

# **PART II: RECONSTRUCTION OF LINGUISTIC HISTORY**

## Chapter 4 Phonological reconstruction

### 4.1. Introduction

This chapter begins the work of reconstructing the linguistic history of KRNB. Readers of this chapter should keep in mind that the common ancestor for the KRNB lects is reconstructed in 7.3.1 as ‘proto-Kamta’. This term is chosen for historical reasons explained in that section, and has no relation to the present day political usage of the same term (cf. section 1.6).

The method employed for phonological reconstruction is the Comparative Method which involves examining phonological correspondences across suspected cognates and reconstructing proto-phonemes and subsequent changes.<sup>1</sup> Three diagnostics—linguistic complexity, ecological distinctiveness, and sociohistorical plausibility—are applied to each reconstructed innovation in order to diagnose propagation events (and exclude parallel events not connected by interaction). These diagnosed PEs are the defining moments in KRNB’s phylogenetic history and are the basis for reconstructing historical Speech Community Events in Chapter 7.<sup>2</sup>

As discussed in Chapter 3, reconstructing the sequencing of innovations is problematic in a dialect continuum because of the normalcy of non-discrete divisions between lects. The boundaries of community interaction are often diachronically unstable, and the result is overlapping and non-nested isoglosses. Moreover, the sequencing of these changes may be ambiguous based on solely *linguistic* principles of seriation. This study employs three types of arguments for sequencing innovations: linguistic, textual, and sociohistorical.<sup>3</sup> Of these, the first two lines of argument are pursued in this chapter (as well as in Chapter 5 and Chapter 6 for innovations in morphology) to establish some relative and absolute chronology of innovations. Where more than one account is possible of the change events that produced the attested correspondences, the task of this chapter is to determine if there are linguistic

---

<sup>1</sup> Cf. section 3.3 This method is called “controlled reconstruction” in Pattanayak (1966) and Maniruzzaman (1977).

<sup>2</sup> Cf. section 3.4.1 for justification of the diagnostics, and section 3.2.2 for discussion of the phylogenetic model.

<sup>3</sup> Cf. section 3.4.3.

(or textual) criteria that render one interpretation of the change events more plausible than other interpretations. The third line of argument for establishing chronology—by sociohistorical criteria—is applied separately in Chapter 7 to round out the reconstruction of linguistic history.

The data which inform the phonological reconstruction are presented in a comparative wordlist in Appendix A. Phonological correspondences in cognates have been tabulated using the WordCorr program (cf. [www.wordcorr.org](http://www.wordcorr.org)). The full set of correspondences for the KRNB reconstruction is given in Appendix B, with generalised correspondences presented in tables throughout this chapter.

The correspondence sets do not include data for Standard Colloquial Bangla (SCB), Asamiya (SCA) or other NIA lects. Nonetheless, the phonological innovations reconstructed here for KRNB can (with a little care) be compared and contrasted with innovations reconstructed in other historical Indo-Aryan studies whose method is either comparative (Southworth 1958, Pattanayak 1966, Maniruzzaman 1977) or etymological (e.g. Chatterji 1926, Kakati 1962, Turner 1966-71, D.N. Das 1990).<sup>4</sup>

## 4.2. Synchronic overview of systems and processes

While the purpose of this chapter is to present a thorough diachronic phonological analysis, an interpretation of the synchronic systems and processes underlies the transcription of data and consequently the reconstruction. This section sketches the phoneme systems of the 8 lects included in the historical reconstruction. The synchronic analysis is based largely on the wordlist data in Appendix A as well as referenced synchronic studies. An exhaustive phonological study of ‘central’ KRNB—the varieties spoken in the districts of Cooch-Bihar and (greater) Rangpur—remains to be undertaken or published.

The most thorough phonological analysis of a KRNB variety to date is Wilde (2002), which describes “one of the Rajbanshi dialects spoken in the district of Jhapa district

---

<sup>4</sup> By an ‘etymological’ method I mean that the study involves reconstruction of linguistic history by an uncontrolled comparison between putative cognates in Sanskrit and the lect(s) in question. The reconstruction is uncontrolled in that the regularity or otherwise of proposed sound changes is not a central or guiding concern. Despite the title of Das’s thesis (1990): *The dialects of Goalpara and Kamrup: a comparative analysis*, the method employed is not the traditional Comparative Method of historical linguistics, but the ‘etymological method’ described here.

of Nepal”—geographically quite close to Mahayespur, eastern Jhapa, which features in this reconstruction.<sup>5</sup> Toulmin (2002) includes some phonological analysis of the Mahayespur variety, and Toulmin *et. al.* (In prep.) describes in some detail both the Bhatibari-Tufanganj variety of West Bengal as well as a variety from Nepal. D.N. Das (1990) gives a phonological sketch of the Indo-Aryan lects of greater Goalpara and Kamrup regions of west Assam (thus including the Bongaigaon lect which also features in this reconstruction). In addition to these descriptions of KRNB, there are good phonological analyses available for neighbouring NIA lects (Ferguson & Chowdury [1960] for Bangla, G. C. Goswami [1966] for standard Asamiya, U. Goswami 1970 for western Asamiya).

KRNB varieties have 6 or 7 segmental vowel phonemes—the difference hinging on the inherited \* $\epsilon$ , and its split into /e/ and / $\epsilon$ / in several lects. The situation is complicated by borrowing. KS and RL both have six-vowel systems /i,  $\epsilon$ , a<sup>6</sup>, [ə;  $\Lambda$ ], o, u/.<sup>7</sup> MH appears to have a seven-vowel system—the result perhaps of borrowing Hindi and Persian words with a retained [e] in contrast with the inherited \* $\epsilon$ , e.g. /ek/ ‘one’, / $\epsilon$ k/ ‘to her/him/it’. The phonemic distinction between /e/ and / $\epsilon$ / is not described in Wilde (2002) for the lect slightly west of Mahayespur. The TH, SH, RP, and BH lects all have 7-vowel systems: /i, e,  $\epsilon$ , a, ə, o, u/; in RP the corresponding vowel for / $\epsilon$ / is lower and thus transcribed as / $\ae$ /.<sup>8</sup> Note that the rounded vowel / $\omega$ / of central and eastern KRNB (TH, SH, RP, BH, BN) corresponds with unrounded / $\Lambda$ / of MH, and [ $\Lambda$ ;ə] of RL and KS. The unrounding in western KRNB is a result of Hindi influence (cf. 4.4.5), and found also in the Bihari lects. The status of the [e] vs. [ $\epsilon$ ] distinction has not been conclusively established for BN in this study, though is assumed to be phonemic following D.N. Das (1990). These similarities and differences in vowel systems are summarised by Table 4-1.

<sup>5</sup> A copy of R.C. Joshy & M. Joshy (2006) was received too late in the course of the present research to properly include its findings.

<sup>6</sup> Phonetically [e] in all that follows.

<sup>7</sup> /ə/ indicates a phonetically mid (in terms of height), central (in terms of backness) and unrounded vowel; / $\Lambda$ / is phonetically unrounded, back and slightly lower than /ə/; [ə;  $\Lambda$ ] indicates synchronic variation.

<sup>8</sup> A manuscript of R.C. Joshy & M. Joshy (2006) was received during the final stages of this study. Its conclusions are yet to be thoroughly compared with those reached in this study.

/i/		/u/
/e/		/o/
/ɛ-æ/	/ə-ʌ-ɔ/	
[æ]	/a/	[ɑ]

**Table 4-1. Amalgamated summary of present-day KRNB vowel systems**

Phonemes are enclosed by forward slash markers, and allophones in square brackets. The phonemic ‘slot’ which distinguishes the 6 and 7 vowel systems is shaded.

The sound [ɑ] is found in BN, BH and RP, and assumed to constitute an allophone of /a/—though the conditioning is not yet understood and requires further research. A preceding high vowel triggers the raising of /a/ → [æ] in BH and RP. In RP the merger with /æ/ is complete, while in BH it may remain distinct from the corresponding vowel /ɛ/ for some speakers in some contexts.<sup>9</sup> The phonemic status of /ɛ/ differs among the lects. Most instances of [e] can be described as allophones of /ɛ/ by regressive vowel harmony. However, loan words (mainly Persian and Hindi) have introduced minimal or near-minimal pairs with the contrasting sounds. All these phonemic and allophonic processes are examined in more depth as part of the diachronic reconstruction.

Turning to the KRNB consonant systems, 7 of the 8 lects examined here follow the typical Indo-Aryan pattern—dominated by stops, distinguished at five points of articulation: bilabial, dental, apical postalveolar (traditionally “retroflex” or “cerebral” in IA studies), laminal postalveolar (traditionally “palatal” in IA studies), and velar. This has remained the Indo-Aryan pattern from Old IA, through Middle IA (despite a plethora of phonological changes) into New IA. The BN lect stands apart from the other 7 lects as it lacks the distinction of apico-dental vs. apico-postalveolar (“dental” vs. “retroflex”), having merged these two series into a new apico-alveolar series as in SCA. This restructuring of the BN consonant system seems to be recent given that it is unquestionably present in the data collected for this study, but was not described by D.N. Das (1990), see further section 4.3.6.

<sup>9</sup> The degree of harmonic raising of /a/ is socially conditioned in Cooch Behar district—merging with /ɛ/ in uneducated village speech, and remaining distinct in more educated or ‘town-style’ speech.

Aspirated counterparts to modally voiced nasals, laterals and rhotics are found in KS, RL, MH and TH (see further below regarding the definition of “aspiration”).

As in the presentation of vowels above, Table 4-2 has consonant phonemes enclosed by forward slash markers, and allophones by square brackets. Special abbreviations used in this table (due to space restrictions) are: vc. for ‘voice’, and asp. for ‘aspiration’.

Moving (active) articulator:			Labial (lower lip)	Apical (tongue tip)			Laminal (tongue blade)	Dorsal (back of tongue)	Laryngeal (vocal folds)
Articulatory target region (passive articulator):			Labial	Dental	Alveolar	Post- alveolar	Alveolar, <sup>10</sup> Post-alveolar	Velar	Glottal
Oral stops +affricates	-vc.	-asp.	/p/ [p <sup>j</sup> p <sup>w</sup> ]	/t̚/ [t̚ <sup>j</sup> t̚ <sup>w</sup> ]		/t/ [t <sup>j</sup> t <sup>w</sup> ]	/ts-tʃ/ [ts <sup>j</sup> ]	/k/ [k <sup>j</sup> k <sup>w</sup> ]	
	-vc.	+asp.	/p <sup>h</sup> /	/t̚ <sup>h</sup> /		/t <sup>h</sup> /	/ts <sup>h</sup> -tʃ <sup>h</sup> /	/k <sup>h</sup> / [k <sup>hj</sup> ]	
	+vc.	-asp.	/b/ [b <sup>j</sup> b <sup>w</sup> ]	/d̚/ [d̚ <sup>j</sup> d̚ <sup>w</sup> ]		/d/ [d <sup>j</sup> d <sup>w</sup> ]	/dʒ-dʒ/ [dʒ <sup>j</sup> dʒ <sup>w</sup> ]	/g/ [g <sup>j</sup> g <sup>w</sup> ]	
	+vc.	+asp.	/b <sup>h</sup> / [p <sup>h</sup> ]	/d̚ <sup>h</sup> / [t̚ <sup>h</sup> ]		/d <sup>h</sup> / [t <sup>h</sup> ]	/dʒ <sup>h</sup> -dʒ <sup>h</sup> /	/g <sup>h</sup> / [k <sup>h</sup> ]	
Nasal stops		-asp.	/m/		/n/ [n <sup>j</sup> n <sup>w</sup> ]			/ŋ/ [ŋ <sup>j</sup> ŋ <sup>w</sup> ]	
		+asp.	/m <sup>h</sup> /		/n <sup>h</sup> /			/ŋ <sup>h</sup> /	
Fricatives	-vc.		[ɸ ɸ <sup>j</sup> ɸ <sup>w</sup> ]				/s-ʃ/ [s <sup>j</sup> ʃ <sup>w</sup> ]	[x]	
	+vc.	-asp.	[β]				[z z <sup>j</sup> z <sup>w</sup> ]	[ɣ]	
	+vc.	+asp.	[β <sup>h</sup> ]				[z <sup>h</sup> ]	[ɣ <sup>h</sup> ]	
Rhotics		-asp.			/r/ [r <sup>j</sup> r <sup>w</sup> ]	/ɾ-r/			
		+asp.			/r <sup>h</sup> -r <sup>h</sup> -ɾ <sup>h</sup> /				
		-asp.			/l/ [l <sup>j</sup> l <sup>w</sup> ]				
Laterals		+asp.			/l <sup>h</sup> /				
Approx- imants			/w/ [w <sup>j</sup> ]			/j/			/h/

**Table 4-2. Amalgamated summary of present-day KRNB consonant systems**

<sup>10</sup> The passive articulator for this set spans alveolar and post-alveolar.

