung removes fufu ...!
	sətsèn Búŋ lù lɨ̀msə̀ kə̀báyn ...	sətsèn Búŋ lú nlɨ̀msə̀ kə̀báyn ...	If Bung heats fufu ...!

Appendix 8. Affirmative past conditional verb forms

	Perfective AFF	Progressive AFF	Gloss
	L+T-H	**H+T-ə̀**	
	Búŋ tí ↓zhɨ́ kə̄báyn ...	Búŋ tí nzhɨ́ɨ́ kə̀báyn ...	If Bung had eaten fufu ...!
	Búŋ tí ↓lám kə̄báyn ...	Búŋ tí nlámə́ kə̀báyn ...	If Bung had cooked fufu ...!
P0	Búŋ tí ↓shítə́ kə̄báyn ...	Búŋ tí nshítə̀ kə̀báyn ...	If Bung had collected fufu ...!
	Búŋ tí ↓sə́ŋtə́ kə̄báyn ...	Búŋ tí nsə́ŋtə̀ kə̀báyn ...	If Bung had sifted fufu ...!
	Búŋ tí lè kə̄báyn ...	Búŋ tí nlèè kə̀báyn ...	If Bung had lost fufu ...!
	Búŋ tí kùm kə̄báyn ...	Búŋ tí ŋkùmə̀ kə̀báyn ...	If Bung had touched fufu ...!
	Búŋ tí shìsə́ kə̄báyn ...	Búŋ tí nshìsə̀ kə̀báyn ...	If Bung had removed fufu ...!
	Búŋ tí lɨ̀msə́ kə̄báyn ...	Búŋ tí nlɨ̀msə̀ kə̀báyn ...	If Bung had heated fufu ...!
	L+T-H	**H+T-ə̀**	
	Búŋ yì tí ↓zhɨ́ kə̄báyn ...	Búŋ yì tí nzhɨ́ɨ́ kə̀báyn ...	If Bung had eaten fufu ...!
	Búŋ yì tí ↓lám kə̄báyn ...	Búŋ yì tí nlámə́ kə̀báyn ...	If Bung had cooked fufu ...!
P1	Búŋ yì tí ↓shítə́ kə̄báyn ...	Búŋ yì tí nshítə̀ kə̀báyn ...	If Bung had collected fufu ...!
	Búŋ yì tí ↓sə́ŋtə́ kə̄báyn ...	Búŋ yì tí nsə́ŋtə̀ kə̀báyn ...	If Bung had sifted fufu ...!
	Búŋ yì tí lè kə̄báyn ...	Búŋ yì tí nlèè kə̀báyn ...	If Bung had lost fufu ...!
	Búŋ yì tí kùm kə̄báyn ...	Búŋ yì tí ŋkùmə̀ kə̀báyn ...	If Bung had touched fufu ...!
	Búŋ yì tí shìsə́ kə̄báyn ...	Búŋ yì tí nshìsə̀ kə̀báyn ...	If Bung had removed fufu ...!
	Búŋ yì tí lɨ̀msə́ kə̄báyn ...	Búŋ yì tí nlɨ̀msə̀ kə̀báyn ...	If Bung had heated fufu ...!
	L+T-H	**H+T-ə̀**	
	Búŋ tə̀ tí ↓zhɨ́ kə̄báyn ...	Búŋ tə̀ tí nzhɨ́ɨ́ kə̀báyn ...	If Bung had eaten fufu ...!
	Búŋ tə̀ tí ↓lám kə̄báyn ...	Búŋ tə̀ tí nlámə́ kə̀báyn ...	If Bung had cooked fufu ...!
P2	Búŋ tə̀ tí ↓shítə́ kə̄báyn ...	Búŋ tə̀ tí nshítə̀ kə̀báyn ...	If Bung had collected fufu ...!
	Búŋ tə̀ tí ↓sə́ŋtə́ kə̄báyn ...	Búŋ tə̀ tí nsə́ŋtə̀ kə̀báyn ...	If Bung had sifted fufu ...!
	Búŋ tə̀ tí lè kə̄báyn ...	Búŋ tə̀ tí nlèè kə̀báyn ...	If Bung had lost fufu ...!
	Búŋ tə̀ tí kùm kə̄báyn ...	Búŋ tə̀ tí ŋkùmə̀ kə̀báyn ...	If Bung had touched fufu ...!
	Búŋ tə̀ tí shìsə́ kə̄báyn ...	Búŋ tə̀ tí nshìsə̀ kə̀báyn ...	If Bung had removed fufu ...!
	Búŋ tə̀ tí lɨ̀msə́ kə̄báyn ...	Búŋ tə̀ tí nlɨ̀msə̀ kə̀báyn ...	If Bung had heated fufu ...!

