Tonality in Caodeng rGyalrong*

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1 Introduction

This article explores the phonological use of pitch in the Caodeng dialect of the rGyalrong language in Tibeto-Burman. The introductory section

*It is my happy privilege to contribute this article to the current festschrift volume in honor of Prof. Roland Bielmeier's eminent research in Caucasian, Iranian, and Tibeto-Burman linguistics on the occasion of his 65th birthday. My long-term endeavor to document and analyze the rGyalrongic languages and dialects would not be possible without the warm friendship and devoted cooperation of my native-speaking teachers, especially my principal Caodeng rGyalrong consultant Bstan’dzin Blogros of Gagiuli Village. This work is a heavily revised version of a paper I presented at the 28th International Conference on Sino-Tibetan Languages and Linguistics on October 6-8, 1995, University of Virginia, Charlottesville. Drafts of this paper have benefited greatly from useful comments from Jim Matisoff, Randy LaPolla, George van Driem, Paul Benedict, Robbins Burling, and Yoshio Nishi. I gratefully acknowledge the generous funding from a Chiang Ching-kuo Foundation Grant RG005-D-93, and several National Science Council grants. The following abbreviations are used in the example sentences: DL=dual; ERG=ergative; EV=evidential; HTR=high transitivity; IMPFv=imperfective; INV=inverse; LTR=low transitivity; NMLz=nominalizer; PL=plural; PFv=perfective; PN=personal name; PRos=prospective; Q=interrogative marker; sG=singular; TR=transitive; VOC=vocative. Transcription of the rGyalrong and Lavrung data is phonemic. Written Tibetan (WT) transliteration, enclosed in angle brackets, follows the standard system proposed in Wylie 1959.

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provides background information on Caodeng rGyalrong (hereafter: Caodeng) (§ 1.1), and an outline of its segmental phonology (§ 1.2). The next section presents different types of pitch-related phenomena observed in Caodeng: a phonetically conditioned type (§ 2.1), a grammatically conditioned type (§ 2.2), and a phonologically significant high-to-low pitch drop (§ 2.3). Concentrating on the last type, the next section establishes its accentual nature and examines cases where accentuation is sensitive to phonological (§ 3.1) and morphosyntactic structure (§ 3.2). Section 4 puts the paper in perspective by comparing the Caodeng pitch-accent system with that of Tokyo Japanese and three other attested Tibeto-Burman systems where pitch is put to restricted phonological use. Conclusions are drawn in section 5.

1.1 Linguistic background

rGyalrong, a morphologically complex Tibeto-Burman language of northwestern Sichuan, is well-known for its unusual historical interest and structural richness. Equally remarkable, but often underrated, is its wide dialectal diversity. There are at least three mutually unintelligible major dialects of rGyalrong, namely Situ (Eastern), Chabao (Northeastern; WT <ja.phug>), and Sidaba (Northwestern; WT <stod.pa>). The latter dialect itself contains two divergent sub-dialects, Caodeng (WT <tsho.bdun>), and Showu. rGyalrong coheres with two neighboring languages Lavrung and Horpa to comprise a compact rGyalrongic subgroup in Tibeto-Burman (J. Sun 2000a, 2000b; Huang 2003). Caodeng is spoken by around 3,000 people residing in the seven out of ten villages within Caodeng Township in Ma'erlang County, Aba Prefecture, northwestern Sichuan. The Caodeng data cited herein represent the speech of Gaqiuli (quchweri?) Village.

1.2 Outline of Caodeng segmental phonology

The structure of the Caodeng syllable is (C)(C)(C)V(C)(C). The language shows a preference for complex syllable-initial contrasts; the nucleus and coda positions are normally filled by one segment only. The following system of initial consonants are posited (enclosed in parentheses are marginal or non-native segments):
An enormous number of initial clusters are attested, including many three-member clusters such as zgr- (e.g. zgrel 'shadow'), sdw- (e.g. sdwi 'bracelet'), and z'br- (e.g. z'bri 'willow'). Caodeng phonology treats nasal + voiceless stop combinations as consonant clusters, but nasal + voiced stop combinations as simplex prenasalized stops. Consonants permitted as syllable codas are -v, -t, -y, -m, -n, -η, -r, -l, -j, and -z. The lateral coda -l is distinctly laminodental. Syllables may also take a glottal-stop coda which may even combine with the continuant codas, creating the only kind of cluster coda in the language. Syllables carrying the glottal coda behave phonologically like checked syllables with regard to accent placement (see further on). Nine vowel phonemes are distinguished: a, i, u, e, o, ɔ, ə, and ɛ. Only two intrinsic complex vocoids ej and oj are found in the native vocabulary, treated herein as vowel + consonantal glide sequences. A number of segmental phonological processes apply to segments, including vowel assimilation, consonant assimilation, syncope, and consonant epenthesis.
2 Caodeng tonality phenomena

2.1 Pitch contours and the glottal stop

In Caodeng, open or continuant-coda syllables may carry a contrastive final glottal catch,\(^1\) as seen in these minimal pairs:\(^2\)

\[
\begin{align*}
\text{ka-for} & \quad \text{‘to be narrow’} & \text{qej} & \quad \text{‘crow (bird)’} \\
\text{ka-for?} & \quad \text{‘to be sour’} & \text{qej?} & \quad \text{‘wheat’}
\end{align*}
\]

