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A Grammar of Bantawa : grammar, paradigm tables, glossary and texts of a Rai language of Eastern Nepal

Doornenbal, M.A.

Citation

Doornenbal, M. A. (2009, November 3). *A Grammar of Bantawa : grammar, paradigm tables, glossary and texts of a Rai language of Eastern Nepal. LOT dissertation series*. LOT, Netherlands Graduate School of Linguistics, Utrecht. Retrieved from <https://hdl.handle.net/1887/14326>

Version: Not Applicable (or Unknown)

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Note: To cite this publication please use the final published version (if applicable).

Chapter 2

Phonology

This chapter is an outline of Bantawa phonology. The phoneme inventory is given and explained, and syllable structure is discussed. There are some issues that deserve special attention, viz. a) the status of voiced aspirated stops, b) the status of the glottal stop, c) the way to deal with Nepali influence on the language, particularly in relation to phonology, and d) some more minor issues.

2.1 Consonants

The consonantal inventory of Bantawa may be summarised as in Table 2.1.

The grey cells are all phonemes, for which minimal pairs are easily found. Their phonemic status has been observed previously by Bāntāvā (2001) and Rai (1985). The grey cells contain phonemes that are quite certain, but those in between square brackets [] are not unproblematic. The phones in white areas of the table are not analysed as phonemes for different reasons.

Table 2.1: Consonant Inventory

<i>manner</i>		<i>labial</i>		<i>alveolar</i>		<i>retroflex</i>		<i>palatal</i>		<i>velar</i>		<i>pharyngeal glottal</i>
		-voice	+voice	-voice	+voice	-voice	+voice	-voice	+voice	-voice	+voice	
stop	-asp	p	b	t	d	(ɽ)	(ɽ̌)			k	g	(ʔ)
	+asp	p ^h	[b ^h]	t ^h	[d ^h]	(ɽ ^h)	(ɽ̌ ^h)			k ^h	[g ^h]	
affricate	-asp			ts	dz							
	+asp			ts ^h	dz ^h							
nasal			m		n						ŋ	
fricative				s								h
glide	-asp		w						j			
	+asp		(w ^h)						(j ^h)			
liquid					l							
trill/flap					r							

Each of these phonemes will be briefly discussed below. The status of the retroflex consonants will be discussed in section §2.4, which discusses Nepali influences in Bantawa. The opposition of voiced stops vs. voiced aspirated stops, viz. [b] vs. [b^h], [d] vs. [d^h], [g] vs. [g^h] and [dz] vs. [dz^h], will be discussed separately. The glottal stop also deserves a discussion of its own, as do the rare aspirated approximants or glides.

Nepali loans

One general problem that needs discussion in a phonological description of any Kiranti language is the status of loans from Nepali. In order to decide whether some phonetic distinction signals a phonemic contrast, it is the set of data under consideration that determines the outcome. The phonology of Bantawa can be discussed very well excluding the loans from Nepali, as the core of the lexicon is well preserved. Also, the percentage of obvious Nepali loans is very limited. I feel that it is justified to consider the phonology of Bantawa while excluding obvious Nepali loans. Some aspects and developments in the sound system may be related to Nepali influence, for instance the development or retention of aspirated voiced stops, viz. /b^h/, /d^h/, /dz^h/ and /g^h/ as distinctive phonemes. However, whatever their origin, these developments are part of the Bantawa sound system as such. The issue is different from whether or not to include Nepali words in the data set. Some criteria for inclusion of Nepali words into the data set could be frequency and degree of adaptation to Bantawa phonology. The situation can be compared to French influence on Dutch. It would be awkward to introduce a phone in the Dutch phoneme inventory on the basis of a single French loan found in some speakers' repertoire. However, when a number of loans that contain this contrastive phone form an integral part of the Dutch vocabulary, the phoneme must be considered a 'Dutch' phoneme.

The Nepali influence on Bantawa is similar. It is hard to produce a good and useful figure to quantify the penetration of Nepali into Bantawa. In my word list, a more or less random slice out of the language, based primarily on texts and, for verbs, elicitation, one finds some 15% of Nepali loans, i.e. 450 out of 3000. Most loans, particularly the frequently used loans, have undergone adaptation to Bantawa phonology. Several authors who published word lists (Rai *et al.* 1985, Bāntāvā 2001) tended to record 'native' words only, and thus these dictionaries give a view of the reality that is biased for 'real' Bantawa words. Apart from this problem with printed sources, there is considerable regional variation in penetration. Some areas are reportedly under stronger Nepali influence than others. For this description, however, the situation in Sindrāñ is taken as a yardstick. In Sindrāñ, most loan words are adapted to Bantawa phonological rules. The loan words that conform to Bantawa phonology were admitted to the data set. For more discussion of Nepali influence, see §2.4.

The class of verbs forms the core of the Bantawa lexicon. The verb inventory is phonologically very regular and forms the most solid stronghold of the native lexicon. We shall establish a basic set of phonemes and phoneme combinations from this class and discuss some phenomena that extend beyond this class.

2.1.1 Minimal pairs for the clear-cut contrasts

In Table 2.1, there is a series of affricate consonants only at the alveodental or alveolar place of articulation. These affricates are sometimes treated as if they fill the ‘gap’ for the palatal stops, but phonetically as well as phonologically this is incorrect. However, these consonants pattern with the stop phonemes in some other respects and we shall treat them together.

Contrasts between unvoiced, unvoiced aspirated and voiced members of the labial, dental, velar and affricate series are easily found¹.

p ~ p^h ~ b

potma	‘grope’ v	puŋma	‘begin’ v
p ^h otma	‘accuse’ v	p ^h uŋma	‘run away, send off’ v
p ^h opma	‘catch’ v	buŋma	‘sow’ v
popma	‘be unholy, defile’ v	p ^h iŋma	‘crack’ v
bopma	‘cover’ v	biŋma	‘blast’ v
pitma	‘put together’ v	p ^h anma	‘change’ v
p ^h itma	‘poison, shoot’ v	banma	‘come level’ v
patma	‘cry out, shout’ v	penma	‘order, fly’ v
batma	‘bloom, bring, reach’ v	p ^h enma	‘untie’ v
putma	‘boil over’ v		
p ^h utma	‘break’ v		

t ~ t^h ~ d ~ d^h

tama	‘come far’ v , ‘copper (N)’ n	tomma	‘support’ v
t ^h ama	‘split’ v	t ^h omma	‘dance, make dance’ v
dama	‘finalise’ v	domma	‘be senseless’ v
d ^h ama	‘fall down, go down’ v	tupma	‘understand, meet’ v
t ^h atma	‘be sufficient’ v	dupma	‘earn’ v
d ^h atma	‘hit’ v	duŋma	‘drink’ v
teŋma	‘make blunt’ v	d ^h uŋma	‘thresh, bump’ v
t ^h eŋma	‘push away with hand’ v	tukma	‘be ill, strike’ v
deŋma	‘weave’ v	t ^h ukma	‘spit at someone’ v
tipma	‘drain off’ v	dukma	‘flood’ v
dipma	‘cover’ v		
t ^h inma	‘pounce, wake up’ v		
dinma	‘lay eggs’ v		

¹In the lists of minimal pairs, the part of speech is given for each word by the following abbreviations: **v** verb, **n** noun, **adj** adjective and **adv** adverb.

ts ~ ts^h ~ dz

tsikma	‘economise, dye’ v	tsinma	‘end, teach, finish’ v
ts ^h ikma	‘pinch’ v	ts ^h inma	‘wrap around’ v
tsama	‘eat’ v	ts ^h aŋma	‘stack up’ v
ts ^h ama	‘get a child’ v , ‘cook’ v	dzarjma	‘construct on the ground’ v , reach height’ v
tsekma	‘chop up, arrange marriage’ v	tsorjma	‘please’ v
ts ^h ekma	‘block, lock in’ v	ts ^h orjma	‘deliver’ v
tsumma	‘shrink, clean up, remove’ v	dzorjma	‘reach height’ v
ts ^h umma	‘sink, tie up’ v		

k ~ k^h ~ g

kikma	‘hold’ v	kuma	‘heat’ v
k ^h ikma	‘be bitter’ v	k ^h uma	‘chew’ v
ken	‘large drum’ n	kakma	‘jump over, occupy’ v
k ^h en	‘wound’ n	gakma	‘make a hut’ v
katma	‘feel’ v	k ^h aŋma	‘look’ v
k ^h atma	‘go, take away’ v	gaŋma	‘make a hut’ v
kepma	‘sting’ v	k ^h orjma	‘freeze’ v
k ^h epma	‘stick’ v	gorjma	‘stretch’ v
kima	‘be long’ v	k ^h oma	‘scrape’ v
k ^h ima	‘quarrel’ v	goma	‘belch’ v
kopma	‘surround’ v	korjma	‘level’ v
k ^h opma	‘close, cut firewood’ v	gorjma	‘stretch’ v

These cases are all unproblematic. However, verbs beginning with voiced affricates and velars are rare. Nevertheless, these verbs contrast regularly with other verbs beginning with a homorganic unvoiced stop and cannot be construed as loans. Nasal consonants contrast with their homorganic stop consonants, which I shall not demonstrate. Nasal also contrast with one another in every position; So do laterals and glides.

m ~ n ~ ŋ

naŋ	‘hail’ n	anco	‘our ^{di} ’ pro
maŋ	‘godhead’ n	amco	‘your ^d ’ pro
nopma	‘touch’ v	canma	‘feed’ v
mopma	‘lose sense’ v	camma	‘sharpen’ v

ma	‘mother’ n	lam	‘way’ n
ŋa	‘fish’ n	laŋ	‘leg’ n
bama	‘weave’ v	ŋaŋma	‘rock’ v
baŋa	‘uncle’ n	ŋanma	‘snap’ v
c ^h una	‘aunt’ n	bamŋa	‘eel’ n
c ^h uma	‘be greasy’ v , ‘ <i>Shorea robusta</i> ’ n	bamna	‘Brahmin’ (Bāhun) n
moŋma	‘deceive’ v	ŋamma	‘stick in’ v
ŋomma	‘taste oily’ v	namma	‘smell, reek’ v
ŋoŋma	‘flounder’ v	k ^h erj	‘measurement basket’ n
		k ^h en	‘wound’ n

w ~ j

Minimal contrasts between /w/ and /j/ are not frequent because these phones have a limited distribution with respect to the following vowel. However, there are enough distinctive contexts to establish a phonemic contrast. The data set contains no minimal pairs between /w/ and /j/, but near-minimal pairs are not infrequent.

wama	‘dry’ v	b ^h uwa	‘owl’ n
jama	‘tickle’ v	buja	‘previously’ adv
witma	‘collect’ v	dawa	‘water jug’ n
jitma	‘bring down’ v	kaja	‘rice plant’ n
winma	‘to grind’ v	dowa	‘officiant’ n
jinpa	‘downwards’ adv	soja	‘basket’ n

r ~ l

riŋma	‘spread the word’ v	ronma	‘pierce’ v
liŋma	‘hook up’ v	lonma	‘go outside’ v , take outside, take out’ v
raŋ	‘plant’ n	ruŋma	‘shake’ v
laŋ	‘leg’ n	luŋma	‘liver’ n
rekma	‘rip’ v	hara	‘plough’ n
lekma	‘lick’ v	hala	‘red’ adj
rima	‘spread, scatter’ v		
lima	‘happen, become’ v		

s ~ t ~ ts ~ ts^h

sarj	‘who’ pro	sakma	‘weed’ v , ‘breath’ n
tarj	‘head’ n	cakma	‘bathe’ v
c ^h arj	‘also’ part	sutma	‘hide’ v
senma	‘ask’ v	cutma	‘tease’ v
tenma	‘uproot’ v	c ^h utma	‘send’ v
cenma	‘splice’ v	maksa	‘bear’ n
c ^h enma	‘select’ v , ‘urinate’ v	makc ^h a	‘son-in-law’ n
siŋ	‘wood’ n		
tiŋ	‘thorn’ n		
ciŋ	‘exit’ n		

2.1.2 Voiced stops vs. voiced aspirated stops

There are only few examples of minimally contrastive pairs between aspirated and unaspirated voiced stops, which suggests that either the phonemic contrast has only recently developed or is in decay. The consideration that contact with the Nepali language, that has the contrast, has relatively recently intensified supports the hypothesis that the phonemic contrast between simple voiced and voiced aspirated stops is a recent development. However, the presence of lexical items that are not apparent loans from Nepali or even have a demonstrable Kiranti pedigree supports the contrary view. It seems that the lexical items that contain voiced aspirates are found in a limited number of functional categories, viz. flower names, intensifiers and ideophonically expressive jargon, cf. §2.2.1.