The recurrent allophonic processes found amongst KRNB lects are: palatalisation and labialisation of stops under certain conditions (cf. 4.3.3); post-vocalic spirantisation or fricativisation of stops and affricates (cf. 4.3.5); and devoicing of initial voiced stops—this last change more regular in BN, and present but more variable in BH (full analysis in 4.3.1).

The point of articulation of the affricates differs across the lects. In KS, RL and MH they are articulated closer to the alveolar ridge than in TH which is more postalveolar (at least for the speakers interviewed for the wordlist). In SH, RP and BH the series is articulated on the alveolar ridge itself, while the BN system lacks affricates altogether—making it once more the phonological odd-one-out (cf. 4.3.9 for the historical changes involved).

The inherited sibilant has a postalveolar articulation in TH, SH, RP, and BH. In KS, RL, MH and BN the phonetic realisation of this phoneme is closer to the alveolar ridge.

The BN lect possesses an alveolar series of stops, but no apico-dental and apico-postalveolar series of stops. This phonological system bears close resemblance to that of Asamiya—distinguishing stops at only three places of articulation, and lacking affricates.

For voiced and aspirated consonants (e.g. /g<sup>h</sup>/) the aspiration is breathy voiced and transcribed by /<sup>h</sup>/. In contrast, the aspiration of voiceless aspirated consonants (e.g. /k<sup>h</sup>/) is transcribed by /<sup>h</sup>/. The definition of ‘aspiration’ used in this study follows Ladefoged and Maddieson:

aspiration is a period after the release of a stricture and before the start of regular voicing (or the start of another segment, or the completion of an utterance) in which the vocal folds are markedly further apart than they are in modally voiced sounds. This definition would allow for voiceless aspirated and breathy voiced aspirated sounds to be grouped together (1996: 70)

The aspirated continuants (nasals, laterals and fricatives) are phonetically characterised by the presence of breathy voicing: /m<sup>h</sup>/=[m̤]; /l<sup>h</sup>/=[l̤]. Close phonetic study of aspirated nasals and laterals in Hindi shows that breathy voicing begins after



a brief initial period of modal voicing (cf. *ibid.*: 107-8, 201-2). The coordination of modal and breathy voicing in stops (again in Hindi) is basically the same (cf. *ibid.*: 57ff.). In this study, stops and continuants which are characterised by the coordination of modal and breathy voicing are alike termed “voiced aspirated” consonants.

The phoneme /h/ is often classed as a fricative in IA studies. However, modern study of phonetics and phonology supports a different classification. Ladefoged (1971) describes the sounds [h] and [ɦ] (of which KRNB /h/ is the latter) as *voiceless or breathy voiced counterparts of the vowels that follow them*. More recently, Ladefoged & Maddieson articulate a slightly revised description:

as Keating (1988) has shown, the shape of the vocal tract during **h** or **ɦ** is often simply that of the surrounding sounds. In saying the word *ahead*, for example, there is usually a breathy voiced **ɦ** during which the formants are moving from those associated with **ə** to those associated with **ε**. Accordingly, in such cases it is more appropriate to regard **h** and **ɦ** as *segments that have only a laryngeal specification, and are unmarked for all other features*. (Ladefoged & Maddieson 1996: 325-6; [italics added—MT])

As a consonant whose characteristics are determined by the surrounding vowels, /h/ is more appropriately classed as an *approximant*, rather than a fricative. In KRNB, as in Indo-Aryan more generally, the /h/ is “voiced”, meaning that the laryngeal specification is for breathy voicing. All further phonetic features are determined by the adjacent sounds.

The postalveolar series of stops (usually referred to in IA studies as “retroflex”) has an apical active articulator in KRNB (as in Hindi) rather than the “sub-apical” (or perhaps rather sub-laminal) articulation of the Dravidian languages (cf. Ladefoged & Maddieson *ibid.*: 26ff.). Ladefoged & Maddieson use the IPA symbols /ʈ , ɖ/ to denote sub-apical retroflexes; and the non-IPA symbols /ʈ̠ , ɖ̠/ for apical “retroflexes”, i.e. postalveolars. The transcription in this study instead adheres to the IPA conventions /ʈ , ɖ/ for “retroflex” phones (taken as including apical postalveolars). However, note that this conventional usage fails to signal the articulatory differences between the stops in KRNB and Tamil (for example).

### 4.3. Comparative reconstruction of KRNB consonants

The consonant system reconstructed in this study for proto-Kamta conforms to the broad Indo-Aryan type referred to above.<sup>11</sup> The proto-phonemes and their generalised reflexes in each of the 8 KRNB test lects are presented in Table 4-3.<sup>12</sup> The correspondences are displayed under three environments: word-initial, inter-vocalic and word-final. Where further categorisation of inter-vocalic conditions is required (e.g. [i\_a]) the more limiting condition is displayed in footnotes rather than in separate columns. Other conventions used are: / ‘deletion’; - ‘data missing but expected’; blank cell ‘phoneme does not occur in this position’; semicolon ‘two synchronic variants’; new line within the same cell ‘different correspondences in different words’ (with conditioning or degree of variation given in a footnote).

---

<sup>11</sup> Note that these reconstructed phonemes are only considered to constitute a contemporaneous proto-phoneme system as a result of the total reconstruction of chronology of changes in this study. The necessity of reconstructing the sequencing of changes before hypothesising a contemporaneous phonological system is a point made in 3.3.

<sup>12</sup> The full array of correspondence sets yielded by the phonological reconstruction is found in Appendix B.

*		*b	*b <sup>h</sup>	*p	*p <sup>h</sup>	*d	*d <sup>h</sup>	*t	*t <sup>h</sup>	*d	*d <sup>h</sup>	*t	*t <sup>h</sup>
#_	Ks	b	b <sup>h</sup>	p	p <sup>h</sup>	d	d <sup>h</sup>	t	t <sup>h</sup>	d	d <sup>h</sup>	t	t <sup>h</sup>
	Rl	b	b <sup>h</sup>	p	p <sup>h</sup>	d	d <sup>h</sup>	t	t <sup>h</sup>	d	d <sup>h</sup>	t	t <sup>h</sup>
	Mh	b	b <sup>h</sup>	p	p <sup>h</sup>	d	d <sup>h</sup>	t	t <sup>h</sup>	d	d <sup>h</sup>	t	t <sup>h</sup>
	Th	b	b <sup>h</sup>	p	p <sup>h</sup>	d	d <sup>h</sup>	t	t <sup>h</sup>	d	d <sup>h</sup>	t	t <sup>h</sup>
	Sh	b	b <sup>h</sup>	p	p <sup>h</sup>	d	d <sup>h</sup>	t	t <sup>h</sup>	d	d <sup>h</sup>	t	t <sup>h</sup>
	Rp	b	b <sup>h</sup>	p	p <sup>h</sup>	d	d <sup>h</sup>	t	t <sup>h</sup>	d	d <sup>h</sup>	t	t <sup>h</sup>
	Bh	b b;p <sup>13</sup>	b <sup>h</sup> b <sup>h</sup> ;p <sup>h</sup> 14	p	p <sup>h</sup>	d	d <sup>h</sup> d <sup>h</sup> ;t <sup>h</sup> 14	t	t <sup>h</sup>	d	d <sup>h</sup> d <sup>h</sup> ;t <sup>h</sup> 14	t	t <sup>h</sup>
	Bn	b;p <sup>15</sup>	p <sup>h</sup>	p	p <sup>h</sup>	d;t <sup>15</sup>	t <sup>h</sup>	t	-	d;t <sup>15</sup>	t <sup>h</sup>	t	t <sup>h</sup>
V_V	Ks	w	β	p	ϕ	d	d <sup>h</sup>	t	t <sup>h</sup>	r	r <sup>h</sup>	t	t <sup>h</sup>
	Rl	w	β <sup>h</sup> 16	p	ϕ	d	d <sup>h</sup>	t	t <sup>h</sup>	ɽ;r	t <sup>h</sup> ;r <sup>h</sup>	t	t <sup>h</sup>
	Mh	β	β <sup>h</sup> 16	p	ϕ	d	d <sup>h</sup>	t	t <sup>h</sup>	ɽ;r	d <sup>h</sup> ;r <sup>h</sup>	t	t <sup>h</sup>
	Th	b β	b <sup>h</sup> β <sup>h</sup> 16	p	-	d	d <sup>h</sup>	t	t <sup>h</sup>	r	r <sup>h</sup>	t	t <sup>h</sup>
	Sh	β	β	p;ϕ p <sup>w</sup> 17	-	d	d	t t <sup>w</sup> 19	t <sup>h</sup>	ɽ;r ɽ <sup>w</sup> 19	t	t	t <sup>h</sup>
	Rp	b b <sup>j</sup> 18	- b <sup>j</sup> 18	p;ϕ p <sup>j</sup> 17	- ϕ <sup>j</sup> 19	d d <sup>j</sup> 17	d d <sup>j</sup> 17	t t <sup>j</sup> 17	t - 17	ɽ;r r <sup>j</sup> 17	ɽ;r r <sup>j</sup> 17	t t <sup>j</sup> 18	t t <sup>j</sup> 17
	Bh	β β <sup>j</sup> 18	β;b b <sup>j</sup> 18	p p <sup>j</sup> 18 p <sup>j</sup> ;p <sup>w</sup> 19	-	d d <sup>j</sup> 17	d d <sup>j</sup> 17	t t <sup>j</sup> 17	t - 17	ɽ;r r <sup>j</sup> 17	ɽ;r r <sup>j</sup> 17	t t <sup>j</sup> 18	t t <sup>j</sup> 18
	Bn	b w	β <sup>h</sup> 16	p	-	d	d <sup>h</sup>	t	t <sup>h</sup>	r	r	t	t <sup>h</sup>
#	Ks	b	b	p	ϕ	d	d	t	t <sup>h</sup>	r		t	t <sup>h</sup> ;t
	Rl	b p <sup>20</sup>	β	p	ϕ	d;t	d	t	t	ɽ;r		t	t <sup>h</sup>
	Mh	b p <sup>20</sup>	b	p	ϕ	d;t	d	t	t <sup>h</sup>	ɽ;r		t	t <sup>h</sup> ;t
	Th	b p <sup>20</sup>	β	p	ϕ	d	d;t	t	t	r		t	t <sup>h</sup> ;t
	Sh	p	ϕ	p	ϕ	t	t	t	t	r		t	t
	Rp	b p <sup>20</sup>	β	p	p	d	d	t	t	ɽ;r		t	t
	Bh	b p <sup>20</sup>	ϕ	p	ϕ;p	t	t	t	t	r		t	t
	Bn	b	ϕ	p	ϕ;p	t	t <sup>h</sup>	t	t	r		t	t;t <sup>h</sup>

**Table 4-3. Summary of inherited consonants and their reflexes**

<sup>13</sup> Devoicing is variable and **non-persistent** (found in only one etymon in the data, cf. Appendix B).

<sup>14</sup> Devoicing is variable and **persistent** in a **minority** of etyma etyma (cf. Appendix B).

<sup>15</sup> Devoicing is variable and **persistent** in the **majority** of etyma etyma (cf. Appendix B).

<sup>16</sup> Phonetically [β]

<sup>17</sup> [i\_a] or [u\_a]

<sup>18</sup> [i\_a] (the information for [u\_a] may be missing from the data if not referenced).

<sup>19</sup> [u\_a]

<sup>20</sup> Generally in Persian words, see 4.3.2.