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	L+T-H	**H+T-ə**	
	Búŋ ə ntí ↓zhí kəbáyn ...	Búŋ ə ntí nzhíí kəbáyn ...	If Bung had eaten fufu ...!
	Búŋ ə ntí ↓lám kəbáyn ...	Búŋ ə ntí nlámə kəbáyn ...	If Bung had cooked fufu ...!
P3	Búŋ ə ntí ↓shítə kəbáyn ...	Búŋ ə ntí nshítə kəbáyn ...	If Bung had collected fufu ...!
	Búŋ ə ntí ↓sə́ŋtə kəbáyn ...	Búŋ ə ntí nsə́ŋtə kəbáyn ...	If Bung had sifted fufu ...!
	Búŋ ə ntí lè kəbáyn ...	Búŋ ə ntí nlèè kəbáyn ...	If Bung had lost fufu ...!
	Búŋ ə ntí kùm kəbáyn ...	Búŋ ə ntí ŋkùmə kəbáyn ...	If Bung had touched fufu ...!
	Búŋ ə ntí shìsə́ kəbáyn ...	Búŋ ə ntí nshìsə́ kəbáyn ...	If Bung had removed fufu ...!
	Búŋ ə ntí lɨmsə́ kəbáyn ...	Búŋ ə ntí nlɨmsə́ kəbáyn ...	If Bung had heated fufu ...!

Appendix 9. Negative imperative singular verb forms

	Perfective	Progressive	Gloss
	L+T-H	**H+T-ə**	
	ká ↓zhí kəbáyn	ká nzhíí kəbáyn	don't eat/be eating fufu!
	ká ↓lám kəbáyn	ká nlámə kəbáyn	don't cook/be cooking fufu!
F1	ká ↓shítə kəbáyn	ká nshítə kəbáyn	don't collect/be collecting fufu!
	ká ↓sə́ŋtə kəbáyn	ká nsə́ŋtə kəbáyn	don't sift/be sifting fufu!
	ká lè kəbáyn	ká nlèè kəbáyn	don't lose/be losing fufu!
	ká kùm kəbáyn	ká ŋkùmə kəbáyn	don't touch/be touching fufu!
	ká shìsə́ kəbáyn	ká nshìsə́ kəbáyn	don't remove/be removing fufu!
	ká lɨmsə́ kəbáyn	ká nlɨmsə́ kəbáyn	don't heat/be heating fufu!
	L+T-H	**H+T-ə**	
	ká né ↓zhí kəbáyn	ká né nzhíí kəbáyn	don't eat/be eating fufu!
	ká né ↓lám kəbáyn	ká né nlámə kəbáyn	don't cook/be cooking fufu!
F2	ká né ↓shítə kəbáyn	ká né nshítə kəbáyn	don't collect/be collecting fufu!
	ká né ↓sə́ŋtə kəbáyn	ká né nsə́ŋtə kəbáyn	don't sift/be sifting fufu!
	ká né lè kəbáyn	ká né nlèè kəbáyn	don't lose/be losing fufu!
	ká né kùm kəbáyn	ká né ŋkùmə kəbáyn	don't touch/be touching fufu!
	ká né shìsə́ kəbáyn	ká né nshìsə́ kəbáyn	don't remove/be removing fufu!
	ká né lɨmsə́ kəbáyn	ká né nlɨmsə́ kəbáyn	don't heat/be heating fufu!
	L+T-H	**H+T-ə**	
	ká lú ↓zhí kəbáyn	ká lú nzhíí kəbáyn	don't eat/be eating fufu!
	ká lú ↓lám kəbáyn	ká lú nlámə kəbáyn	don't cook/be cooking fufu!
F3	ká lú ↓shítə kəbáyn	ká lú nshítə kəbáyn	don't collect/be collecting fufu!
	ká lú ↓sə́ŋtə kəbáyn	ká lú nsə́ŋtə kəbáyn	don't sift/be sifting fufu!
	ká lú lè kəbáyn	ká lú nlèè kəbáyn	don't lose/be losing fufu!
	ká lú kùm kəbáyn	ká lú ŋkùmə kəbáyn	don't touch/be touching fufu!
	ká lú shìsə́ kəbáyn	ká lú nshìsə́ kəbáyn	don't remove/be removing fufu!
	ká lú lɨmsə́ kəbáyn	ká lú nlɨmsə́ kəbáyn	don't heat/be heating fufu!

