The Segmental and Tonal Structure of Verb Inflection in Babanki
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ABSTRACT

In this paper we present a phonological and morphological analysis of the inflectional marking of the verb in Babanki, a Grassfields Bantu language of the Ring subgroup in Cameroon. We show that both the segmental markers and tonal patterns are sensitive to multiple past and future tenses, perfective vs. progressive aspect, indicative vs. subjunctive mood, and negation. Of particular interest is the discovery of a conjoint-disjoint (CJ/DJ) contrast better known from Eastern and Southern Bantu languages. After presenting the different tense aspect markers, we develop rules assigning tone patterns by tense-aspect-mood-negation. Fourteen appendixes provide full (color-coded) conjugations of eight verbs of different syllable structure and tone.

1. Introduction

The purpose of this paper is to provide a description of tense-aspect-mood (TAM) 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 thorough-going 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 forms seen in the preceding sections.

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. 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 subject-verb agreement which differs from subject pronouns 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.

| class | Pro | Agr | class | Pro | Agr |
|-------|-----|-----|-------|-----|-----|
| 1     | ghə | Ø   | 7     | kó  | ə   |
| 2     | və   | ə   | 8     | və   | ə   |
| 3     | ghə  | ə   | 9     | zə   | Ø   |
| 5     | zə   | ə   | 10    | só   | só  |
| 6     | ghə  | ə   | 13    | tə   | tə  |
| 6a    | mə   | Ø   | 19    | fə   | fə  |

Table 1. Babanki Subject Pronouns and Concord

An overt class 19 subject concord marker (SM) ə is seen in the following example, agreeing with fənyín ‘bird’:

(1) fə-nyín ə n-lám ə kə-báyn ‘A bird cooked fufu’

19-bird SM P3-cook P3 7-fufu

As also seen, in its disjoint (DJ) form, the distant past (P3) is marked both by the prefix n- as well as the post-verbal particle ə. As we will see, a perfective morpheme /ə/ actually occurs between the SM and the verb, but fuses with ə. 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 bún ‘Bung’ belonging to class 1, which does not have a SM.

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2 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): fənyín vs. túbù ‘jigger’; kəbwó vs. jì ‘road’; wú vs. fəlám ‘fishing net’. There are also a few sound differences: kəbə̀ná vs. kəbə̀tə ‘calabash’; kəbwó vs. kəbyá ‘half’; wún vs. wúyn ‘child’; kənsfif vs. kənfif ‘blindness’.

3 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, ɲ, f, v, s, z, sh, zh, gh, pf, bv, ts, dz, ch, j, l, w, and y] and 8 vowels [i, ɪ, u, ʊ, e, ə, o, a]. We follow IPA transcription except that [ʃ, ʒ, ɲ, ɣ, j] are transcribed [sh, zh, ny, gh y] respectively, and [u] represents IPA [u].
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, CVCCV or CVCV. 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.

| root tone | root | stem | infinitive | imperative | gloss | stem shape |
|-----------|------|------|------------|------------|-------|------------|
| H         | zhí  | zhí  | ̀-zhí      | zhí        | ‘eat’  | CV         |
| H         | lám  | lám  | ̀-lám      | lám        | ‘cook’ | CVC        |
| H         | shí  | shít | ̀-shító    | shító      | ‘collect’ | CVCV     |
| H         | sàŋtó | ̀-sàŋtó | sàŋtó | ‘sift’ | CVCCV      |
| L         | lè   | lè   | ̀-lè       | lèé        | ‘lose’  | CV         |
| L         | kùm  | kùm  | ̀-kùm      | kùmò       | ‘touch’ | CVC        |
| L         | shí  | shís | ̀-shísó    | shísó      | ‘remove’ | CVCV      |
| L         | lìm  | lìms | ̀-lìmsó    | lìmsó      | ‘heat’  | CVCCV      |

Table 2. Babanki Verbs Cited in this Study

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 sàŋtó ‘sift’ has the pluractional suffix -t (cf. sàŋ ‘sift’) while lìmsó ‘heat’ has the causative suffix -s (cf. lìm ‘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 ̀- 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. /ɔ/ (see §6), 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 (˘) and rising LH (˚) 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. 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 kābáyn ‘cook fufu!’ (imperative)
   b. kùmə̀ kābáyn ‘touch fufu!’

(3) a. Búng tò lám kābáyn ‘Bung cooked fufu’ (P2 conjoint general past)
   b. Búng tò kùm kābáyn ‘Bung touched fufu’

In (2) we see that the noun class prefix /kó-/ is raised to M between two H tones. As was also seen in Table 2, the L tone verb in (2b) has acquired an epenthetic schwa to avoid the rising tone

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4 The only time a verb can have an HL tone is when it occurs clause-finally in certain non-indicative moods such as the hortative, e.g. yúwù kùm ‘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. lám ‘lamp’, sô ‘saw’, ânkùnyàm ‘pig’, bûbù ‘deaf (mute) person’, fànzozdó ‘bird (sp.).’
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 (lăm kə̀báyn). The resulting L-HL-H sequence is then converted to L-M-H (cf. Hyman 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: Bụŋ tə̀ lâm kə̀báyn ‘Bung cooked the fufu’
   Bụŋ tə̀ lâm kə̀tɔ̀ ‘Bung cooked the snail’
   
   adverbial: Bụŋ tə̀ lâm nánto ‘Bung cooked too much’
   
   preposition: Bụŋ tə̀ lâm nə̀ mbə̀sə̀ ‘Bung cooked with soup’
   
   WH-question: Bụŋ tə̀ lâm ghɔ̀ ‘what did Bung eat?’
   
   b. LTS doesn’t apply
   
   Multiverb: Bụŋ tə̀ lám ə̀ mè ‘Bung finished cooking/cooked completely’
   
   Y-N question: Bụŋ tə̀ lám ə̀ ‘Did Bung eat?’
   
   Final position: Bụŋ ə̀ tə̀ 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 (compare Bụŋ tə̀ kǔm ghɔ̀ ‘what did Bung touch? where the verb kǔm is L tone and /ghɔ̀/ remains L). In (4b) LTS does not apply when followed either by a consecutivized verb (‘cook & finish’) or the yes-no question marker /ə̀/. 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 P2 marker /tə̀/ → [tə̃] by H tone spreading from the preceding DJ marker /ə̃/—see discussion in §3). Finally, it should be noted that a bisyllabic H-H verb undergoes LTS independent of what follows, hence finally: Bụŋ ə̀ tə̀ sə́ntə̀ ‘Bung sifted’.

In the following discussion we will almost exclusively cite forms where the verb is followed by the object noun kə̀báyn ‘fufu’ 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 (§6).

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.)
Tense | AUX | Approximate time period
---|---|---
P0 | ` | Present, a few minutes ago
P1 | yì | Today
P2 | tə̀ | Yesterday to about 2 weeks ago
P3 | N- | More than 2 weeks ago
F1 | à | Not longer than in a few minutes
F2 | nè | Later today
F3 | lù | From tomorrow on

Table 3. Babanki Tense Distinctions

As indicated, the P1, P2, F1, F2 and F3 tenses have L tone segmental auxiliaries. The P0 and P3
do not have a segmental auxiliary, although the latter requires a nasal prefix on the verb. Since tone is also involved, these markers 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 /s yì/ and P2 /s tə̀/ which are however realized [s yî] and [s tə̀] by H tone spreading. Examples involving all of the verbs in Table 2 can be found in Appendix 1.

| Tense | Conjoint | Disjoint |
|---|---|---|
P0 | ` ... | ó ... `lí |
P1 | yì ... | ó yì ... |
P2 | tə̀ ... | ó tə̀ ... |
P3 | N ... (Ć) | ó N ... `lí |
F1 | à ... | ó à ... ` |
F2 | nè ... | ó nè ... ` |
F3 | lù ... | ó lù ... ` |

Table 4. Conjoint and Disjoint Tense Marking

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):5

(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

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5 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 Ngọc tî jüm mènywîn (CJ) vs. Ngọc tî mën jüm mènywîn (DJ) ‘Ngong drove away the birds’ (second author, personal notes).
utterance, either in answer to a WH question, e.g. ‘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’, or contrastively, e.g. ‘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 affirmative clauses.

(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/.

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 the 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 tə zhì kəbáyn ‘Bung ate the fufu’
   b. Búŋ tə làm kəbáyn ‘Bung cooked the fufu’
   c. Búŋ tə səntə kəbáyn ‘Bung sifted the fufu’

As seen the L of P2 /tə/ spreads and delinks the underlying root H of /zhì/ ‘eat’, /lám/ ‘cook’ and /səntə/ ‘sift’. 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 /kə-/ to form a M tone. In the case of bisyllabic /səntə/ (→ səntə) in (5c), only its first H delinks, with the suffix -tə maintaining the H tone. Since the H is not reassigned to the following noun, its /kə-/ prefix remains L, as it also is after a L tone verb:

(6) a. Búŋ tə lè kəbáyn ‘Bung lost the fufu’
   b. Búŋ tə kùm kəbáyn ‘Bung touched the fufu’
   c. Búŋ tə lɪmsə kəbáyn ‘Bung heated the fufu’

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.)
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 ə nzhì kābāyn  ‘Bung ate the fufu’
    b. Búŋ ə nlām kābāyn  ‘Bung cooked the fufu’
    c. Búŋ ə nsōntô kābāyn  ‘Bung sifted the fufu’

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

(8) a. Búŋ ə nlèé kābāyn  ‘Bung lost the fufu’
    b. Búŋ ə ŋkūmô kābāyn  ‘Bung touched the fufu’
    c. Búŋ ə nlīmsô kābāyn  ‘Bung heated the fufu’

First, the monosyllabic verbs in (8a,b) acquire a second H tone schwa syllable, which assimilates to the vowel of a CV root, but is realized [ə̄] after a CVC root, also conditioning 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.