The glottal stop also has some interesting morphological applications. One primary type of verb-stem alternations in Caodeng, for example, is the reversal of syllable-final glottality.\(^3\) The restricted verb paradigms below exemplify two verb roots with inherent glottal-stop coda (‘to put’ and ‘to smoke’) and two without (‘to buy’ and ‘to wear’), where Stem 1 or the verb base (as seen in the nominalized citation forms) contrasts in final glottality with the marked Stem 2 (seen in the perfective forms):

\[
\begin{align*}
\text{ke-te}$^\prime$ & \quad \text{‘to put’} & \text{ke-ski}$^\prime$ & \quad \text{‘to smoke’} \\
\text{ne-te} & \quad \text{‘s/he put’} & \text{te-ski} & \quad \text{‘s/he smoked’} \\
\text{ka-xtu} & \quad \text{‘to buy’} & \text{kr-ge} & \quad \text{‘to wear’} \\
\text{te-xtu} & \quad \text{‘s/he bought’} & \text{te-ge} & \quad \text{‘s/he wore’}
\end{align*}
\]

Moreover, verbs regularly lose the inherent glottal coda in the progressive aspect, but unlike the perfective this aspect does not require originally unglossed roots to acquire the glottal coda:

\[
\begin{align*}
\text{ese-te} & \quad \text{‘s/he is putting’} & \text{ese-ski} & \quad \text{‘s/he is smoking’} \\
\text{ese-xtu} & \quad \text{‘s/he is buying’} & \text{ese-ge} & \quad \text{‘s/he is wearing’}
\end{align*}
\]

Syllables checked by the glottal-stop coda, like the other checked syllable in \(\text{-t}\), are normally associated with high level pitch (marked with the

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\(^1\) The glottal coda is not distinctive in non-final syllables (see below).

\(^2\) Adjectival concepts are conveyed in rGyalrong by stative verbs. Unless otherwise specified, verbs are cited in their nominalized infinitive forms.

\(^3\) All verbs in Caodeng distinguish a verb base or STEM 1 and a marked STEM 2 which, in addition to indicating past-time reference in the perfective and imperfective past verb forms, is also required in low-transitivity progressives, converbs, as well as oblique deverbal nouns. Many common transitive verbs show an additional STEM 3, or singular transitive non-past stem. A systematic comparison of verb-stem formation in various rGyalrong dialects is presented in J. Sun 2004. The marked stems (STEM 2 and STEM 3) are indicated with subscript numerals in the glosses.
macron),\(^4\) while non-checked syllables are normally pronounced in a high falling pitch (marked with the circumflex), as in:

\[
\begin{align*}
(5) & \quad \text{qêj} '\text{wheat}' & \text{kar-tê} '\text{to put}' \\\n& \quad \text{qêj} '\text{crow (bird)}' & \text{ne-tê 's/he put'}
\end{align*}
\]

One advantage of including the glottal stop in the set of stop codas is that this gives a principled account of the association of high level pitch with the glottal-stop coda, as this is the normal pitch pattern carried by all checked syllables. The necessity for recognizing a distinct glottal-stop coda in Caodeng is further demonstrated by the fact that syllables ending in a glottal stop behave phonologically as checked syllables with regard to the placement of accent. Examples of such accent rules will be given in §3.1 below.

A notable consequence of the above segmental analysis is that Caodeng rGyalrong now counts as another Tibeto-Burman language where plain and glottalized syllables stand in phonological opposition.\(^5\)

### 2.2 Grammatically conditioned pitch contours

As previously stated, checked and non-checked syllables in Caodeng are commonly pronounced in (high) level and falling pitch, respectively. This generalization is however true only of morphemes from syntactic classes other than verbs (including stative verbs denoting property notions, the equivalent of adjectives in other languages). Verb roots checked by the glottal stop regularly drop the glottal coda in the perfective and past imperfective (using Stem 2), as well as in the high-transitivity progressive (using Stem 1), while the pitch contour shifts from level to falling (6a). This alternation of pitch patterns has been extended to verb roots comprising all syllable types, including those checked by the stop coda -r (6b):

\(^4\) Except for verbs; see §2.2 below.

\(^5\) Other languages in this set include Jingpo, Limba, Chepang, Garo, and the Guanyinqiao dialect of Lavrug (Mu'erzong variety). Minimal pairs involving the two syllable types in Mu'erzong (personal research) are exemplified by:

\[
\begin{align*}
& \text{sa 'blood'} & \text{dp? 'melt'} & \text{rj? 'knee'} \\
& \text{sa? 'feet'} & \text{dp? 'melted (STEM 2)'} & \text{rj? 'borrow'}
\end{align*}
\]

Unlike in Caodeng, the pitch contour normally associated with glottalized syllables in Mu'erzong Lavrung is low rising.
The level and falling contours in Caodeng, then, have evolved from conditioned pitch variations associated with the glottal stop into a phonological exponent of tense-aspect distinctions.\(^7\)

Before leaving the subject of pitch contour variations, we must point out that in addition to the grammatically determined contrast seen above, a small number of lexical roots are found to manifest unpredictable falling pitch, for example:

\[ \text{(7) } \begin{align*} 
\text{rdût} & \quad \text{‘exactly’} \\
\text{ts’t} & \quad \text{‘goat’} 
\end{align*} \]

### 2.3 The contrastive pitch step-down

The restricted final pitch contours (level vs. falling) seen above seem prevalent across rGyalrong dialects.\(^8\) Caodeng phonology, however, is characterized by a markedly different tonality type that plays a much more important functional role. Phonological words in Caodeng differ as to whether

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\(^6\) This verb applies to objects with an opening, e.g. bags, mouths.