Michailovsky (1994: 766) does not reconstruct reflexes in Proto-Kiranti that correspond to this opposition and excludes /g^h/ and /dz^h/ from his Bantawa phoneme inventory, which suggests that the opposition is not old. For /b^h/ and /d^h/, Michailovsky simply lists two variants for some examples (1994: 772), without further elaboration. I maintain that /d^h/, /b^h/ and /g^h/ are real phonemes, for which enough contrasts can be demonstrated. For /dz^h/, technically no contrast can be shown. However, it must not be excluded from the phoneme inventory. Most speakers of Bantawa have distinct preferences for one form or the other of the words that have either /dz/ or /dz^h/. This phonemic distinction is very real to the speakers.

b ~ b^h

At first sight, the phonemic status of /b^h/ is doubtful. There are dialectal variations in words, such as in examples (4) and (5), that give the impression that specific forms are very local and, perhaps, more accidental than significant.

- (4) pig
- a. [b^hak] (Sindrāñ, author’s field notes)
 - b. [bak] (Rabi dialect, NK Rai)

- (5) crab
 a. [k^heβak] (Sindrāñ, author's field notes)
 b. [k^hebak] (Rabi dialect, NK Rai)

Moreover, there are certain forms where deciding on the right form was hard for several informants, for example those in (6) and (7)

- (6) biŋma 'blast'
 b^hiŋma 'blast', also: b^hiŋk^hawa vs. biŋk^hawa 'gun'
 (7) bekma 'fold'
 b^hekma 'fold'

However, for most other forms there generally is agreement on the proper form. There are some nouns showing the contrast /b/ vs. /b^h/. Word-initially, the contrast is relatively unproblematic in spite of variation in some words. Most speakers who have learnt Nepali are very aware of the contrast, e.g. in frequent loans such as b^hela 'gathering' vs. bela 'time, occasion'.

- (8) b ~ b^h minimal pairs
 a. batma 'bloom', 'bring', 'reach'
 b^hatma 'fetch water'
 b. bak 'flat, leaf'
 b^hak 'pig'

While there is a word initial contrast, /b^h/ and /b/ do not appear in phonemic contrast in intervocalic position². Voiced bilabials are usually realised as [β] in this position. Informants' intuitions about which consonant this should represent are often based on their understanding of the etymology of the word in question. A form such as [k^heβak] 'crab' causes doubt, as the [βak] part could be understood as 'flat', as a crab is flat, or as 'pig', as there may be something pig-like about the crab. This doubt about a word's etymology shows the real uncertainty about the voiced, intervocalic bilabials. Phonologically, the contrast is neutralised intervocalically.

d ~ d^h

The contrast between /d/ and /d^h/ is more frequent and well-established than that between /b/ and /b^h/. Still, there are quite a few instances where judgment is uncertain, or where there are two forms available to express the same concept.

- (9) danma 'trip'
 d^hanma 'bring down'
 (10) dima 'make fall'
 d^hima 'lay'

²In fact, the one example of intervocalic /b^h/ from Rai *et al.* (1985), which represents the Rabi dialect, is yo-b^hi 'chin'. This entry in Rai *et al.* (1985) contains a footnote reading 'Koku: yo-bi'.

- (11) *din* ‘egg’
 d^hin ‘egg’

Some of these correspondences (9,10) can be explained as a reflex of a Proto-Tibeto-Burman transitive derivation process, cf. §6.3.1. While synchronically the meaning difference may be minimal or absent, we can assume that in the past there used to be a derivational relationship between two forms. Anyhow, in most instances the contrast is unproblematic, as shown in the minimal pairs.

The occurrence of two forms for ‘egg’ in example (11) has another explanation. The variation in this form may be related to the fact that ‘egg’ is most frequently used in compounds, such as *wadin* ‘chicken-egg’ etc. The point is that similar to the labial voiced stops, the aspiration contrast is neutralised intervocalically. The phonemes /d/ or /d^h/ may be realised either way, but, in careful speech, will be realised as the known underlying form. In transparent compounds, speakers have an intuition as to which phoneme is underlying, so that the phonemic contrast must still be maintained for this position. In the non-compound loans /pād^hu ~ pād^u/ ‘dove’ (< **pərewa* (N), *parewā*) the aspiration is truly uncertain. The form /badd^he ~ badde/ ‘many’ (< **bəḍ^hi* (N)), another loan which is unique anyway with its d-geminate, the aspiration is very often not realised. Speakers may pronounce aspiration if they are aware of the word’s origin, or for extra emphasis. A similar ideophonic value is associated with other consonants, e.g. see /dz ~ dz^h/ below. Underlyingly, we must posit /badd^he/.

dz ~ dz^h

Voiced alveodental affricates are rare in Bantawa. Either [dz] or [dz^h] occurs in only 25 words out of some 2000, of which only ten are possibly of native origin. Voiced alveodental affricates do not seem to appear in the core verb lexicon that derives from proto-Kiranti (Michailovsky 1994). The remarks that apply to the b ~ b^h opposition apply with more force to the opposition dz ~ dz^h.

Most of the verbs that start with [dz] are acceptable with the aspirated variant as well.

- (12) Verbs with dz ~ dz^h
- | | | |
|----|--|---|
| a. | <i>dzaŋma</i> | ‘construct on the ground’, ‘reach height’ |
| b. | <i>dzanma</i> | ‘pile up’ (related to (a)?) |
| c. | <i>dzoŋma</i> / <i>ḍ^hoŋma</i> | ‘reach height, be tall’ |
| d. | <i>ḍ^honma</i> | ‘make tall’ (derived from (c)?) |
| e. | <i>ḍ^homma</i> | ‘surround’ |
| f. | <i>ḍ^humma</i> | ‘gather’ |

The non-verbal examples are listed in (13).

- (13) Non-verbs with dz ~ dz^h
- | | | |
|----|---------------------------|-----------|
| a. | <i>dz^harak</i> | ‘all’ |
| b. | <i>badzijonma</i> | ‘cricket’ |

- | | |
|---|---|
| c. ondzoŋlo / undz ^h oŋlok | ‘much, many’ (< dzoŋma) |
| d. goŋdzoruŋ | ‘begonia’ |
| e. dz ^h idz ^h ema | ‘ <i>Mussaenda macrophylla</i> flower’ (Nepali <i>dhobini</i>) |
| f. dzəjgəla | ‘kind of flower’ |

Of these words, dz^harak is the most prominent and frequent. The low frequency of /dz/ and /dz^h/ does not mean that they are foreign³.

If we leave the flower names aside, the concept of size, mostly big, and the consonants /dz/ and /dz^h/ seem associated. This association can be qualified as onomatopœic, or, more correctly, ideophonic (Caughley 1997: 96). The expressiveness of the sound is associated with the size denoted. One gets the impression that the breathiness and length of the vowel after /dz/ in the words /dz^harak/ and /dz^hoŋma/ is related to the emphasis or size expressed. Throughout I shall note the ideophonic usage of words and sounds in general; With respect to adverbs cf. the discussion in §8.2.4.

In sum, while there is no minimal pair in the native lexicon of Bantawa to contrast [dz] and [dz^h], the proficient speakers of this language have fixed intuitions about which one to choose for some words. The contrast between [dz] and [dz^h] is marginal, but phonemic.

g ~ g^h

Word-initially, there is only one contrast between [g] and [g^h]. The following forms are found in the data set.

- (14) goŋma ~ g^hoŋma
 a. goŋma ‘stretch’
 b. g^hoŋma⁴ ‘fuck’
- (15) goksū ~ g^hoksū ‘caterpillar’
- (16) goma ~ g^homa ‘belch’

There are no minimal pairs with the exception of (14), where, again, emotional value seems to be attached to the aspirated form. However, while there are very few minimal pairs, there are some near-minimal pairs that warrant the conclusion that this contrast is phonemic.

- (17) guŋguŋluŋ ‘very deep’
 g^hum ‘leaf umbrella’

Speakers that have had some exposure to Nepali have fixed preferences for one form or the other. It is fair to say that the phonemic contrast exists in the competence

³dz^harak has possible cognates in at least Limbu: *sorək*, and Chamling: *j^harak*. Ebert (1997a) remarks that ‘j^harak’ in Chamling is the only word she found with this onset. The verbs that indicate ‘to be of size’, *dzoŋma*, *dz^hoŋma*, *dz^honma* also have apparent cognates in Limbu: *cəŋjən*, *cəŋjəŋ*: height, elevation. Bantawa *dzanma* may have a cognate in the Limbu verb *camma* (*cənd-*) ‘to put something up high’ (The Limbu examples are from Jeff Webster, personal communication).

⁴This word is considered very rude.

of most speakers. However, there is regional variation, resulting in speakers from one area preferring and consistently using one form, while in another area another form may be preferably used.

These factors together make it impossible to find a criterion by which to determine the underlying phoneme for those words that have two forms. In a reconstructed ‘proto-Bantawa’ language, the contrast is certainly not there. The contrast /g/ vs. /g^h/ is a recent development⁵.

Intervocally, again, the contrast is completely neutralised. For compound words, the underlying phoneme can be reconstructed, but not for example (18) below.

- (18) ogi ~ og^hi ‘sweet potato’

For occurrences after the homorganic nasal /ŋ/ the picture is even more complicated. Here a forward voicing assimilation process also seems to operate, which is rare elsewhere in the language, except, may be, in rapid speech.

- (19) ‘star’
 a. saŋ-g^hen (NK Rai)
 b. saŋ-ken (author’s field notes)

As this type of syllable junction occurs in compounds only, underlying forms are easily reconstructed.

2.1.3 The glottal stop

Glottal stops do not contrast with other phonemes

The glottal stop is a problematic phone in Bantawa that does not have the status of a full phoneme. There is no position where the glottal stop contrasts with any other sound. The glottal stop only contrastively occurs syllable initially; however, the contrast is with its absence only. The presence of the glottal stop indicates a syllable boundary, and this syllable boundary is contrastive, e.g. (20).