*		*ɕ	*ɕ <sup>fi</sup>	tʃ	tʃ <sup>h</sup>	*g	*g <sup>fi</sup>	*k	*k <sup>h</sup>	*m	*m <sup>fi</sup>	*n	*n <sup>fi</sup>	*ŋ	*ŋ
#_	Ks	ɕ	ɕ <sup>fi</sup>	tʃ	tʃ <sup>h</sup>	g	g <sup>fi</sup>	k	k <sup>h</sup>	m		n			
	Rl	ɕ	ɕ <sup>fi</sup>	tʃ	tʃ <sup>h</sup>	g	g <sup>fi</sup>	k	k <sup>h</sup>	m		n			
	Mh	ɕ	ɕ <sup>fi</sup>	tʃ	tʃ <sup>h</sup>	g	g <sup>fi</sup>	k	k <sup>h</sup>	m		n			
	Th	ɕ	ɕ <sup>fi</sup>	tʃ	tʃ <sup>h</sup>	g	g <sup>fi</sup>	k	k <sup>h</sup>	m		n			
	Sh	z	z <sup>fi</sup>	ts	ts <sup>h</sup> ;s	g	g <sup>fi</sup>	k	k <sup>h</sup>	m		n			
	Rp	ɕ	ɕ <sup>fi</sup>	ts;s	ts <sup>h</sup> ;s	g	g <sup>fi</sup>	k	k <sup>h</sup>	m		n			
	Bh	ɕ	ɕ <sup>fi</sup> ɕ <sup>fi</sup> ,ts <sup>fi</sup> 21	ts	ts <sup>h</sup>	g	g <sup>fi</sup> g <sup>fi</sup> ,k <sup>fi</sup> 21	k	k <sup>h</sup>	m		n			
Bn	z;s <sup>22</sup>	s <sup>fi</sup> 23	s	s	g;k <sup>24</sup>	k <sup>fi</sup>	k	k <sup>h</sup>	m		n				
V_V	Ks	ɕ	-	tʃ	tʃ <sup>h</sup>	g	g <sup>fi</sup>	k	k <sup>h</sup> ;x	m	m <sup>fi</sup> 25	n	n <sup>fi</sup>	n	ŋ
	Rl	z	-	tʃ	tʃ <sup>h</sup> ;s	g	g <sup>fi</sup>	k	k <sup>h</sup>	m	m <sup>fi</sup>	n	n <sup>fi</sup>	n	ŋ
	Mh	z	-	tʃ	tʃ <sup>h</sup>	g	g <sup>fi</sup>	k	x	m	m <sup>fi</sup>	n	n <sup>fi</sup>	n	ŋ
	Th	ɕ	ɕ <sup>fi</sup>	tʃ	tʃ <sup>h</sup>	g;ɣ	g <sup>fi</sup>	k	x	m	m <sup>fi</sup>	n	-	n	ŋ
	Sh	z z <sup>j</sup> 29	z	s	s	ɣ	ɣ <sup>fi</sup> 26	x k <sup>w</sup> 27 k <sup>j</sup> 29	x - <sub>28</sub>	m m <sup>w</sup> 27	m	-	-	n - <sub>28</sub>	ŋ
	Rp	ɕ ɕ <sup>j</sup> 28	ɕ	ts;s ts;s <sup>j</sup> 28	s s <sup>j</sup> 29	g - <sub>28</sub>	g - <sub>28</sub>	k k <sup>j</sup> 28	k k <sup>j</sup> 28	m m <sup>j</sup> 29	m	n n <sup>j</sup> 28	n - <sub>28</sub>	n n <sup>j</sup> 28	ŋ - <sub>28</sub>
	Bh	ɕ ɕ <sup>j</sup> 28	ɕ	ts ts <sup>j</sup> 28	s s <sup>j</sup> 29	g;ɣ - <sub>28</sub>	g;ɣ - <sub>28</sub>	k k <sup>hj</sup> 28	x k <sup>hj</sup> 28	m m <sup>j</sup> 29	m	n n <sup>j</sup> 28	n - <sub>28</sub>	n n <sup>j</sup> 28	ŋ - <sub>28</sub>
Bn	z	z	s	s	ɣ	ɣ <sup>fi</sup> 26	k	x	m	m	n	n	n	ŋ	
_#	Ks	ɕ		tʃ	tʃ	g	g	k	k	m		n		n	ŋ
	Rl	ɕ		tʃ	tʃ <sup>h</sup>	g	g	k	k <sup>h</sup>	m		n		n	ŋ
	Mh	ɕ		tʃ	tʃ <sup>h</sup>	g;k	g	k	k <sup>h</sup>	m		n		n	ŋ
	Th	tʃ		tʃ	tʃ;tʃ <sup>h</sup>	g	g	k	k <sup>h</sup>	m		n		n	ŋ
	Sh	s		s	s	k	k	k	k	m		n		n	ŋ
	Rp	ɕ		s	ts;s	g	g	k	k	m;~		n		n	ŋ
	Bh	s		s	ts <sup>h</sup> ;s	k	k	k	k	m		n		n	ŋ
Bn	s		s	s	g;k	x	k	x	m		n		n	ŋ	

**Table 4-4. Summary of inherited consonants and their reflexes (cont.)**

<sup>21</sup> Devoicing is variable and **persistent** in a **minority** of etyma etyma (cf. Appendix B).

<sup>22</sup> Devoicing is variable and **non-persistent** (found in only one etymon in the data, cf. Appendix B).

<sup>23</sup> Phonetically [s̥]

<sup>24</sup> Devoicing is variable and **persistent** in the **majority** of etyma etyma (cf. Appendix B).

<sup>25</sup> Throughout this table, /m<sup>fi</sup>/ is phonetically [m̥], /n<sup>fi</sup>/ is phonetically [n̥], and /l<sup>fi</sup>/ phonetically [l̥].

<sup>26</sup> Phonetically [ç̥].

<sup>27</sup> [u\_a]

<sup>28</sup> [i\_a] or [u\_a]

<sup>29</sup> [i\_a] (the information for [u\_a] may be missing from the data if not referenced).

*		*l	*ɭ	*l <sup>fi</sup>	*r	*ʃ	*h	*w	*j
#_	Ks	l			r n <sup>30</sup>	s	h		
	Rl	l			r n <sup>30</sup>	s	h		
	Mh	l			r n <sup>30</sup>	s	h		
	Th	l;n			r;Ø	ʃ	h		
	Sh	n			r;Ø	ʃ	h		
	Rp	n			Ø	ʃ	h		
	Bh	n			r;n	ʃ	h		
V_V	Bn	l			r	h s	h		
	Ks	l	l	l <sup>fi</sup>	r	s	/ <sup>31</sup> h	w	j
	Rl	l	l	l <sup>fi</sup>	r	s	h	w	j
	Mh	l	l	l <sup>fi</sup>	r	s	h	w	j
	Th	l	l	l <sup>fi</sup>	r	ʃ	h	w	j
	Sh	l l;ʌ <sup>32</sup>	l _ <sup>33</sup>	l l;ʌ <sup>34</sup>	r;ɭ	ʃ ʃ;j <sup>34</sup>	/ <sup>35</sup> w	w	j
	Rp	l ʌ;j <sup>36</sup>	l ʌ <sup>36</sup>	l ʌ;j <sup>36</sup>	r r <sup>j</sup> <sup>36</sup>	ʃ ʃ <sup>36</sup>	/ <sup>35</sup> w _ <sup>36</sup>	w w <sup>j</sup> <sup>36</sup>	j
Bh	l ʌ;j <sup>36</sup>	l ʌ <sup>36</sup>	l j <sup>36</sup>	r r <sup>j</sup> <sup>36</sup>	ʃ ʃ <sup>36</sup>	/ <sup>35</sup> w _ <sup>36</sup>	w w <sup>j</sup> <sup>36</sup>	j	
#_	Bn	l	l	l	r	s h	h / <sup>37</sup>	w	-
	Ks	l	l		r	s	/		
	Rl	l	l		r	s			
	Mh	l	l		r	s	/		
	Th	l	l		r	ʃ	/		
	Sh	l	l		r	ʃ	/		
	Rp	l	l		r	ʃ	/		
Bh	l	l		r	ʃ	/			
Bn	l	l		r	s	/			

**Table 4-5. Summary of inherited consonants and their reflexes (cont.)**

<sup>30</sup> #\_VNC, e.g. \*rand<sup>fi</sup>- ‘cooks’.

<sup>31</sup> #CV\_V#

<sup>32</sup> [i\_a] or [u\_a]

<sup>33</sup> [i\_a] or [u\_a]

<sup>34</sup> [i\_a] (the information for [u\_a] may be missing from the data if not referenced).

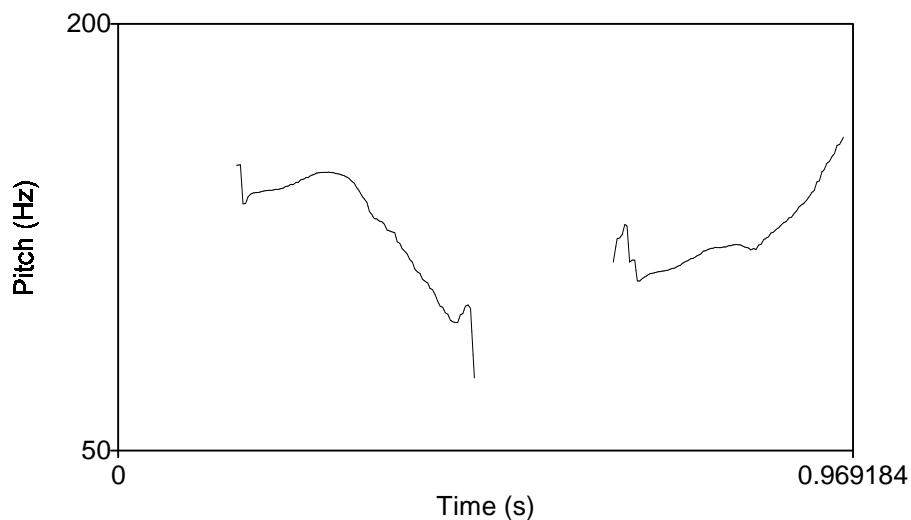
<sup>35</sup> This correspondence is found in most Tadbhavas, while /h/ is often maintained in Tatsamas.

<sup>36</sup> [i\_a] or [u\_a]

<sup>37</sup> This correspondence is irregular. Even within Tadbhavas there seems to be no categorical pattern of either deleting or maintaining medial \*h in BN’s linguistic history.

### 4.3.1. Devoicing of word-initial stops

Bongaigaon stands apart from the other KRNB lects as having undergone the most radical changes in its consonant system. One of these changes is the devoicing of word-initial stops. Voiced aspirated obstruents (stops and affricates) have undergone complete devoicing of the obstruent element in word-initial position, e.g. \*b<sup>h</sup>ul > /p<sup>h</sup>ul/ ‘error, mistake’. This devoicing causes near homophony with words beginning with voiceless aspirated consonants, for example /p<sup>h</sup>ul/ ‘flower’. In general the homophony is not complete, and the phonemic distinction is maintained (between [p<sup>h</sup>] and [p<sup>h</sup>]) through a phonetic combination of breathy-voiced aspiration and low tone. Figure 4-1 shows the pitch contours for a nearly homophonous minimal pair [p<sup>h</sup>al] ‘ploughshare’ and [p<sup>h</sup>a`l] ‘good’.



**Figure 4-1 Pitch contours for [p<sup>h</sup>al] ‘ploughshare’ and [p<sup>h</sup>a`l] ‘good’**

The stop element in both lexemes is voiceless [p], but the lexeme which has undergone devoicing (rightmost in the figure) has *low* (or perhaps low-rising) *tone*. The presence of low tone as a reflex of inherited voiced aspirates (e.g. \*b<sup>h</sup>) in initial position recurs in the data, though it is somewhat variable even for the same lexeme.

The more regular reflex of proto-voiced aspirates in BN is a voiceless obstruent element followed by *breathy-voiced* aspiration. The quality of the aspiration thus maintains the inherited contrast between voiced and voiceless aspirates. Aspiration

derived from inherited voiceless obstruents is ‘clear’ (e.g. \*p<sup>h</sup> > [p<sup>h</sup>]), while aspiration derived from inherited voiced obstruents has breathy-voicing (e.g. \*b<sup>h</sup> > [p<sup>h</sup>]). The presence of low tone is best explained as a phonetic accompaniment to breathy-voiced aspiration, and currently of no greater phonological significance.

The phonemic contrast between obstruents differentiated only by different qualities of aspiration is interesting, and perhaps unique in Indo-Aryan. Further observation of the BN consonant system should be undertaken to see whether this phonological arrangement is maintained, or whether tonal quality takes on phonemic significance. The breathy-voiced aspiration is transcribed in the data with /<sup>h</sup>/, as against clear aspiration /<sup>h</sup>/.

Consideration of other possible ways of phonemecising the consonant segment are not our concern here (for example [p<sup>h</sup>] vs. [p<sup>h</sup>]), but should be addressed by further synchronic phonological studies. In particular, attention should be given to the articulation in BN of the inherited voiced aspirated affricate \*ḍ<sup>h</sup> > [ṣ], that is, a breathy voiced fricative without aspiration.<sup>38</sup> This phoneme may be cross-linguistically significant, given Ladefoged and Maddieson’s statement that “There are no languages listed with breathy voiced fricatives” (1996: 178). The concern of this study is with the nature of the innovation—which is a phonetic devoicing change.