Appendix 10. Negative imperative plural verb forms

	Perfective AFF	Progressive AFF	Gloss
	H+T-H	**H+T-ə**	
	ká ghə̀ŋ zhí kəbáyn	ká ghə̀ŋ ə́ nzhíí kəbáyn	don't eat/be eating fufu!
	ká ghə̀ŋ lám kəbáyn	ká ghə̀ŋ ə́ nlámə kəbáyn	don't cook/be cooking fufu!
F1	ká ghə̀ŋ shítə kəbáyn	ká ghə̀ŋ ə́ nshítə kəbáyn	don't collect/be collecting fufu!
	ká ghə̀ŋ sə́ŋtə kəbáyn	ká ghə̀ŋ ə́ nsə́ŋtə kəbáyn	don't sift/be sifting fufu!
	ká ghə̀ŋ lé kəbáyn	ká ghə̀ŋ ə́ nlèè kəbáyn	don't lose/be losing fufu!
	ká ghə̀ŋ kúm kəbáyn	ká ghə̀ŋ ə́ ŋkùmə kəbáyn	don't touch/be touching fufu!

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	kə́ ghə̀ŋ shíˈsə́ kə̄báyn	kə́ ghə̀ŋ ə́ nshìsə̀ kə̀báyn	don't remove/be removing fufu!
	kə́ ghə̀ŋ límˈsə́ kə̄báyn	kə́ ghə̀ŋ ə́ nlɨ̀msə̀ kə̀báyn	don't heat/be heating fufu!
	L+L-T	**H+T-ə̀**	
	kə́ ghə̀ŋ nè zhɨ̀ kə̄báyn	kə́ ghə̀ŋ né nzhɨ́ɨ́ kə̀báyn	don't eat/be eating fufu!
	kə́ ghə̀ŋ nè làm kə̄báyn	kə́ ghə̀ŋ né nlámə́ kə̄báyn	don't cook/be cooking fufu!
F2	kə́ ghə̀ŋ nè shìtə́ kə̀báyn	kə́ ghə̀ŋ né nshítə̀ kə̀báyn	don't collect/be collecting fufu!
	kə́ ghə̀ŋ nè sə̀ŋtə́ kə̀báyn	kə́ ghə̀ŋ né nsə́ŋtə̀ kə̀báyn	don't sift/be sifting fufu!
	kə́ ghə̀ŋ nè lè kə̀báyn	kə́ ghə̀ŋ né nlèè kə̀báyn	don't lose/be losing fufu!
	kə́ ghə̀ŋ nè kùm kə̀báyn	kə́ ghə̀ŋ né ŋkùmə̀ kə̀báyn	don't touch/be touching fufu!
	kə́ ghə̀ŋ nè shìsə̀ kə̀báyn	kə́ ghə̀ŋ né nshìsə̀ kə̀báyn	don't remove/be removing fufu!
	kə́ ghə̀ŋ nè lɨ̀msə̀ kə̀báyn	kə́ ghə̀ŋ né nlɨ̀msə̀ kə̀báyn	don't heat/be heating fufu!
	L+L-T	**H+T-ə̀**	
	kə́ ghə̀ŋ lù zhɨ̀ kə̄báyn	kə́ ghə̀ŋ lú nzhɨ́ɨ́ kə̀báyn	don't eat/be eating fufu!
	kə́ ghə̀ŋ lù làm kə̄báyn	kə́ ghə̀ŋ lú nlámə́ kə̄báyn	don't cook/be cooking fufu!
F3	kə́ ghə̀ŋ lù shìtə́ kə̀báyn	kə́ ghə̀ŋ lú nshítə̀ kə̀báyn	don't collect/be collecting fufu!
	kə́ ghə̀ŋ lù sə̀ŋtə́ kə̀báyn	kə́ ghə̀ŋ lú nsə́ŋtə̀ kə̀báyn	don't sift/be sifting fufu!
	kə́ ghə̀ŋ lù lè kə̀báyn	kə́ ghə̀ŋ lú nlèè kə̀báyn	don't lose/be losing fufu!
	kə́ ghə̀ŋ lù kùm kə̀báyn	kə́ ghə̀ŋ lú ŋkùmə̀ kə̀báyn	don't touch/be touching fufu!
	kə́ ghə̀ŋ lù shìsə̀ kə̀báyn	kə́ ghə̀ŋ lú nshìsə̀ kə̀báyn	don't remove/be removing fufu!
	kə́ ghə̀ŋ lù lɨ̀msə̀ kə̀báyn	kə́ ghə̀ŋ lú nlɨ̀msə̀ kə̀báyn	don't heat/be heating fufu!