- (20) a. so.ma ‘lazyness’
 b. som.ʔa ‘by love’

In syllable-final position, the glottal stop occurs as an allophone for the voiceless stops /p/ /t/ and /k/. Considering this distribution of the glottal stop, we analyse the glottal stop as a contextually determined filler that signals a syllable boundary. In specific positions, the glottal stop functions as the default consonant. The glottal stop is then analysed as an empty syllable-initial consonant position. This analysis makes room for inserting glides in some contexts where a vowel-final syllable occurs in a word or phrase before a syllable with an empty onset. In these contexts, glottal occlusion may appear as well but cannot be analysed as phonemic, as it is not contrastive with the glides /w/ or /j/.

⁵Michailovsky (1994) leaves the /g ~ g^h/ series out of the phonemic inventory for Bantawa. However, this does not seem warranted. In Rai’s work on the Rabi dialect as well as in my field notes, several /g ~ g^h/ contrasts are found.

In the discussion of allophony, we shall see that syllable-final stops are pronounced with simultaneous closure of the glottis, resulting in unreleased consonants. The simultaneous closure of the glottis makes it hard to perceive differences between /p/, /t/ and /k/ in syllable-final position, even to native Bantawa speakers. Moreover, in some instances the glottal occlusion is more audible or occurs previous to the closure at the place of articulation of the consonant, leading to perception of a glottal stop. These facts together must have led Bāntāvā (2001: 1) to posit the glottal stop as a phoneme. On investigation, there is not a single minimal pair that could tell the glottal stop apart from any of the voiceless syllable-final stops. The most frequent contexts where syllable-final glottal stops are recorded are at the end of a word and before either of the two glides /j/ and /w/, most prominently in /-kwa-/ sequences. The morphemes <-wa> ‘water’ or <-wa> ‘fowl’ are quite frequent in Bantawa nominal compounds. The homophonous suffix <-wa> is used in a ‘male’ class of nominals. Where roots ending in /k/ get a suffix with the form <-wa>, the phonetic realisation of the /k/ is primarily glottal, as in examples (21).

- (21) $k \rightarrow ? / _ w$
- | | | |
|----------------|-------------|---------|
| a. /tsakwa/ | [tsaʔwa] | ‘water’ |
| b. /akwa/ | [aʔwa] | ‘oil’ |
| c. /kintʰokwa/ | [kintʰɔʔwa] | ‘rebel’ |

In these contexts, writing /k/ is completely acceptable to Bantawa speakers. When the word-internal structure of derivations is transparent, e.g. in *cakwa* (<*cak ‘bathe’ + *wa ‘liquid’), writing /k/ is preferred. Verbal roots ending in /p/, /t/ or /k/, that appear in continuous forms with <jan> are frequently realised with a final [ʔ]. This effect is carried further in reduced forms for the conjugation of <jak> ‘existential to be’ and for the proto-verb <*jan> ‘to be’, that does not occur independently, cf. example (22).

- (22) forms deriving from /jan/, with /ʔ/
- | | | |
|-------------|----------|----------------------------------|
| a. /jakjan/ | [jaʔjan] | ‘it is’ (<jak-jan ‘be-PROG’) |
| b. /maan/ | [maʔan] | ‘it was not’ |
| | | (<*man-jak-jan ‘NEGNPp-be-PROG’) |

In fact, the last form (22b) is an example where [ʔ] occurs intervocalically and no glide allophone would be acceptable. Although this form could be understood to form a near-minimal pair with /p/, /t/ or /k/, or /w/ or /j/ in similar contexts, this is not the correct analysis. The occurrence of [ʔ] in example (22b) represents the last reflex of deleted material at the syllable boundary: the syllable boundary itself. Word final /t/ and /p/ may also be replaced by or misheard as [ʔ], but less so than /k/. However, in some circumstances the prefronting vowel assimilation reveals the nature of the consonant, even when the consonant is not pronounced, cf. the section on allophony §2.2.

- (23) $t \rightarrow ?$
- | | | | |
|----------|----------------------|----------------------|----------|
| a. /pot/ | $\rightarrow$ [poʔt] | $\rightarrow$ [poʔʔ] | ‘throat’ |
|----------|----------------------|----------------------|----------|

Uncertain final consonants

In contexts where prefronting is not audible, viz. after the front vowels /i/ and /e/, only careful speech or transparent word structure shows what the underlying consonant is. As a result, there are a number of words where different sources give different opinions on which the syllable final consonant is in a given word. Also, often forms without consonant exist next to forms with them, cf. Table 2.2. Historical analysis or synchronic investigation of the derivational history of these words may point out which is the underlying consonant. There is no reason to assume an underlying consonant /ʔ/, however.

Table 2.2: Uncertain end consonants

<i>Underlying</i>	<i>Gloss</i>	<i>Hatuvālī</i>	<i>Rai</i>	<i>Bāntāvā</i>
/utwa/	sugarcane	[utwa]	[uʔa]	[uʔwa]
/cakwa/	water	[cakwa]	[cakwa]	[caʔwa]
/akwa/	oil	[akwa]	[akwa]	[aʔwa]
/cikji/	rat	[cikji] / [ciʔji]	[cük-yü]	
/toŋwat/	basket	[toŋwa] / [toŋwaʔ]		[toŋwa]
/mirik/	tail	[mirik] / [miri]	[mirip] / [miri]	[miri]
/sibit/	bean	[sibit] / [sibi]		

No empty onset

Bantawa, like other Kiranti languages⁶, disallows phonological words without onset. If the initial consonant position is empty, some consonantal material is inserted. By default, we hear a word-initial glottal release if no other syllable-initial consonant is present. Although the glottal onset may be replaced by appropriate glides or simply be left out in rapid speech, the insertion of a glottal stop is the rule. However, it seems that the notion of phonological word does not suffice to account for the appearance of glottal stops or other empty-onset replacers in every context.

(24) inserted glottal stop

a. [pujupʔo]

pujup-ʔo
cucumber-GEN

⁶Cf. (Bickel *et al.* 2007: 10).

- ‘of the cucumber’ ?o ‘GEN’
- b. [iʔukniŋ]
 i-uk-n-iŋ
 NEGNPp-peel-NEG-1s
 ‘I did not peel it’ ukma ‘to peel’
- c. [kʰosaʔa]
 kʰo-sa-ʔa
 he/she-PRN-ERG
 ‘by him’ ?a ‘ERG’
- d. [uʔu]
 uʔ-u
 peel-3P
 ‘he peeled it’ u ‘3P’
- e. [ciʔa]
 ciʔ-a
 finish-PT
 ‘it finished’ a ‘PT’

When in a morphologically complex word a vowel-initial suffix affixes to a stem or some prefix attaches to a vowel-initial stem, some phonetic material is inserted to dissociate the two vowels or the vowel-initial syllable from the previous. It is not the notion of phonological word that requires non-empty onsets, but a smaller phonological constituent, the syllable.

Cohering and non-cohering suffixes The word-internal syllable boundaries where a glottal stop is audible always coincide with morphemic boundaries. Morpheme boundaries between two vowels always produce the potential for epenthesis of a glottal stop. Wherever there is a boundary of the above nature, there may be a glottal stop in the empty-onset position. However, there is a small class of vowel-initial bound morphemes that do not introduce this type of syllable boundary. The contrast between the two classes consists in the presence of a syllable boundary.

For instance, the genitive <-ʔo> (GEN) differs minimally with the vocative <-o> (VOC), in that the latter does not necessarily introduce a new syllable. The following pair shows this contrast.

- (25) King
- a. haŋpo!
 *ʰaŋpa-o
 king-VOC
 ‘oh king!’
- b. haŋpaʔo
 haŋpa-ʔo

king-GEN
 ‘of the king, the king’s’

The difference in junction behaviour can be explained in two ways. The first is to simply say that the glottal stop is a consonant in its own right, which is a simple but unsatisfactory solution. Phonologically, the glottal stop does not contrast with other phones. For instance, Rai lists two different forms for the genitive case in his grammar as in (26).

- (26) genitive according to Rai (1985)
- a. -wo / [V] _ after vowels
 - b. -ko / [C] _ after consonants

This allomorphy for the genitive does not appear in the Sindrāñ dialect, but we shall observe elsewhere that paradigmatic intervocalic positions can be filled with either the glottal stop or conditioned glides [w] or [y], cf. §4.3.6. The dialectal difference and the phonological facts observed in the verb paradigms together must lead us to suspect that the genitive does not so much start with a consonant, but rather with a consonant position. By contrast, the vocative elides the preceding vowel if it can, or will form a new syllable if it cannot. The genitive suffix <-ʔo> is a non-cohering suffix, which means that it forms its own domain for syllabification, where the vocative -o is cohering and forms one domain of syllabification with the stem to which it has been attached (Booij 2005: 155).

In the nominal realm, the vocative <-o> is the only vowel-initial suffix that does not necessarily introduce a syllable boundary. The final vowel /a/ on nouns is replaced by the vocative <-o> on suffixation. A stem change takes place, cf. §3.2.

For the sake of the simplicity of description, we choose to describe these phenomena by defining conditioned allomorphs for verb roots or noun roots. Vowel-initial suffixes that start with a consonant position are, in this grammar, transcribed with an initial glottal. This glottal represents the phonetical fact that this consonant position is usually realised with a glottal stop.

Glide insertion The empty consonant position may be realised as glides in some contexts. Where two different vowels meet on a syllable boundary, the inserted glottal can be replaced by an appropriate intervocalic glide, either of /j/ or /w/. Glide insertion is the same in all places where vowels do not coalesce, but in some places glide insertion is required while in other places it is optional. There is a degree of variability on where and when to use glides, depending on speaker’s preferences and also on pragmatic pressure. For example, before stressed syllables glide insertion is rare, probably due to the pragmatic pressure to make the stressed syllable stand out.

Glides are predictable by the combination of the two vowels involved. The following rules apply: a) if both vowels are non-low, i.e. both are one of the set { i u o e }, no glide is inserted, b) if both vowels are low, i.e. both are /a/, no glide is inserted, c) if the first vowel is /a/ and the second is non-low and non-round, i.e. one of the set { i e }, then /j/ may be inserted, d) if the first vowel is non-low and the second vowel is /a/, then /w/ may be inserted, e) if the first vowel is non-low and

non-round, i.e. one of the set { i e }, and the second is any other vowel, then /j/ may be inserted.

This leads to underlying forms as in examples (27).

(27) Non-empty onsets: glide insertion.

- a. [cija]
/ci-a/
finish-PT
'it finished'
- b. [nuwa]
/nu-a/
be.good-PT
'it's good'

A separate discussion of vowel-junction behaviour in verb stem final position is deferred to §4.3, on verbal morphophonology. To describe verb stem alternations, I shall use the glottal stop as a notational device for a syllable boundary that prevents vowel coalescence. This glottal stop is treated in this grammar as a symbol to represent a contrastive syllable boundary.

2.1.4 Aspirated glides

As will be discussed in §3.4, there are some frequent words in Bantawa that have /hj/ as an onset. All of these words have been derived in a process that seems to prefix some proto-morpheme <*h-> to bound locative roots, resulting in nominal locative roots. The <*h-> may be compared to the English prefix 'a-' in 'above' and 'around'.

- (28) NOMloc
- *h -ju (LOC.below) > hju-
 - *h -ja (LOC.level) > hja-
 - *h -du (LOC.up) > d^hu-
 - *h -da (LOC) > d^ha-

This prefixation results in aspiration when applied to /d/-initial forms. Application of this prefix to /j/-initial locative roots results in a complex onset /hj-/. The exact nature of the morphological operation cannot be determined, but we observe that a pharyngeal articulation is added to the syllable onset.

One might argue that the /hj/-forms are aspirated glides. Another phonetic oddity sets these forms apart from simple onset words, viz. the /h/ phoneme that is normally realised as voiced [ɦ] is, surprisingly, devoiced in this context.