\(^7\) Vowel lowering, an ancillary phonological process differentiating the different aspects, turn the mid vowels \(e\) and \(a\) respectively to \(\{e\}\) and \(\{a\}\) as the pitch changes from level to falling. Thus, the form \(\text{us;jkōt} 's/he is carving'\) in (4) is realized as \(\text{toldk5t}\). Interestingly, there exist a handful of checked stative verbs exhibiting falling pitch for the non-perfective as well as the perfective, e.g. \(\text{ko-mts’t} '\text{to be full}'\), \(\text{[PV]} \text{ts-mts’t}\). The unpredictable falling pitch must be lexically marked on such irregular verbs.

\(^8\) Pitch contours being contingent on the glottal coda is also true of the Sromo (Dai and Yammuchu 1992) and Zhuokeji (XR Lin 1989; YJ Lin 2001) varieties of Situ rGyalrong, where they are treated as distinctive tones. I noted the same phenomenon in the Benzhen variety of the Situ dialect. Pitch contour variations are however absent from the Chaobao dialect, based on my personal research on its Long’erjia variety and more recent work by Lin You-Jing and Guillaume Jacques on other varieties of Chabao. For examples of tonal contrasts in various rGyalrong dialects, see XR Lin 1993: 411–526.
the pitch steps down in the middle of the word, as evidenced in the examples below (raised H and L indicate high and low pitch, respectively):

(8) a. żphonH-tsH-'Phuntsog (personal name)'
    żlaH-weH-'Dawa (personal name)'
  b. ×1-kH-pH 'my home'
      p1-kH-eH 'my mouth'
      pH-fwH-e 'my age'
      eH-fweH 'my tooth'

As can be seen, pitch may drop in some personal names but not in others (8a), and in some possessed monosyllabic nominal roots (v- = ‘first-person singular possessor’) but not in others (8b). The foregoing data demonstrate clearly that the pitch drop H-L is independently distinctive.

The high-toned portion of the pitch drop can be borne even by grammatical elements with minimal semantic content, as seen in (9) involving the nominal prefix te-/ta- and the nominalising prefix ka-:

(9) taH-riL 'tax'
    teL-riH 'rope'
    kCJH-tj'orL 'pickled radish leaves'
    kCJL-tjorH 'be sour'

The H-L pitch drop can be represented in a revealing way by placing an acute accent on the high-pitched syllable immediately preceding the pitch drop; words that do not manifest the pitch drop are left unmarked, thus:

(10) pH-kH-pH 'my home'
    vH-kH-eH 'my mouth'
    sH-riH 'tax'
    tuH-riH 'rope; rack for air-drying grain'

The notation above implies that pitch modulations in Caodeng have to do with accentual phenomena. This interpretation is supported by a number of facts about the language.

First, monosyllabic words in Caodeng show no contrast in pitch height, but are invariably high-pitched (see §4.1 below); in other words, the phonological function of pitch in Caodeng is syntagmatic rather than paradigmatic.

Second, at most one H-L pitch drop is permitted in a Caodeng phonological word. Thus in the formation of compounds, which behave as single
phonological words in this language, only the last compound component is allowed to retain its lexical H-L pitch drop:

(11) a. tɔŋ-me 'foot'
    tɔŋ-q'u 'posterior side'
    tɔŋ-me-q'u (*tɔŋ-me-q'u) 'heel'

b. tɔŋ-ko? 'head'
    tɔŋ-rnɔ 'hair'
    tɔŋ-ko-nnɔ 'hair of head'

c. tɔŋ-me 'foot'
    tɔŋ-mŋɔ 'eye'
    tɔŋ-mŋɔ (*tɔŋ-mŋ-ɔŋa) 'anklebone'

d. tɔŋ-ko? 'head'
    tɔŋ-dzi 'skin'
    tɔŋ-kɔ-ŋzi 'scalp'

As seen in (11c–d), Caodeng word-formation rules require the deletion of the nominal prefix tɔŋ- of the final compound component, and the high-toned portion of the pitch drop is realized on the root of the preceding compound element (mŋɔ- and kɔ-).9

The two facts presented above show that the phonological function of this particular type of pitch variations is culminative (Hyman 1975: 231-232; McCawley 1978: 119; Beckman 1986: 19–22). Once the location of pitch drop is determined (see below), derivation of the surface pitch patterns of a Caodeng word is automatic: unaccented word-initial syllables as well as post-accent syllables are low-pitched, all other syllables are normally high-pitched. This, of course, is another salient characteristic of accentual as opposed to tonal systems.

With stress-accent systems like English, where 'changing pitch, vowel duration, and intensity all contribute to the highlighting of the stressed syllable' (Hyman 1975: 231), the most robust criterion of stress accent according to some researchers is total amplitude (Beckman 1986: 145–78). Moreover, the predominant phonetic correlate of accent in Caodeng is pitch as accented syllables are not associated with more intensity or greater length.

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9 The diachronic analog of this process in a tone language is termed 'tone grounding' in Hyman 1978: 267.
The foregoing considerations lead to the conclusion that the latter type of tonality observed in Caodeng may be regarded as a kind of pitch accent. We will return to this point in §4 below.

3 Accent rules

As shown in (8-9) above, accentuation is lexically unpredictable in Caodeng. There is, for instance, no (synchronic) reason why accent falls on the penultimate in tame ‘leg’ but not in terme ‘hair’. In this section, however, we look into cases where accent placement is determined by phonological (§3.1) and grammatical (§3.2) contexts.

3.1 Phonologically conditioned accent rules

In the three cases presented below, accent is sensitive to the syllable structure of the input morphemes. Specifically, checked (i.e. by -t or -ʔ) and smooth syllables behave differently with respect to accent placement.