Appendix 11. Negative hortative verb forms

	Perfective AFF	Progressive AFF	Gloss
	H+T-H	**H+T-ə̀**	
	kə́ yúwù zhɨ́ kə̄báyn	kə́ yúwù ə́ nzhɨ́ɨ́ kə̀báyn	let's not eat/be eating fufu!
	kə́ yúwù lám kə̄báyn	kə́ yúwù ə́ nlámə́ kə̀báyn	let's not cook/be cooking fufu!
F1	kə́ yúwù shítə́ kə̄báyn	kə́ yúwù ə́ nshítə̀ kə̀báyn	let's not collect/be collecting fufu!
	kə́ yúwù sə́ŋtə́ kə̄báyn	kə́ yúwù ə́ nsə́ŋtə̀ kə̀báyn	let's not sift/be sifting fufu!
	kə́ yúwù lé kə̀báyn	kə́ yúwù ə́ nlèè kə̀báyn	let's not lose/be losing fufu!
	kə́ yúwù kúm kə̀báyn	kə́ yúwù ə́ ŋkùmə̀ kə̀báyn	let's not touch/be touching fufu!
	kə́ yúwù shíˈsə́ kə̄báyn	kə́ yúwù ə́ nshìsə̀ kə̀báyn	let's not remove/be removing fufu!
	kə́ yúwù límˈsə́ kə̄báyn	kə́ yúwù ə́ nlɨ̀msə̀ kə̀báyn	let's not heat/be heating fufu!
	L+L-T	**H+T-ə̀**	
	kə́ yúwù nè zhɨ̀ kə̄báyn	kə́ yúwù né nzhɨ́ɨ́ kə̀báyn	let's not eat/be eating fufu!
	kə́ yúwù nè làm kə̄báyn	kə́ yúwù né nlámə́ kə̄báyn	let's not cook/be cooking fufu!
F2	kə́ yúwù nè shìtə́ kə̀báyn	kə́ yúwù né nshítə̀ kə̀báyn	let's not collect/be collecting fufu!
	kə́ yúwù nè sə̀ŋtə́ kə̀báyn	kə́ yúwù né nsə́ŋtə̀ kə̀báyn	let's not sift/be sifting fufu!
	kə́ yúwù nè lè kə̀báyn	kə́ yúwù né nlèè kə̀báyn	let's not lose/be losing fufu!
	kə́ yúwù nè kùm kə̀báyn	kə́ yúwù né ŋkùmə̀ kə̀báyn	let's not touch/be touching fufu!
	kə́ yúwù nè shìsə̀ kə̀báyn	kə́ yúwù né nshìsə̀ kə̀báyn	let's not remove/be removing fufu!
	kə́ yúwù nè lɨ̀msə̀ kə̀báyn	kə́ yúwù né nlɨ̀msə̀ kə̀báyn	let's not heat/be heating fufu!
	L+L-T	**H+T-ə̀**	
	kə́ yúwù lù zhɨ̀ kə̄báyn	kə́ yúwù lú nzhɨ́ɨ́ kə̀báyn	let's not eat/be eating fufu!
	kə́ yúwù lù làm kə̄báyn	kə́ yúwù lú nlámə́ kə̄báyn	let's not cook/be cooking fufu!
F3	kə́ yúwù lù shìtə́ kə̀báyn	kə́ yúwù lú nshítə̀ kə̀báyn	let's not collect/be collecting fufu!
	kə́ yúwù lù sə̀ŋtə́ kə̀báyn	kə́ yúwù lú nsə́ŋtə̀ kə̀báyn	let's not sift/be sifting fufu!
	kə́ yúwù lù lè kə̀báyn	kə́ yúwù lú nlèè kə̀báyn	let's not lose/be losing fufu!
	kə́ yúwù lù kùm kə̀báyn	kə́ yúwù lú ŋkùmə̀ kə̀báyn	let's not touch/be touching fufu!
	kə́ yúwù lù shìsə̀ kə̀báyn	kə́ yúwù lú nshìsə̀ kə̀báyn	let's not remove/be removing fufu!
	kə́ yúwù lù lɨ̀msə̀ kə̀báyn	kə́ ghə̀ŋ lú nlɨ̀msə̀ kə̀báyn	let's not heat/be heating fufu!