Other examples of this near homophony, besides /p<sup>h</sup>al/ ‘ploughshare’ and /p<sup>h</sup>al/ ‘good’, include:

- /k<sup>h</sup>ora/ ‘lame, cripple’ vs. /k<sup>h</sup>ora/ ‘horse’
- /p<sup>h</sup>era/ ‘thigh’ vs. /p<sup>h</sup>era/ ‘sheep’
- /t<sup>h</sup>akia/ ‘having stayed’ vs. /t<sup>h</sup>akia/ ‘having covered’

This devoicing of initial voiced aspirates also occurs in Bhatibari, which out of the 8 test-sites is geographically closest to BN. Unlike for BN, however, the devoicing is variable in the BH data and occurs on only a minority of possible occasions. Nonetheless, this devoicing is persistent in the BH data, being found on more than

---

<sup>38</sup> The relevant items in the BN wordlist data are: /s<sup>h</sup>okōra/ ‘spear used for fishing’ (no proto-form reconstructed as part of this study), /s<sup>h</sup>aluk/ < \*ḍ<sup>h</sup>aluk ‘chilli’, /s<sup>h</sup>ula/ < \*ḍ<sup>h</sup>ula ‘to hang’, /s<sup>h</sup>ora/ < \*ḍ<sup>h</sup>ora ‘stream, small river’.

one occasion for all five of Bhatibari’s voiced aspirates. It is most persistent in BH for initial \*ḍʱ. Examples from the BH data are:

- [bʱul ; pʱul] ‘error’
- [ḍʱuɬæ ; tʱuɬæ] ‘dust’
- [ḍʱol ; tʱol] ‘drum’
- [ḍʱori ; tsʱori] ‘rain’
- [gʱɔŋʈa ; kʱɔŋʈa] ‘bell’

In Bongaigaon the devoicing goes further, to also affect *non-aspirated* stops in initial position; this change is variable in BN, but has high frequency. Unlike for the devoicing of aspirated stops in Bongaigaon which is socially uniform, this change is probably conditioned by social variables. The uneducated speaker—a rickshaw puller—who recorded the wordlist gave devoiced variants on a majority of occasions, while the educated speaker gave voiced counterparts. Some examples:

- [gai-γoru ; **kai**-γoru] < \*gai-goru ‘cow’
- [**ban**-pani ; **pan**-paŋi] < \*ban-pani ‘flood’

Devoicing of *non-aspirated* stops is also found in the Bhatibari data, but highly infrequently. The geographical range coupled with the relative progress of the change in BN and BH suggest a change in progress, with propagation occurring from Bongaigaon towards Bhatibari, as follows:

	Bhatibari	Bongaigaon
Voiced Aspirated	Variable, minority, persistent	Regular
Voiced Unaspirated	Variable, non-persistent	Variable, majority, persistent

**Table 4-6. Devoicing of initial stops in Bhatibari and Bongaigaon**

Further monitoring of the situation is required.

Looking around the NIA lects, a similar change can be found in some lects discontinuous with KRNB—most notably in the north-west of the sub-continent (e.g. Kashmiri [Koul 2003]), and to the south-east of KRNB in east Bengali dialects (e.g. Dhaka dialect [Pal 1966]). In all these lects, voiced aspirates have been lost from the phonemic inventory through devoicing, sometimes in coordination with deaspiration and the development of tone (Masica 1991: 118-21, 204-5). The geographical distribution of these structurally similar innovations in the extreme north-west and north-east corners of the NIA area prompts Jain & Cardona (2003) to propose contact



with Tibeto-Burman languages as a causal condition for the development of this variation. This explanation would suggest that the devoicing change is not diagnostic of a propagation event because of its ecological non-distinctiveness (cf. 3.4.1.2).

However, the situation among the KRNB lects is different in important respects to the changes described above for other Indo-Aryan lects. In Bongaigaon and Bhatibari it is only in *initial position* that the voiced aspirates are devoiced—therefore there is no general merger between voiced and voiceless aspirates. Furthermore, as yet there is no reduction in the phoneme inventory even in initial position due to the maintenance of breathy-voiced aspiration despite the obstruent element losing its voicing. Lastly, as noted above, the devoicing of initial voiced aspirates in BN (and BH to a lesser extent) has been extended to the *unaspirated* voiced stops. For example, in BN we find regular \*b<sup>h</sup> > /p<sup>h</sup>/ word-initially, and variable but frequent \*b > /p/ word-initially. Thus, while there is partial similarity with other innovations in Indo-Aryan, the conditioning is distinct enough from those cases to obviate any obvious link. On the grounds of this distinct linguistic conditioning, and in particular the development of a phonemic contrast based primarily on *aspiration quality*—which is unique to NIA—the initial devoicing of aspirated obstruents in BN (and BH variably) is diagnostic of a propagation event. The innovations are summarised as follows:

[PI 1.] Devoicing of the obstruent element (not the aspiration) of initial voiced aspirates {regular in BN, variable in BH}. Diagnostic.

[PI 2.] Devoicing of initial obstruents {variable in BN}. Non-diagnostic.

The sociohistorical conditioning of [PI 1.], involving BN (and BH peripherally) is investigated in Chapter 7.

#### **4.3.2. Devoicing of word-final stops**

The correspondences for word-final stops are brought together in Table 4-7 for ease of drawing comparisons across phonemes (reproduced from Tables 4-3 and 4-4).

*Phoneme	*b	*b <sup>fi</sup>	*d	*d <sup>fi</sup>	*ɟ	*g	*g <sup>fi</sup>
KS	b	b	d	d	ɟ	g	g
RL	b;p	β	d;t	d	ɟ	g	g
MH	b;p	b	d;t	d	ɟ	g;k	g
TH	b;p	β	d	d;t	tʃ	g	g
SH	p	φ	t	t	s	k	k
RP	b;p	β	d	d	ɟ	g	g
BH	b;p	φ	t	t	s	k	k
BN	b	φ	t	t <sup>h</sup>	s	g;k	x

**Table 4-7. Summary of correspondences for word-final voiced stops**

In RL, MH, TH and RP there are occasional instances of devoicing of final \*b. The same pattern is noted by Chatterji for SCB and SCA: “Persian words in some cases show [p] for [b]” (1926: 446). Indeed, the words that show \*b > p in RL, MH, TH and RP are of Persian or Arabic origin: \*ɟɔwab ‘answer’ (Arabic), \*tʃɔrɔb ‘fat (grease)’ (Persian), \*k<sup>h</sup>arab ‘evil, wicked’ (Arabic).<sup>39</sup> The data in Pattanayak (1966) show occasional final devoicing of \*b in Perso-Arabic words for Oriya also (e.g. /k<sup>h</sup>ɔrapɔ/ ‘bad, evil’, with a later suffixed -ɔ). Note that \*mɔtlob ‘meaning’ (Arabic origin) and \*gɔrib ‘poor’ (also Arabic origin) occur without final devoicing in RL or MH, and in the case of \*gɔrib in BH also. Final voicing in \*mɔtlob suggests a recent borrowing of this item into RL and KS from Hindi; the etymon is not found elsewhere in the KRNB data, and these two lects exhibit the greatest Hindi influence of the eight surveyed here (cf. \*ɔ unrounding, and changes in nominal morphology). In the case of \*gɔrib, the etymon is found elsewhere in KRNB and cannot be a recent borrowing in the same class as \*mɔtlob. A recent re-borrowing of \*gɔrib via Hindi /gɔrib/ is sociohistorically plausible in the case of RL and KS, but not in the case of BH. No further conclusion can be reached at present on the irregularity of final \*b > /b/ in BH /gorib/ ‘poor’.

Is this final devoicing of \*b in Perso-Arabic words diagnostic of a propagation event and an erstwhile PN? Possibly, but a proper reconstruction of the scope of propagation and its chronology requires examination of Perso-Arabic loanwords in Oriya, Bangla, Asamiya, and further afield in NIA, and is thus beyond the scope of this study.

<sup>39</sup> The RP data has one exception, retaining the voicing in \*tʃɔrɔb ‘grease’.

The evidence for devoicing of final \*ḍ and \*g in MH, and \*ḍ<sup>h</sup> in TH, is scanty (one etymon for each) and non-conclusive.

The most persistent final devoicing is across SH, BH and BN. The relevant collected data are presented in Table 4-8, with glosses in the footer.

	Sh		Bh		Bn	
	-vc	+vc	-vc	+vc	-vc	+vc
b	zowap, <sup>40</sup> zip, b <sup>h</sup> ap, gorip	-	ḍṵp, ḍṵwap	gorib, pub	-	pub, gorib
b <sup>h</sup>	loḥ	-	loḥ	-	loḥ	-
ḍ	nṵnṵṭ, oṭ, mṵṭ, ṣṵoṭ, bipṵṭ	-	nṵnṵṭ, noṭ, mṵṭ, k <sup>h</sup> ṛṭ	-	howat, rot, hoat, bipṵṭ, amot	hrṵḍ ; rṵḍ
ḍ <sup>h</sup>	ḍṵṭ	-	ḍṵṭ	-	ḍṵṭ <sup>h</sup>	-
ḍṣ	ṣṵṣṵs zahaṭ, ṣṵḃṵs, ṣṵns, moxṵs	-	ḍṵahas, ṣṵs, ḍṵomos	-	sahas, las, hṵḥṵs, ṭes	-
g	rak	-	b <sup>h</sup> ok, nṵk, rak, ṣṵouk	-	rag ; rak t <sup>h</sup> ṵg ; t <sup>h</sup> ṵk	-
g <sup>h</sup>	mek, bak, mak	-	mek, bak, mak	-	mex, bax, max	-
Total <sup>41</sup>	20	0	18	2	16	4
% devoiced	100%		90%		80%	

**Table 4-8. Analysis of final devoicing in SH, BH and BN<sup>42</sup>**

Final devoicing of \*b > p is not found in the data for BN, but the Perso-Arabic words generally devoiced in Eastern Indo-Aryan (see above) are also notably absent from those data. A larger or targeted wordlist collection at BN may yet provide some instances of final \*b > p devoicing in lexemes of Perso-Arabic origin.

<sup>40</sup> /zowap; ḍṵwap/ ‘answer’, /zip/ ‘life’, /ṭap/ ‘anger’, /b<sup>h</sup>ap/ ‘love’, /gorip, gorib/ ‘poor’, /pub/ ‘east’, /ḍṵp/ ‘barley’, /loḥ/ ‘temptation’, /nṵnṵṭ/ ‘husband’s elder sister’, /oṭ, nouṭ, rouṭ/ ‘sunshine’, /mṵṭ/ ‘alcohol’, /ṣṵoṭ/ ‘taste’, /bipṵṭ/ ‘danger’, /k<sup>h</sup>ṛṭ/ ‘sorrow’, /amot/ ‘enjoy’, /hrṵḍ; rṵḍ/ ‘lake’, /ḍṵṭ, ḍṵṭ<sup>h</sup>/ ‘milk’, /ṣṵṣṵs/ ‘sun’, /zahaṭ, ḍṵahas, sahas/ ‘ship’, /ṣṵḃṵs/ ‘green’, /ṣṵns, ṣṵs/ ‘evening’, /moxṵs/ ‘brain’, /ḍṵomos/ ‘twin’, /las/ ‘shame’, /hṵḥṵs/ ‘ease’, /ṭes/ ‘loud’, /rak; rag/ ‘anger’, /b<sup>h</sup>ok/ ‘pain’, /nṵk/ ‘vein’, /ṣṵouk/ ‘all’, /t<sup>h</sup>ṵg; t<sup>h</sup>ṵk/ ‘lie (untruth)’, /mek; mex/ ‘cloud’, /bak; bax/ ‘tiger’, /mak; max/ ‘month of the Hindu calendar’.

<sup>41</sup> The total is based on 1 point for regular occurrences and .5 for variable occurrences (only relevant to the \*g in BN).

<sup>42</sup> The etymon has not been counted if the final voicing value is possibly the result of voicing assimilation with the initial consonant of a subsequent word. For example in Bhatibari: /k<sup>h</sup>ub b<sup>h</sup>al/ ‘very good’, but /k<sup>h</sup>up ṣṵroṭ/ ‘very beautiful’.

For SH, BH, and BN, final devoicing is regular for \*ḍ, \*ḍ<sup>h</sup>, \*ḍʒ, \*b<sup>h</sup>, \*g<sup>h</sup>.<sup>43</sup> The aspirated affricate \*ḍʒ<sup>h</sup> does not occur in word-final position. Devoicing of final \*g is also found in these three lects, but less conclusively given the variation in BN and only one reflex of final \*g in SH. Final devoicing in SH, BH and BN does not closely parallel the initial devoicing changes (4.3.1); final devoicing is largely uniform across SH, BH and BN, while initial devoicing is advanced in BN, in progress in BH and not present (to any significant degree) in SH. Thus final devoicing and initial devoicing are here analysed as distinct and unrelated changes.

Final devoicing of stops is not common in Indo-Aryan. The distinctiveness of this change in the NIA context suggests it is diagnostic of a propagation event.

[PI 3.] \*ḍ, \*ḍ<sup>h</sup>, \*ḍʒ, \*b<sup>h</sup>, \*g<sup>h</sup> > [-voice] / \_# {SH, BH, BN}. (after rhoticisation).  
Diagnostic.

Two further changes are not diagnostic of propagation events:

[PI 4.] \*b > [-voice] / \_# {SH}. Non-diagnostic.

This change overlaps in linguistic conditioning with the devoicing of final \*b in Perso-Arabic words (see above), and its diagnostic value is unclear.

[PI 5.] \*g > [-voice] / \_# {SH, BH, variably in BN}. Non-diagnostic.

This change may be diagnostic of a propagation event (perhaps even to be incorporated within [PI 3.]), but the data available to this study include only one reflex of final \*g in SH, and variability of reflex in BN, and hence are not conclusive.