3.1.1 Approximate numerical compounds

In Caodeng, two adjacent numerals in combination with a prefix ka-\(^{10}\) and followed by a classifier form compounds denoting approximate ranges of quantity delimited by the two numerals. As illustrated below, the derived accent pattern of such approximate numeral compounds is identical to that of the classifier component (12a-b). However, if the root of the classifier ends a checked syllable, the compound allows an optional penultimate accent (12c):

\[
\begin{align*}
(12) & \text{Classifier} & \text{Approximate Numerical Compound} \\
& \text{a. ‘rtsom ‘section’} & \text{ka-sne-xso-rtsom ‘two-three sections’} \\
& \text{‘bu ‘herd’} & \text{ka-sne-xso-bu ‘two-three herds’} \\
& \text{‘tsat ‘drop’} & \text{ka-sne-xso-tsat ‘two-three drops’} \\
& \text{b. sji ‘day’} & \text{ka-sne-xso-sji ‘two-three days’} \\
& \text{mer ‘night’} & \text{ka-sne-xso-mer ‘two-three nights’} \\
& \text{sle ‘month’} & \text{ka-sne-xso-sle ‘two-three months’}
\end{align*}
\]

\(^{10}\) With an alternant -a before a uvular consonant.
3.1.2 Spontaneous and ambulative verb formations

Likewise, several verbal formations, including the spontaneous and the ambulative, are accented variably according to input syllable structure. The spontaneous verb form is productively derived by adding the prefix na- to the verb root. The lexical accent of the verb is maintained if the root ends in a checked syllable (13a); otherwise, the spontaneous form receives penultimate accent (13b):

(13) Verb Spontaneous Form
a. kw-te? ‘to put’
   ke-na-te? ‘to put (readily, of one’s accord)’
   kw-le? ‘to release’
   ke-na-le? ‘to release (readily, of one’s accord)’
b. ka-fjut ‘to take out’
   ke-na-fjut ‘to take out (readily, of one’s accord)’
   ka-ge ‘to wear’
   ke-na-ge ‘wear (readily, of one’s accord)’

The ambulative forms are also regularly produced by attaching to the verb root a prefix ne- followed by a reduplicated syllable comprising the root onset plus -a. Prefixed formatives in the original verb, if any, are replaced by ne-. Ambulatives retain the accent of the input verb root if the latter ends in a checked syllable (14a); otherwise, they invariably bear penultimate accent (14b):

(14) Verb Ambulative Form
a. ka-fnat ‘set fire’
   ke-na-fnat
   ka-xyjet ‘observe’
   kw-nxyjet
   ka-yta ‘chase’
   kw-nyta
   ka-xve? ‘dig’
   kw-nxwalwe?
b. kw-nom ‘roam’
   kw-nom’tom
   kw-namder ‘jump’
   kw-namder
   kw-ytu ‘buy’
   kw-nxytu
   kw-xsay ‘hit’
   kw-nxxsway

11 So named because the ‘spontaneous’ verb form is typically associated with adverbial meanings like ‘out of one’s own will’, ‘with gusto’, ‘by oneself’, ‘by natural force’, etc.

12 A derived verbal from meaning ‘to go around V-ing’.
3.2 Grammatically conditioned accent rules

As shown in §3.1.2, pitch accent in Caodeng not only serves to contrast lexical meanings but is exploited by the grammar. Additional morphosyntactic environments will be presented in the following which assign a definite accent pattern irrespective of the input accent of the constituent morphemes.

3.2.1 Accent assigned by the syntactic construction

3.2.1.1 Intensive forms of stative verbs

The intensive forms of stative verbs are formed via partial reduplication, whereby the verb root is prefixed with a syllable comprising a copy of the original initial of the verb root plus \(-\text{a}\) vocalism. The derived intensives, as a rule, show penultimate accent:

\[(15) \text{Verb} \quad \text{Intensive} \]
\[\begin{align*}
\text{ka-xte?} & \quad \text{to be big} & \quad \text{ka-xiixte} \\
\text{ka-werne?} & \quad \text{to be red} & \quad \text{ka-wernörne} \\
\text{ka-qerqu?} & \quad \text{to be freezing} & \quad \text{ka-qerqörqü} \\
\text{ka-mërtev} & \quad \text{to be spicy} & \quad \text{ka-mërtevörqü}
\end{align*}\]

3.2.1.2 Verbs in the as-soon-as construction

In Caodeng, events occurring in close temporal sequence can be expressed by combining clauses in an \(\text{as-soon-as}\) construction where the clause serving as the temporal background is headed by a special verb form marked by (i) the prefix \(\text{ro-}\) attached to the verb base\(^{13}\) and (ii) penultimate accent. Examples (16) illustrate:

\[(16) \begin{align*}
\text{a. kakö?-ka rö-mti-aŋ} & \quad \text{ka-nas\'dás\'du t̄a-o-je-aŋ} \\
3\text{SG-ERG} & \text{as-soon-as-see-1SG INF-scold PFV-INV-begin2-1SG}
\end{align*}\]

‘He started to scold me as soon as he saw me.’