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Appendix 12. Negative subjunctive verb forms

	Perfective AFF	Progressive AFF	Gloss
F1	**H+T-H**	**H+T-ə̀**	
	... lá ká yúwù zhɨ́ kābáyn	... lá ká yúwù ə́ nzhɨ́ɨ́ kə̀báyn	... that we not eat fufu!
	... lá ká yúwù lám kābáyn	... lá ká yúwù ə́ nlámə́ kə̀báyn	... that we not cook ...
	... lá ká yúwù shítə́ kābáyn	... lá ká yúwù ə́ nshítə̀ kə̀báyn	... that we not collect ...
	... lá ká yúwù sə́ŋtə́ kābáyn	... lá ká yúwù ə́ nsə́ŋtə̀ kə̀báyn	... that we not sift ...
	... lá ká yúwù lé kə̀báyn	... lá ká yúwù ə́ nlèè kə̀báyn	... that we not lose ...
	... lá ká yúwù kúm kə̀báyn	... lá ká yúwù ə́ ŋkùmə̀ kə̀báyn	... that we not touch ...
	... lá ká yúwù shíˈsə́ kābáyn	... lá ká yúwù ə́ nshìsə̀ kə̀báyn	... that we not remove ...
	... lá ká yúwù límˈsə́ kābáyn	... lá ká yúwù ə́ nlɨ̀msə̀ kə̀báyn	... that we not heat ...
F2	**L+L-T**	**H+T-ə̀**	
	... lá ká yúwù nè zhɨ kābáyn	... lá ká yúwù né nzhɨ́ɨ́ kə̀báyn	... that we not eat fufu!
	... lá ká yúwù nè làm kābáyn	... lá ká yúwù né nlámə́ kə̀báyn	... that we not cook ...
	... lá ká yúwù nè shìtə́ kə̀báyn	... lá ká yúwù né nshítə̀ kə̀báyn	... that we not collect ...
	... lá ká yúwù nè sə̀ŋtə́ kə̀báyn	... lá ká yúwù né nsə́ŋtə̀ kə̀báyn	... that we not sift ...
	... lá ká yúwù nè lè kə̀báyn	... lá ká yúwù né nlèè kə̀báyn	... that we not lose ...
	... lá ká yúwù nè kùm kə̀báyn	... lá ká yúwù né ŋkùmə̀ kə̀báyn	... that we not touch ...
	... lá ká yúwù nè shìsə̀ kə̀báyn	... lá ká yúwù né nshìsə̀ kə̀báyn	... that we not remove ...
	... lá ká yúwù nè lɨ̀msə̀ kə̀báyn	... lá ká yúwù né nlɨ̀msə̀ kə̀báyn	... that we not heat ...
F3	**L+L-T**	**H+T-ə̀**	
	... lá ká yúwù lù zhɨ kābáyn	... lá ká yúwù lú nzhɨ́ɨ́ kə̀báyn	... that we not eat fufu!
	... lá ká yúwù lù làm kābáyn	... lá ká yúwù lú nlámə́ kə̀báyn	... that we not cook ...
	... lá ká yúwù lù shìtə́ kə̀báyn	... lá ká yúwù lú nshítə̀ kə̀báyn	... that we not collect ...
	... lá ká yúwù lù sə̀ŋtə́ kə̀báyn	... lá ká yúwù lú nsə́ŋtə̀ kə̀báyn	... that we not sift ...
	... lá ká yúwù lù lè kə̀báyn	... lá ká yúwù lú nlèè kə̀báyn	... that we not lose ...
	... lá ká yúwù lù kùm kə̀báyn	... lá ká yúwù lú ŋkùmə̀ kə̀báyn	... that we not touch ...
	... lá ká yúwù lù shìsə̀ kə̀báyn	... lá ká yúwù lú nshìsə̀ kə̀báyn	... that we not remove ...
	... lá ká yúwù lù lɨ̀msə̀ kə̀báyn	... lá ká yúwù lú nlɨ̀msə̀ kə̀báyn	... that we not heat ...