The absence of \*ḍ from this set of final devoiced consonants suggests that \*ḍ had already undergone rhoticisation > [ɽ] > /r/ (cf. 4.3.8) before these final devoicing changes were propagated. That is, rhoticisation preceded final devoicing.

### 4.3.3. Palatalisation and labialisation of consonants

Palatalisation and labialisation of consonants are connected changes which occur in central KRNB lects. This use of the term ‘palatalisation’ should not be confused with the MIA process of the same name, by which *ty, thy* > *cc, cch* (Bubenik 2003: 218).

---

<sup>43</sup> Excluding /hrōd ; rōd/ ‘lake’ from the BN data as a *Tatsama* (recent Sanskrit loanword).

In Rangpur and Bhatibari, a consonant occurring between a high vowel and the low vowel /a/ is palatalised: \*C > C<sup>j</sup> / V[+high]\_ a {RP, BH}.

In Shalkumar the change is slightly different: palatalisation occurs after /i/ and labialisation after /u/, both still before /a/. That is, \*C > C<sup>j</sup> / i \_ a {SH}, and \*C > C<sup>w</sup> / u \_ a {SH}. These changes are more variable in SH than in BH and RP, though nonetheless persistent in SH.

	*ɟ > [ɟ <sup>j</sup> ] / i _ a	*p > [p <sup>w</sup> ] (> [p <sup>j</sup> ]) / u _ a
	‘wet, damp’	‘silver’
	*b <sup>h</sup> iɟa	*rupa
KS	b <sup>h</sup> iɟa	-
RL	b <sup>h</sup> iɟal	rupa
MH	b <sup>h</sup> iɟa	rupa
TH	b <sup>h</sup> iɟa	rupa ; upa
RP	b <sup>h</sup> iɟ <sup>j</sup> a	up <sup>j</sup> æ
SH	b <sup>h</sup> iɟ <sup>j</sup> æ	up <sup>w</sup> a
BH	b <sup>h</sup> iɟ <sup>j</sup> æ	rup <sup>j</sup> æ
BN	p <sup>h</sup> iza	rupa

**Table 4-9. Examples of labialisation and palatalisation across KRNB lects**

The palatalised feature after high-front vowel /i/ is linguistically natural, though apparently unique within Indo-Aryan to this area. Palatalisation after the *high-back* vowel /u/, as in RP and BH, is less expected linguistically than the *labialisation* attested for SH. Accordingly, the more linguistically plausible explanation is of two original changes: palatalisation of consonants /i\_a/, and labialisation of consonants /u\_a/. Subsequently the palatalised feature was generalised in these two environments in RP and BH, supplanting the labialised feature. This account, which invokes linguistic seriation based on *plausible* diachronic dependency (cf. 3.4.3.1) implies three phonological changes:

[PI 6.] \*C > C<sup>j</sup> / i \_ a {SH, RP, BH} (co-occurrent with [PI 7.]). Diagnostic.

[PI 7.] \*C > \*C<sup>w</sup> / u \_ a {SH, RP, BH} (co-occurrent with [PI 6.]). Diagnostic.

[PI 8.] \*C<sup>w</sup> > C<sup>j</sup> {RP, BH} (after [PI 7.]). Diagnostic.

The palatalisation and labialisation changes described above are innovations which are uncommon among NIA lects. The conditioning environments are also relatively complex, and the range of propagation is contiguous and hence sociohistorically plausible as a PE. Accordingly, these changes constitute diagnostic evidence for reconstructing propagation events. A more detailed account of the ranges of these innovations is given in section 7.4.1.1 where chronology of the changes is reconstructed by sociohistorical sequencing.

#### 4.3.4. Deaspiration of medial consonants

Deaspiration in non-initial position is common in Bengali (Chatterji 1926: 442), and in some of the KRNB lects. However, the discussion here of KRNB deaspiration will be with some limitations. The environments considered here exclude final position because the reconstruction is based on wordlists, without previous phonological study of most of the lects. The problem presents itself then of distinguishing in wordlist data between phonemic final *aspiration* and phonetic final *stop release*—be it aspirated or not. The presence or absence of final aspiration in KRNB lects is therefore left for further research. Whatever the result, it is unlikely to be diagnostic of a unified propagation event, because final deaspiration is found in a number of NIA lects, most pertinently Bengali and Nepali. The contact through diglossia with both these languages in different KRNB areas increases the possibility of independent propagation, negating the likelihood of an integrated KRNB propagation event in this case.

However, the deaspiration of *medial* consonants is not so common in NIA—in particular it is not found in Nepali—making it more useful for diagnosing PEs (as well as being more reliably analysed from the wordlist data than final deaspiration). Medial deaspiration was found by Pattanayak (1966: 62ff.) to be of historical importance for reconstructing “\*AB”—a putative common stage in the Asamiya-Bangla linguistic histories. We will return to this broader picture after considering the prevalence of the change in our 8 KRNB lects. The relevant correspondences from Tables 4-3 to 4-5 are reproduced below in Table 4-10, but without the footnotes to

specify more detailed environmental conditioning. Medial \*h is also included in Table 4-10, alongside aspirated consonants, for reasons given below.

*	*p <sup>h</sup>	*b <sup>h</sup>	*t <sup>h</sup>	*d <sup>h</sup>	*t <sup>h</sup>	*d <sup>h</sup>	*ʈ <sup>h</sup>	*ʈ <sup>h</sup>	*k <sup>h</sup>	*g <sup>h</sup>	*l <sup>h</sup>	*n <sup>h</sup>	*m <sup>h</sup>	*h
KS	ϕ	β	t <sup>h</sup>	d <sup>h</sup>	t <sup>h</sup>	r <sup>h</sup>	-	tʃ <sup>h</sup>	k <sup>h</sup> ;x	g <sup>h</sup>	l <sup>h</sup>	n <sup>h</sup>	m <sup>h</sup>	/h
RL	ϕ	β <sup>h</sup>	t <sup>h</sup>	d <sup>h</sup>	t <sup>h</sup>	t <sup>h</sup> ;r <sup>h</sup>	-	tʃ <sup>h</sup>	k <sup>h</sup>	g <sup>h</sup>	l <sup>h</sup>	n <sup>h</sup>	m <sup>h</sup>	h
MH	ϕ	β <sup>h</sup>	t <sup>h</sup>	d <sup>h</sup>	t <sup>h</sup>	d <sup>h</sup> ;r <sup>h</sup>	-	tʃ <sup>h</sup>	x	g <sup>h</sup>	l <sup>h</sup>	n <sup>h</sup>	m <sup>h</sup>	h
TH	-	b <sup>h</sup> β <sup>h</sup>	t <sup>h</sup>	d <sup>h</sup>	t <sup>h</sup>	r <sup>h</sup>	ʈ <sup>h</sup>	tʃ <sup>h</sup>	x	g <sup>h</sup>	l <sup>h</sup>	-	m <sup>h</sup>	h
SH	-	β	t <sup>h</sup>	d	t <sup>h</sup>	ɽ	z	s	x	ɣ <sup>h</sup>	l l;ʎ	-	m	/
RP	- ϕ <sup>j</sup>	- b <sup>j</sup>	t -	d d <sup>j</sup>	t t <sup>j</sup>	ɽ;r r <sup>j</sup>	ʈ -	s s <sup>j</sup>	k k <sup>j</sup>	g -	l ʎ;p <sup>j</sup>	n -	m	/- -
BH	-	β;b b <sup>j</sup>	t -	d d <sup>j</sup>	t t <sup>j</sup>	ɽ;r r <sup>j</sup>	ʈ -	s s <sup>j</sup>	x k <sup>h</sup>	g;ɣ -	l p <sup>j</sup>	n -	m	/- -
BN	-	β <sup>h</sup>	t <sup>h</sup>	d <sup>h</sup>	t <sup>h</sup>	r	z	s	x	ɣ <sup>h</sup>	l	n	m	h /

**Table 4-10. Summary of reconstructed medial aspirates and their inter-vocalic reflexes**

The reconstruction of proto-phonemes includes inherited aspirated sonorants \*l<sup>h</sup>, \*n<sup>h</sup> and \*m<sup>h</sup> (see 4.3.10 for the argument), as well as the medially-rhoticised \*d<sup>h</sup> (cf. 4.3.8). In inter-vocalic position, aspiration is lost from these four proto-phonemes, as well as from the affricate \*ʈ<sup>h</sup>, in Shalkumar, Rangpur, Bhatibari and Bongaigaon, but maintained in the other four lects. These five phonemes form a natural phonological class: voiced continuants.

The four lects with regular deaspiration of voiced continuants *also lose medial \*h in regular or semi-regular fashion*. Most of the irregularity in correspondences is found in the Tatsama vocabulary (NIA borrowings from Sanskrit), while in Tadbhavas the correspondences show mostly regular loss of medial \*h.<sup>44</sup> Kishanganj also loses medial \*h, but it is phonologically restricted to the environment #CV\_V#. <sup>45</sup> For example: (from KS) /gu~i/ < \*guhi ‘crocodile’, /lua/ < \*lowha ‘steel’; as against /pəhar/ < \*pahaḍ ‘mountain’, /behan/ < \*bihaṇḍ ‘dawn’. As discussed in section 4.2,

<sup>44</sup> Though BN has some unexplained irregularity, see page 76 above, footnote 37.

<sup>45</sup> /gʌm/ < \*gohom ‘wheat’ is an example not covered by the generalisation expressed here.

/h/ (and we may presume also \*h) refers to the phonemic characteristic of breathy voicing accompanied by other phonetic features determined by the adjacent vowels.

The loss of aspiration from voiced affricates, nasals, laterals and rhotics in medial position is phonologically related to the deletion of medial \*h. In all cases, breathy voicing in continuant consonants is changed to modal voicing.

[PI 9.] \*C[+breathy voice, +continuant] > [+modal voice] / V\_ {SH, RP, BH, BN, Oriya, Asamiya, Bangla} ([tentatively] after C16<sup>th</sup>, after rhoticisation).  
Diagnostic.

This change is diagnostic of a propagation event based on ecological distinctiveness; as noted above, deaspiration is not common in Indo-Aryan outside of the eastern NIA lects.

As this change includes lects with a written tradition—Bangla, Asamiya and Oriya—the reconstruction of chronology may also be informed by historical textual evidence. In the historical literature of Asamiya we find that “-h- remained in [Early Asamiya] generally to be lost in modern Assamese” (Kakati 1962: 168). Similarly, “In modern Oriyā, at least in the standard colloquial and northern dialects, an intervocalic -h- is elided as in Bengali. But in early Oriyā, this -h- is seen to be preserved in many instances” (P. C. Majumdar 1970: xxxiii). Medial \*l<sup>fi</sup>, \*m<sup>fi</sup> and \*n<sup>fi</sup> are also deaspirated in these same lects. Oriya is unlike the others in one respect: \*d<sup>fi</sup> does not merge with \*ḍ in medial position, but the two remain as distinct phonemes. Chatterji describes a general “tendency to disaspiration” in Bengali, Asamiya and Oriya:

In the Eastern (Māgadhī) group of speeches disaspiration of intervocal and final stops is more or less common at the present day, but ... not more than 300 years old. (Chatterji 1926: 159)

Confusingly, this statement is not supported by Pattanayak’s (1966) data for SCB, SCA or SCO. Pattanayak’s data for Bengali include cases of non-initial deaspiration of \*p<sup>h</sup>, \*t<sup>h</sup>, \*tʃ<sup>h</sup>, \*k<sup>h</sup>, but in all cases the deaspirated stops are word-*final*, not medial, contrary to Chatterji’s general statement. Pattanayak’s data include only one piece of evidence in support of medial deaspiration of \*t<sup>h</sup>. There are three Bengali words in his list which inherit medial \*t<sup>h</sup>: /paṭ<sup>h</sup>ano/ < \*pṛṭ<sup>h</sup>- ‘send’; /oṭ<sup>h</sup>a/ < \*uṭ<sup>h</sup>- ‘raise’; and



/laŋi/ < \*laŋ<sup>h</sup>i ‘stick’.<sup>46</sup> Only the last of the three has undergone deaspiration. We may conclude that the merger of medial \*t<sup>h</sup> and \*t is not a regular feature of SCB, unless Pattanayak’s data are at this point reflecting an archaic orthography rather than common speech.

While there is conflicting evidence for a general deaspiration change (along the lines of [PI 10.] below) in Bangla linguistic history, the loss of aspiration in voiced continuants only (along the lines of [PI 9.]) is conclusively established for Bangla, Oriya, Asamiya and some of the KRNB lects. Chatterji writes regarding the phonological history of \*d<sup>h</sup> (rhoticised as /t<sup>h</sup>/) in Bangla:

It seems in the early 16<sup>th</sup> century, voiced aspirated forms like পড় «pārḥ-» read ... বাঢ়ে «bārḥ» *increases* ... still obtained, although it is likely that the aspiration had become feeble. The voiced aspirates seem to have preserved the aspiration (in the West Central dialect [i.e. SCB—MT]) longer than the unvoiced ones, in both final and intervocal positions (Chatterji 1926: 442).