\(< \text{ka-mti?} \quad \text{to see}>\)

\(\text{13 The choice of stem can be ascertained in view of verbs involving ablauted stems, e.g. ‘qet (Stem 1) vs. get (Stem 2), where it is Stem 1 that is selected (in 16c).}\)
b. *kako?* ro-np'álen *ke-náyev* *yo?*
   3SG as.so.on.as.lie.on.one's.side IMPFV-fall.asleep be
   ‘He falls asleep as soon as he lies down.’
   (< *ka-np'álen* ‘to lie on one’s side’)

c. *pye o-ré’dzemp ro-qeš t'v-mal’biam*
   bird 3SG:POSS-wing as.so.on.as-stretch PFV:DOWNSTREAM-fly
   ‘The bird flew downstream as soon as it stretched open its wings.’
   (< *ka-qeš* ‘to stretch (arms, wings, etc.)’)

d. *konñ? ro-ne’dat ro-emgy’-de*
   3DL as.so.on.as-argue PFV:COME.to.blows-3DL
   ‘They two came to blows as soon as they argued.’
   (< *ka-ne’dat* ‘to argue’)

3.2.1.3 Denominal measure words denoting containers

Penultimate accent is also assigned to measure words derived from nouns denoting containers. Some examples quantified by the numeral *ka-* ‘one’ are shown in (17). Notably, this derivational process extends freely to loanwords, as in (17b):

(17) a. *zrola?* ‘pail’
   *ka-zrola* ‘a pail of’
   *p’örtjuf* ‘bowl’
   *ka-p’örtjuf* ‘a bowl of’

b. *tshav?* ‘plate < Tibetan *tha.spag’
   *ka-tshav* ‘a plate of’
   *te’bi?* ‘bottle < Amdo Tibetan *dam-be’
   *ka-te’bi* ‘a bottle of’
   *tsöntson?* ‘cup < Chinese *zhāngzhōng’
   *ka-tsöntson?* ‘a cup of’
   *p’öntsö* ‘basin < Chinese *pénzī’
   *ka-p’öntsö* ‘a basin of’

3.2.1.4 Vocatives

Most personal names in Caodeng are direct Tibetan loans. In the vocative, interestingly, they are marked by the penultimate accent:

(18) Personal Name     Vocative Form
    *rnam*             *rāñm*            *sön*             *sön*          *sgö’don*          *sgö’don*    *skelözang*       *skelözang*   *dzöme*          *dzöme*       *len*            *len*
3.2.1.5 Yes-no questions

Caodeng has no counterpart of the interrogative particle "ma" of Situ rGyalrong (see XR Liu 1993: 391–2) in the formation of yes-no questions. Instead, one way such questions are formed in Caodeng is by attaching an accented interrogative prefix "a-" to one of the copular verbs apposed to a preceding clause. In this copular construction, the truth of the proposition is presupposed:

(19) a. for? sonem twa? ne-tʰi
   yesterday PN  booze PFV:TR-drink2
   'Sonam drank booze yesterday.'

   b. for? sonem twa? ne-tʰi a-1/o
   yesterday PN  booze PFV:TR-drink2 Q-be
   'Is it the case that Sonam drank booze yesterday?'

The pragmatically unmarked, and phonologically more remarkable, method of turning statements into yes-no questions is to place a penultimate accent directly on the inflected main verb, as in:

(20) for? sonem twa? né-tʰi
    yesterday PN  liquor PFV:TR:Q-drink2
    'Did Sonam drink liquor yesterday?'

(21) smi kə-mev-ca
    fire PFV:Q-go.off2-EV
    'Has the fire gone off?'

However, if the potential target syllable already bears penultimate accent, recourse must be made to the accented copular construction shown above. Consider (22a–b):

(22) a. kakoʔ-ko nejiʔ ja-ta-o-nəvlo
    3SG-ERG 2SG PROS-2-INv-cheat
    'S/he will cheat you. (< kə-nəvlo 'to cheat')'

   b. kakoʔ-ko nejiʔ ja-ta-o-nəvlo a-yo
    3SG-ERG 2SG PROS-2-INv-cheat Q-be
    'Will s/he cheat you?'

Personal Name Vocative Form
metsiʔ  mētoʔ
kreqims'o  kreqims'o
3.2.1.6 Excursus on the limits of accent placement

The discerning reader will have noticed a salient trait in Caodeng accentology: accent does not go beyond a certain syllable from the end of the word. In fact, accent defined by the H-L pitch drop is limited to one syllable position only: the penultimate. This observation is corroborated by further data in (23) involving input personal names already accented on the penultimate, where the corresponding vocative forms remain unchanged save for increased intonational emphasis:

(23) Personal Name       Vocative Form
    enents'æray            enents'æray
    lemürcoi               lemürcoi

It is important to note that suffixes in Caodeng are always low-pitched, and therefore invisible to (i.e. unaffected by) accent placement. In the example below, the addition of the third-person dual index -'dza to the accented stem návio does not trigger relocation of the accent one step to the right: *ja-ta-o-návio-ʻdza:

(24) koko-ʔa ʻdzənymi? ja-ta-o-návio-ʻdza
    3SG-ERG 2DL       PROS-2-INv-cheat-DL
    *'S/he will cheat you two.'

With all suffixes being extrametrical, stem-final accent (the default case) is effectively the same as absence of accent. Thus, the generalization can be reached that the only phonologically significant accent location in Caodeng is stem-penultimate. In what follows, the terms ‘accented’ and ‘unaccented’ will hence refer only to presence versus absence of the marked stem-penultimate accent.