While for reasons of analogy, an analysis as 'aspirated glides' may seem attractive, we shall discard this possibility immediately, as a) there are no other examples of a synchronic or diachronic formation process resulting in similar forms, i.e. these forms are a rare lexical matter, and b) there are other syllable-initial consonant clusters as well, such that these forms fit in a pattern.

The sequence /hj-/ then is considered as a complex onset. The devoicing of /h/ in this context is a matter of allophony.

2.1.5 Vowels

There are six phonemic vowels in Bantawa, cf. Table 2.3. Minimal pairs as in example (29) are plentiful.

Table 2.3: Vowel Inventory

/i/	/i/ ⁷	/u/
/e/		/o/
	/a/	

(29) Vowels

- a. kanma ‘identify’, ‘see’
- b. kenma ‘keep animals’
- c. kinma ‘scare’
- d. kunma ‘choke’
- e. konma ‘walk’
- f. kinma ‘button up, sew’

The diphthong /əj/ is very rare, but it does occur in some original Kiranti words. The phoneme /əj/ also appears in older loans from Nepali or other neighbouring languages.

(30) /əj/

- a. k^həjsi ‘walnut’
- b. ɬəjgəla ‘kind of flower’
- c. pusəj ‘uncle’⁸
- d. pəjri ‘stairs’ (< *b^hərjaŋ (N) ??)

Alternative analyses for this sound sequence must be discounted. To analyse the phoneme /əj/ as two syllables, e.g. /i.i/, meets with the following objections. First, there are no other examples of polysyllabic morphemes that have a sequence of two vowels. Second, when an /i/-initial suffix is added to a verbal stem ending in a vowel, either i.e. /i/ gets deleted, or a glide /j/ is inserted.

An analysis positing the glide /j/ as syllable coda can be rejected, as this analysis would leave the facts a) that the other glide /w/ does not occur syllable-finally and b) that /j/ does not occur after any other vowel unexplained. Also, the phonetic

⁷In previous literature on Bantawa, several notations have been used for the vowel /i/. The vowel /i/ can be realised in a variety of ways, which evidently lead to different transcriptions. Rai (1985), apparently under German influence, chose /ü/, which Ebert freely changed to /i/ in her descriptions (1994: 16). By default, and in contrast with the Nepali short /a/, realised as [ə], [ɔ] or [ʌ], the vowel /i/ is realised as a [+high] vowel. Later, in the section on allophony, we shall see that the vowel /i/ can be realised as any vowel in the central region.

⁸father’s younger sister’s husband

duration of this syllable, even in controlled speech, is similar to or even shorter than that of the other vowels. We must then allow it into the phoneme inventory.

Feature definitions

As an effective means of description, I propose to use the I,A,U system as proposed by Van de Weijer (1994: 5). Three single-valued features express the following properties as in (31) [his (3)].

- (31) I frontness (or ‘acuteness’ or ‘sharpness’ or ‘palatality’)
 A lowness (or ‘compactness’ or ‘sonority’)
 U roundness (or ‘gravity’ or ‘flatness’ or ‘labiality’)

The vowels of Bantawa can be defined in terms of this single-valued feature system as in Table 2.4. The benefit of this type of feature definition will be shown later where it serves as a means of formulating rules. We shall refer to this feature definition in the sections on vowel assimilation (§2.5.2) and Nepali loans (§2.4.2).

Table 2.4: Vowel feature definitions

/i/	I
/e/	I, A
/ɨ/	
/a/	A
/u/	U
/o/	U, A

Vowel length

As opposed to the neighbouring Kiranti languages Limbu (van Driem 1987), Kulung (Tolsma 1999) and Wāmbule (Opengort 2002), vowel length is *not* contrastive in Bantawa. While there is some allophony in terms of vowel quality and length, related to the syllable structure, this allophony is not contrastive, cf. §2.3.2.

/e/ vs. /a/

There are a number of morphemes where there is a seemingly free variation between /e/ and /a/.

(32)	/e/-form	/a/-form	gloss	notes
	/tet/	/tat/	-qual	iktat, iktet ‘one’
	/c ^h e/	/c ^h a/	-also	wac ^h in c ^h aŋ ‘beer also’
				iŋ-biwa-c ^h e ‘my brother too’
	/ŋe/	/ŋa/	EMPH	emphatic marker
	/anken/	/ankan/	we ^{incl,pl}	also ‘ankenka’ (excl,pl)

For the alternations in (32), I have not been able to find patterns of phonological conditioning. The differences may be dialectal, but I have not been able to associate one or the other form to any region, nor have I found an obvious dialectal pattern, let alone an isogloss, within the Bantawa area. In the works of Bāntāvā (2001, V.S. 2055), who describes a more northern variety, we find both /tet/ and /tat/ for the numeral counter QUAL. Similarly, I have recorded both forms from my informants.

There are patterns of /e/ ~ /a/ correspondences across Kiranti languages, e.g. the /ɛ/ in Limbu consistently corresponds to /a/ in Bantawa.

In conclusion, while /e/ and /a/ are significantly different in minimal pairs, in this limited set of lexical items /e/ and /a/ vary freely. The morphemes in (32) share the feature that they are bound and not the first syllables in the words they are part of. We could speculate that there is something ‘under the surface’, e.g. an archiphoneme /æ/. However, in order to falsify or verify this hypothesis we need other surface phenomena to correlate with this putative vowel. I have found none.

2.2 The syllable

The canonical form of the syllable in Bantawa is represented in (33).

(33) $C_1 (C_2) V (C_f)$

The Bantawa word consists of one or more syllables. The first rule that regulates syllabification is the rule for onset maximalisation.

(34) CVCV

a. CV.CV

b. *CVC.V

In a sequence such as in (34), the second consonant must be taken to be the onset of the second syllable, rather than the final consonant of the first. The principle of onset maximalisation explains the phonetic realisation of consonants and vowels. A sequence of consonants must split over two syllables, except where two consonants make a valid syllable onset. In the latter case, onset maximalisation kicks in again. There are instances, where there could be ambiguity as to which syllable one of the legal syllable-final consonants would belong, viz. where a consonant occurs word-medially before a glide. This is the case in progressive verb forms, in front of the progressive morpheme <jaŋ> (PROG), or in nominals with the frequent <-wa> suffix. In these cases, the readily accessible morphological make-up of the word determines the syllabification.

(35) syllabification of -CC- sequences

a. k^ha.rek.la ‘drought’

b. o.hjat.ni ‘over here’

c. tik.wa ‘forest fowl’

d. mi.dat.jaŋ ‘they are visible’

What will be said below on the phonetic realisation of consonants and vowels, must be related to this model of the syllable. Once the correct syllabification for a

word is known, the phonetic realisation of phonemes is predictable.

2.2.1 Syllable onset

Every phonemic consonant may appear in syllable initial position, as this is the most contrastive position. The syllable initial position may not be empty. The syllable initial position is filled by the glottal stop if it is empty lexically or by paradigmatic alternation such as found in verbal conjugation.

By contrast, the second consonant position of the syllable onset may only contain /j/ or /w/. To understand the phonotactic rules of the syllable onset, it is helpful to divide the consonants in sonority classes. With regard to sonority, all stops and affricates must be grouped as obstruents (C_o). This class includes the fricatives /s/ and /h/. Second strongest consonants are the nasals (C_n), followed by the liquids (C_l) and finally the approximants (C_a). Only the approximants can occur in the C_2 position, after obstruents.

(36) Consonant classes

C_o obstruents	/p/ /p ^h / /b/ /b ^h /, /t/ /t ^h / /d/ /d ^h /, /k/ /k ^h / /g/, /ts/ /ts ^h / /dz/, /s/ /h/
C_n nasals	/m/ /n/ /ŋ/
C_l liquids	/l/ /r/
C_a approximants	/w/ /j/

(37) consonant clusters

- a. sjau-sjau 'chirp-chirp' [DB]
- b. p^hjal-p^hjal 'flap-flap' [DB]
- c. c^hjamc^hjam 'with one stroke'

The examples are onomatopœic or, rather, ideophonic, but there are also non-ideophonic examples, such as below.

(38) consonant clusters (non-ideophonic)

- a. hjakko 'over there'
- b. hwatni 'this way'

While it is true that technically any approximant or C_a can occur in C_2 position, this is not the case in the core lexicon of the language, that is the verb and noun inventory. In fact, no complex onsets occur at all in the core lexicon. This fact has also been observed in the very instructive article on the subject of reduplication by Winter and Rai (1997). Based on the observation that in the adverbial elements that they discuss many rare phonemes occur, particularly the infamous /dz/, /dz^h/ and /g^h/, Winter and Rai arrive at an analysis of these forms as 'paralexemic', i.e. they separate these forms from the basic lexicon. The class of paralexemes comprises the lexical items with those phonemes and those with complex onsets. This classification is based on formal characteristics alone. Winter and Rai proceed to connect these formal characteristics to a functional consideration, viz. that these forms have an

iconic or ‘ideophonic’ value, i.e. ‘they can effectively be treated as belonging to one category — a category definable not only in terms of deviations from normal phonological, phonotactic and morphological patterns of Bantawa, but also in terms of a shared functional-semantic dimension.’ (Winter and Rai 1997: 133). This semantic dimension is that of emotion, emphasis or an iconic expression of degree.

The stratification in the Bantawa lexicon is not a unique feature of Bantawa, but has good parallels in other languages as well⁹. In particular, for Japanese four different strata have been discerned. The lexicon can be divided into four sets of forms, viz. Yamato ‘native’, Sino-Japanese loans, foreign words, i.e. recent loans and mimetics (Itô and Mester 1995).

A similar situation exists in Bantawa, where there are strict formal and functional criteria that distinguish the core lexicon from that of the paralexemes. Additionally, a last stratum, that of the loans of Nepali and beyond, can be singled out. The term ‘paralexemes’ corresponds to ‘mimetics’:

Mimetics ‘function syntactically as manner adverbs and may refer to just any aspect (visual, emotional, etc.) of the activity involved, rather than just its sound’¹⁰.

It is helpful to introduce the notion of stratification. There are only very few exceptional core-lexical items such as /hjuna/ ‘below’ to challenge the notion.

All phonemes in the onset position are normally pronounced true to the phonetic value of their notation as used here. The phonetic realisation of coronal stops will be discussed below, §2.4 ‘Nepali Influence’. At this point we may note that while /h/ usually is realised with voice [ɦ], /h/ is devoiced when followed by /j/ or /w/.

/wa/ and /ja/: vowel length, complex onset or both?

There are other, severe restrictions on the distribution of /w/ and /j/ in post-onset position. The issue is that /w/ in post-onset position only occurs before /a/, and /j/ only occurs before /a/ and /u/. The examples of /j/ before /u/ are limited to the morpheme /hju/ ‘below’ and its derivations. For /w/ and /j/ in onset position, no such limitations exist.

(39) /w/ and /j/ in onset position

- a. wetma
 ‘to throw’
- b. witma
 ‘to collect’
- c. wik
 ‘field’
- d. jukma
 ‘to mount’

⁹Languages that show stratification include European languages, such as English and Dutch. For instance, for both English and Dutch there are separate morphological word formation strategies for latinate and germanic roots.

¹⁰This definition originates from McCawley and is cited from Itô and Mester (1995).