We are now ready to consider the corresponding DJ forms in the second data column of Appendix 1. As seen, these all involve a DJ marker /ə́/ occurring between the subject and the verb (which however fuses with the /å/ auxiliary in the P1). 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 ə tə zhì kābāyn  ‘Bung ate the fufu’
    b. Búŋ ə tə làm kābāyn  ‘Bung cooked the fufu’
    c. Búŋ ə tə sōntô kābāyn  ‘Bung sifted the fufu’

(10) a. Búŋ ə tə lè kābāyn  ‘Bung lost the fufu’
    b. Búŋ ə tə kūm kābāyn  ‘Bung touched the fufu’
    c. Búŋ ə tə limsô kābāyn  ‘Bung heated the fufu’

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

(11) a. Búŋ ə nzhì ɬî kābāyn  ‘Bung ate the fufu’
    b. Búŋ ə nlām ɬî kābāyn  ‘Bung cooked the fufu’
    c. Búŋ ə nsōntô ɬî kābāyn  ‘Bung sifted the fufu’

(12) a. Búŋ ə nlèé ɬî kābāyn  ‘Bung lost the fufu’
    b. Búŋ ə ŋkūmô ɬî kābāyn  ‘Bung touched the fufu’
    c. Búŋ ə nlīmsô ɬî kābāyn  ‘Bung heated the 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 `/lî/` 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.\(^7\) 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.\(^8\)

(13) a. Búŋ ə́ né ʻzhí kōbâyn ‘Bung will eat the fufu’
   b. Búŋ ə́ né ʻlám kōbâyn ‘Bung will cook the fufu’
   c. Búŋ ə́ né ʻsōŋô kōbâyn ‘Bung will sift the 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 kōbâyn ‘Bung will lose the fufu’
   b. Búŋ ə́ né kûm kōbâyn ‘Bung will touch the fufu’
   c. Búŋ ə́ né lîmsô kōbâyn ‘Bung will heat the fufu’

Although only tonal, the presence of a second post-verbal DJ marker is of course less surprising given the post-verbal DJ marker `/lî/` 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.

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/` `/-à/` suffix is realized with the same tone as the verb root:

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\(^7\) For discussion of the interaction of preconsonantal nasals with tone in the noun class system, see Akumbu & Hyman (2017).

\(^8\) 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 `[tə̂]`. We speculate that the reason why the L delinks is that the F1 and F2 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 *nèè* and *lûù*.  

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It is however the H-L pattern of the CV(C)CV verb stems /səŋ/ ‘sift’ and /shít/ ‘collect’ that show that the suffix must be L:

(17) a. Búŋ səŋtə kóbáyn ‘Bung is sifting fufu’ (P0)
b. Búŋ tə nsəŋtə kóbáyn ‘Bung was sifting fufu’ (P2)
c. Búŋ ə né nsəŋtə kóbáyn ‘Bung will be sifting fufu’ (F2)

We therefore propose that the H of the root spreads and delinks the L of CV-ə and CVC-ə 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 /kə-/ 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.\(^9\) We have shaded this pattern green.

While the input of tense markers is the same as in Table 3, the following curious fact should be noted: the P tenses show the same segmental marking as the CJ forms in column 1, while the F tenses have the same /ə/ preceding the tense auxiliary as in the DJ forms in column 2. There are tonal differences, however.\(^10\) First, except in the P3, the P tenses have a H tone following the tense auxiliary which produces a rising tone in the case of P1 and P2: /yɨ´/ → [yɪ], / tə´/ → [tʊ]. The same H tone accounts for the tonal differences between the P0 CJ and the corresponding progressive:

(18) a. /Búŋ Ɂ lám kóbáyn/ → Búŋ lám kóbáyn ‘Bung has cooked the fufu’
b. /Búŋ Ɂ lám-ə kóbáyn/ → Búŋ lámə kóbáyn ‘Bung is cooking the fufu’

\(^9\) 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.

\(^10\) The preverbal high tone effects in the future progressives seem to correlate with the postverbal 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 nə and F2 lʊ, 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- … -ə. 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 ‘N- … -ə, possibly representing (relics of) an erstwhile periphrastic construction of an auxiliary plus nominalized main verb. Under this assumption, P0 and P3 stand out in 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).
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 /kò-/ 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 /kò-/ noun prefix is therefore not affected.

5. Negative forms

From 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 tə zhì kəbáyn ‘Bung did not eat the fufu’
    b. Búŋ ə́ kó tə łám kəbáyn ‘Bung did not cook the fufu’
    c. Búŋ ə́ kó tə səntə kəbáyn ‘Bung did not sift the fufu’

(20) a. Búŋ ə́ kó tə lə kəbáyn ‘Bung did not lose the fufu’
    b. Búŋ ə́ kó tə kũm kəbáyn ‘Bung did not touch the fufu’
    c. Búŋ ə́ kó tə limsə kəbáyn ‘Bung did not heat the 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 4.11 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 ‘lámə kəbáyn ‘Bung is not cooking fufu’ (P0)
    b. Búŋ ə́ kó tə nlámə kəbáyn ‘Bung was not cooking fufu’ (P2)
    c. Búŋ ə́ kó ‘né nlámə kəbáyn ‘Bung will not be cooking fufu’ (F2)

(22) a. Búŋ ə́ kó kũmə kəbáyn ‘Bung is not touching fufu’ (P0)
    b. Búŋ ə́ kó tə ŋkũmə kəbáyn ‘Bung was not touching fufu’ (P2)
    c. Búŋ ə́ kó ‘né ŋkũmə kəbáyn ‘Bung will not be touching fufu’ (F2)

The downsteps on ‘lámə in (21a) and ‘né 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 /ə/, exactly as the F2 auxiliary /nè/ undergoes after the DJ marker /ə/ in (13) and (14), and similarly in other future tenses in Appendix 1. However, since the non-indicative negative marker is /kə/, as in kə nzhù 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

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11 It is well known that both DJ and negation involve an inherent focus, hence form a natural class (see Hyman & Watters 1984).
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 /limsà/ ‘heat’:  

(23) a. F1 lám kõbáñ ‘cook the fufu!’
    kùmõ kõbáñ ‘touch the fufu’
    limsõ kõbáñ ‘heat the fufu’
    b. F2 nè lám kõbáñ ‘cook the fufu!’
    nè kùm kõbáñ ‘touch the fufu’
    nè limsõ kõbáñ ‘heat the fufu’
    c. F3 lù lám kõbáñ ‘cook the fufu!’
    lù kùm kõbáñ ‘touch the fufu’
    lù limsõ kõbáñ ‘heat the fufu’

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

(24) a. F1 ghõn lám kõbáñ ‘you pl. cook the fufu!’
    ghõn kùm kõbáñ ‘you pl. touch the fufu!’
    ghõn limsõ kõbáñ ‘you pl. heat the fufu!’
    b. F2 ghõn nè lám kõbáñ ‘you pl. cook the fufu!’
    ghõn nè kùm kõbáñ ‘you pl. touch the fufu!’
    ghõn nè limsõ kõbáñ ‘you pl. heat the fufu!’
    c. F3 ghõn lù lám kõbáñ ‘you pl. cook the fufu!’
    ghõn lù kùm kõbáñ ‘you pl. touch the fufu!’
    ghõn lù limsõ kõbáñ ‘you pl. heat the 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-1H downstep sequence is created: /ghõn limsõ kõbáñ/ → ghõn lim’sõ kõbáñ ‘you pl. heat the fufu!’

12 Full paradigms of the non-indicative forms discussed in this section can be found in Appendices 3-7.
13 We color this pattern gold in the appendices.
a H'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, keeping the prefix of ‘fufu’ L. 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 kəbáyn ‘let’s cook the fufu’
yúwù küm kəbáyn ‘let’s touch the fufu’
yúwù líms’só kəbáyn ‘let’s heat the fufu’
b. F2 yúwù nè lám kəbáyn ‘let’s cook the fufu’
yúwù nè küm kəbáyn ‘let’s touch the fufu’
yúwù nè líms’ó kəbáyn ‘let’s heat the fufu’
c. F3 yúwù lu lám kəbáyn ‘let’s cook the fufu’
yúwù lu küm kəbáyn ‘let’s touch the fufu’
yúwù lu líms’s kəbáyn ‘let’s heat the fufu’

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:

(26) a. F1 ... lá yúwù lám kəbáyn ‘(Bung wants) that we cook the fufu’
... lá yúwù küm kəbáyn ‘(Bung wants) that we touch the fufu’
... lá yúwù líms’só kəbáyn ‘(Bung wants) that we heat the fufu.’
b. F2 ... lá yúwù nè lám kəbáyn ‘(Bung wants) that we cook the fufu’
... lá yúwù nè küm kəbáyn ‘(Bung wants) that we touch the fufu’
... lá yúwù nè líms’ó kəbáyn ‘(Bung wants) that we heat the fufu’
c. F3 ... lá yúwù lu lám kəbáyn ‘(Bung wants) that we cook the fufu’
... lá yúwù lu küm kəbáyn ‘(Bung wants) that we touch the fufu’
... lá yúwù lu líms’s kəbáyn ‘(Bung wants) that we heat the fufu.’

(27) a. F1 sóts’en Búŋ lám kəbáyn ‘if Bung cooks the fufu ...’
sóts’en Búŋ küm kəbáyn ‘if Bung touches the fufu ...’
sóts’en Búŋ líms’só kəbáyn ‘if Bung heats the fufu ...’
b. F2 sóts’en Búŋ nè lám kəbáyn ‘if Bung cooks the fufu ...’
sóts’en Búŋ nè küm kəbáyn ‘if Bung touches the fufu ...’
sóts’en Búŋ nè líms’s kəbáyn ‘if Bung heats the fufu ...’
c. F3 sóts’en Búŋ lu lám kəbáyn ‘if Bung cooks the fufu ...’
sóts’en Búŋ lu küm kəbáyn ‘if Bung touches the fufu ...’
sóts’en Búŋ lu líms’s kəbáyn ‘if Bung heats the fufu ...’

14 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.
15 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.
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:

(28) a. Imp.sg ə́ nlám kə́báyn ‘be cooking the fufu!’
    b. Imp.pl ghə́ŋ ə́ nlám kə́báyn ‘you pl. be cooking the fufu!’
    c. Hort yúwù ə́ nlám kə́báyn ‘let’s be cooking the fufu!’
    d. Sbjn ...lá yúwù ə́ nlám kə́báyn ‘(Bung wants) that we be cooking the fufu’
    e. Cond sə́tsən Búŋ dí? kə́ nlám kə́báyn ... ‘if Bung is cooking the fufu...’

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

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 ˈlám kə́báyn ‘don’t cook the fufu!’
    ká kùm kə́báyn ‘don’t touch the fufu!’
    ká lɨ̀ msə́ kə́báyn ‘don’t heat the fufu!’
    b. F2 ká né ˈlám kə́báyn ‘don’t cook the fufu!’
    ká né kùm kə́báyn ‘don’t touch the fufu!’
    ká né lɨ̀ msə́ kə́báyn ‘don’t heat the fufu!’
    c. F3 ká lú ˈlám kə́báyn ‘don’t cook the fufu!’
    ká lú kùm kə́báyn ‘don’t touch the fufu!’
    ká lú lɨ̀ msə́ kə́báyn ‘don’t heat the fufu!’