3.2.2 Accent loss

Accent in Caodeng tends to be retained as nominal or verbal roots undergo various processes of morphology. We have seen a rather dramatic instance of accent retention in (11c-d), where during compound formation an input accent gets realized on a preceding compound element. Moreover, the inherent accent on monosyllabic nouns is preserved by attached prefixes (as in (8b) above; see further section §4.1). In the following examples of verbal derivation, accent is maintained respectively by the causative prefix.
in causative verbs (25) and by reduplicated material in reciprocal verbs (26).\textsuperscript{14}

\begin{itemize}
\item \textit{ka-d\textsuperscript{-}d3ev} ‘to roll’
\item \textit{ke-sa-d\textsuperscript{-}d3ev} ‘to cause to roll’
\end{itemize}

cf.
\begin{itemize}
\item \textit{ke-f\textsuperscript{-}f\textsuperscript{a}} ‘to go’
\item \textit{ke-say-f\textsuperscript{a}} ‘to cause to go’
\end{itemize}

\begin{itemize}
\item \textit{ke-q\textsuperscript{a}-\textsuperscript{s\textsuperscript{e}}} ‘to look for’
\item \textit{ke-qes\textsuperscript{a}se} ‘to look for each other’
\item \textit{ke-r\textsuperscript{a}\textsuperscript{q\textsuperscript{a}}} ‘to embrace’
\item \textit{ke-rqarq\textsuperscript{a}} ‘to embrace each other’
\end{itemize}

cf.

In the preceding section, we have examined a number of cases of accent imposed by particular grammatical structures. We turn now to morphosyntactic environments which require the inherent accent to be obliterated.

\subsection*{3.2.2.1 Accent loss in unprefixed verb forms}

Caodeng morphology relies heavily on prefixation. Unprefixed verb forms are distinguished from prefixed ones by removal of inherent accent. This quite idiosyncratic accent loss can be demonstrated by the following prefixed (27a) and unprefixed (27b) forms of the accented verb \textit{ke-res\textsuperscript{a}ki} ‘to pull’:

\begin{itemize}
\item a. \textit{ka-res\textsuperscript{a}ki} ‘one who pulls’
\item \textit{no-res\textsuperscript{a}ke} ‘you\textsubscript{sg} will pull’ or ‘(You\textsubscript{sg}) pull upward!’
\item \textit{ja-res\textsuperscript{a}ke} ‘s/he will pull’
\item \textit{ja-res\textsuperscript{a}ki-j\textsuperscript{a} ka} ‘Let’s go pull!’\textsuperscript{15}
\item b. \textit{res\textsuperscript{a}ke} ‘s/he will pull’
\item \textit{res\textsuperscript{a}ke-\textsuperscript{q\textsuperscript{a}}} ‘I will pull’
\item \textit{res\textsuperscript{a}ki-t\textsuperscript{a}} ‘we\textsubscript{pl} will pull’
\item \textit{res\textsuperscript{a}ki-j\textsuperscript{a} ko} ‘Let’s pull!’
\end{itemize}

\textsuperscript{14} The reciprocal verb forms, like intensive statives, comprise a reduplicated prefixed syllable with a copy of the original initial of the root plus \textit{s\textsuperscript{e}}. However, reciprocal reduplication always retains the input accent of the verb root.

\textsuperscript{15} This exemplifies the hortative, formed by suffixing the (inclusive) first-person dual \textit{-t\textsuperscript{a}} or plural \textit{-j\textsuperscript{a}} indexes to the verb base, followed optionally by the illocutionary particle \textit{ko}. Note that the addition of an \textit{andative} prefix \textit{j\textsuperscript{a}-} denoting ‘movement away from the speaker’ reclaims the lost accent in \textit{ja-res\textsuperscript{a}ki-j\textsuperscript{a} ko} ‘Let’s go pull!’.
3.2.2.2 Accent-suppressing tense-aspects

Caodeng verbs also regularly drop lexical accents in a number of tense-aspect forms. Accent-suppressers among the tense-aspects include the high-transitivity progressive, and the two tenses based on Stem 2: the past perfective and imperfective. Consider the partial conjugations of the accented verb *kə-xxay* ‘to hit’ below, where lexical accent is retained in the prospective, but removed in the various accent-suppressing tense-aspects:

\[(28)\]

\[\text{a. } jə-\text{xxay-aj } 'I am about to hit him/her.'\]
\[\text{PROS-hit-1SG}\]

\[\text{b. } u\text{xx-xxay-aj } 'I am hitting him/her.'\]
\[\text{PROG:HTR-hit-1SG}\]

\[\text{c. } tə-\text{xxay-aj } 'I hit him/her.'\]
\[\text{PFV-hit2-1SG}\]

\[\text{d. } nə-\text{xxay-aj } 'I was hitting/used to hit him/her.'\]
\[\text{IMPFV:PAST-hit2-1SG}\]

4 Caodeng pitch accent in typological perspective

4.1 Tonality in Caodeng and Tokyo Japanese compared

We have shown in the preceding sections that Caodeng rGyalrong possesses a system of pitch accent which is reminiscent of Standard Tokyo Japanese (TJ), a textbook example of pitch-accent languages (McCawley 1973: 113; Vance 1987: Chapter 8; Shibatani 1990: 177-184). Nevertheless, the Caodeng system diverges in several important respects from that of TJ. First of all, the Caodeng system seems much less complicated than that of TJ. In the latter language, accent can potentially occur on any syllable in a word (at least in nouns) and postposed particles have different effects on noun + particle combinations (see McCawley 1968: § 3.5; Vance 1987: § 8.3.1). Accent placement in Caodeng, on the

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16 Two progressives are distinguished in Caodeng: a low-transitivity progressive formed by prefixing *θ* to Stem 2, and a high-transitivity progressive formed by prefixing *θθ* to the verb base (with any input accent removed).