If the loss of aspiration described here for \*d<sup>h</sup> is representative of a loss of aspiration in voiced continuants generally, then Chatterji’s diagnosis of a post-16<sup>th</sup> century chronology applies to [PI 9.]. This chronology will be applied “tentatively” to this change, with further confirmation sought in Chapter 7 from sociohistorical sequencing.

A more general deaspiration process has occurred in Rangpur and Bhatibari, as shown by the rows of shading in Table 4-10. In these lects, no aspiration occurs in medial position.

[PI 10.]Loss of aspiration in all inter-vocalic consonants {RP, BH, ?Bangla, ?Oriya}.  
Diagnostic.

In some cases, the merger with inherited voiceless consonants is not entirely concluded—obscured by variable fricativisation in the bilabial and velar series (cf. 4.3.5). A general deaspiration occurs nonetheless, and is diagnostic of a propagation event on the basis of ecological distinctiveness (as in the case of [PI 9.] above).

---

<sup>46</sup> A further Bangla form given in Pattanayak’s study, /aŋji/ ‘ring’ may also be relevant, but he is unable to give a proto-form.

### 4.3.5. Post-vocalic fricativisation

As alluded to in 4.3.4, bilabial and velar stops in medial position are frequently fricativised in KRNB. This generally allophonic process resembles the process of lenition which took place in MIA: stops became fricatives, then went on to be lost altogether in several Apabhramśa dialects (Bubenik 2003: 219).

The generalised correspondences relevant to post-vocalic fricativisation in KRNB are given in Table 4-11 for the labial, velar and “palatal” (i.e. laminal) series of stops and affricates (reproduced from Tables 4-3 and 4-4).

		Bilabial				Lamino- (post)alveolar				Velar			
*		*b	*b <sup>h</sup>	*p	*p <sup>h</sup>	*ɟ	*ɟ <sup>h</sup>	*tʃ	*tʃ <sup>h</sup>	*g	*g <sup>h</sup>	*k	*k <sup>h</sup>
V_V	Ks	w	β	p	ϕ	ɟ	-	tʃ	tʃ <sup>h</sup>	g	g <sup>h</sup>	k	k <sup>h</sup> ,x
	Rl	w	β <sup>h</sup>	p	ϕ	z	-	tʃ	tʃ <sup>h</sup> ;s	g	g <sup>h</sup>	k	k <sup>h</sup>
	Mh	β	β <sup>h</sup>	p	ϕ	z	-	tʃ	tʃ <sup>h</sup>	g	g <sup>h</sup>	k	x
	Th	b β	b <sup>h</sup> β <sup>h</sup>	p	-	ɟ	ɟ <sup>h</sup>	tʃ	tʃ <sup>h</sup>	g; γ	g <sup>h</sup>	k	x
	Sh	β	β	p;ϕ p <sup>w</sup>	-	z z <sup>j</sup>	z	s	s	γ	γ <sup>h</sup>	x k <sup>w</sup> k <sup>j</sup>	x -
	Rp	b b <sup>j</sup>	- b <sup>j</sup>	p;ϕ p <sup>j</sup>	- ϕ <sup>j</sup>	ɟ ɟ <sup>j</sup>	ɟ	ts;s ts;s <sup>j</sup>	s s <sup>j</sup>	g -	g -	k k <sup>j</sup>	k k <sup>j</sup>
	Bh	β β <sup>j</sup>	β;b β <sup>j</sup>	p p <sup>j</sup> p <sup>j</sup> ;p <sup>w</sup>	-	ɟ ɟ <sup>j</sup>	ɟ	ts ts <sup>j</sup>	s s <sup>j</sup>	g;γ -	g;γ -	k k <sup>j</sup>	x k <sup>hj</sup>
	Bn	b w	β <sup>h</sup>	p	-	z	z	s	s	γ	γ <sup>h</sup>	k	x
#	Ks	b	b	p	ϕ	ɟ		tʃ	tʃ	g	g	k	k
	Rl	b p	β	p	ϕ	ɟ		tʃ	tʃ <sup>h</sup>	g	g	k	k <sup>h</sup>
	Mh	b p	b	p	ϕ	ɟ		tʃ	tʃ <sup>h</sup>	g;k	g	k	k <sup>h</sup>
	Th	b p	β	p	ϕ	tʃ		tʃ	tʃ;tʃ <sup>h</sup>	g	g	k	k <sup>h</sup>
	Sh	p	ϕ	p	ϕ	s		s	s	k	k	k	k
	Rp	b p	β	p	p	ɟ		s	ts;s	g	g	k	k
	Bh	b p	ϕ	p	ϕ;p	s		s	ts <sup>h</sup> ;s	k	k	k	k
	Bn	b	ϕ	p	ϕ;p	s		s	s	g;k	x	k	x

Table 4-11. Summary of correspondences relevant to post-vocalic fricativisation

Most commonly fricativised in medial position are the KRNB proto-phonemes \*p<sup>h</sup>, \*b, \*b<sup>h</sup> and \*k<sup>h</sup>. These are fricativised across all of KRNB—with the exception of RP, and regularity of fricativisation is absent also in BH. These two lects are where inter-vocalic deaspiration and palatalisation are most regular (4.3.3-4.3.4). It seems likely that these other processes have interfered with the efficacy of fricativisation in RP and BH. Next most commonly fricativised in medial position are \*tʃ<sup>h</sup>, \*dʒ, \*g, \*g<sup>h</sup> and \*tʃ. In general, fricativisation is resisted for \*p and \*k, with the exception of Shalkumar—the KRNB lect with most extensive medial fricativisation—which has fricativised reflexes of all these proto-phonemes.<sup>47</sup>

The incidence of fricativisation is somewhat different in final position as opposed to the inter-vocalic position examined above. Word finally, fricativisation is standard for \*p<sup>h</sup> and common for \*b<sup>h</sup>, but not for \*k<sup>h</sup>. Otherwise, word-final fricativisation is restricted to the laminals in SH, RP, BH, BN, and to the velars in BN.

Besides KRNB, intervocalic fricativisation of labials and velars is present in SCB (Chatterji 1926, Ferguson and Chowdhury 1960) and SCA, though this process is mainly mentioned in connection with aspirate consonants. For example: “Intervocally, the aspirated stops [in SCA] are more lenis than the unaspirated ones” (Goswami & Tamuli 2003: 406). Given the presence of this fricativisation process in Bangla, Asamiya and KRNB the question arises whether it traces its heritage back to an early eastern Magadhan stage. Chatterji seems to suggest so when he proposes fricativised allophones of /g, d, b/ as part of the phonology of Māgadhi Apabhramśa (1926: 258). However, elsewhere he suggests that intervocalic spirant pronunciation of /p<sup>h</sup>, b<sup>h</sup>/ is as recent as the early 20<sup>th</sup> century (*ibid.*: 442-443). At this stage both the chronology, and the diagnostic value, of these intervocalic fricative allophones is far from clear. Further determination of this issue is left to later studies. Such studies should also consider whether there is a possible Tibeto-Burman substratum to this phenomenon, noting its presence in Asamiya, eastern Bangla and KRNB.

---

<sup>47</sup> \*dʒ<sup>h</sup> occurs in medial position in only one etymon in the reconstruction: \*maɖʒ<sup>h</sup>- ‘between, middle’.

#### 4.3.6. Merger of dental and post-alveolar apical stops

The merger of apical stops—dentals and postalveolars—is a distinctive feature of Asamiya (Baruah & Masica 2001, Goswami & Tamuli 2003), and the same merger is found in the Bongaigaon data collected for this study.<sup>48</sup> This is an unexpected result. In his study of the local NIA lects of the west of Assam, D.N. Das (1990) describes a fully maintained “retroflex”/dental distinction for the lects of old Goalpara district, which includes Bongaigaon. He is not alone in this statement (cf. Goswami 1970, 1974). However, the data collected for this study contradict their statements. The two series—dental and apico-postalveolar—are merged into an alveolar series in the data collected in Bongaigaon as part of this study.<sup>49</sup> Very occasionally there is a postalveolar or dental articulation but in those cases the distinction is often not correctly reinstated. That is, there are cases of an inherited dental articulation being variably pronounced as a postalveolar, and vice-versa.

Assuming D.N. Das’ (1990) and Goswami’s (1970, 1974) descriptions to be accurate—a good assumption given their native ears—the merger of dental and apico-postalveolar series is a recent change. It will be worth ascertaining whether Das collected the data for his Ph.D. thesis some time before 1990, and also whether the data represent a conservative phonology of older speakers. Alternatively, there may exist different sub-dialects within the Bongaigaon area, some of which are more conservative and retain the dental/“retroflex” distinction, others of which have merged the two series as described here. Given the differences between previous descriptions and the description outlined here, the dental/“retroflex” merger may have occurred in certain BN lects as recently as the 20<sup>th</sup> century.

However, in SCA it is considerably older than this. Chatterji notes that in Asamiya written records from the 15<sup>th</sup> Century “Assamese traits are occasionally noticeable: *e.g.* the confusion between dentals and cerebrals [i.e. postalveolar apicals—MT]” (Chatterji 1926: 108). On this evidence, the chronology of [PI 11.] for SCA may be

---

<sup>48</sup> It is usually claimed to be unique in Indo-Aryan to the Assam region, however Ed Boehm reports the merger also for one of the Tharu lects (pers. comm.).

<sup>49</sup> For example, /pat/ < \*paṭ- ‘leaf’, /pet/ < \*peṭ ‘stomach’, /tarka/ < \*ṭaṭka ‘fresh’, /taratari/ < \*ṭara-tari ‘quick, swift’.

dated at latest to the 15<sup>th</sup> Century, and plausibly earlier still. The propagation of the same change into BN, on the other hand, is a much more recent event.

[PI 11.] Apical series > alveolar articulation {BN and Asamiya} (during or before C15 in Asamiya, C20 in BN). Diagnostic of contact relations with SCA through diglossia.

This change has entered BN as a result of a diglossia with SCA.

#### 4.3.7. Merger of dental and post-alveolar nasals and laterals

From MIA and earlier NIA literature, as well as comparative data from modern NIA lects (such as Marathi and Oriya), we know that a similar distinction to that described above—between dental and postalveolar—pertained previously for nasals and laterals. None of the present-day KRNB lects maintain this inherited distinction between /n/ and /ŋ/, /l/ and /ɭ/. Pertinent facts from the historical textual record are summarised as follows (from Chatterji 1926: 523 ff., 538ff.):

- In Late Middle Bengali texts (1500-1800 AD) there is always confusion between ण (postalveolar nasal symbol) and न (dental/alveolar nasal symbol),<sup>50</sup>
- There is some confusion between these two symbols in the *Sri Krishna Kirtana* (1300-1500) and the *Caryapadas* (earlier still). However, the incidence of ण (postalveolar nasal symbol) is much higher, and confusion with न (dental/alveolar nasal symbol) considerably lesser, during the early Middle Bangla period than in late Middle Bangla;
- Chatterji concludes that “It seems likely that Bengali possessed [the alveolar/postalveolar distinction in nasals] in the early Middle Bengali period” (*ibid.*), i.e. 1300-1500 AD. “From the beginning of the 15<sup>th</sup> century, probably, it ceased to exist as a cerebral” (*ibid.*);
- Modern Oriya /ŋ/ and /ɭ/ correspond to OIA medial /-ŋ-, -n-/ and /-ɭ-, -l-/ respectively. The postalveolar retraction of OIA single (i.e. not clustered) /n/ and /l/ is a MIA change reported by the Prakrit grammarians. However, during late MIA (Apabhramsa) the innovative postalveolar nasal and lateral returned to an

---

<sup>50</sup> There being no distinct symbol for a post-alveolar lateral in the Bangla-Asamiya script, it is harder to date the loss of an alveolar/post-alveolar distinction from textual evidence for laterals than for nasals.

alveolar articulation in initial position. Since late MIA therefore, an alveolar/postalveolar distinction has been maintained (if at all) in medial position only. Although “Modern Oṛiyā is pretty definite [in maintaining this distinction], Middle Oṛiyā spelling, as in the 15<sup>th</sup> and 16<sup>th</sup> century inscriptions (see p.107), is not fixed in this matter” (*ibid.*);

- This loss of apical distinctions among nasals and laterals is not unique to Bangla and Asamiya, but also found in the Bihari and Hindi lects. The maintenance of the dental/postalveolar distinction is attested to some degree by the early Maithili works including Vidāpati’s Padāvalī (Jha 1985 [1958]: 183). Vidāpati lived from the end of the 14<sup>th</sup> to the beginning of the 15<sup>th</sup> century AD (Yadav 2003), which suggests that the loss of this distinction in the Maithili area occurred sometime during or after the 15<sup>th</sup> century, as was suggested for Bengali above.