Whereas we established /kó/ as the indicative negative marker, the forms in (29) show that the non-indicative marker is /kə̄/, which however fuses with the F1 marker /à/ in (29a). As also seen, the H of /kə̄/ spreads onto the tense marker, delinking its L, which then triggers a downstep on a following H: /kə̄ à/ → kə̄, kə́ nè́, kə̄ lù → kə̄, kə̄ nè́, kə̄ lù́. 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 prefix on kə̄.

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

(30) a. F1 ká ghə́ŋ lám kə́báyn ‘you pl. don’t cook the fufu!’
    ká ghə́ŋ kùm kə́báyn ‘you pl. don’t touch the fufu!’
    ká ghə́ŋ lìmsə́ kə́báyn ‘you pl. don’t heat the fufu!’
    b. F2 ká ghə́ŋ nè́ lám kə́báyn ‘you pl. don’t cook the fufu!’
    ká ghə́ŋ nè́ kùm kə́báyn ‘you pl. don’t touch the fufu!’
    ká ghə́ŋ nè́ lìmsə́ kə́báyn ‘you pl. don’t heat the fufu!’
As seen, the paradigm is exactly identical to that of the corresponding affirmatives in (24), except for the presence of kó occurring before the subject, here the second person plural pronoun ghəŋ. 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, which differ only in the presence of the complementizer lá:

(31) a. F1 kó yúwù lám kóbáyn ‘let’s not cook the fufu!’
kó yúwù kúm kóbáyn ‘let’s not touch the fufu!’
kó yúwù límsò kóbáyn ‘let’s not heat the fufu!’
b. F2 kó yúwù nè lám kóbáyn ‘let’s not cook the fufu!’
kó yúwù nè kúm kóbáyn ‘let’s not touch the fufu!’
kó yúwù nè límsò kóbáyn ‘let’s not heat the fufu!’
c. F3 kó yúwù lù lám kóbáyn ‘let’s not cook the fufu!’
kó yúwù lù kúm kóbáyn ‘let’s not touch the fufu!’
kó yúwù lù límsò kóbáyn ‘let’s not heat the fufu!’

(32) a. F1 ... lá kó yúwù lám kóbáyn ‘(Bung wants) that we not cook the fufu!’
... lá kó yúwù kúm kóbáyn ‘(Bung wants) that we not touch the fufu!’
... lá kó yúwù límsò kóbáyn ‘(Bung wants) that we not heat the fufu!’
b. F2 ... lá kó yúwù nè lám kóbáyn ‘(Bung wants) that we not cook the fufu!’
... lá kó yúwù nè kúm kóbáyn ‘(Bung wants) that we not touch the fufu!’
... lá kó yúwù nè límsò kóbáyn ‘(Bung wants) that we not heat the fufu!’
c. F3 ... lá kó yúwù lù lám kóbáyn ‘(Bung wants) that we not cook the fufu!’
... lá kó yúwù lù kúm kóbáyn ‘(Bung wants) that we not touch the fufu!’
... lá kó yúwù lù límsò kóbáyn ‘(Bung wants) that we not heat the fufu!’

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 sótsën Búng dí? kó lám kóbáyn ‘if Bung doesn’t cook the fufu …’
    sótsën Búng dí? kó kúm kóbáyn ‘if Bung doesn’t touch the fufu …’
    sótsën Búng dí? kó límsò kóbáyn ‘if Bung doesn’t heat the fufu …’
b. F2 sótsën Búng nè dí? kó lám kóbáyn ‘if Bung doesn’t cook the fufu …’
    sótsën Búng nè dí? kó kúm kóbáyn ‘if Bung doesn’t touch the fufu …’
    sótsën Búng nè dí? kó límsò kóbáyn ‘if Bung doesn’t heat the fufu …’
c. F3 sótsën Búng lù dí? kó lám kóbáyn ‘if Bung doesn’t cook the fufu …’
    sótsën Búng lù dí? kó kúm kóbáyn ‘if Bung doesn’t touch the fufu …’
    sótsën Búng lù dí? kó límsò kóbáyn ‘if Bung doesn’t heat the fufu …’
While the F1 doesn’t have an overt tense marker, the F2 and F3 markers nè and lù appear before another morpheme dìʔ followed by the negative morpheme kə́. Since dìʔ is identical to the copular verb /dìʔ/ ‘be’, we interpret the above historically as ‘if Bung will be not cook, touch, heat...’. As seen, 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 sə́tsɛ̀n, the auxiliary form tí occurs after the tense marker in the past conditional:

(34) a. P0 Búŋ tí ˈlám kəbáyn  ‘if Bung had cooked the fufu ...’
    Búŋ tí kùm kəbáyn  ‘if Bung had touched the fufu ...’
    Búŋ tí limsó kəbáyn  ‘if Bung had heated the fufu ...’

b. P1 Búŋ yi tí ˈlám kəbáyn  ‘if Bung had cooked the fufu ...’
    Búŋ yi tí kùm kəbáyn  ‘if Bung had touched the fufu ...’
    Búŋ yi tí limsó kəbáyn  ‘if Bung had heated the fufu ...’

c. P2 Búŋ tə tí ˈlám kəbáyn  ‘if Bung had cooked the fufu ...’
    Búŋ tə tí kùm kəbáyn  ‘if Bung had touched the fufu ...’
    Búŋ tə tí limsó kəbáyn  ‘if Bung had heated the fufu ...’

d. P3 Búŋ ə́ntí tí ˈlám kəbáyn  ‘if Bung had cooked the fufu ...’
    Búŋ ə́ntí kùm kəbáyn  ‘if Bung had touched the fufu ...’
    Búŋ ə́ntí limsó kəbáyn  ‘if Bung had heated the 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. The corresponding negatives are provided in (35).

(35) a. P0 Búŋ tí dìʔ kə́ ˈlám kəbáyn  ‘if Bung hadn’t cooked the fufu ...’
    Búŋ tí dìʔ kə́ kùm kəbáyn  ‘if Bung hadn’t touched the fufu ...’
    Búŋ tí dìʔ kə́ limsó kəbáyn  ‘if Bung hadn’t heated the fufu ...’

b. P1 Búŋ yi tí dìʔ kə́ ˈlám kəbáyn  ‘if Bung hadn’t cooked the fufu ...’
    Búŋ yi tí dìʔ kə́ kùm kəbáyn  ‘if Bung hadn’t touched the fufu ...’
    Búŋ yi tí dìʔ kə́ limsó kəbáyn  ‘if Bung hadn’t heated the fufu ...’

c. P2 Búŋ tə́ tí dìʔ kə́ ˈlám kəbáyn  ‘if Bung hadn’t cooked the fufu ...’
    Búŋ tə́ tí dìʔ kə́ kùm kəbáyn  ‘if Bung hadn’t touched the fufu ...’
    Búŋ tə́ tí dìʔ kə́ limsó kəbáyn  ‘if Bung hadn’t heated the fufu ...’

d. P3 Búŋ ə́ntí dìʔ kə́ ˈlám kəbáyn  ‘if Bung hadn’t cooked the fufu ...’
    Búŋ ə́ntí dìʔ kə́ kùm kəbáyn  ‘if Bung hadn’t touched the fufu ...’
    Búŋ ə́ntí dìʔ kə́ limsó kəbáyn  ‘if Bung hadn’t heated the fufu ...’

As seen, the same auxiliary + negative sequence dìʔ kə́ is used as in the future negative conditional.

16 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 tísá ‘arrange’.
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 1-12. 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.

We begin by recapitulating the preverbal “auxiliaries” in Table 5, where the different cells in the paradigm are also color-coded for tone pattern.\(^{17}\)

| indicative.aff | indic.neg | imp.aff | imp.neg | hort.aff | sbjn.aff | cond.aff. | imp.pl.aff | imp.pl.neg | sbjn.neg | cond.neg |
|---------------|----------|--------|--------|---------|---------|-----------|------------|------------|---------|---------|
| CJ            | DJ       | PR     | PF     | PR      | PF      | PR        | PF         | PF         | PR      | PR      |
| P0            | `á`      | `ó kó` | `ó kó` | tì`     | tì dìʔ? kó |
| P1            | yì `yì`  | yì `ó kó `yì` | yì tì` | yì tì dìʔ kó |
| P2            | tò `tò`  | tò `ó kó tò` | tò tì` | tò tì dìʔ kó |
| P3            | ə̀ ə́ ə́ `ó kó` | `ó kó` | ə̀ ə́ ə́ ə́ `ó nti` | ə̀ ə́ ə́ ə́ dìʔ kó |
| F1            | ə́ `á`  | ə́ `ó kó` | `ó kó`  | Ø `á` ká` | ká `ó ká` | ká `ó ká` | ká `ó ká` | ká...ó | dìʔ kó |
| F2            | nè `né`  | ə́ `ó kó `né` | `ó kó `né`  | nè `ká né` | ká né | nè `nè ká` | nè `ká...nè` | ká...nè | nè dìʔ kó |
| F3            | ə̀ ə́ ə́ `lù`  | ə́ `ó kó `lù` | `ó kó `lù`  | lù `lù ká` | lù lù ká | ká lù lù | ká...lù | ká...lù | lù dìʔ kó |

Table 5. Preverbal Segmental and Tonal Marking in the Babanki Verb Paradigm

As seen most clearly in the F2 and F3 indicative negative sequences, ə́ `ó kó `né` and ə́ `ó kó `lù` 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 /ə́/, which we assume is the same morpheme as the [ə] that precedes the indicative negative marker /kó`, but does not occur with the non-indicative negative marker /kə́/.\(^{18}\) 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 5 is to show the output forms, including tonal variations that were discussed in earlier sections, e.g. P1 yì, yì and yì. 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),

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\(^{17}\) In Table 5, 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.