17 Other pitch-accent systems characterized by step-down of pitch include Central Carrie (Pike 1986), the Gyeongsan dialect of Korean (Egerod and Hashimoto 1982: 7-8), several central and western dialects of Basque (Hualde 1991), and Muka Qiang (Evans, ms., see further on).
other hand, is highly constrained—the only phonologically unpredictable accent position is the penultimate of the stem. Most of the accentual phenomena surveyed in the preceding sections, it will be recalled, pertain to the phonological manipulation of the stem-penultimate accent. In Caodeng, furthermore, stem-final accent does not differ phonologically from lack of accent, owing to the obligatorily low-pitched suffixes. This is no so in TJ, where final accent is distinct from no accent (e.g. hand ‘flower’ vs. hana ‘nose’). Final accent can therefore be left unmarked in Caodeng, but must be lexically specified in Tokyo Japanese.

In both Tokyo Japanese and Caodeng, monosyllabic words contrast in accent even though the citation pitches remain identical. The two languages differ in how the accent is realized in this particular environment. The distinction between the accented word hi ‘fire’ and the unaccented word hi ‘sun’ in TJ surfaces only when these are followed by a postposition such as the subject marker ga, where only the accented root hi ‘fire’ induces the pitch drop hiH_gaL. In Caodeng, likewise, certain monosyllabic morphemes carry a latent or external (Wzng 1972: 491) accent, represented in this paper by a preposed apostrophe. The external accent is realized only when a preceding morphological element is added to materialize the pitch step-down. Thus, in isolation, the accented word xser ‘gold’ carries a high falling pitch just like the unaccented word rjal ‘silver’; but when, for example, the first-person singular possessive prefix e- is attached, these words become respectively e-xser ([e1HxserL]) ‘my gold’ and e-rjal ([eLrjalH]) ‘my silver’.

Another important distinction between the Caodeng and TJ systems has to do with the size of the domain of accent, which is the phonological word in the former language but the minor phrase in the latter. The accent-reduction process examined in (11) shows that compounds conform to the culminativity or ‘one-accent-per-word’ constraint and are thus legitimate phonological words in Caodeng, as they are in TJ. In TJ, fast speech often reduces a major phrase comprising several ‘minor phrases’ (phonological strings pronounced without an intervening pause) to a single minor phrase (Shibatani 1990: 179). True phrases containing more than one accented syllable in Caodeng, nevertheless, do not undergo accent reduction. For instance, the Noun-Verb (29a) and Noun-Modifier (29b) phrases below each contain two separately accented phonological words:
(29) a. käju
   kä-pʰt
   käju kä-pʰt
   ‘firewood’
   ‘to cut’
   ‘to cut firewood’
b. š-ryev
   š-yółe
   š-ryev š-yółe
   ‘my wife’
   ‘to be good’
   ‘my good wife’

4.2 Other restricted tone systems in Tibeto-Burman

4.2.1 Balti Tibetan

Pitch is distinctive to a limited extent in Balti, a western Tibetan dialect spoken in Pakistan. Balti, unlike the tonal Tibetan dialects, makes a phonological distinction of pitch only in polysyllabic words, hence apparently similar to pitch accent in Caodeng. The majority of such words carries a melody pattern with a high pitch on the second syllable; on the other hand, eighty-four disyllabic and trisyllabic nouns (plus all verbal nouns) are noted with a first-syllable high pitch (Sprigg 1966: 187–9). Following are two minimal pairs differentiated by the two pitch patterns:

(30) butša ‘child’
    šjélbá ‘poverty’
    butša ‘man, male’
    šjélba ‘begging (verbal noun)’

High tone in Balti, therefore, is severely restricted not only categorically (initial high tone occurs only with nouns) but also positionally, as it stays on a fixed initial or second syllable despite affixation or compounding (Bielmeier 1988: 47–48). Following Bielmeier, we regard Balti tonality as an incipient system of stress, as it satisfies both the central criteria of stress-accent (Hyman to appear; § 4): obligatoriness (all lexical words have a syllable marked for high tone) and culminativity (all lexical words have only one syllable marked for high tone).

4.2.2 Gurung

Gurung, a language of the Tamang subgroup of Bodic, has been described by Warren Glover as having a pitch-accent system.\(^\text{18}\) In this language,

\(\text{18}\) This is to be contrasted with Burton-Page’s two-tone analysis (Ghandrung dialect; Burton-Page 1955) and Sprigg’s analysis (Thak dialect; Sprigg 1997) consisting of two
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Tonality in Caodeng rGyalrong

pitch contrast (high vs. low) combines in intricate ways with an intersecting contrast of phonation types (plain vs. breathy), forming a so-called ‘four-box’ system characteristic of many Tibeto-Burman languages of the Himalayas. Glover’s interpretation of the Gurung system as accentual follows from its phonotactic constraints allowing at most one high pitch in a given phonological word. Nevertheless, Gurung departs on at least two counts from what is expected of typical pitch-accent systems. First, contrastive pitch registers are in paradigmatic opposition on the same syllable, as shown in the minimal pair below (data cited are from Glover 1970: 68, 71; high and mid phonetic pitches are indicated by H and M):

\[(31) \text{ca} [\text{ts}H] ‘he’ \quad \text{ali} [l\text{im}H] ‘clod of earth’
\]
\[\text{ca} [\text{ts}M] ‘vein’ \quad \text{ali} [l\text{im}M] ‘brother’\]

Second, the pitch of a given Gurung syllable is jointly determined by its phonation type, its position in the word, the voicing state of word-initial stops, and the pitch of neighboring syllables (Glover 1970: 66–8); yet, importantly, a high-pitched (in Glover’s terms ‘accented’) syllable does not lead to a step-down of pitch. This is to be contrasted with the Tokyo or Caodeng system where an accent not only takes at least two syllables to realize (i.e. a syntagmatic contrast is involved), but is always accompanied by pitch drop. In fact, the Gurung system shows some affinity to word-tone systems like Lhasa Tibetan (J. Sun 1997) in that both involve a pitch-register contrast (high vs. low) localized on one syllable per phonological word, except that the location of the contrast is confined to the initial syllable in Lhasa but is free in Gurung.