Given this evidence from historical texts, I tentatively conclude that the alveolarisation of nasals and laterals in Bangla and Maithili became regularised in these lects only after the 15<sup>th</sup> century AD. If this change occurred in KRNB lects at a similar or slightly later time to Maithili and Bangla, then the postalveolar nasal and lateral would have been present (at least variably) during the proto-Kamta stage of development, 1250-1550 AD (cf. 7.3.1).

[PI 12.]\*ŋ, \*ɭ > /n, l/ {KRNB, Bangla, Asamiya, Maithili, Hindi, etc.} (15<sup>th</sup> century or later). Diagnostic value unknown.

Whether or not the propagation of this structural change was interconnected between early Bangla, Asamiya, KRNB, Hindi, Bihari, etc. is a matter for a broader reconstruction (though cf. section 7.4.4).

In order that reconstruction of the proto-Kamta lexicon be as realistic as possible, nasal and lateral postalveolars are included in the set of proto-phonemes in Table 4-21. Nasal and lateral postalveolars are also included in the lexical reconstructions in Appendix A based on the following criterion: wherever a reconstructed nasal or lateral corresponds with Oriya /ŋ/ and /ɭ/ (which maintain the earlier NIA distinction), we can assume that the proto-Kamta phoneme likewise had postalveolar articulation.

#### 4.3.8. Rhoticisation

Rhoticisation of post-vocalic \*d̪ and \*d̪ʱ, while innovative, is quite widely distributed across NIA. Masica states: “In much of NIA, MIA -d̪ ... became, at least allophonically, [-ɽ-]” (1991: 194, here ɽ would seem to represent a postalveolar or retroflex tap [ɽ,ɽ]). He continues: “In the Bihari and Eastern (and even some Western) Hindi dialects, Nepali, Assamese, and East Bengali dialects (and partly in Kashmiri also), this [-ɽ-] has merged, no longer allophonically, with /r/”. The widespread range of this rhoticisation and alveolarisation in Eastern and Midlands NIA, as well as Nepali, complicates the reconstruction of PEs. The changes fail the diagnostic of ecological distinctiveness, and with no great complexity to commend themselves, the rhoticisation (and consequent alveolarisation) change is not diagnostic of an interconnected propagation event.

[PI 13.] \*d̪, \*d̪ʱ (> \*[r], \*[rʱ]) > /r/, /rʱ/ / V\_ {Bihari lects, several KRNB lects, Asamiya, Nepali, some Bangla lects, some Hindi lects}. Non-diagnostic.

Some relative chronology for rhoticisation in KRNB can be established based on linguistic and textual seriation. However, given that we cannot reconstruct unified propagation events for rhoticisation, such sequencing is of little use in an account of linguistic history. Rhoticisation in KRNB must have preceded changes in *final voicing* ([PI 3.]-[PI 5.]), for otherwise the devoicing change would bleed the rhoticisation, and the word final reflex of \*d̪ would be /t̪/ (which it is not). Secondly, rhoticisation must have preceded the merger of dental and postalveolar apical stops, because the alveolarisation change would bleed rhoticisation. The alveolarisation of apical stops is reconstructed above as [PI 11.] with chronology “during or before C15 in Asamiya, C20 for BN”. Thirdly, rhoticisation—by turning \*d̪ʱ into a continuant—feeds the deaspiration of continuants by [PI 9.] in SH and BN and therefore rhoticisation must have preceded [PI 9.]. That deaspiration change was reconstructed as prior to fricativisation of stops, and (tentatively) after C16<sup>th</sup>. However, unless we are able to diagnose the extent of propagation events involving rhoticisation, then this chronology cannot be put to use in reconstructing linguistic history.

#### 4.3.9. The inherited “palatal” (i.e. laminal) series of affricates

The reconstructed KRNB consonants include the typical Indo-Aryan series of obstruents (stops & affricates) at 5 places of articulation: bilabial, dental, apico-postalveolar, lamino-postalveolar (“palatal”) and velar. These series are generally retained, but have undergone quite substantial restructuring in BN. Merger of the dental and postalveolar apical series has already been reconstructed in 4.3.6. In the laminal series of affricates also, changes take place which result in a restructured phonological system for BN.

Of the eight lects examined in this phonological reconstruction, Thakurgaon has the most strongly postalveolar articulation of affricates (e.g. [tʃ]). The series is slightly fronted towards the alveolar ridge in Kishanganj, Rangeli and Mahayespur, and is articulated on the ridge in Rangpur, Shalkumar and Bhatibari (e.g. [ts]). Especially in the central KRNB lects, the precise place of articulation of affricates is socially conditioned with more educated speakers favouring a more postalveolar pronunciation and less educated speakers favouring a more alveolar pronunciation. The situation is somewhat different in Bongaigaon where, similarly to Asamiya, the inherited affricates have regularly become fricatives.

Fronting of affricates is not uncommon in Indo-Aryan, as Masica writes:

There is a tendency in some languages and dialects to pronounce the /c/ as an alveolar (or “dental”) affricate [tʃ], e.g., in Nepali, Eastern and Northern dialects of Bengali (Dacca, Maimansing, Rajshahi), the Lamani and North-western Marwari dialects of Rajasthan, the Kagani dialect of “Northern Lahnda”, Kumauni, and many West Pahari dialects (Masica 1992: 94)

Chatterji suggests in the case of North and East Bengali dialects that contact with Tibeto-Burman languages played a role in the phonetic adjustment of this series (Chatterji 1926: 79). If this is the case, then this innovation fails the second diagnostic of “ecological distinctiveness” (cf. 3.4.1.2), and thus it is not necessary that this change in articulation was propagated from north to east as Chatterji goes on to suggest. Rather, because Tibeto-Burman contact occurs independently in both north and east (as also in the Nepali speaking area), the possibility of independent



development is quite high. Fronting of affricates to alveolar articulation is not, therefore, diagnostic of a propagation event.

#### 4.3.10. The inherited aspirated sonorants

Aspirated sonorants (that is, rhotics, laterals, and nasals involving the coordination of modal and breathy voicing, cf. 4.2) are found sparingly and only in medial position in the four more western lects of this reconstruction: KS, RL, MH and TH. In the other four KRN B lects, as in SCB and SCA, aspiration is regularly lost in this environment by [PI 9.].

Aspirated and unaspirated pairs of stops are the norm throughout Indo-Aryan history, but the same opposition in the laterals and nasals is not as fundamental to the Indo-Aryan consonant system. For the phonemes  $*l^h$ ,  $*m^h$ ,  $*n^h$  to be established as an inherited element of KRN B linguistic history, these phonemes must be found regularly in correspondences which are not explicable as innovations.<sup>51</sup>

Aspirated nasals and laterals formed part of the MIA phonology, as Bubenik writes:

In MIA murmured nasals and the lateral liquid resulted through metathesis from OIA clusters *hm*, *hn*, *hṇ*, *hl*: *brāhmaṇa* ‘brahman’ > [Śaurasenī], [Māgadhī] *bamhaṇa* (Bubenik 2003: 206).

Though these phonemes are established for MIA, it remains to be determined that they were not lost in late MIA, with the modern aspirated nasals and lateral resulting by local innovations. This can be demonstrated by examining the aspirated correspondences in conjunction with OIA and MIA etymology where known.

---

<sup>51</sup> The aspirated stop  $*d^h$ —which undergoes lenition to a rhotic [ $r^h$ ,  $r^h$ ,  $r^h$ ] cf. 4.3.8—is excluded from the discussion in this section, as its inherited status, as part of the stop system, is not in doubt and the innovations that affect it have already been addressed above

English	'kite'	'now'	'yesterday, tomorrow'	'axe, hatchet'	'lame, cripple'
Et. Id.	#327	#1210	#1511	#684	#990
KS	ʃil <sup>h</sup> a	al <sup>h</sup> a	kal	ku <sup>h</sup> ari	-
RL	ʃil <sup>h</sup> a	al <sup>h</sup> a	kal <sup>h</sup> i	ku <sup>h</sup> al	-
MH	ʃil <sup>h</sup> a	al <sup>h</sup> a	kali; kəli	ku <sup>h</sup> ari	lu <sup>h</sup> a
TH	ʃil <sup>h</sup> a	ɛla; ɛlan <sup>h</sup> e; ɛl <sup>h</sup> aj	kail	ku <sup>h</sup> al	lula, nula
SH	tsil <sup>h</sup> a	ɛla	kali	ku <sup>h</sup> al	-
RP	tsil <sup>h</sup> æ	ɛla	kalk <sup>h</sup> æ, kail	ku <sup>h</sup> æl	nu <sup>h</sup> æ
BH	tsil <sup>h</sup> æ	æla	kali	ku <sup>h</sup> æl	nu <sup>h</sup> æ
BN	sila	ɛla	kali	ku <sup>h</sup> ar	-
Etym.	<i>cilli</i> > <i>cillā</i> {Pk.}	{p-Kamta} *ɛl <sup>h</sup> a < *ɛhla < *ɛ- bela 'this time'	<i>kālya</i>	<i>kuṭhāra</i>	<i>lulla</i>

**Table 4-12. Cognates with [l<sup>h</sup>] and their etymologies**

The evidence presented for inherited \*l<sup>h</sup> in these five etyma varies in consistency. While #327 and #1210 attest /l<sup>h</sup>/ in corresponding positions for four lects (as indicated by the dark shading), the same pattern is not borne out by the other three etyma.

Aspiration in #1511 is restricted to Rangeli, though common with Maithili in this etymon (Jha 1985 [1958]: 187). This formal match between Rangeli and Maithili, and not between Rangeli and the other KRNB lects, suggests the RL form to be a Maithili loan. This hypothesis is sociohistorically plausible—supported by the geographical position of Rangeli: closest of the 8 KRNB lects to the Maithili speaking area of Bihar and the Nepal Tarai.

In #684 it is KS and MH which break up the regular correspondence of an aspirated rhotic (< \*d<sup>h</sup> < OIA -*ṭh-*) with an aspirated lateral instead. These reversed reflexes of medial rhotic and laterals are common with Hindi and Bihari, and constitute a loan word.<sup>52</sup>

The distribution of /l<sup>h</sup>/ in #990 does not match any of the former correspondences. Lack of aspiration in TH conflicts with the correspondence for #327 and #1210. With

<sup>52</sup> The Turner (1966-71) entry for this etymon includes the following cognates: kuṭhāra 3244 kuṭhāra m. 'axe' ... Pa. kuṭhārī -- f., Pk. kuḍhāra -- m., kuhāḍa -- m., °ḍī -- f. (for ṭh -- r ~ h -- ḍ see piṭhara -- ), S. kuhāro m., L. P. kuhārā m., °ṛī f., P. kulhārā m., °ṛī f., WPah. bhal. kurhārī f., Ku. kulyāro, gng. kulyār, B. kuṛāl, °li, kuṛul, Or. kuṛāla, kurārha, °ṛhi, kurhārī, kuṛāri; Bi. kulhārī 'large axe for squaring logs'; H. kulhārā m., °ṛī f. 'axe'.

aspiration present in only one lect it is ambiguous whether the aspiration in MH is inherited (with TH an irregularity or loan), or whether MH is a borrowing from Bihari (with TH representing the KRNB inheritance from MIA). The former explanation has some support, given that it is derived from OIA \*-ll-, as too was #327 *cilli*. However, in the case of #990 the more authentically KRNB inheritance cannot be conclusively determined without systematically examining all the reflexes of OIA -ll- in TH and MH.

The firmest ground for an inherited aspirated lateral comes therefore from the correspondences in #327 and #1210. On the basis of the correspondences in these two cognates I tentatively reconstruct \*l<sup>h</sup> as a proto-phoneme of proto-Kamta. Given this reconstruction, the correspondences are generally well explained by [PI 9.] (excepting loanwords) and the reflexes are the same as for aspirated nasals reconstructed below. Proto-Kamta forms for the five etyma given in Table 4-12 are consequently reconstructed as: \*tʃil<sup>h</sup>a ‘kite’; \*ɛl<sup>h</sup>a ‘now’; \*kali ‘yesterday, tomorrow’ (with /kal<sup>h</sup>i/ a Maithili loan); \*kuɖ<sup>h</sup>al ‘axe, hatchet’; and \*(lula; lul<sup>h</sup>a) ‘lame, crippled’. The data are insufficient at present to disambiguate whether one of these forms for ‘lame, crippled’ is a loan, or whether variability in this lexeme should be reconstructed for the proto-Kamta stage.

Turning to the evidence for inherited aspirated nasals, the cognates for /n<sup>h</sup>/ are less well distributed across KRNB, making it harder still to reliably reconstruct a proto-Kamta phoneme. (Forms like /ban<sup>h</sup>-/ ‘to tie’ {MH}, which correspond with a nasal-stop cluster in another lect, e.g. /band-/ ‘to tie’ {BH}, have not been included in Table 4-13 as in such cases the common KRNB inheritance is a nasal-stop cluster, with the aspirated nasal a more recent innovation, cf. 4.3.12.)