\(^{18}\) Note that `/á/` is not restricted to main clause indicatives, as it can also occur in a relative clause, e.g. kàbàyn á Búng ə́ kó `né` `lám` ‘the fufu that Bung will not cook (F2)’.
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 /káà/ + /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 / å /, the future auxiliaries /nè/ and /lù/ instead become H tone [né] and [lù] 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.\footnote{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. ñ + nshít ñ + nshít ñshís ‘collected’, ñ + nshís ñshís ‘removed’.}

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 - à suffix, which however assimilates to the H of a monosyllabic H tone verb: /n-lám-à/ ‘cook.PROG’ \(\rightarrow\) n-lám-å. 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 Bùŋ å ḋkùmá kábýn (CJ) and Bùŋ å ḋkùmò tô kòbáyn (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: kùm ‘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 overridden by a suffixal tone. With this in mind, Table 6 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.)

| pre-verb | verb tone | suffix | tone on noun prefix kà- |
|----------|-----------|--------|------------------------|
| Grey     | L         | L-T    | Ø                      | L except M after 1σ /H/ stem |
| Orange   | å         | H-T    | - à only on 1σ L verbs | L throughout |
| Yellow   | (L)       | T-H    | - å after L verbs in aff.imp.sg. | M throughout |
| Blue     | L         | L-H    | - å 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    | - å except - å after 1σ H verbs | L throughout |

Table 6. Summary of Babanki Stem-Tone Patterns in Tonal Context

As seen, only the grey pattern lacks a suffix. The two orange P3 cells are unique in requiring a non-suffixal formative /lù/ 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. \( k \, + \, + \, l \, m \, + \, k \, b \, a \, y \, n \rightarrow k \, \, l \, m \, k \, b \, a \, y \, n \rightarrow k \, \, l \, m \, k \, b \, a \, y \, n \) ‘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)C. Of these 19, all but five have the shape CV?V where the vowels are identical, and three are clearly compounds. This leaves the following two verbs: \( \text{búngli} \) ‘be ripe’, \( \text{bóbó} \) ‘carry (child) on back’, on which a surface schwa does not accompany the suffixal L in the progressive: \( \text{Búng yì mbóbò kabhán} \) ‘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’ representing the orange and blue patterns show this relation in (34).

(34) a. \( \text{Búng ə ngúmá lí kábáyn} \) ‘Bung touched the fufu’ (P3 DJ)
   \( /\text{ngúm/} \rightarrow ə \text{ngúm} \rightarrow ə \text{ngúmá} \)

   b. \( \text{Búng ə ngúmá kábáyn} \) ‘Bung touched the fufu (P3 CJ)
   \( /ə \text{ngúm/} \rightarrow ə \text{ngúm} \rightarrow ə \text{ngúmá} \)

In (34a) the H tone of the /ə/ 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. Similarly, in (34b), 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 (34), 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 (35a).

(35) a. \( \text{kùmá kábáyn} \) ‘touch the fufu!’
   \( /\text{kùm’/} + /\text{kábáyn/} \rightarrow \text{kùm kábáyn} \rightarrow \text{kùmá kábáyn} \)

   b. \( \text{Búng ə né kùm kábáyn} \) ‘Bung will touch the fufu’ (F2)
   \( /\text{kùm’/} + /\text{kábáyn/} \rightarrow \text{kùm + kábáyn} \rightarrow \text{kùm kábáyn} \)

While we have given the same derivation in (35a) as was seen in (34b), the question is why we get a different result in (35b) 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 kə-, 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. 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.

While 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 /tə/ to yì and tə by H tone spreading, while the F2 and F3 markers /nè/ and /lù/ instead become nè` and lù`. 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.

It seems to us that the most likely approach would be to rank the tone assignments by morphosyntactic feature combinations. This too is not an easy task, but at least it is coherent: while the single feature PROG(ressive) assigns an undominated tone pattern, overriding all others, certain morphosyntactic 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:

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20 This same process is responsible for the M tone prefix found after monosyllabic /H/ verbs in the grey pattern: /Búng yì lám kábdyn/ → Búng yì lám kábdyn → Búng yì lám ’kábdyn → Búng yì lám kábdyn → Búng yì lám kábdyn ‘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: Búng yì sìntá kábdyn ‘Bung sifted the fufu’.

21 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.
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:

| Green | Orange | Blue | Gold | Yellow | Grey |
|-------|--------|------|------|--------|------|
| PROG  | P0 DJ  | P3 DJ| SBJN F1 | FUT DJ | PST |
|       | P3     |      |       | FUT NEG [-sbjn] | FUT |
|       |        |      |       | IMP F1 | IMP F2, F3 |
|       |        |      |       | IMP NEG | PAST COND |

Table 7. Tone Patterns by Features (first attempt)

In Table 7 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 7 we put a [-sbjn] place holder, which violates the privativity of the features in (36). If we had changed the rankings, as in Table 8, we run into a different problem:

| Green | Orange | Blue | Gold | Grey | Yellow |
|-------|--------|------|------|------|--------|
| PROG  | P0 DJ  | P3 DJ| SBJN F1 | PST | FUT |
|       |        |      |       | FUT CJ | IMP F1 |
|       |        |      |       | SBJN | IMP F2, F3 |
|       |        |      |       | IMP NEG | PAST COND |

Table 8. Tone Patterns by Features (second attempt)

Since SBJN F1 has already been assigned to gold, we can designate grey for the remaining affirmative and negative F2 and F3 subjunctives. However, as seen, 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. Two potential solutions seem possible. The first is to change the feature values. If we could refer to the DJ, indicative, and imperative negatives as having a special feature [+F], this could be required in assigning the yellow pattern to them (as well as to the conditional negative), thereby denecessitating the [-sbjn] 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.

A second 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 7 by treating the CJ-like F2 and F3 non-indicatives as receiving their grey pattern first:

| Green | Orange | Blue | Gold | Grey | Yellow | Grey |
|-------|--------|------|------|------|--------|------|
| PROG  | P0 DJ  | P3   | SBJN F1 | IMP F2, F3 | SBJN F2, F3 | FUT DJ |
|       | P3 DJ  |      |      | IMP F1 |      | FUT NEG |
|       |        |      |      |      |      | IMP F1 |
|       |        |      |      |      |      | PAST COND |

Table 8. Tone Patterns by Features (third attempt)

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 [-sbjn], 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.

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 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.

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22 We also haven’t addressed the conditional negative which takes the same yellow tone pattern as the non-DJ indicative and imperative negatives.
23 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).
24 Note that the H tone of dìʔ from in the F1 suggests a H marker preceding the input verb dìʔ ‘be’, thus making it fall into line with the gold subjunctive cells. The F2 and F3 nè dìʔ and ̀lù dìʔ 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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## APPENDICES

### Appendix 1. Affirmative Indicative Verb Forms

| 1. Perfective (CJ) | 2. Perfective (DJ) | 3. Progressive | Glosses |
|--------------------|--------------------|----------------|---------|
| **P0**             |                    |                |         |
| Búŋ zhi kábáyn     | Búŋ ə zhi ‘lī kábáyn | Búŋ zhi kábáyn | Bung has eaten/is eating futu... |
| Búŋ lám kábáyn     | Búŋ ə lám ‘lī kábáyn | Búŋ lámá kábáyn | ...has cooked/is cooking... |
| Búŋ shitá kábáyn   | Búŋ ə shitá ‘lī kábáyn | Búŋ shitá kábáyn | ...has collected/is collecting... |
| Búŋ sángtá kábáyn  | Búŋ ə sángtá ‘lī kábáyn | Búŋ sángtá kábáyn | ...has sifted/is sifting... |
| Búŋ lē kábáyn      | Búŋ ə lē ‘lī kábáyn | Búŋ lē kábáyn | ...has lost/is losing... |
| Búŋ kúmer kábáyn  | Búŋ ə kúmer ‘lī kábáyn | Búŋ kúmer kábáyn | ...has touched/is touching... |
| Búŋ shísá kábáyn  | Búŋ ə shísá ‘lī kábáyn | Búŋ shísá kábáyn | ...has removed/is removing... |
| Búŋ limsá kábáyn  | Búŋ ə limsá ‘lī kábáyn | Búŋ limsá kábáyn | ...has heated/is heating... |
| **P1**             |                    |                |         |
| Búŋ yí zhi kábáyn  | Búŋ ə yí zhi kábáyn | Búŋ yí nzhí kábáyn | Bung ate/was eating futu... |
| Búŋ yí lám kábáyn  | Búŋ ə yí lám kábáyn | Búŋ yí námá kábáyn | ...cooked/was cooking... |
| Búŋ yí shitá kábáyn| Búŋ ə yí shitá kábáyn | Búŋ yí nshité kábáyn | ...collected/was collecting... |
| Búŋ yí sángtá kábáyn| Búŋ ə yí sángtá kábáyn | Búŋ yí nṣántá kábáyn | ...sifted/was sifting... |
| Búŋ yí lē kábáyn   | Búŋ ə yí lē kábáyn | Búŋ yí nlé kábáyn | ...lost/was losing... |
| Búŋ yí kúmer kábáyn| Búŋ ə yí kúmer kábáyn | Búŋ yí nkùmá kábáyn | ...touched/was touching... |
| Búŋ yí shísá kábáyn| Búŋ ə yí shísá kábáyn | Búŋ yí nshísá kábáyn | ...removed/was removing... |
| Búŋ yí limsá kábáyn| Búŋ ə yí limsá kábáyn | Búŋ yí nlimsá kábáyn | ...heated/was heating... |
| **P2**             |                    |                |         |
| Búŋ tō zhi kábáyn  | Búŋ ə tō zhi kábáyn | Búŋ tō nzhí kábáyn | Bung ate/was eating futu... |
| Búŋ tō lám kábáyn  | Búŋ ə tō lám kábáyn | Búŋ tō námá kábáyn | ...cooked/was cooking... |
| Búŋ tō shitá kábáyn| Búŋ ə tō shitá kábáyn | Búŋ tō nshité kábáyn | ...collected/was collecting... |
| Búŋ tō sángtá kábáyn| Búŋ ə tō sángtá kábáyn | Búŋ tō nṣántá kábáyn | ...sifted/was sifting... |
| Búŋ tō lē kábáyn   | Búŋ ə tō lē kábáyn | Búŋ tō nlé kábáyn | ...lost/was losing... |
| Búŋ tō kúmer kábáyn| Búŋ ə tō kúmer kábáyn | Búŋ tō nkùmá kábáyn | ...touched/was touching... |
| Búŋ tō shísá kábáyn| Búŋ ə tō shísá kábáyn | Búŋ tō nshísá kábáyn | ...removed/was removing... |
| Búŋ tō limsá kábáyn| Búŋ ə tō limsá kábáyn | Búŋ tō nlimsá kábáyn | ...heated/was heating... |
| **P3**             |                    |                |         |
| Búŋ ə nzhí kábáyn  | Búŋ ə nzhí ‘lī kábáyn | Búŋ ə nzhí kábáyn | Bung ate/was eating futu... |
| Búŋ ə námá kábáyn  | Búŋ ə námá ‘lī kábáyn | Búŋ ə námá kábáyn | ...cooked/was cooking... |
| Búŋ ə nshité kábáyn| Búŋ ə nshité ‘lī kábáyn | Búŋ ə nshité kábáyn | ...collected/was collecting... |
| Búŋ ə nṣántá kábáyn| Búŋ ə nṣántá ‘lī kábáyn | Búŋ ə nṣántá kábáyn | ...sifted/was sifting... |
| Búŋ ə nlé kábáyn   | Búŋ ə nlé ‘lī kábáyn | Búŋ ə nlé kábáyn | ...lost/was losing... |
| Búŋ ə nkùmá kábáyn | Búŋ ə nkùmá ‘lī kábáyn | Búŋ ə nkùmá kábáyn | ...touched/was touching... |
| Búŋ ə nshísá kábáyn| Búŋ ə nshísá ‘lī kábáyn | Búŋ ə nshísá kábáyn | ...removed/was removing... |
| Búŋ ə nlimsá kábáyn| Búŋ ə nlimsá ‘lī kábáyn | Búŋ ə nlimsá kábáyn | ...heated/was heating... |
| **F1**             |                    |                |         |
| Búŋ á zhi kábáyn   | Búŋ á ‘zhí kábáyn | Búṅ á nzhí kábáyn | Bung will eat/be eating futu... |
| Búŋ á lám kábáyn   | Búŋ á ‘lám kábáyn | Búṅ á námá kábáyn | ...will cook/be cooking... |
| Búŋ á shitá kábáyn | Búŋ á ‘shitá kábáyn | Búṅ á nshité kábáyn | ...will collect/be collecting... |
| Búŋ á sángtá kábáyn| Búŋ á ‘sángtá kábáyn | Búṅ á nṣántá kábáyn | ...will sift/be sifting... |
| Búŋ á lē kábáyn    | Búṅ á lē ‘lī kábáyn | Búṅ á nlé kábáyn | ...will lose/be losing... |
| Búŋ á kúmer kábáyn | Búṅ á kúmer ‘lī kábáyn | Búṅ á nkùmá kábáyn | ...will touch/be touching... |
| Búŋ á shísá kábáyn | Búṅ á shísá ‘lī kábáyn | Búṅ á nshísá kábáyn | ...will remove/be removing... |
| Búŋ á limsá kábáyn | Búṅ á limsá ‘lī kábáyn | Búṅ á nlimsá kábáyn | ...will heat/be heating... |
| **F2**             |                    |                |         |
| Búŋ né zhi kábáyn  | Búṅ né ‘zhí kábáyn | Búṅ né nzhí kábáyn | Bung will eat/be eating futu... |
| Búŋ né lám kábáyn  | Búṅ né ‘lám kábáyn | Búṅ né námá kábáyn | ...will cook/be cooking... |
| Búŋ né shitá kábáyn| Búṅ né ‘shitá kábáyn | Búṅ né nshité kábáyn | ...will collect/be collecting... |
| Búŋ né sángtá kábáyn| Búṅ né ‘sángtá kábáyn | Búṅ né nṣántá kábáyn | ...will sift/be sifting... |
| Búŋ né lē kábáyn   | Búṅ né lē ‘lī kábáyn | Búṅ né nlé kábáyn | ...will lose/be losing... |
| Búŋ né kúmer kábáyn| Búṅ né kúmer ‘lī kábáyn | Búṅ né nkùmá kábáyn | ...will touch/be touching... |
| Búŋ né shísá kábáyn| Búṅ né shísá ‘lī kábáyn | Búṅ né nshísá kábáyn | ...will remove/be removing... |
| Búŋ né limsá kábáyn| Búṅ né limsá ‘lī kábáyn | Búṅ né nlimsá kábáyn | ...will heat/be heating... |