4.2.3 Puxi Lavrung

Lavrung, a rGyalrongic language closely related to rGyalrong, provides us with another interesting tonality system bearing partial similarity to the Caodeng tonality system.

Spoken in Rangtang, Ma’erkang, and Jinchuan counties to the west of the rGyalrong (proper) area, Lavrung is internally diverse with three mutually unintelligible dialects: Guanyinqiao, Puxi, and Yelong (J. Sun crisscrossing systems, a register and a contour tone system.)
2000a; Huang 2003). In the Puxi dialect, a robust system of binary tonal contrast (high falling ɚ and low rising ɚ) operates on monosyllables:

(32) zgê ‘saddle’  djû ‘demon’
    zgê ‘charcoal’  djû ‘year’

However, in multisyllabic words and even phrases, the ability to bear the two-way tonal opposition is restricted to one accented syllable only. Accent is unpredictable in multisyllabic morphemes or loan words, where lexical marking is required:

(33) t’ôw ‘large hammer’  jântsô ‘shrew’
    skarmâ ‘star’  vëjî ‘serow’

Interestingly, once lexical tones are ascertained, accent placement in the accentual domain can be determined straightforwardly from the input tones according to the these principles:

(34) (i) Accent the leftmost high (falling) tone.
    (ii) If there are no high tones, then
         (nia) accent the rightmost low tone if the accentual domain contains
               no toneless syllables.
         (nib) otherwise accent the leftmost low tone.

Following are examples of the above principles applying to compounds (35a) and phrases (35b):

(35) a. spô ‘meadow’ + sasô ‘wild berry’  → spôsasô ‘strawberry’
    snaou ‘broad bean’ + c’âv ‘pod’  → snauc’âv ‘broad-bean pod’

b. vây ‘butter’ + dzî ‘eat’  → vây dzî
    vây ‘butter’ + u-dzî ‘eat [PFV]’  → vây u-dzî
    rî ‘write’ + mf’sê ‘know how’  → rî mf’sê
    rî ‘write’ + na-mf’fô ‘know how  → rî na-impfv:past

19 Representing the speech of Luoxi Hamlet in Xiaoyili Village, Puxi Township, Rang-tang County (personal research).

20 Since the only legitimate syllable to bear tones is one that is accented, tonal specification itself serves as a convenient mark for accent location inside the accentual domain.

21 All grammatical morphemes are toneless.
5 Concluding remarks

The present study explores in detail three types of tonality phenomena in the Caodeng dialect of rGyalrong. In the first two types, level versus falling pitch contours are largely predictable, conditioned respectively by a glottal-stop coda (barring a few lexical exceptions) and morphological features (tense-aspect). In the third type, a distinctive pitch step-down plays a restricted but significant role at both lexical and morphosyntactic levels, much as in Tokyo Japanese. Caodeng accent is a distinctive feature of individual lexical entries. Lexical accent, on the other hand, is subject to modification by specific phonological and morphosyntactic constructions.

Tibeto-Burman languages display considerable variation with respect to the phonological function of pitch. The tonality systems in Caodeng and in the three other Tibeto-Burman languages outlined above represent different points on a wide continuum between omnisyllabic tone systems (e.g. Loloish, Tujia) and atonal systems (e.g. Amdo Tibetan, Newari). Caodeng tonality, however, distinguishes itself from the other Tibeto-Burman systems by the salient feature of H-L pitch stepdown, the hallmark of pitch accent for many linguists. In any event, a clear-cut tonal/atonal dichotomy with respect to the highly diversified Tibeto-Burman family is misguided, and the existence of clear examples of restricted tone systems (Caodeng and Lavrung) in the rGyalrong area in northwestern Sichuan raises the possibility that similar halfway-house tonality systems may lurk in the neighboring Tibeto-Burman languages, having escaped the attention of previous investigators. It seems that this suspicion will soon be vindicated as more and more linguistic data from this area are brought to light.\footnote{The Showu sub-dialect of Sidaba rGyalrong also makes contrastive use of pitch accent. The accent rules appear to be quite different. For instance, unlike in Caodeng where accent falls on stem-penult, accent in Showu can access the antepenult syllable, as seen in the formation of the vocative, e.g. \textit{pi\=je\=fi\=me\=so} \rightarrow \textit{pi\=je\=fi\=me\=s\=u} (vocative) and the interrogative: \textit{na\=-\=mit} \textit{'(The fire) has gone out.'}; \textit{\=na\=-\=mat} \textit{'Has (the fire) gone out?'} (personal field data). A fascinating restricted tone system has been found recently in the Muka variety of Qiang, a Qiangic language spoken to the east of rGyalrong area in Aba Prefecture. Meka monosyllables do not contrast in tone, but multisyllabic words are characterised by a high \textit{word tone} that spreads rightward from the left edge of the word, as well as a \textit{pitch accent} that induces a H-L drop of pitch (Evans ms.). No less interesting tonality subtypes are being investigated in other languages in the area, such}
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