- e. *jokma*
'to feel pain'
- f. *jitma*
'to bring down'

Examples of /w/ before non-low back vowels /o/ and /u/ are impossible to find. Bāntāvā (2001) lists some examples with /wo/ in his dictionary, and Rai (1985) lists <-wo> as the canonical form for the post-vocalic genitive. In the Hatuvālī dialect however, there are no such examples. Instead, in all of the examples that Rai and Bantawa list, we found [ʔo] in the Hatuvālī dialect, which must lead to the obvious conclusion that one of the dialectal differences is that the 'no empty onset' principle is obeyed in a different fashion.

Likewise, there are no examples of /je/ and /ji/. The words that are on file such as /jitma/ 'bring down', /jikma/ 'to mount (a horse)' and /jima/ 'come down' are all identified as Dilpālī dialect by Hatuvālī speakers. In the Hatuvālī, the canonical forms all have /i/ or /u/ where Dilpālī forms have /i/. The Hatuvālī dialect, apparently, has phonotactical constraints that are different from those of the Dilpālī dialect.

The limited distribution of /w/ and /j/ before vowels is can be explained as a result of articulatory constraints and auditory contrastiveness (Burquest 1998: 62). In phonological theory, the Obligatory Contour Principle (OCP) has been defined, that blocks the occurrence of identical phonological features in immediate adjacency. Many languages show an OCP-like resistance to sequences of segments that differ in just one distinctive feature. In Bantawa, the co-occurrence of vowels and consonants at the same articulatory position seems constrained, such that /w/ cannot be followed by a vowel having a [U] feature, and /j/ does not appear before vowels having [I]. As a result, there are less examples in Bantawa that show that /w/ and /j/ are distinct phonemes. However, there is still a clear contrast before the two vowels that have no [I] or [U] feature, i.e. /i/ and /a/.

The nature of /w/ and /j/ in the second position (C₂) of a complex onset before the vowel /a/ calls for some discussion. In his grammar of Wāmbule, Ogenort (2002: 60) posits a vowel length contrast for all vowels excepting the /e/ and /o/. Both in Wāmbule and in Bantawa, the /wa/ and /ja/ sequences can occur after the regular set of syllable onsets¹¹. In those contexts, the question is whether /w/ and /j/ should be considered part of the nucleus or rather be analysed as a complex onset + vowel. For the /Cwa/ sequence, it seems straightforward to opt for an analysis of /wa/ as vowel, as there are no other contexts for post-initial /w/ except before the vowel /a/. In addition, there is a deceptive morphophonological relationship between /o/ and /wa/. If there were a morphophonological alternation between /o/ and /wa/ we could henceforth analyse /wa/ as a short /o/ [ɔ], which, for some speakers, is in fact an acceptable allophone.

The morphophonological alternation seems to be the following. When deictic pronouns ending in -o are suffixed with certain suffixes that happen to have a

¹¹The regular onset inventory of Wāmbule includes complex onsets of the format C₁C₂, i.e. an initial consonant plus a liquid, e.g. /gl/ and /pr/, so that onsets as /glw/ and /prw/ are equally acceptable. In this respect, Wāmbule, together with other western Kiranti languages, differs significantly from Bantawa. However, the problem of how to analyse /wa/ and /ja/ remains similar.

consonant cluster, a syllable structure of (C)VC.CV results. In a syllable structure like this, the first syllable has a filled coda, and the syllable counts as heavy, as in contrast with a light syllable that has an empty coda. The changes to the nucleus vowel of the syllable that occur as a result of this added syllable weight can be described as shortening.

(40) Vowel shortening?

- a. mo
that
[mō]
'that'
- b. mo-ko
that-REF
[mōkō]
'that one' (specifically)
- c. m-wa-kko
that-LIKE-REF
[mōakō]
'one like that'

On the basis of this apparent alternation between /o/ and /wa/, we could jump to the conclusion that /wa/ must be analysed as a part of the nucleus, but there are some objections to this analysis. Firstly, it is not at all the case that in closed syllables with /o/, [ōa] is the preferred or even allowed realisation. For example, to pronounce *mokma* 'to hit' as [mōakmā] is clearly unacceptable. The alternation in (40), then, is not a simple long-short alternation. There is no phonological rule that operates on vowel length. An alternative analysis for these forms is preferable. Informed by the morphological composition of these words, such an analysis is presented in §3.4.

Except for locative expressions, all words with a /Cja/ onset are in the 'paralexemic' class, as proposed by Rai and Winter. The discussion of /ja/ in post-initial context can be brief. I know of no examples of morphophonological alternation between /e/ and /ja/. Also, for /j/ in C₂ position, the phoneme /a/ is not the only vowel that can follow. In locative expressions, both /hja-/ and /hju-/ function as base roots. Apparently, /CjV/ is simply a legal sequence in Bantawa, and nothing stops us from analysing the /j/ in those sequences as a C₂.

In terms of the vowel system, analysing /wa/ as short /o/ and /ja/ as short /e/ would render the vowel system asymmetrical, as there would only be these two vowels with a short vs. long opposition.

It remains an interesting fact, that when the phoneme /w/ occupies the C₂ position, then the phoneme /a/ is the only vowel that can follow. However, this phonotactic phenomenon is widespread in the languages of Nepal, both of Indo-Aryan and Tibeto-Burman stock. In Nepali, /wā/ and /jā/ are regular alternative perceptions and pronunciations of short /ɔ/ and /æ/. In transcribed English loans, one finds *tyāksi* /tjaksi/ for 'taxi', and I have even seen *pvāṭs* /pwaṭs/ for 'pots'.

The phoneme sequences /Cw/ and /Cj/ will be analysed as 'paralexemic' consonant clusters. This analysis has two descriptive benefits. a) The difference between

‘native’ and ‘mimetic’ forms in the lexicon can be expressed in terms of a single rule of phonotactics, viz. mimetic forms have consonant clusters. b) We do not need to imbalance the vowel system by introducing three new vowels, viz. /ja/, /ju/ and /wa/. While in Nepali and other languages of the area /wa/ and /ja/ are interpreted as short vowels, sometimes even with regular alternations with the longer counterparts, this analysis does not fit Bantawa. In sum, the phoneme sequences /wa/ and /ja/ are not included in the vowel inventory.

2.2.2 Syllable final consonants

In the analysis of syllable codas, the sonority classes come in as useful again. Only obstruents and nasals occur in coda position in the Bantawa core lexicon, i.e. in nouns and verbs. Affricates, fricatives or voiced stops do not appear in syllable-final position. It is both impossible and irrelevant to determine whether the consonants appearing are devoiced or de-aspirated consonants or underlyingly something else that is devoiced and de-aspirated in the process of realisation. This is impossible to determine because the language provides no contexts in which the contrast would emerge again, e.g. by voiced or vowel-initial suffixes. This implies that there are no contexts where the contrast would be relevant again. Most nominal suffixes beginning with a vowel have an empty initial consonant position realised as a glottal stop, as in example (41).

(41) Nominal suffixes beginning with -V

- a. [pujupʔo]
/pujup-ʔo/
cucumber-GEN
‘of the cucumber’
- b. [minaʔa]
/mina-ʔa/
man-ERG
‘by the man’

Suffixes that a) begin with a vowel and b) do not cause hiatus never cause aspiration or voicing of a previous consonant that would be voiceless or unaspirated in the root form.

Verbal stem alternation is far more complicated than can be described here and cannot be put in purely formal rules of phonology alone. The relevant observation pertaining to the point here is that even in verb stem alternation there are no rules referring to voicing vs. devoicing of the stem-final consonants. However, some verb stem alternations may be motivated by the requirements of a valid syllabification, cf. §4.3.5.

The set of syllable-final consonants contains the following consonants that all share the property [-continuant].

(42) Final Consonants

- | | |
|-------|-------------|
| C_f | /p/ /t/ /k/ |
| | /m/ /n/ /ŋ/ |

There is a single restriction on the syllable-final consonant which is a result of a phonological rule. No velar can close a syllable that has /i/ for a vowel. This restriction is the result of a process that backs /i/ to /ɨ/ in this context.

- (43) backing of high vowels before velars
 $i \rightarrow \text{ɨ} / _ [+velar]$

The results of this process can be shown by comparing cognates between Bantawa and surrounding languages, as in examples (44,45).

- (44) kima 'to fear'
 a. || kima 'to fear' (Limbu)
 b. kitma 'to scare'
- (45) jima 'to descend'
 a. || jitma 'to bring down' (Dilpali)

There are many such correspondences of /ɨ/ and /i/, some within the language, but most between Bantawa words and their cognates in other languages. The rule (43) is still productive, witness the facts that a) in native Bantawa words, the sequence /i[velar]/ is not found anywhere, b) in verb stem relationships, as between *kima* ~ *kitma* above, there is a regular change, and c) in the verb paradigm we find /ci/ as an allomorph for the dual suffix <-ci> before /ŋ/, see §4.4.

Gemination

Whenever two identical consonants meet at the syllable boundary, we can speak of a geminate. Most geminates are not lexical but arise as a coincidental result of the meeting of identical consonants. Geminates are realised as long consonants.

- (46) geminates
 a. [hɛnkʰam:a] /hen.kʰam.ma/ 'world'
 < *hen 'stay', *kʰam 'place', *ma 'big'
 b. [kadʰup:a] /ka.dʰup.pa/ 'blacksmith'
 < *APP-hit-APM (regular active participle: 'hitter')

In Nepali orthography, there is a tendency to write geminates as two consonants of the same type, with the first one orthographically halved. This orthography may lead to a bad analysis in the case of some words where syllable-final /t/ and syllable initial /ts/ meet:

- (47) almost-geminates: t/ts geminates
 a. [het:sʰawa] /het.tsʰa.wa/ 'orphan'
 < *het (|| hen 'remain, be left behind'), *cʰa 'child', *wa 'male'

The important thing to note is that while the Nepali orthography would prescribe *हेच्छावा* *hecchāvā* for this particular form, this orthography should not lead to the erroneous thought that /ts/ is a valid syllable-final consonant, or even that /ts/ could

geminate as a whole. In Bantawa, not only identical consonants at the syllable form geminate: An unvoiced stop syllable-final consonant meeting a syllable-initial voiced homorganic stop will also produce a voiced geminate. If we interpret a geminate as the same consonant occurring in both syllables involved, this type of gemination leads to voiced syllable-final consonants that are not in the regular set of syllable final consonants as defined in (42).

- (48) gemination
- a. [bobbojoŋ-ma]
bop-bojoŋ-ma
round-*termite-FEM¹² 'termite'
 - b. sud-da
< ? *sitə *together* (N) - *da 'locative'
'together with'
 - c. mad-diŋ
man-yiŋ
NEGTP-be
'it's not there!'
 - d. k^his-sa
*deer-animal¹³ 'deer'
 - e. hissa (Bāntāvā 2001)
'frustration'

The first examples show voice assimilation on the first consonant ($p \rightarrow b, t \rightarrow d$). For (48a) my informant insisted that writing the phonemic form represented second was best, because the compounded structure of the word is perfectly transparent. However, for (48b) and (48c) the etymology is not readily accessible and writing /dd/ makes sense. Most voicing assimilations however, are like the *hetc^hawa* example above and have a transparent origin. The latter two cases are less obvious, as it is not clear what the underlying consonant under the first /s/ should be. Bāntāvā (2001) lists quite a few words containing /ss/ geminates. Most of these words qualify for membership of the paralexemic class on semantic grounds, iconically expressing emotion or forceful intent. However, there are ample examples of phonologically derived /ss/ geminates in the language, i.e. where verb stems in -t are suffixed by /s/-initial suffixes.