Búŋ lu zhí kábáyn: Búŋ ə lu ‘zhí kábáyn | Búṅ lu nzhí kábáyn | Bung will eat/be eating futu
| Búŋ lù làm kəbáyn | Búŋ ò lú ‘lám kəbáyn | Búŋ ò lú nlámó kəbáyn | ...will cook/be cooking... |
|---------------------|----------------------|------------------------|--------------------------|
| Búŋ lù shító kəbáyn | Búŋ ò lú ‘shító kəbáyn | Búŋ ò lú nsáŋtò kəbáyn | ...will collect/be collecting... |
| Búŋ lù sáŋtó kəbáyn | Búŋ ò lú ‘sáŋtó kəbáyn | Búŋ ò lú nshítò kəbáyn | ...will sift/be sifting... |
| Búŋ lù lè kəbáyn   | Búŋ ò lú lè kəbáyn    | Búŋ ò lú nlèè kəbáyn   | ...will lose/be losing...  |
| Búŋ lù kùm kəbáyn  | Búŋ ò lú kùm kəbáyn  | Búŋ ò lú ŋkùmó kəbáyn  | ...will touch/be touching... |
| Búŋ lù shisà kəbáyn| Búŋ ò lú shisà kəbáyn | Búŋ ò lú nshisà kəbáyn | ...will remove/be removing... |
| Búŋ lù limsò kəbáyn| Búŋ ò lú limsò kəbáyn | Búŋ ò lú nlimsò kəbáyn | ...will heat/be heating...  |
## Appendix 2. Negative Indicative Verb Forms

| Perfictive NEG | Progressive NEG | Glosses |
|----------------|-----------------|---------|
| **Búng ̀ko ʒhi kábdáyn** | **Búng ̀ko ʒhi kábdáyn** | Búng has not eaten/is not eating fufu |
| **Búng ̀ko ʃhitá kábdáyn** | **Búng ̀ko ʃhitá kábdáyn** | Búng has not collected/is not collecting fufu |
| **Búng ̀ko ʃntá kábdáyn** | **Búng ̀ko ʃntá kábdáyn** | Búng has not sifted/is not sifting fufu |
| **Búng ̀ko ɭlé kábdáyn** | **Búng ̀ko ɭlé kábdáyn** | Búng has not lost/is not losing fufu |
| **Búng ̀ko kʊm kábdáyn** | **Búng ̀ko kʊm kábdáyn** | Búng has not touched/is not touching fufu |
| **Búng ̀ko sísá kábdáyn** | **Búng ̀ko sísá kábdáyn** | Búng has not removed/is not removing fufu |
| **Búng ̀ko limsá kábdáyn** | **Búng ̀ko limsá kábdáyn** | Búng has not heated/is not heating fufu |
| **Búng ̀ko ʃi yí nzhí kábdáyn** | **Búng ̀ko ʃi yí nzhí kábdáyn** | Búng did not eat/was not eating fufu |
| **Búng ̀ko ʃi yí n lámá kábdáyn** | **Búng ̀ko ʃi yí n lámá kábdáyn** | Búng did not cook/was not cooking fufu |
| **Búng ̀ko ʃi yí nshítá kábdáyn** | **Búng ̀ko ʃi yí nshítá kábdáyn** | Búng did not collect/was not collecting fufu |
| **Búng ̀ko ʃi yí nʃntá kábdáyn** | **Búng ̀ko ʃi yí nʃntá kábdáyn** | Búng did not sift/was not sifting fufu |
| **Búng ̀ko ʃi yí n ɭlé kábdáyn** | **Búng ̀ko ʃi yí n ɭlé kábdáyn** | Búng did not lose/was not losing fufu |
| **Búng ̀ko ʃi yí nkúm kábdáyn** | **Búng ̀ko ʃi yí nkúm kábdáyn** | Búng did not touch/was not touching fufu |
| **Búng ̀ko ʃi yí sísá ɭbáyn** | **Búng ̀ko ʃi yí sísá ɭbáyn** | Búng did not remove/was not removing fufu |
| **Búng ̀ko ʃi yí limsá kábdáyn** | **Búng ̀ko ʃi yí limsá kábdáyn** | Búng did not heat/was not heating fufu |
| **Búng ̀ko ʃi yí nzhí sísá kábdáyn** | **Búng ̀ko ʃi yí nzhí sísá kábdáyn** | Búng did not eat/was not eating fufu |
| **Búng ̀ko ʃi yí n lámá sísá kábdáyn** | **Búng ̀ko ʃi yí n lámá sísá kábdáyn** | Búng did not cook/was not cooking fufu |
| **Búng ̀ko ʃi yí nshítá sísá kábdáyn** | **Búng ̀ko ʃi yí nshítá sísá kábdáyn** | Búng did not collect/was not collecting fufu |
| **Búng ̀ko ʃi yí nʃntá sísá kábdáyn** | **Búng ̀ko ʃi yí nʃntá sísá kábdáyn** | Búng did not sift/was not sifting fufu |
| **Búng ̀ko ʃi yí n ɭlé sísá kábdáyn** | **Búng ̀ko ʃi yí n ɭlé sísá kábdáyn** | Búng did not lose/was not losing fufu |
| **Búng ̀ko ʃi yí nkúm sísá kábdáyn** | **Búng ̀ko ʃi yí nkúm sísá kábdáyn** | Búng did not touch/was not touching fufu |
| **Búng ̀ko ʃi yí sísá ɭbáyn** | **Búng ̀ko ʃi yí sísá ɭbáyn** | Búng did not remove/was not removing fufu |
| **Búng ̀ko ʃi yí limsá sísá kábdáyn** | **Búng ̀ko ʃi yí limsá sísá kábdáyn** | Búng did not heat/was not heating fufu |
| **Búng ̀ko nzhí kábdáyn** | **Búng ̀ko nzhí kábdáyn** | Búng did not eat/was not eating fufu |
| **Búng ̀ko n lámá kábdáyn** | **Búng ̀ko n lámá kábdáyn** | Búng did not cook/was not cooking fufu |
| **Búng ̀ko nshítá kábdáyn** | **Búng ̀ko nshítá kábdáyn** | Búng did not collect/was not collecting fufu |
| **Búng ̀ko nʃntá kábdáyn** | **Búng ̀ko nʃntá kábdáyn** | Búng did not sift/was not sifting fufu |
| **Búng ̀ko ɭlé kábdáyn** | **Búng ̀ko ɭlé kábdáyn** | Búng did not lose/was not losing fufu |
| **Búng ̀ko nkúm kábdáyn** | **Búng ̀ko nkúm kábdáyn** | Búng did not touch/was not touching fufu |
| **Búng ̀ko sísá kábdáyn** | **Búng ̀ko sísá kábdáyn** | Búng did not remove/was not removing fufu |
| **Búng ̀ko limsá kábdáyn** | **Búng ̀ko limsá kábdáyn** | Búng did not heat/was not heating fufu |
| **Búng ̀k kó ʒhi kábdáyn** | **Búng ̀k kó ʒhi kábdáyn** | Búng will not eat/be eating fufu |
| **Búng ̀k kó ɭám kábdáyn** | **Búng ̀k kó ɭám kábdáyn** | Búng will not cook/be cooking fufu |
| **Búng ̀k kó ʃhitá kábdáyn** | **Búng ̀k kó ʃhitá kábdáyn** | Búng will not collect/collecting fufu |
| **Búng ̀k kó ʃntá kábdáyn** | **Búng ̀k kó ʃntá kábdáyn** | Búng will not sIFT/IFT fufu |
| **Búng ̀k kó ɭlé kábdáyn** | **Búng ̀k kó ɭlé kábdáyn** | Búng will not lose/losing fufu |
| **Búng ̀k kó nkúm kábdáyn** | **Búng ̀k kó nkúm kábdáyn** | Búng will not touch/touching fufu |
| **Búng ̀k kó sísá kábdáyn** | **Búng ̀k kó sísá kábdáyn** | Búng will not remove/removing fufu |
| **Búng ̀k kó limsá kábdáyn** | **Búng ̀k kó limsá kábdáyn** | Búng will not heat/heating fufu |
| **Búng ̀k kó ʃhí kábdáyn** | **Búng ̀k kó ʃhí kábdáyn** | Búng will not eat/be eating fufu |
| **Búng ̀k kó ɭám kábdáyn** | **Búng ̀k kó ɭám kábdáyn** | Búng will not cook/be cooking fufu |
| **Búng ̀k kó ʃhitá kábdáyn** | **Búng ̀k kó ʃhitá kábdáyn** | Búng will not collect/collecting fufu |
| **Búng ̀k kó ʃntá kábdáyn** | **Búng ̀k kó ʃntá kábdáyn** | Búng will not sIFT/IFT fufu |
| **Búng ̀k kó ɭlé kábdáyn** | **Búng ̀k kó ɭlé kábdáyn** | Búng will not lose/losing fufu |
| **Búng ̀k kó nkúm kábdáyn** | **Búng ̀k kó nkúm kábdáyn** | Búng will not touch/touching fufu |
| **Búng ̀k kó sísá kábdáyn** | **Búng ̀k kó sísá kábdáyn** | Búng will not remove/removing fufu |
| **Búng ̀k kó limsá kábdáyn** | **Búng ̀k kó limsá kábdáyn** | Búng will not heat/heating fufu |
### Appendix 3. Affirmative Imperative Sg. Verb Forms