Appendix 13. Negative future conditional verb forms

	Perfective AFF	Progressive AFF	Gloss
F1	**L+T-H**	**H+T-ə̀**	
	sə́tsə̀n Búŋ dí? ká zhɨ́ kābáyn	sə́tsə̀n Búŋ dí? ká nzhɨ́ɨ́ kə̀báyn	If Bung doesn't eat fufu ...
	sə́tsə̀n Búŋ dí? ká lám kābáyn	sə́tsə̀n Búŋ dí? ká nlámə́ kə̀báyn	If Bung doesn't cook fufu ...
	sə́tsə̀n Búŋ dí? ká shítə́ kābáyn	sə́tsə̀n Búŋ dí? ká nshítə̀ kə̀báyn	If Bung doesn't collect fufu ...
	sə́tsə̀n Búŋ dí? ká sə́ŋtə́ kābáyn	sə́tsə̀n Búŋ dí? ká nsə́ŋtə̀ kə̀báyn	If Bung doesn't sift fufu ...
	sə́tsə̀n Búŋ dí? ká lè kābáyn	sə́tsə̀n Búŋ dí? ká nlèè kə̀báyn	If Bung doesn't lose fufu ...
	sə́tsə̀n Búŋ dí? ká kùm kābáyn	sə́tsə̀n Búŋ dí? ká ŋkùmə̀ kə̀báyn	If Bung doesn't touch fufu ...
	sə́tsə̀n Búŋ dí? ká shìsə́ kābáyn	sə́tsə̀n Búŋ dí? ká nshìsə̀ kə̀báyn	If Bung doesn't remove fufu ...
	sə́tsə̀n Búŋ dí? ká lɨ̀msə́ kābáyn	sə́tsə̀n Búŋ dí? ká nlɨ̀msə̀ kə̀báyn	If Bung doesn't heat fufu ...
F2	**L+T-H**	**H+T-ə̀**	
	sə́tsə̀n Búŋ nè dì? ká zhɨ́ kābáyn	sə́tsə̀n Búŋ nè dì? ká nzhɨ́ɨ́ kə̀báyn	If Bung doesn't eat fufu ...
	sə́tsə̀n Búŋ nè dì? ká lám kābáyn	sə́tsə̀n Búŋ nè dì? ká nlámə́ kə̀báyn	If Bung doesn't cook fufu ...
	sə́tsə̀n Búŋ nè dì? ká shítə́ kābáyn	sə́tsə̀n Búŋ nè dì? ká nshítə̀ kə̀báyn	If Bung doesn't collect fufu ...
	sə́tsə̀n Búŋ nè dì? ká sə́ŋtə́ kābáyn	sə́tsə̀n Búŋ nè dì? ká nsə́ŋtə̀ kə̀báyn	If Bung doesn't sift fufu ...
	sə́tsə̀n Búŋ nè dì? ká lè kābáyn	sə́tsə̀n Búŋ nè dì? ká nlèè kə̀báyn	If Bung doesn't lose fufu ...
	sə́tsə̀n Búŋ nè dì? ká kùm kābáyn	sə́tsə̀n Búŋ nè dì? ká ŋkùmə̀ kə̀báyn	If Bung doesn't touch fufu ...
	sə́tsə̀n Búŋ nè dì? ká shìsə́ kābáyn	sə́tsə̀n Búŋ nè dì? ká nshìsə̀ kə̀báyn	If Bung doesn't remove fufu ...
	sə́tsə̀n Búŋ nè dì? ká lɨ̀msə́ kābáyn	sə́tsə̀n Búŋ nè dì? ká nlɨ̀msə̀ kə̀báyn	If Bung doesn't heat fufu ...