- (49) [cakwa b^hassi k^hatma]
- cakwa b^hat-si k^hat-ma
water fetch-SUP go-INF
'to go to get water'

This assimilation seems obligatory in some dialects only, e.g. Rabi, Dilpālī. In careful pronunciation, Hatuvālī speakers will pronounce [b^hatsi]. In conclusion, in

¹²Feminine suffix, cf. §3.1.4.

¹³The suffix <-sa> usually designates larger animals, cf. §3.1.4.

phonemic notation, we shall allow for /s/ in syllable-final position in conditioned circumstances, viz. geminates that are often paralexemic. For transparently derived forms we shall write /ts/, not /ss/.

Nasals at the syllable boundary

One of the most common natural processes in language is that of nasal assimilation (Burquest 1998: 117). However, nasal assimilation does not occur in Bantawa. There is, sure enough, a statistical preference for nasals to meet homorganic consonants at the syllable boundary in polysyllabic morphemes, cf. (50), but there is no rule that enforces homorganic articulation of sequences of stops and nasals.

- (50) homorganic nasal and stop at syllable boundary
- a. /tumpu/ ‘kāulo (N) tree’
 - b. /bendasi/ ‘tomato’
 - c. /p^hanta/ ‘young man’
 - d. /lonɡa/ ‘pepper’

The absence of an assimilation rule may be associated with the functional pressure on syllable-final nasals. Possessive prefixes, for example, contrast in their final consonant only, cf. §3.4.

- (51) No nasal assimilation
- a. am-ko
your^s-GEN
‘your’
 - b. an-ko
our^{msi}-GEN
‘our’
 - c. am-ŋappa
your^s-childs.father.in.law
‘your child’s father-in-law’
 - d. iŋ-papa
my-father
‘my father’

Summary

In sum, the following syllable structures are found in Bantawa¹⁴.

- (52) The Bantawa syllable¹⁵
- a. C V
 - b. C_o C_a V

¹⁴V is the set of vowels, including the diphthong. All of the sets C, C_o, C_a and C_f have been defined before (36).

- c. C V C_f
- d. C_o C_a V C_f

This model is very simple, considering that the further restrictions on phoneme co-occurrence and syllable co-occurrence are quite few. Native words containing syllables of types (52b) and (52d) are immediately marked as paralexemes that often have an ideophonic or onomatopœic aspect to their meaning.

The simplicity of Bantawa syllable structure is remarkable. The total number of possible onsets is 1 (empty onset) + 23 (number of consonants) + 16 * 2 (number of obstruents * number of C₂), is 56. The total number of nuclei is 7 (number of vowels), and the number of possible finals = 1 (empty) + 6 (number of C_f), is 7. The number of possible rhymes therefore is 7 * 7 - 2 (excluding /i/+velar), is 47. All in all the number of possible syllables is a mere 56 * 47 = 2632. However, /w/ and /j/ in C₂ position only occur before /a/, so we must subtract 16 * 2 (number of complex onsets) * 6 (all vowels not /a/) * 7 (all possible codas) = 1344. All in all, there are then 1288 possible syllables.

The number of syllables that contain a /wa/ or /ja/ sequence is 16 * 2 * 7 = 224, i.e. the number of obstruents * the number of C₂ * the number of codas. Of the possible syllables, 224 are paralexemic, by the standard defined and bring an ideophonic meaning aspect. These paralexemes are not part of the core verbal and nominal lexicon. This leaves a mere 1044 possible syllables for the core lexicon.

If we consider that the Bantawa verb root is always monosyllabic and that there are currently some 750 verb entries in the lexicon, we can appreciate the very dense population of the available phonological space, which stands in contrast to some other languages. All words in the lexicon that deviate from this syllable type can be immediately recognised as recent loans, most often from Nepali.

2.3 Allophony

In the previous discussion of phonemes, some notes on allophony have already been made. In this following section, we shall discuss other relevant patterns of allophony.

2.3.1 Intervocalic consonants

Consonant phonemes in intervocalic position may sound significantly different from their syllable-initial form. [-Coronal] aspirated stops may be realised as fricative, by a laxation of stricture:

- (53) voiceless fricatives as allophones for aspirates
- a. [taraxuk] /tarak^huk/ 'a clan name'
 - b. [liϕu] /lip^hu/ 'sting (e.g. of a bee)'
 /p^h/ may be realised as [ϕ] anyway, cf.
 - c. [ϕintsiri] /p^hintsiri/ 'mushroom'

Voiced [-coronal] stops, irrespective of aspiration, may also be realised as a fricative by the same lenition.

- (54) voiced fricatives as allophones for stops
- | | | | |
|----|----------|-----------|---------------|
| a. | [saluβi] | /salubi/ | ‘salubi root’ |
| b. | [kʰɛβak] | /kʰebʰak/ | ‘crab’ |
| c. | [oyi] | /ogʰi/ | ‘sweet yam’ |

The above lenition processes can be summarized in an optional lenition rule as defined in (55).

- (55) aspirated consonants can be replaced by fricative consonants
 [+aspirated] → [-stop] / [+V] _ [+V]

Syllable-initial phonemes in a position that would form difficult combinations may be adapted to fit the tongue. The nasal /ŋ/ may be pronounced /ɲ/ after an /n/ or before a high vowel.

- (56) $\eta \rightarrow \mathfrak{n} \begin{matrix} / \mathfrak{n} _ \\ / _ [\mathfrak{i}] \end{matrix}$
- | | | | |
|----|---------|---------|-----------------------------|
| a. | [munɲa] | /munɲa/ | ‘that much, that much only’ |
| b. | [ɲɛn] | /ɲen/ | ‘fight’ |

This type of adaptation never goes as far as to cause the phonetic realisation of a phoneme to coincide with that of another, however.

2.3.2 Vowel allophony

The syllable nucleus is invariably one of the vowels or the diphthong. While there is no phonemic contrast between long and short vowels in Bantawa, there is some phonetic variation that depends on location. Vowels in open word-final syllables are all pronounced with significant lengthening, except for the /a/ that has no long variant. The normal short variants of vowels may differ both in quality and in length from the long vowels. The regular allophonic variations in vowel quality are shown in examples (57-59).

- (57) /e/ → [e:] / _ [#]
 /e/ → [ɛ]
- | | | | |
|----|------------|------------|----------------|
| a. | [lɛmlɛm:a] | /lɛmlemma/ | ‘yeti’ |
| b. | [dɛki:] | /deki/ | ‘why’ |
| c. | [bʰe:] | /bʰe/ | ‘arrow, spear’ |
- (58) /o/ → [o:] / _ [#]
 /o/ → [ɔ]
- | | | | |
|----|-----------|----------|---------------|
| a. | [tʰaklo:] | /tʰaklo/ | ‘stairs’ |
| b. | [do:] | /do/ | ‘mouth’ |
| c. | [kɔmbi] | /kombi/ | ‘grass knife’ |

- (59) /i/ → [i:] / _ [#]
 /i/ → [i]
- | | | |
|----------|-------|--------------|
| a. [piʔ] | /pit/ | ‘cow’ |
| b. [ni:] | /ni/ | ‘it is said’ |

The rule that summarizes this allophony is in (60).

- (60) vowel realisation in open and closed syllables
 /V/ → [V:] / _ [#]
 /V/ → [+central]

After velar consonants, vowels may be initially backed if they are eligible for backing, which is to say that particularly /o/ may be articulated as [ʊo] or [u]. Before /e/, frequently an on-glide /ɨ/ is inserted after velars. Before coronal consonants, vowels have a fronted off-glide, cf. §2.1.3 on glottal stops. The results of these processes can be represented in careful phonetic transcriptions as in (61).

- (61) off-glide and on-glide
- | | | |
|--|-----------------------|------------|
| a. [k ^{hw} o ^h nki:] | /k ^h onki/ | ‘and then’ |
| b. [ko ^h nma] | /konma/ | ‘to walk’ |
| c. [k ^h a ^h it] | /k ^h at/ | ‘he goes’ |
| d. [saŋk ^h ɛn] | /saŋken/ | ‘star’ |

2.3.3 Allophony of the central vowel

The central vowel /i/ has many realisations, and much of this allophony is free. The feature definition of /i/ is empty, i.e. that none of the features I, A, or U are associated. The empty feature definition of /i/ expresses and perhaps even explains the variability of this vowel.

There are some regular patterns of variation in realisation of the central vowel /i/. How these patterns must be explained is not entirely clear. Some variations seem triggered by harmony, i.e. assimilation, some by dissimilation. There are quite a few verbal prefixes that have /i/ as a vowel: <ti-> (2AS), <mi> (3PL), etc.

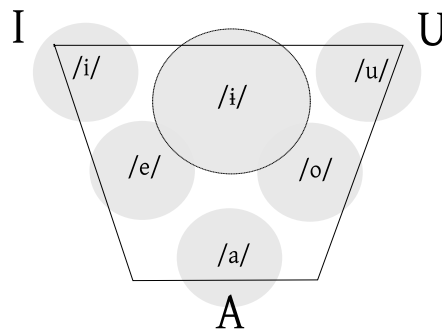
The quality of this vowel by and large correlates with the quality of the vowel of the following syllable, the verb root, in the following way:

- (62) /i/ → [ə] / _ C[+back]
 a. [məmu] /mimu/ ‘they do’
- (63) /i/ → [ə] / _ C[+low]
 a. [juŋ məlaʔ] /jiŋ milat/ ‘they pray’
- (64) /i/ → [u] / _ C[+velar]
 a. [isinuŋnuŋ] /isinnuŋniŋ/ ‘I do not know (PROG)’

There is a striking variability in the realisation of this particular phoneme, which is not mirrored in parallel variability in other vowels. While this variation seems conditioned by other vowels in the word, it need not be cast in terms of vowel harmony. Nowhere do the allophones of /i/ coincide with another phonemic vowel. In other words, the allophony of /i/ is a not matter of phonology but phonetics. However, there are good reasons to draw attention to this variability. It must be noted that a) this phoneme is sensitive to features of non-adjacent phonemes, i.e. vowel qualities may spread beyond the immediate segmental context, and b) the phoneme /i/ is more sensitive to the vowel quality of the vowels of adjacent syllables than other vowel phonemes.

With regard to the last point, we can say that if we picture the vowel phonemes as occupying an area in the vocalic continuum, we should represent /i/ as covering a large central region. While all vowels modestly occupy small areas on the vowel map, cf. Figure 2.1, the central vowel may be realised anywhere else.

Figure 2.1: Vowel Distribution



When we leave out the Nepali loans that have retained the short *a* from Nepali, most often realised as /ə/ or /ʌ/, the vowel /i/ never overlaps with the realisation of any other vowel present in Bantawa language. However, when the loans from Nepali are added to the picture, some contrasts with native vocabulary may become very subtle. My language informants were aware of the problematic vowel contrasts and pointed out the difficulties as in example (65).

- (65) Vowels that are different in one dialect, but the same in another
- | | | | |
|----|---------|---------|---|
| a. | [həŋsa] | /hiŋsa/ | ‘while living’ (Bantawa) |
| b. | [hʌŋsa] | /həŋsa/ | ‘a creature, a spirit’ (< Nepali <i>haṁsā</i>) |

In the Sindrān dialect under investigation, the Nepali loan vowel /ʌ/ and Bantawa /i/ were quite distinct. In recorded speech from the neighbouring area of Bāsikhorā both vowels are equated to [ʌ]. The difference with regard to the realisation of the central vowel /i/ can be expressed as a difference between east and west. In the west, the vowel /i/ is equal to the Nepali vowel short /a/, often realised as [ɔ], in the east, viz. Sindrān, Homtān and east from the Hatuvā area, /i/ is distinctly realised as [i] or [u].