| Verbal Affirmative | Progressive | Gloss |
|--------------------|-------------|-------|
| F1                 |             |       |
| zhi kābāyn         | á nzhí kābāyn | eat/be eating fufu! |
| lám kābāyn         | á nlámá kābāyn | cook/be cooking fufu! |
| shaltó kābāyn      | á nshítō kābāyn | collect/be collecting fufu! |
| sáŋtō kābāyn       | á nsáŋtō kābāyn | sift/be sifting fufu! |
| lēe kābāyn         | á nleē kābāyn | lose/be losing fufu! |
| kūmā kābāyn        | á nkūmā kābāyn | touch/be touching fufu! |
| shisā kābāyn       | á nshisā kābāyn | remove/be removing fufu! |
| līmsā kābāyn       | á nlmisā kābāyn | heat/be heating fufu! |
| F2                 |             |       |
| nē zhi kābāyn      | nē nzhí kābāyn | eat/be eating fufu! |
| nē lám kābāyn      | nē nlámá kābāyn | cook/be cooking fufu! |
| nē shaltó kābāyn   | nē nshítō kābāyn | collect/be collecting fufu! |
| nē sáŋtō kābāyn    | nē nsáŋtō kābāyn | sift/be sifting fufu! |
| nē lē kābāyn       | nē nleē kābāyn | lose/be losing fufu! |
| nē kūm kābāyn      | nē nkūmā kābāyn | touch/be touching fufu! |
| nē shisā kābāyn    | nē nshisā kābāyn | remove/be removing fufu! |
| nē līmsā kābāyn    | nē nlmisā kābāyn | heat/be heating fufu! |
| F3                 |             |       |
| lū zhi kābāyn      | lū nzhí kābāyn | eat/be eating fufu! |
| lū lām kābāyn      | lū nlámá kābāyn | cook/be cooking fufu! |
| lū shaltó kābāyn   | lū nshítō kābāyn | collect/be collecting fufu! |
| lū sáŋtō kābāyn    | lū nsáŋtō kābāyn | sift/be sifting fufu! |
| lū lē kābāyn       | lū nleē kābāyn | lose/be losing fufu! |
| lū kūm kābāyn      | lū nkūmā kābāyn | touch/be touching fufu! |
| lū shisā kābāyn    | lū nshisā kābāyn | remove/be removing fufu! |
| lū līmsā kābāyn    | lū nlmisā kābāyn | heat/be heating fufu! |

### Appendix 4. Affirmative Imperative Pl. Verb Forms

| Verbal Affirmative | Progressive | Gloss |
|--------------------|-------------|-------|
| F1                 |             |       |
| ghàng zhi kābāyn   | ghàng á nzhí kābāyn | eat/be eating fufu! |
| ghàng lām kābāyn   | ghàng á nlámá kābāyn | cook/be cooking fufu! |
| ghàng shaltó kābāyn| ghàng á nshítō kābāyn | collect/be collecting fufu! |
| ghàng sáŋtō kābāyn | ghàng á nsáŋtō kābāyn | sift/be sifting fufu! |
| ghàng lē kābāyn    | ghàng á nleē kābāyn | lose/be losing fufu! |
| ghàng kūmā kābāyn  | ghàng á nkūmā kābāyn | touch/be touching fufu! |
| ghàng shisá kābāyn | ghàng á nshisā kābāyn | remove/be removing fufu! |
| ghàng līmsá kābāyn | ghàng á nlmisā kābāyn | heat/be heating fufu! |
| F2                 |             |       |
| ghàng nē zhi kābāyn| ghàng nē nzhí kābāyn | eat/be eating fufu! |
| ghàng nē lām kābāyn| ghàng nē nlámá kābāyn | cook/be cooking fufu! |
| ghàng nē shaltó kābāyn| ghàng nē nshítō kābāyn | collect/be collecting fufu! |
| ghàng nē sáŋtō kābāyn| ghàng nē nsáŋtō kābāyn | sift/be sifting fufu! |
| ghàng nē lē kābāyn | ghàng nē nleē kābāyn | lose/be losing fufu! |
### Appendix 5. Affirmative Hortative Verb Forms

| Perfective AFF | Progressive AFF | Gloss                     |
|---------------|-----------------|---------------------------|
| yúwù zhí kábáyn | yúwù zhí kábáyn | let’s eat/be eating fufu! |
| yúwù lám kábáyn | yúwù lám kábáyn | let’s collect/be collecting fufu! |
| yúwù shíť kábáyn | yúwù shíť kábáyn | let’s sift/be sifting fufu! |
| yúwù sántá kábáyn | yúwù sántá kábáyn | let’s remove/be removing fufu! |
| yúwù lè kábáyn | yúwù lè kábáyn | let’s heat/be heating fufu! |
| yúwù kúm kábáyn | yúwù kúm kábáyn | let’s lose/be losing fufu! |
| yúwù shíś kábáyn | yúwù shíś kábáyn | let’s touch/be touching fufu! |
| yúwù lĭmsá kábáyn | yúwù lĭmsá kábáyn | let’s heat/be heating fufu! |
### Appendix 6. Affirmative Subjunctive Verb Forms

| Perfective AFF | Progressive AFF | Gloss |
|----------------|-----------------|-------|
| ...lá yúwù zhí kábáyn | ...lá yúwù ò nzhí kábáyn | ... that we eat fufu! |
| ...lá yúwù lám kábáyn | ...lá yúwù ò nlámá kábáyn | ... that we cook fufu! |
| ...lá yúwù shíhá kábáyn | ...lá yúwù ò nshíhá kábáyn | ... that we collect fufu! |
| ...lá yúwù sàŋtō kábáyn | ...lá yúwù ò nsaŋtō kábáyn | ... that we sift fufu! |
| ...lá yúwù kúm kábáyn | ...lá yúwù ò nlëë kábáyn | ... that we lose fufu! |
| ...lá yúwù shìsó kábáyn | ...lá yúwù ò nshìsó kábáyn | ... that we touch fufu! |
| ...lá yúwù lìmsó kábáyn | ...lá yúwù ò nlìmsó kábáyn | ... that we remove fufu! |

#### F1

| Perfective AFF | Progressive AFF | Gloss |
|----------------|-----------------|-------|
| ...lá yúwù nè zhí kábáyn | ...lá yúwù nè nzhí kábáyn | ... that we eat fufu! |
| ...lá yúwù nè lám kábáyn | ...lá yúwù nè nlámá kábáyn | ... that we cook fufu! |
| ...lá yúwù nè shíhá kábáyn | ...lá yúwù nè nshíhá kábáyn | ... that we collect fufu! |
| ...lá yúwù nè sàŋtō kábáyn | ...lá yúwù nè nsàŋtō kábáyn | ... that we sift fufu! |
| ...lá yúwù nè kúm kábáyn | ...lá yúwù nè nlëë kábáyn | ... that we lose fufu! |
| ...lá yúwù nè shìsó kábáyn | ...lá yúwù nè nshìsó kábáyn | ... that we remove fufu! |
| ...lá yúwù nè lìmsó kábáyn | ...lá yúwù nè nlìmsó kábáyn | ... that we heat fufu! |

#### F2

| Perfective AFF | Progressive AFF | Gloss |
|----------------|-----------------|-------|
| ...lá yúwù lù zhí kábáyn | ...lá yúwù lù nzhí kábáyn | ... that we eat fufu! |
| ...lá yúwù lù lám kábáyn | ...lá yúwù lù nlámá kábáyn | ... that we collect fufu! |
| ...lá yúwù lù shíhá kábáyn | ...lá yúwù lù nshíhá kábáyn | ... that we cook fufu! |
| ...lá yúwù lù sàŋtō kábáyn | ...lá yúwù lù nsàŋtō kábáyn | ... that we sift fufu! |
| ...lá yúwù lù kúm kábáyn | ...lá yúwù lù nlëë kábáyn | ... that we lose fufu! |
| ...lá yúwù lù shìsó kábáyn | ...lá yúwù lù nshìsó kábáyn | ... that we remove fufu! |
| ...lá yúwù lù lìmsó kábáyn | ...lá yúwù lù nlìmsó kábáyn | ... that we heat fufu! |