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	L+T-H	**H+T-ə**	
	sǎtsèn Búŋ lù dìʔ ká zhɨ́ kābáyn	sǎtsèn Búŋ lù dìʔ ká nzhɨ́ɨ́ kàbáyn	If Bung doesn't eat fufu ...
	sǎtsèn Búŋ lù dìʔ ká lám kābáyn	sǎtsèn Búŋ lù dìʔ ká nlámə́ kàbáyn	If Bung doesn't cook fufu ...
F3	sǎtsèn Búŋ lù dìʔ ká shítə́ kābáyn	sǎtsèn Búŋ lù dìʔ ká nshítə kàbáyn	If Bung doesn't collect fufu ...
	sǎtsèn Búŋ lù dìʔ ká sə́ŋtə́ kābáyn	sǎtsèn Búŋ lù dìʔ ká nsə́ŋtə kàbáyn	If Bung doesn't sift fufu ...
	sǎtsèn Búŋ lù dìʔ ká lè kābáyn	sǎtsèn Búŋ lù dìʔ ká nlèè kàbáyn	If Bung doesn't lose fufu ...
	sǎtsèn Búŋ lù dìʔ ká kùm kābáyn	sǎtsèn Búŋ lù dìʔ ká ŋkùmə kàbáyn	If Bung doesn't touch fufu ...
	sǎtsèn Búŋ lù dìʔ ká shìsə́ kābáyn	sǎtsèn Búŋ lù dìʔ ká nshìsə kàbáyn	If Bung doesn't remove fufu ...
	sǎtsèn Búŋ lù dìʔ ká lɨmsə́ kābáyn	sǎtsèn Búŋ lù dìʔ ká nlɨmsə kàbáyn	If Bung doesn't heat fufu ...