As noted, the allophonic variability of the /i/ vowel demonstrates that the realisation of a phoneme not only depends of its immediate context, but may also be influenced by non-adjacent segments, viz. vowels in adjacent syllables. In §2.5, we shall return to this observation.

2.3.4 Weakening of syllable-final /n/

Before /s/ and /j/, a syllable-final consonant /n/ is pronounced as a nasalised alveolar approximant or semi-vowel. It is odd to put /s/ and /j/ together, but I surmise that /s/ and /j/ form a natural class of alveolar non-stop consonants. Before the alveodental stops /t/, /tʰ/, /d/ and /dʰ/, the change of /n/ is optional, but before /s/ and /j/ it is obligatory.

- (66) /n/ reduction
 [+nasal+anterior] → [-consonantal] / _ [+consonantal,+anterior]

The occurrence of this phonetic form of /n/ is not restricted to any specific morphological context. The sound change occurs where the negative prefix <man-> meets verb stem initial consonants in verb stems, in word formation and inside monomorphemic words.

- (67) /n/ weakening
- | | | |
|---------------|-------------|----------------------|
| a. [maĩsetdo] | </mansetdo/ | ‘do not kill’ |
| b. [maĩjuŋdo] | </manjuŋdo/ | ‘do not place it’ |
| c. [weĩsi] | </wensi/ | ‘raspberry’ |
| d. [koĩsi] | </konsi/ | ‘(in order) to walk’ |

For verbal morphophonology, this phonological change is insignificant. The application of the phonological change is entirely predictable and does not distinguish one verb from another. The alternation of /n/ and /i/ needs no explanation in terms of verb stem allomorphy, *contra* Sprigg (1987). In contrast with what is reported for the Rabi dialect (Rai 1985), the glide normally does not lose nasality. Since Bantawa speakers and readers easily reconstruct this sound as a conditioned allophone for /n/, we must write /n/¹⁶.

2.4 Nepali influence

So far, the discussion has been limited to native Bantawa words. Native words can be formally defined as the words that have the phonetic and phonological characteristics outlined above and can boast a decent Kiranti pedigree. Regular cognates of native words can be readily found in other Kiranti languages of the area and further afield in the language family. Form and history agree here and, to some extent, also form

¹⁶There is considerable regional variation with respect to this sound change. The replacement of syllable-final dentals or the insertion of /i/ varies regionally, to the extent that for a word as *kʰonki* ‘and then’ forms such as *kʰoinki* are found, cf. off-glides, above.

and function, as the entire domain of verbs and core vocabulary of noun and other word classes consists of these forms only.

However, it is fair to say that present-day Bantawa has undergone heavy influence from Nepali. The Nepali influence is tangible in all Bantawa dialects, but perhaps to a different extent for different dialects. The problem that the linguist now faces is to decide to which extent the Nepali loanwords should be considered part of the language, and thus be part of the analysis.

Currently, some loan words are readily recognised as such, and stand apart considerably both in form and in usage, i.e. they are restricted to certain domains only. In the previous section (2.2.2), it was noted that because of the strict limitations on Bantawa phonotactics in the syllable, formally recognising foreign words is straightforward. However, not only the syllabic structure of a word may betray foreign descent, the appearance of some specific phones is also indicative of loan forms.

This could lead to the conclusion that nothing is amiss, as if the phonology of the pure language could be discussed without mentioning Nepali influence. In the introduction to this chapter, we have idealised the phonological world by identifying the native part of the lexicon, i.e. the class of verbs and nouns without obvious foreign descent. This has been a helpful strategy, and using formal methods only, we have even been able to stratify the native Bantawa lexicon further into a set of core forms and mimetic forms.

As a heuristic strategy, this analytical approach is helpful. However, even if the premiss that lexical strata can be teased apart is true, that does not imply that no problems on the fringe of languages remain. Some selected issues will be discussed here. These are the problems of a) the correct phonological analysis of coronals in Bantawa and b) the vocalic contrast between the Bantawa central vowel /i/ and the Nepali central vowel /ɔ/.

While we are on the subject of borrowing from Nepali, we shall include a discussion of formal operations in the borrowing process.

2.4.1 Dentals, retroflexes, alveodentals or alveolars?

The first problem that the linguist faces is that of the coronal consonants. The Nepali language contains two sets of coronals. See Table 2.5.

Table 2.5: Nepali Coronals

	[-voice-asp][-voice+asp][+voice-asp][+voice+asp][+voice+nas][fric]					
alveodental	t̪ त	t̪ʰ थ	d̪ द	d̪ʰ ध	ɳ न	(s)
retroflex, palatal	ɭ ढ	ɭʰ ढ	ɖ ढ	ɖʰ ढ	ɳ ण	(ʃ)

In contrast with Nepali coronals, Bantawa coronals are originally neither dental or retroflex. The retroflex vs. dental opposition is geographically mostly limited to the South Asia area¹⁷, but the opposition is not original to the Tibeto-Burman

languages. Within the Bantawa phonology, the retroflex vs. dental opposition is irrelevant, so I deliberately chose to write the Bantawa coronal phonemes with the simple symbols /t/, /d/, etc.

However, the frequency of Nepali loans in the language calls for inclusion of the Nepali opposition in the language. All loan words in example (68) are well used and contrast with the native word *tara* ‘he brought’.

- (68) *tara*
- | | | | |
|----------------|--------------------|--------|-------------------------------|
| a. <i>tara</i> | < Nep. <i>tār</i> | [ṭar] | ‘wire’ |
| b. <i>tara</i> | < Nep. <i>tārā</i> | [ṭara] | ‘star’ |
| c. <i>tara</i> | < Nep. <i>ṭār</i> | [ṭar] | ‘level ground’ |
| d. <i>tara</i> | < <i>tatma</i> | [ṭara] | ‘to bring’ (intr. conjugated) |

Now we could choose to distinguish the different words in the text in roman alphabet by precisely indicating the type of coronal meant. In fact, I believe that some Bantawa speakers that are very proficient in both Nepali and their mother tongue speak exactly like that. However, such careful speech is rare. My informants held that ‘towards the north’, people tended to identify the Bantawa native /t/ with Nepali /ṭ/, whereas to the east the Bantawa /t/ is conflated with /ṭ/. This corresponds to what we see in the works of Bāntāvā (V.S. 2055, 2001) and Rai (1985). Bāntāvā, who is from the north, consistently writes /ṭ/ for Bantawa /t/, while Rai, from the east, simply posits a /t/ vs. /ṭ/ opposition in his phonology, and continues to assign the native Bantawa /t/ to the /ṭ/ slot. While he lists a few minimal pairs with regard to place of articulation (Rai 1985: 24-26), he does not offer /t/ vs. /ṭ/ contrasts, which I believe is a major omission in his description.

If the three sounds are distinctive, the coronal area is articulatorily overcrowded. Therefore, it is difficult to imagine three phonemically distinctive coronals with the same manner articulation in a language. There are several logical alternatives.

1. consider and pronounce them differently, i.e. maintain a three-way distinction
2. equate Bantawa /t/ with Nepali /ṭ/
3. equate Bantawa /t/ with Nepali /t/
4. ignore the Nepali distinction and equate both Nepali /t/s to Bantawa /t/.

Where this will end up is a part of the natural development of the language in the current context. While prescriptive linguistics may influence language development, I believe that neither option 1 or 4 is viable for the simple reason that the articulatory space is overcrowded.

In conclusion, we cannot say to which of the two Nepali phonemes /t/ or /ṭ/ the Bantawa /t/ corresponds. However, we shall in the following description choose to write the Bantawa /t/ as simply *t*. Nepali loans will be marked as such, either by adding an *N* in the gloss or by italicising the word in the source text or both. Nepali dental /t/ [ṭ] will not be marked, the retroflex /ṭ/ [ṭ] however will be.

¹⁷And some languages of Oceania, particularly Australia (Ladefoged and Maddieson 1996)

These notational choices might be construed as an implicit choice for the equation of Bantawa /t/ with the Nepali /t̪/, but are not intended that way, as I believe that this choice will be made by the language community.

With regard to writing, however, I hold the opinion that writing Bantawa /t/ as the Nepali /t/ and to write all other coronals as corresponding dentals is a) closer to the truth for the Northern and Central dialects, including the one under investigation here, and also b) looks better in the Devanāgarī alphabet. A quick letter count of the Nepali dictionary reveals that there are double the number of dentals in the dictionary than retroflexes, which holds for each voiced vs. aspirated opposition pair. Writing /त थ द ध न/ is therefore arguably more natural.

2.4.2 Vowels

The situation with regard to vowels is similar to that of the coronals. The basic inventory of simple vowels of Nepali is /ā a i e u o/. Additionally, the diphthongs /ai/ [əj] and /au/ [əu] are found. The Devanāgarī script used for Nepali permits writing length contrasts for /ū/ and /ī/ as well. This length contrast is a matter of history and orthography, but is not phonemic.

The length contrast between /ā/ and /a/ is better explained as a contrast of quality¹⁸. Short /a/ is realised as [ə], [ɔ] or [ʌ], depending on context and individual choice. In Nepali transliterations, I shall write ‘a’, but in Bantawa words I shall write ‘ə’, even when ‘ɔ’ would be equally justified.

Where Nepali meets Bantawa, all of the vowels and the diphthong /ai/ are straightforwardly mapped onto Bantawa equivalents. The short vowel /a/, by contrast, is retained as /ə/ in many loan words. See below.

The Nepali vowels /au/ and /a/ are not native to the Bantawa vowel system. The diphthong /au/ is mostly realised as an approximation of the Nepali original or as /o/. For the Nepali vowel /a/, the correspondances are more diverse.

Under certain conditions, the Bantawa vowel /i/ is realised phonetically as [ɔ]. The conditioned phonetic identity of Bantawa /i/ with the Nepali /a/ would make this phonological vowel /i/ the obvious choice for the phonological adaptation of Nepali loan words. However, there are no examples of phonological adaptation of Nepali /a/ > Bantawa /i/, rather, it seems that the Nepali loan /a/ is copied intact as [ɔ]. If we include Nepali loans in the data set for phonological analysis, the vowel inventory must be extended with the extra vowel /ɔ/.

Rai (1985: 29) simply included the Nepali /a/ in the phoneme inventory. Rai analyses the set of vowels as in Table 2.6.

While Rai (1985) works with a ternary opposition high-mid-low, I have adapted his analysis to a binary format in Table 2.6. However, while Rai (1985) offers some

¹⁸While the length opposition in Nepali has phonological significance across the entire vowel range, this does not mean that long counterparts of short vowels are simply long vowels with the same quality. In Nepali, there is a morphophonological relationship between short and long vowel pairs, viz. /a/ and /ā/, and /i/ and /ī/. Examples: *pakāunu* ‘to cook, transitive’ vs. *pāknu* ‘to cook, intransitive’, *rājnitī* ‘politics’ vs. *rājnitik* ‘political’.

¹⁹Rai writes /ü/ for the vowel that we write as /i/

²⁰Rai writes capital A for the Nepali short /a/, as he apparently had limited typesetting options.

contrasts for the obvious oppositions, he does not give examples of the less obvious vowel contrast /A/ vs. /ü/, in our notation: /ɔ/ vs. /i/.