#### F3

| Perfective AFF | Progressive AFF | Gloss |
|----------------|-----------------|-------|
| sàtsën Búng zhí kábáyn ... | sàtsën Búng ò nzhí kábáyn ... | If Bung eats fufu ...! |
| sàtsën Búng lám kábáyn ... | sàtsën Búng ò nlámá kábáyn ... | If Bung cooks fufu ...! |
| sàtsën Búng shíhá kábáyn ... | sàtsën Búng ò nshíhá kábáyn ... | If Bung collects fufu ...! |
| sàtsën Búng sàŋtō kábáyn ... | sàtsën Búng ò nsàŋtō kábáyn ... | If Bung sifts fufu ...! |
| sàtsën Búng kúm kábáyn ... | sàtsën Búng ò nlëë kábáyn ... | If Bung loses fufu ...! |
| sàtsën Búng shìsó kábáyn ... | sàtsën Búng ò nshìsó kábáyn ... | If Bung touches fufu ...! |
| sàtsën Búng lìmsó kábáyn ... | sàtsën Búng ò nlìmsó kábáyn ... | If Bung removes fufu ...! |

#### F1

| Perfective AFF | Progressive AFF | Gloss |
|----------------|-----------------|-------|
| sàtsën Búng nè zhí kábáyn ... | sàtsën Búng ò nzhí kábáyn ... | If Bung eats fufu ...! |
| sàtsën Búng nè lám kábáyn ... | sàtsën Búng ò nlámá kábáyn ... | If Bung cooks fufu ...! |
| sàtsën Búng nè shíhá kábáyn ... | sàtsën Búng ò nshíhá kábáyn ... | If Bung collects fufu ...! |
| sàtsën Búng nè sàŋtō kábáyn ... | sàtsën Búng ò nsàŋtō kábáyn ... | If Bung sifts fufu ...! |
| sàtsën Búng nè kúm kábáyn ... | sàtsën Búng ò nlëë kábáyn ... | If Bung loses fufu ...! |
| sàtsën Búng nè shìsó kábáyn ... | sàtsën Búng ò nshìsó kábáyn ... | If Bung touches fufu ...! |
| sàtsën Búng nè lìmsó kábáyn ... | sàtsën Búng ò nlìmsó kábáyn ... | If Bung removes fufu ...! |

#### F2

| Perfective AFF | Progressive AFF | Gloss |
|----------------|-----------------|-------|
| sàtsën Búng lù zhí kábáyn ... | sàtsën Búng lù nzhí kábáyn ... | If Bung eats fufu ...! |
| sàtsën Búng lù lám kábáyn ... | sàtsën Búng lù nlámá kábáyn ... | If Bung cooks fufu ...! |
| sàtsën Búng lù shíhá kábáyn ... | sàtsën Búng lù nshíhá kábáyn ... | If Bung collects fufu ...! |
| sàtsën Búng lù sàŋtō kábáyn ... | sàtsën Búng lù nsàŋtō kábáyn ... | If Bung sifts fufu ...! |
| sàtsën Búng lù kúm kábáyn ... | sàtsën Búng lù nlëë kábáyn ... | If Bung loses fufu ...! |
| sàtsën Búng lù shìsó kábáyn ... | sàtsën Búng lù nshìsó kábáyn ... | If Bung touches fufu ...! |
| sàtsën Búng lù lìmsó kábáyn ... | sàtsën Búng lù nlìmsó kábáyn ... | If Bung removes fufu ...! |

#### F3

| Perfective AFF | Progressive AFF | Gloss |
|----------------|-----------------|-------|
| sàtsën Búng lù zhí kábáyn ... | sàtsën Búng lù nzhí kábáyn ... | If Bung eats fufu ...! |
| sàtsën Búng lù lám kábáyn ... | sàtsën Búng lù nlámá kábáyn ... | If Bung cooks fufu ...! |
| sàtsën Búng lù shíhá kábáyn ... | sàtsën Búng lù nshíhá kábáyn ... | If Bung collects fufu ...! |
| sàtsën Búng lù sàŋtō kábáyn ... | sàtsën Búng lù nsàŋtō kábáyn ... | If Bung sifts fufu ...! |
| sàtsën Búng lù kúm kábáyn ... | sàtsën Búng lù nlëë kábáyn ... | If Bung loses fufu ...! |
| sàtsën Búng lù shìsó kábáyn ... | sàtsën Búng lù nshìsó kábáyn ... | If Bung touches fufu ...! |
| sàtsën Búng lù lìmsó kábáyn ... | sàtsën Búng lù nlìmsó kábáyn ... | If Bung removes fufu ...! |

### Appendix 7. Affirmative Conditional Verb Forms
### Appendix 8. Affirmative Past Conditional Verb Forms

| Perfective AFF | Progressive AFF | Gloss |
|----------------|-----------------|-------|
| Búŋ tì 'zhlí kábâýn ... | Búŋ tì nzhí kábâýn ... | If Bung had eaten fufu ...! |
| Búŋ tì 'lám kábâýn ... | Búŋ tì nlâmá kábâýn ... | If Bung had cooked fufu ...! |
| Búŋ tì 'śhitá kábâýn ... | Búŋ tì nthítá kábâýn ... | If Bung had collected fufu ...! |
| Búŋ tì 'sântá kábâýn ... | Búŋ tì nsântá kábâýn ... | If Bung had sifted fufu ...! |
| Búŋ tì lë kábâýn ... | Búŋ tì nlëë kábâýn ... | If Bung had lost fufu ...! |
| Búŋ tì kûm kábâýn ... | Búŋ tì qkûmá kábâýn ... | If Bung had touched fufu ...! |
| Búŋ tì shisâ kábâýn ... | Búŋ tì nshisâ kábâýn ... | If Bung had removed fufu ...! |
| Búŋ tì limsá kábâýn ... | Búŋ tì nlimsá kábâýn ... | If Bung had heated fufu ...! |

### Appendix 9. Negative Imperative Sg. Verb Forms

| Perfective | Progressive | Gloss |
|------------|-------------|-------|
| ká 'zhí kábâýn | ká nzhí kábâýn | don’t eat/be eating fufu! |
| ká 'lám kábâýn | ká nlâmá kábâýn | don’t cook/be cooking fufu! |
| ká 'śhitá kábâýn | ká nthítá kábâýn | don’t collect/be collecting fufu! |
| ká ‘sântá kábâýn | ká nsântá kábâýn | don’t sift/be sifting fufu! |
| ká lë kábâýn | ká nlëë kábâýn | don’t lose/be losing fufu! |
| ká kûm kábâýn | ká qkûmá kábâýn | don’t touch/be touching fufu! |
### Appendix 10. Negative Imperative Pl. Verb Forms

| Perfective AFF | Progressive AFF | Gloss |
|----------------|-----------------|-------|
| ká shiśó kábáyn | ká nshiśó kábáyn | don’t remove/be removing fufu! |
| ká limsó kábáyn | ká nlimsó kábáyn | don’t heat/be heating fufu! |

**F2**

| ká né ‘zhí kábáyn | ká né nzhí kábáyn | don’t eat/be eating fufu! |
|-------------------|--------------------|--------------------------|
| ká né ‘lám kábáyn | ká né nlámá kábáyn | don’t cook/be cooking fufu! |
| ká né ‘shító kábáyn | ká né nshító kábáyn | don’t collect/be collecting fufu! |
| ká né ‘sàŋtá kábáyn | ká né nsàŋtá kábáyn | don’t sift/be sifting fufu! |
| ká né lè kábáyn | ká né nlè kábáyn | don’t lose/be losing fufu! |
| ká né kúm kábáyn | ká né nkúmá kábáyn | don’t touch/be touching fufu! |
| ká né shiśó kábáyn | ká né nshiśó kábáyn | don’t remove/be removing fufu! |
| ká né limsó kábáyn | ká né nlimsó kábáyn | don’t heat/be heating fufu! |

**F3**

| ká lú ‘zhí kábáyn | ká lú nzhí kábáyn | don’t eat/be eating fufu! |
|-------------------|--------------------|--------------------------|
| ká lú ‘lám kábáyn | ká lú nlámá kábáyn | don’t cook/be cooking fufu! |
| ká lú ‘shító kábáyn | ká lú nshító kábáyn | don’t collect/be collecting fufu! |
| ká lú ‘sàŋtá kábáyn | ká lú nsàŋtá kábáyn | don’t sift/be sifting fufu! |
| ká lú lè kábáyn | ká lú nlè kábáyn | don’t lose/be losing fufu! |
| ká lú kúm kábáyn | ká lú nkúmá kábáyn | don’t touch/be touching fufu! |
| ká lú shiśó kábáyn | ká lú nshiśó kábáyn | don’t remove/be removing fufu! |
| ká lú limsó kábáyn | ká lú nlimsó kábáyn | don’t heat/be heating fufu! |

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### Appendix 11. Negative Hortative Verb Forms

| Perfective AFF | Progressive AFF | Gloss |
|---------------|-----------------|-------|
| ká yúwú zí kábáyn | ká yúwú ã nzhí kábáyn | let’s not eat/eating fufu! |
| ká yúwú lám kábáyn | ká yúwú ã nlámá kábáyn | let’s not cook/be cooking fufu! |
| ká yúwú šifá kábáyn | ká yúwú ã nshifá kábáyn | let’s not collect/be collecting fufu! |
| ká yúwú sáñtò kábáyn | ká yúwú ã nsañtò kábáyn | let’s not sift/be sifting fufu! |
| F1 ká yúwú lè kábáyn | ká yúwú ã niè kábáyn | let’s not lose/be losing fufu! |
| ká yúwú küm kábáyn | ká yúwú ã nkuım kábáyn | let’s not touch/be touching fufu! |
| ká yúwú shí’sá kábáyn | ká yúwú ã nshisá kábáyn | let’s not remove/be removing fufu! |
| ká yúwú límsá kábáyn | ká yúwú ã nlímsá kábáyn | let’s not heat/be heating fufu! |
| ká yúwú nè zhi kábáyn | ká yúwú ã nzhí kábáyn | let’s not eat/be eating fufu! |
| ká yúwú nè lám kábáyn | ká yúwú ã nlámá kábáyn | let’s not cook/be cooking fufu! |
| ká yúwú nè shifá kábáyn | ká yúwú ã nshifá kábáyn | let’s not collect/be collecting fufu! |
| F2 ká yúwú nè sáñtò kábáyn | ká yúwú ã nsañtò kábáyn | let’s not sift/be sifting fufu! |
| ká yúwú nè lè kábáyn | ká yúwú ã niè kábáyn | let’s not lose/be losing fufu! |
| ká yúwú nè küm kábáyn | ká yúwú ã nkuım kábáyn | let’s not touch/be touching fufu! |
| ká yúwú nè shí’sá kábáyn | ká yúwú ã nshisá kábáyn | let’s not remove/be removing fufu! |
| ká yúwú nè límsá kábáyn | ká yúwú ã nlímsá kábáyn | let’s not heat/be heating fufu! |