Appendix 14. Negative past conditional verb forms

	Perfective AFF	Progressive AFF	Gloss
	L+T-H	**H+T-ə**	
	Búŋ tí dìʔ ká ↓zhɨ́ kābáyn ...	Búŋ tí dìʔ ká nzhɨ́ɨ́ kàbáyn ...	If Bung hadn't eaten fufu ...!
	Búŋ tí dìʔ ká ↓lám kābáyn ...	Búŋ tí dìʔ ká nlámə́ kàbáyn ...	If Bung hadn't cooked fufu ...!
P0	Búŋ tí dìʔ ká ↓shítə́ kābáyn ...	Búŋ tí dìʔ ká nshítə kàbáyn ...	If Bung hadn't collected fufu ...!
	Búŋ tí dìʔ ká ↓sə́ŋtə́ kābáyn ...	Búŋ tí dìʔ ká nsə́ŋtə kàbáyn ...	If Bung hadn't sifted fufu ...!
	Búŋ tí dìʔ ká lè kābáyn ...	Búŋ tí dìʔ ká nlèè kàbáyn ...	If Bung hadn't lost fufu ...!
	Búŋ tí dìʔ ká kùm kābáyn ...	Búŋ tí dìʔ ká ŋkùmə kàbáyn ...	If Bung hadn't touched fufu ...!
	Búŋ tí dìʔ ká shìsə́ kābáyn ...	Búŋ tí dìʔ ká nshìsə kàbáyn ...	If Bung hadn't removed fufu ...!
	Búŋ tí dìʔ ká lɨmsə́ kābáyn ...	Búŋ tí dìʔ ká nlɨmsə kàbáyn ...	If Bung hadn't heated fufu ...!
	L+T-H	**H+T-ə**	
	Búŋ yì tí dìʔ ká ↓zhɨ́ kābáyn ...	Búŋ yì tí dìʔ ká nzhɨ́ɨ́ kàbáyn ...	If Bung hadn't eaten fufu ...!
	Búŋ yì tí dìʔ ká ↓lám kābáyn ...	Búŋ yì tí dìʔ ká nlámə́ kàbáyn ...	If Bung hadn't cooked fufu ...!
P1	Búŋ yì tí dìʔ ká ↓shítə́ kābáyn ...	Búŋ yì tí dìʔ ká nshítə kàbáyn ...	If Bung hadn't collected fufu ...!
	Búŋ yì tí dìʔ ká ↓sə́ŋtə́ kābáyn ...	Búŋ yì tí dìʔ ká nsə́ŋtə kàbáyn ...	If Bung hadn't sifted fufu ...!
	Búŋ yì tí dìʔ ká lè kābáyn ...	Búŋ yì tí dìʔ ká nlèè kàbáyn ...	If Bung hadn't lost fufu ...!
	Búŋ yì tí dìʔ ká kùm kābáyn ...	Búŋ yì tí dìʔ ká ŋkùmə kàbáyn ...	If Bung hadn't touched fufu ...!
	Búŋ yì tí dìʔ ká shìsə́ kābáyn ...	Búŋ yì tí dìʔ ká nshìsə kàbáyn ...	If Bung hadn't removed fufu ...!
	Búŋ yì tí dìʔ ká lɨmsə́ kābáyn ...	Búŋ yì tí dìʔ ká nlɨmsə kàbáyn ...	If Bung hadn't heated fufu ...!
	L+T-H	**H+T-ə**	
	Búŋ tə̀ tí dìʔ ká ↓zhɨ́ kābáyn ...	Búŋ tə̀ tí dìʔ ká nzhɨ́ɨ́ kàbáyn ...	If Bung hadn't eaten fufu ...!
	Búŋ tə̀ tí dìʔ ká ↓lám kābáyn ...	Búŋ tə̀ tí dìʔ ká nlámə́ kàbáyn ...	If Bung hadn't cooked fufu ...!
P2	Búŋ tə̀ tí dìʔ ká ↓shítə́ kābáyn ...	Búŋ tə̀ tí dìʔ ká nshítə kàbáyn ...	If Bung hadn't collected fufu ...!
	Búŋ tə̀ tí dìʔ ká ↓sə́ŋtə́ kābáyn ...	Búŋ tə̀ tí dìʔ ká nsə́ŋtə kàbáyn ...	If Bung hadn't sifted fufu ...!
	Búŋ tə̀ tí dìʔ ká lè kābáyn ...	Búŋ tə̀ tí dìʔ ká nlèè kàbáyn ...	If Bung hadn't lost fufu ...!
	Búŋ tə̀ tí dìʔ ká kùm kābáyn ...	Búŋ tə̀ tí dìʔ ká ŋkùmə kàbáyn ...	If Bung hadn't touched fufu ...!
	Búŋ tə̀ tí dìʔ ká shìsə́ kābáyn ...	Búŋ tə̀ tí dìʔ ká nshìsə kàbáyn ...	If Bung hadn't removed fufu ...!
	Búŋ tə̀ tí dìʔ ká lɨmsə́ kābáyn ...	Búŋ tə̀ tí dìʔ ká nlɨmsə kàbáyn ...	If Bung hadn't heated fufu ...!
	L+T-H	**H+T-ə**	
	Búŋ ə̀ ntí dìʔ ká ↓zhɨ́ kābáyn ...	Búŋ ə̀ ntí dìʔ ká nzhɨ́ɨ́ kàbáyn ...	If Bung hadn't eaten fufu ...!
	Búŋ ə̀ ntí dìʔ ká ↓lám kābáyn ...	Búŋ ə̀ ntí dìʔ ká nlámə́ kàbáyn ...	If Bung hadn't cooked fufu ...!
P3	Búŋ ə̀ ntí dìʔ ká ↓shítə́ kābáyn ...	Búŋ ə̀ ntí dìʔ ká nshítə kàbáyn ...	If Bung hadn't collected fufu ...!
	Búŋ ə̀ ntí dìʔ ká ↓sə́ŋtə́ kābáyn ...	Búŋ ə̀ ntí dìʔ ká nsə́ŋtə kàbáyn ...	If Bung hadn't sifted fufu ...!
	Búŋ ə̀ ntí dìʔ ká lè kābáyn ...	Búŋ ə̀ ntí dìʔ ká nlèè kàbáyn ...	If Bung hadn't lost fufu ...!
	Búŋ ə̀ ntí dìʔ ká kùm kābáyn ...	Búŋ ə̀ ntí dìʔ ká ŋkùmə kàbáyn ...	If Bung hadn't touched fufu ...!
	Búŋ ə̀ ntí dìʔ ká shìsə́ kābáyn ...	Búŋ ə̀ ntí dìʔ ká nshìsə kàbáyn ...	If Bung hadn't removed fufu ...!
	Búŋ ə̀ ntí dìʔ ká lɨmsə́ kābáyn ...	Búŋ ə̀ ntí dìʔ ká nlɨmsə kàbáyn ...	If Bung hadn't heated fufu ...!

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