If we allow Nepali loans in the data set, we must assign the features [I,U] to the central Bantawa vowel /i/, and leave the vowel definition for Bantawa /ɔ/ blank, i.e. make it the central vowel. This is not a very strange idea, even for language-internal reasons, i.e. without reference to the language contact situation, as the vowel /i/ historically derives from */i/. In some word final and all pre-velar positions, this historical */i/ moved to /i/ by spreading forward of the [U] feature of the velar.

Under an analysis of /i/ as [], i.e. no features, this change amounts to losing the [I] feature. It would then be strange that /e/ should be exempt from this rule. Under an analysis of /i/ as [I,U], this change amounts to adding the [U] feature under the conditions specified.

We revisit the rule of the backing of /i/ as previously given in (43).

(69) backing of high vowels before velars

- i → i / _ [+velar]
- a. i as []
[I] → [] / _ [+velar]
- b. i as [I, U]
[I] → [I, U] / _ [+velar]

Under whatever analysis, the fact remains that the Bantawa contrast /i/ vs. /ɔ/ is problematic. In some dialects, the vowel /i/ and /ɔ/ are contrastive phonemes. In Rabi (Rai 1985) and Sindrāñ the vowel contrast is consistently marked, i.e. phonemic, while for other dialects the vowels are equally pronounced as [ɔ]. The oppositions in (70) demonstrate the point.

(70) /i/ ~ /ɔ/

- a. tiri 'you can'
- b. tɔrɔ 'but' (N)
- c. hiŋsa 'living'
- d. hɔŋsa 'spirit' (N)

Table 2.6: Bantawa vowels according to Rai (1985: 29)

	u	i	ü (i) ¹⁹	A (ɔ) ²⁰	a	o	e
high	+	+	+	-	-	-	-
mid	-	-	-	+	-	+	+
low	-	-	-	-	+	-	-
front	-	+	-	-	-	-	+
round	+	-	-	-	-	+	-

It is an orthographic challenge to represent this opposition in the Devanāgarī alphabet. In some dialects, viz. Bāsikhorā and Āmcok, there is no difference between the vowels. Some speakers, then, will resist marking any of these vowels as different from the other. For other speakers different marking of different vowels will be straightforward and expected. To complicate the problem, for all dialects across the Bantawa-speaking area, even in those dialects where the /i/ is phonemically equal to the Nepali short /a/ elsewhere, the /i/ before velars is audibly different [u] from the same phoneme in other contexts.

This leads to different intuitions regarding this phoneme's status and distributions. One finds spellings of /i/ [u] as an ऌ, i.e. u with low dot, e.g. in Bāntāvā (2001). In the monthly magazine *Bungwakha* (Rāi 2004), many spelling variations are found. It is advisable to choose an orthographic form that keeps the spelling of those vowels close to their Nepali counterpart, viz. अ, and distinct enough to disambiguate in every instance. A regular and subtle variation on the Nepali short /a/ (अ) seems an obvious choice, but ultimately this is a matter to be decided by the Bantawa writing community²¹.

2.4.3 Phonological adaptation in borrowing from Nepali

Several regular phonological procedures take place in borrowing from Nepali. Where the Nepali form of the word conflicts with Bantawa rules for syllabification, several strategies are employed.

Addition of /a/ to a closed syllable.

Closed syllables in Bantawa can end in a very limited set of phonemes only. Wherever there is a violation of that rule, the vowel /a/ is added. Syllable-final aspiration may be lost before the /a/ is added, but not always.

(71) obligatory /a/-addition

- | | | |
|------------------------|---------------------------------|------------|
| a. ak ^h ira | < ākhir [ak ^h ir] | 'last' |
| b. k ^h ola | < khol [k ^h ol] | 'cover' |
| c. dzuwapa | < javāph [dʒowap ^h] | 'answer' |
| d. lek ^h a | < lekḥ [lek ^h] | 'highland' |

Where the syllable-final consonant is legal, addition of the vowel /a/ is optional.

(72) Optional /a/ after /p,t,k,m,n,ŋ/

- | | | |
|--------------------------|---------------------------------|------------------|
| a. g ^h um | < ghum [g ^h um] | 'leaf umbrella' |
| b. dʒet ^h ana | < jēṭhān [dʒet ^h an] | 'brother-in-law' |

Secondary features are usually dropped, e.g. nasalisation of vowels, or aspiration of consonants in non-initial position.

²¹At the moment of writing (2007), the Bantawa-language journal *Bungwakha* (Rāi 2004) increasingly adopts the spelling अ. Some individual authors still prefer ऌ before velars.

- (73) g^hasa < ghās [g^hās] ‘grass’
 (74) natri < nāthrī [nat^hri] ‘nose-bone’

The Nepali short vowel /a/ [ɔ] is frequently interpreted as the vowel /a/:

- (75) /a/ → /ɔ/
 a. sarasa < sārās [sarɔs] ‘saras crane’
 b. lapsi < lapsī [lɔpsi] ‘lapsi fruit’

For consonants, it is hard to give rules. In frequently used and older loans, the retroflex consonants reduce to alveodental counterparts. Intervocalic voiced retroflex stops are often pronounced as [r] /r/. There are some reinterpretations of Nepali words that suggest that Bantawa as a language prefers to close syllables in /i/ with a /t/ or glottal closure.

- (76) rare and unsystematic operations
 a. sibit < simī [simi] ‘bean’
 b. masit < mās [mas] ‘black gram’

For (76a) the loan history may shed some light on the present-day form. The /b/ consonant in form (76a) may have been retained from the Sanskrit *śimbaḥ*. Forms such as these point to a longer loan history, as they are phonologically perfectly adapted and seem independent loans from an older stage of Nepali. In both forms we find an additional /t/ that is absent from the source, which perhaps does not reflect loan history but rather an inconspicuous tendency to add /t/ to words that would otherwise end in an open vowel /-i/. Unsystematic loans must therefore be explained by their loan history and by independent phonological processes, such as the variability of end consonants as discussed in §2.1.3.

2.5 Selected morphophonological issues

2.5.1 Quantity and tone

In a certain context in the Bantawa language, and according to some speakers, there is a phonemic contrast of tone. This apparent tonal contrast only emerges in a unique context, viz. in closed syllable verb stems in certain verb forms in certain conjugation types.

While I was able to establish some phonological reality of the feature by testing both production and comprehension and getting consistent results with a limited number of informants, the contrast was rejected by others. To get some clarity on this possible contrast, the particular context of this prosodic feature will receive some attention in the section dedicated to verb conjugations.

Here, I shall just observe that my data show a meaningful, phonemic high or rising pitch that contrasts with the neutral tone contour in closed verb stems of the

first and second conjugation. This audible contrast is a result of a lexical property of these verbs but is not present on all forms of the verbs of these classes.

- (77) k^hapma
 a. k^hàpma
 'to cry'
 b. k^hápma
 'to thatch'
- (78) k^hokma
 a. k^hókma
 'to chop off'
 b. k^hòkma
 'to extract'

Given the evidence, we must conclude that Bantawa has a phonemic tone contrast. The tonal contrast is not a prominent feature of the language and is limited to certain dialects only. Indeed, I am not aware of any grammarian who has noted it before. This may be due to either the marginal and predictable nature of the contrast or to the absence of the phenomenon in the dialects that previous grammarians dealt with. The functional load of this phonological distinction is minimal: The tonal distinction matters most in the cases discussed in §4.3.7. As the high-tone verbs seem the odd ones out, I shall limit myself to marking the high-tone verbs, where relevant, with an acute accent (´). For discussion, see section §4.3 on verb stem types.

2.5.2 Vowel harmony

In the most frequently used of word classes, the pronouns and the pronominal derivatives, we find two instances of vowel assimilation where the assimilation is to the vowel of the next syllable, i.e. a non-adjacent segment. This is best labelled vowel harmony.

Variable quality of the vowel in the pronominal marker <-sV> (PRN)

The first instance of this rare process is found in the pronominal marker <-sV> (PRN) that is regularly inserted in certain pronominal and quasi-pronominal forms. See §3.4.5. This morpheme has two allomorphs, viz. <so ~ sa>, that are conditioned by the vocalic context as in example (79).

- (79) PRN <sa / _ [a] ~ so / _ [o]>
 a. o-sa-ʔa
 this-PRN-ERG
 'by this'
 b. o-so-ʔo
 this-PRN-GEN
 'of this'

It is helpful here to invoke a feature-based system of phonology. We can understand such pronominal forms as either fully underspecified, i.e. only a vowel ‘position’ is present, or just specified as [A], as this is the one feature shared by /a/ and /o/. The specific vowel quality of the suffix then spreads forward.

/o/ ~ /u/ harmony

The second instance of apparent vowel harmony is seen in the different vowel quality of the pronouns themselves, where they are suffixed by locational or other markers.

(80) ‘that’-locatives

- a. mo
that
‘that’
- b. mu-ju
that-LOC.low
‘there below’
- c. mo-ja
that-LOC.level
‘over there’

(81) ‘this’-compound locative expressions

- a. u-hjutni
this-downwards
‘down here’
- b. o-hjatni
this-at.the.same.level
‘over here’

(82) derivations of *k^ho* ‘that’

- a. *k^hun-nuch^{aŋ}-ŋa*
that-even.though-EMPH
‘nevertheless...’
- b. *k^hun-ki-na* (*k^honkina*)
that-SEQ-TOP
‘and after that...’

The [I] or [U] feature values of the suffix vowel apparently delete the [A]-feature of the pronominal root. The examples with *k^ho* above are found in Sindrān only. There is some variation between speakers. In written Bantawa, e.g. (Rāi 2004), as well as in careful speech, the form *k^hun* is avoided. While the forms (80) and (81) are found in writing, Bāntāvā (2001) lists *ohjutni* in his dictionary. We can conclude, that vowel harmony is not fully phonologised and varies across dialects. In literary Bantawa, writing underlying phonemes may be preferable. For the <-sa ~ -so> variation, that is fully phonological, two different forms must be written, true to the phonological form.

2.5.3 Final remarks

Henceforth, in subsequent chapters, I shall use the following notation to write the phonemes of the language. This notation differs from the phonetic notation based on the IPA alphabet only in order to simplify and connect to the work on South Asian languages by other authors.

The representation of [ts], [dz] and their aspirated counterpart affricates by /c/, /j/ and /c^h/, /j^h/ is in line with South Asian linguistic tradition. Similarly, writing IPA [j] as /y/ is a part of the same tradition that I shall follow. By the same tradition, the affricates are included in the stop series. While palatal affricates do not pattern in all respects with the stop series, e.g. they cannot be syllable-final consonants, they do pattern with stops in other respects, e.g. they can be obstruents in complex syllable onsets. Apart from the traditional reasons, then, there is independent motivation for this presentation.

Technically, [dz^h] is a very marginal phoneme as opposed to [dz], but I shall represent the opposition throughout. Similarly, I shall write either /b/ or /b^h/ intervocally, according to what my informants or I deemed best on the basis of known etymology or other intuitions.

Table 2.7: Consonant Inventory

<i>manner</i>		<i>labial</i>		<i>alveolar</i>		<i>palatal</i>		<i>velar</i>		<i>pharyngeal</i>
		-voice	+voice	-voice	+voice	-voice	+voice	-voice	+voice	
stop	-asp	p	b	t	d	c	j	k	g	
	+asp	p ^h	b ^h	t ^h	d ^h	c ^h	j ^h	k ^h	g ^h	
nasal			m		n				ŋ	
fricative				s						h
glide			w				y			
liquid					l					
trill					r					