### Appendix 12. Negative Subjunctive Verb Forms

| Perfective AFF | Progressive AFF | Gloss |
|---------------|-----------------|-------|
| ...lá ká yúwú zí kábáyn | ...lá ká yúwú ã nzhí kábáyn | ... that we not eat fufu! |
| ...lá ká yúwú lám kábáyn | ...lá ká yúwú ã nlámá kábáyn | ... that we not cook... |
| ...lá ká yúwú šifá kábáyn | ...lá ká yúwú ã nshifá kábáyn | ... that we not collect... |
| F1 ...lá ká yúwú sáñtò kábáyn | ...lá ká yúwú ã nsañtò kábáyn | ... that we not sift... |
| ...lá ká yúwú lè kábáyn | ...lá ká yúwú ã niè kábáyn | ... that we not lose... |
| ...lá ká yúwú küm kábáyn | ...lá ká yúwú ã nkuım kábáyn | ... that we not touch... |
| ...lá ká yúwú shí’sá kábáyn | ...lá ká yúwú ã nshisá kábáyn | ... that we not remove... |
| ...lá ká yúwú límsá kábáyn | ...lá ká yúwú ã nlímsá kábáyn | ... that we not heat... |
| ...lá ká yúwú nè zhi kábáyn | ...lá ká yúwú ã nzhí kábáyn | ... that we not eat fufu! |
| ...lá ká yúwú nè lám kábáyn | ...lá ká yúwú ã nlámá kábáyn | ... that we not cook... |
| ...lá ká yúwú nè shifá kábáyn | ...lá ká yúwú ã nshifá kábáyn | ... that we not collect... |
| F2 ...lá ká yúwú nè sáñtò kábáyn | ...lá ká yúwú ã nsañtò kábáyn | ... that we not sift... |
| ...lá ká yúwú nè lè kábáyn | ...lá ká yúwú ã niè kábáyn | ... that we not lose... |
| ...lá ká yúwú nè küm kábáyn | ...lá ká yúwú ã nkuım kábáyn | ... that we not touch... |
| ...lá ká yúwú nè shí’sá kábáyn | ...lá ká yúwú ã nshisá kábáyn | ... that we not remove... |
| ...lá ká yúwú nè límsá kábáyn | ...lá ká yúwú ã nlímsá kábáyn | ... that we not heat... |

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The text continues with similar tables and descriptions of verb forms and their meanings.
### Appendix 13. Negative Future Conditional Verb Forms

| Perfective AFF | Progressive AFF | Gloss |
|---------------|-----------------|-------|
| sátsén Búng dì? kó zhí kábáyn | sátsén Búng dì? kó nzhí kábáyn | If Bung doesn’t eat fufu ... |
| sátsén Búng dì? kó lám kábáyn | sátsén Búng dì? kó nláám kábáyn | If Bung doesn’t cook fufu ... |
| sátsén Búng dì? kó shítá kábáyn | sátsén Búng dì? kó nshítá kábáyn | If Bung doesn’t collect fufu ... |
| sátsén Búng dì? kó nshítá kábáyn | sátsén Búng dì? kó nsláám kábáyn | If Bung doesn’t sift fufu ... |
| sátsén Búng dì? kó nsláám kábáyn | sátsén Búng dì? kó nlsáám kábáyn | If Bung doesn’t lose fufu ... |

**F1**

| Perfective AFF | Progressive AFF | Gloss |
|---------------|-----------------|-------|
| sátsén Búng nè dì? kó zhí kábáyn | sátsén Búng nè dì? kó nzhí kábáyn | If Bung doesn’t eat fufu ... |
| sátsén Búng nè dì? kó lám kábáyn | sátsén Búng nè dì? kó nláám kábáyn | If Bung doesn’t cook fufu ... |
| sátsén Búng nè dì? kó shítá kábáyn | sátsén Búng nè dì? kó nshítá kábáyn | If Bung doesn’t collect fufu ... |
| sátsén Búng nè dì? kó nshítá kábáyn | sátsén Búng nè dì? kó nsláám kábáyn | If Bung doesn’t sift fufu ... |
| sátsén Búng nè dì? kó nsláám kábáyn | sátsén Búng nè dì? kó nlsáám kábáyn | If Bung doesn’t lose fufu ... |

**F2**

| Perfective AFF | Progressive AFF | Gloss |
|---------------|-----------------|-------|
| sátsén Búng lú dì? kó zhí kábáyn | sátsén Búng lú dì? kó nzhí kábáyn | If Bung doesn’t eat fufu ... |
| sátsén Búng lú dì? kó lám kábáyn | sátsén Búng lú dì? kó nláám kábáyn | If Bung doesn’t cook fufu ... |
| sátsén Búng lú dì? kó shítá kábáyn | sátsén Búng lú dì? kó nshítá kábáyn | If Bung doesn’t collect fufu ... |
| sátsén Búng lú dì? kó nshítá kábáyn | sátsén Búng lú dì? kó nsláám kábáyn | If Bung doesn’t sift fufu ... |
| sátsén Búng lú dì? kó nsláám kábáyn | sátsén Búng lú dì? kó nlsáám kábáyn | If Bung doesn’t lose fufu ... |

**F3**

| Perfective AFF | Progressive AFF | Gloss |
|---------------|-----------------|-------|
| sátsén Búng lú dì? kó zhí kábáyn | sátsén Búng lú dì? kó nzhí kábáyn | If Bung doesn’t eat fufu ... |
| sátsén Búng lú dì? kó lám kábáyn | sátsén Búng lú dì? kó nláám kábáyn | If Bung doesn’t cook fufu ... |
| sátsén Búng lú dì? kó shítá kábáyn | sátsén Búng lú dì? kó nshítá kábáyn | If Bung doesn’t collect fufu ... |
| sátsén Búng lú dì? kó nshítá kábáyn | sátsén Búng lú dì? kó nsláám kábáyn | If Bung doesn’t sift fufu ... |
| sátsén Búng lú dì? kó nsláám kábáyn | sátsén Búng lú dì? kó nlsáám kábáyn | If Bung doesn’t lose fufu ... |

If Bung doesn’t touch fufu ...

... that we do not remove...

... that we do not heat...
### Appendix 14. Negative Past Conditional Verb Forms

| Perfective AFF                     | Progressive AFF                  | Gloss                                           |
|-----------------------------------|----------------------------------|------------------------------------------------|
| Búng tì dì? kó ‘zhí kábáèn ...    | Búng tì dì? ká nzhí kábáèn ...   | If Bung hadn’t eaten fufu ...!                 |
| Búng tì dì? kó ‘lám kábáèn ...    | Búng tì dì? ká nlámá kábáèn ...  | If Bung hadn’t cooked fufu ...!                |
| Búng tì dì? kó ‘shítá kábáèn ...  | Búng tì dì? ká nshítá kábáèn ... | If Bung hadn’t collected fufu ...!             |
| **P0**                            |                                  |                                                 |
| Búng tì dì? kó ‘sáŋtá kábáèn ...  | Búng tì dì? ká nsáŋtá kábáèn ...  | If Bung hadn’t sifted fufu ...!                |
| Búng tì dì? kó lè kábáèn ...      | Búng tì dì? ká nleè kábáèn ...   | If Bung hadn’t lost fufu ...!                  |
| Búng tì dì? kó kùm kábáèn ...     | Búng tì dì? ká nkúmá kábáèn ...  | If Bung hadn’t touched fufu ...!               |
| Búng tì dì? kó shisá kábáèn ...   | Búng tì dì? ká nshisá kábáèn ... | If Bung hadn’t removed fufu ...!               |
| Búng tì dì? kó limsá kábáèn ...   | Búng tì dì? ká nlimsá kábáèn ... | If Bung hadn’t heated fufu ...!                |
| **P1**                            |                                  |                                                 |
| Búng yì tì dì? kó ‘zhí kábáèn ...  | Búng yì tì dì? ká nzhí kábáèn ... | If Bung hadn’t eaten fufu ...!                 |
| Búng yì tì dì? kó ‘lám kábáèn ...  | Búng yì tì dì? ká nlámá kábáèn ...| If Bung hadn’t cooked fufu ...!                |
| Búng yì tì dì? kó ‘shítá kábáèn ...| Búng yì tì dì? ká nshítá kábáèn ...| If Bung hadn’t collected fufu ...!             |
| Búng yì tì dì? kó ‘sáŋtá kábáèn ...| Búng yì tì dì? ká nsáŋtá kábáèn ...| If Bung hadn’t sifted fufu ...!                |
| Búng yì tì dì? kó lè kábáèn ...   | Búng yì tì dì? ká nleè kábáèn ... | If Bung hadn’t lost fufu ...!                  |
| Búng yì tì dì? kó kùm kábáèn ...  | Búng yì tì dì? ká nkúmá kábáèn ...| If Bung hadn’t touched fufu ...!               |
| Búng yì tì dì? kó shisá kábáèn ...| Búng yì tì dì? ká nshisá kábáèn ...| If Bung hadn’t removed fufu ...!               |
| Búng yì tì dì? kó limsá kábáèn ...| Búng yì tì dì? ká nlimsá kábáèn ...| If Bung hadn’t heated fufu ...!                |
| **P2**                            |                                  |                                                 |
| Búng tò tì dì? kó ‘zhí kábáèn ...  | Búng tò tì dì? ká nzhí kábáèn ... | If Bung hadn’t eaten fufu ...!                 |
| Búng tò tì dì? kó ‘lám kábáèn ...  | Búng tò tì dì? ká nlámá kábáèn ...| If Bung hadn’t cooked fufu ...!                |
| Búng tò tì dì? kó ‘shítá kábáèn ...| Búng tò tì dì? ká nshítá kábáèn ...| If Bung hadn’t collected fufu ...!             |
| **P3**                            |                                  |                                                 |
| Búng ə ntí dì? kó ‘zhí kábáèn ...  | Búng ə ntí dì? ká nzhí kábáèn ... | If Bung hadn’t eaten fufu ...!                 |
| Búng ə ntí dì? kó ‘lám kábáèn ...  | Búng ə ntí dì? ká nlám kábáèn ... | If Bung hadn’t cooked fufu ...!                |
| Búng ə ntí dì? kó ‘shítá kábáèn ...| Búng ə ntí dì? ká nshítá kábáèn ...| If Bung hadn’t collected fufu ...!             |