English	‘light’	‘milk’	‘elbow’	‘print, mark’
Et. Id.	#208	#536	#389	#416
KS	-	-	kənia; kλnia	-
RL	ḡʌn <sup>h</sup> ak	ḡun <sup>h</sup> i	kon <sup>h</sup> ia	-
MH	ḡʌn <sup>h</sup> ak	ḡun <sup>h</sup> i	kilkani <sup>53</sup>	tʃin <sup>h</sup> ʌ
TH	-	-	keheni	-
SH	-	-	kilkani <sup>53</sup>	sin
RP	-	-	kolkun <sup>h</sup> æ; korkunæ <sup>53</sup>	-
BH	ḡonak	-	kilkæni <sup>53</sup>	-
BN	zonak; sonak	-	tilkani <sup>53</sup>	-
Etym.	<i>joṇhā</i> (Prakrit) < <i>jyōtsnā</i> ‘moonlight’	<i>dōhana</i>	*kahuṇi (KRNB) < <i>kaphōṇi</i>	<i>cihna</i>

**Table 4-13. Cognates with [n<sup>h</sup>] and their etymologies**

Analysis of the etymologies confirms Bubenik’s statement above that derived MIA *nh* from an earlier consonant cluster *-hn-*. The correspondence of nasals in #208, #536 and #416, while not well represented by cognate data across lects, nonetheless matches the MIA data well enough to justify reconstructing \*n<sup>h</sup> as a proto-Kamta inheritance. The aspiration is lost, as seen for \*l<sup>h</sup> above, in the four more eastern lects (by [PI 9.]).

The aspiration in #389 is so restricted that it is more likely to have occurred through metathesis subsequent to the proto-Kamta period. The etymon is reconstructed for p-Kamta as \*kahuṇi > /kani/. Suffixation with \*-a occurs in both KS and RL (cf. 4.4.11) and is followed by “shortening” of \*kahuṇi (> \*kahnia) > /kλhnia/ in KS by [PI 34.]. The corresponding vowel /o/ in RL, is not as predicted by [PI 32.], which would give /ε/ as in TH; the RL vowel in /kon<sup>h</sup>ia/ is plausibly influenced by the Hindi form /kohni/ with the same meaning.

<sup>53</sup> This item is a partial cognate with the other KRNB forms. The cognate portion is -kani < \*kahuni.

The aspirated bilabial nasal /m<sup>h</sup>/ is also quite rare in the wordlist data.

English	‘potter’	‘blacksmith’	‘Brahman caste’	‘to descend’
Et. Id.	#828	#815	#850	#1625
KS	kum <sup>h</sup> ar	-	baβ <sup>h</sup> ən	nam <sup>h</sup> -
RL	kum <sup>h</sup> ar	-	baβ <sup>h</sup> ʌn	naβ <sup>h</sup> -
MH	kum <sup>h</sup> ar	kum <sup>h</sup> ar <sup>54</sup>	bram <sup>h</sup> ʌn <sup>55</sup>	num <sup>h</sup> - <sup>54</sup>
TH	kum <sup>h</sup> ar	kam <sup>h</sup> ar	brammon <sup>55</sup>	-
SH	kumar	kamar	bamon	nam-
RP	kumær	kamar	bamon	nam-
BH	kumær	kamar	bamon	nam-
BN	kumar	kamar	bamon ; bamun	nam-
Etym.	<i>kumbhakāra</i>	<i>karmā́ra</i>	<i>brāhmaṇ</i>	<i>nam-</i>

**Table 4-14. Cognates with [m<sup>h</sup>] and their etymologies**

English	‘you.PL.ACC’	‘them.PROX. PL.ACC’	‘them.DIST. PL.ACC’	‘you.PL.ACC’	‘their.PROX. PL.ACC’	‘their.DIST. PL.ACC’
Et. Id.	#2303	#2305	#2306	#2320	#2323	#2324
KS	ʈumsak	ismak	usmak	ʈumsar	ismar	usmar
RL	ʈəm <sup>h</sup> ak	jəm <sup>h</sup> a-k	am <sup>h</sup> ak	ʈəm <sup>h</sup> ar	jəm <sup>h</sup> a-r	am <sup>h</sup> ar
MH	ʈʌm <sup>h</sup> ak	em <sup>h</sup> ak	ʌm <sup>h</sup> ak	ʈʌm <sup>h</sup> ar	em <sup>h</sup> ar	ʌm <sup>h</sup> ar
TH	ʈum <sup>h</sup> ak	im <sup>h</sup> a-k	um <sup>h</sup> ak	ʈum <sup>h</sup> ar	im <sup>h</sup> a-r	um <sup>h</sup> ar
SH	ʈomak	imak	umak	ʈomar	imar	umar
RP	ʈomak	emak	omak	ʈomar	emar	omar
BH	ʈomak	im <sup>i</sup> æ-k	umak	ʈomar	im <sup>i</sup> æ-r	umar
BN	tomak ; tumak	imak	tamak	tumar	imar	tamar

**Table 4-15. Cognates with [m<sup>h</sup>] and their etymologies (cont.)**

The best evidence for inheritance of \*m<sup>h</sup> is the correspondence in #828, which also agrees with #815, and fits the same pattern as seen above for \*n<sup>h</sup> and \*l<sup>h</sup>—deaspiration in the four more eastern lects, maintenance elsewhere. The correspondences in #850 and #1625 also seem to be connected to \*m<sup>h</sup>, but there is fricativisation and loss of nasal value in RL and KS. The conditions of this lenition cannot be surmised from these data. The cognate data for Mahayespur and Thakurgaon in #850 (diagonally shaded) do not represent the same stratum as the other data—the consonant cluster /br-/ indicates a more recent Sanskrit loan (Tatsama).

<sup>54</sup> The vowel /u/ in these two items is not a printing error. The phonological difference with the forms in other KRNB lects is as yet unexplained.

<sup>55</sup> This form is a Tatsama (Sanskrit loan).

The aspirated nasals found in the pronouns would be straightforwardly harmonised with the other \*m<sup>h</sup> correspondences, except that /m<sup>h</sup>/ in RL, MH and TH corresponds with /ms/ or /sm/ in KS. Several possible explanations need to be considered, all of them involving morphological changes, and these are more appropriately dealt with in Chapter 5 (cf. 5.6.1).

#### **4.3.11. Changes to initial liquids**

The initial liquids have a complex history in Eastern NIA, which traces back to the MIA period. The Eastern Prakrit underwent a complete merger of inherited /r/ and /l/ > /l/ (as attested by inscriptions and other sources [Masica 1991: 186]). However, /r/ was re-established in contrast to /l/ due to the influence of Sanskrit as well as MIA varieties that had not undergone the merger. Chatterji finds the re-establishment of /r/ to have occurred before the 10<sup>th</sup> century AD, the point at which he holds Eastern Magadhan (Oriya, Bangla, Asamiya, KRNB) to have become differentiated from the other Magadhan lects (Chatterji 1926: 537).

To add further complexity to the mix, MIA also saw interchange between /l/ and /n/ in initial position (Jha 1985 [1958]: 187, who cites Pischel 1981 [1900]: §§260, 243). Chatterji writes that this interchange was inherited into Māgadhī Apabhraṁśa, and from there into the Magadhan lects (Chatterji 1926: 545). However, the historical works on these lects show that this interchange is not regularly attested in modern Magadhan lects, and the primary reflex of OIA *l-* is /l/, not /n/ (Chatterji 1926: 527ff., 543ff.; Jha 1985 [1958]: 177ff, 187ff; Kakati 1962: 229ff; Tiwari 1960: 67ff.). As in the case of the r/l merger, reintroduction of the distinction between initial l/n probably resulted from multilingualism during the Apabhraṁśa (late MIA) period.

With that introduction to the history of liquids in Eastern MIA and NIA, the generalised correspondences for reconstructed \*l and \*r in KRNB are as follows (reproduced from Table 4-5):

	#_			V_V			_#		
	*l,*l	*l <sup>h</sup>	*r	*l,*l	*l <sup>h</sup>	*r	*l,*l	*l <sup>h</sup>	*r
Ks	l		r n	l	l <sup>h</sup>	r	l		r
Rl	l		r n	l	l <sup>h</sup>	r	l		r
Mh	l		r n	l	l <sup>h</sup>	r	l		r
Th	l;n		r;Ø	l	l <sup>h</sup>	r	l		r
Sh	n		r;Ø	l	l l; $\zeta$	r; $\zeta$	l		r
Rp	n		Ø	l $\zeta$ ;l <sup>j</sup>	l $\zeta$ ;l <sup>j</sup>	r r <sup>j</sup>	l		r
Bh	n		r;n	l $\zeta$ ;l <sup>j</sup>	l l <sup>j</sup>	r r <sup>j</sup>	l		r
Bn	l		r	l	l	r	l		r

**Table 4-16. Summary of reconstructed liquids and their reflexes**

The reflexes for the aspirated lateral are not our concern here, as they have been addressed in section 4.3.10. There are a few stray retentions of the Magadhan r/l merger (e.g. KRNB \* $\text{ʃ}oril$  ‘body’ derived from Sanskrit *śarīr*; \*(re)jun, lejun) ‘garlic’ derived from Sanskrit *lāsuna*). However, the majority pattern is the re-establishment of the older contrast in all positions.

The main changes to these proto-phonemes occur in initial position where \*l > /n/ has been regularised in RP, BH and SH. While this change also occurred during MIA, the evidence from Eastern NIA lects discussed above shows that the l/n distinction was reintroduced during late MIA, as for the r/l merger. It is not uncommon in fact for the same change to re-occur independently in different stages of Indo-Aryan history, for example: medial spirantisation (cf. 4.3.5), rhoticisation of inter-vocalic /d/, and so on. The strong regularity in the correspondence between /n/ in RP, BH and SH, and /l/ in the other varieties (excluding for the moment TH), is good evidence that the distinction had been thoroughly reintroduced by the proto-Kamta stage, and that the nasalisation innovation is the result of a post-KRNB propagation event.

The \*l > n change is found alongside changes to the other inherited liquid, \*r, in the very same varieties. In Rangpur and Shalkumar initial \*r > Ø, while in BH initial \*r

> n or Ø variably. Both these changes are socially stereotyped as ‘uneducated speech’ to a greater extent than \*l > n. This awareness of a negative social stereotype seems to be the reason for irregularity, or variability, of \*r > [r;Ø] in SH, and \*r > [Ø;n] in BH. The change in initial \*r is most regular (out of the 8 KRNB lects) in Rangpur. The name of the town is thus pronounced [ompur] by locals.

Changes \*l > n and \*r > Ø are also found in Thakurgaon, but they are found predominately in the speech of the local Hindus—Poliya and Rajbanshi—and not as frequently in that of local Muslims.

Given the irregular inheritance of MIA initial *l > n*, there is some chance that re-occurrence could have happened independently in separate areas. In the south of West Bengal (Midnapore district), non-contiguous with the KRNB area, the same change is found amongst the Lodha people (Dasgupta 1978: 156. E.g. [loha, noha] iron’). Therefore this change is not *diagnostic* of a propagation event because of the possibility of independent and parallel changes (given the MIA history). However, an examination of the range of the change in North Bengal, shows it to be neatly contiguous in this area. Therefore, it is still possible that the change occurred through a propagation event, even if it cannot *diagnose* that propagation event. Thus [PI 14.] is “supportive, but not diagnostic” of a propagation event. That is, if another change which *is* diagnostic of a propagation event (and hence a PN) shares the same range as [PI 14.], then [PI 14.] will be considered to have been propagated within the same network. This turns out to be the case, see section 7.4.1.

[PI 14.]\*l > /n/ / #\_ {RP, SH, BH, and TH Hindus}. Supportive, not diagnostic.

The loss of the initial rhotic—as in RP, SH, BH and amongst TH Hindus—and the nasalisation of the initial rhotic—as (variably) in BH—are less common in e.Mg. than the l>n change. The ranges are contiguous, and these changes are diagnostic of PEs, despite not being particularly complex in their conditioning.

[PI 15.]\*r > Ø / #\_ {RP, variably in SH & BH, and among TH Hindus}. Diagnostic

[PI 16.]\*r > n / #\_ {BH variably}. Diagnostic.



There is one further change left to be discussed in this section: initial \*r > n in the lects KS, RL, MH in just one item of the collected data, \*rand<sup>h̄</sup>- ‘cooks’ > /nan<sup>h̄</sup>-. There are no other instances in the collected data of a proto-word with the word-initial sequence \*rVnC. It is linguistically plausible that this is the conditioning environment for this change of initial \*r>n in {KS, RL, MH}. Given the close historical relationship between these three lects, it seems unlikely that this correspondence is a chance occurrence, but without further tokens to instantiate the correspondence it is not conclusive evidence for a propagation event at this stage.

#### 4.3.12. Homorganic nasal + stop clusters

Medial clusters were highly common during OIA, but were generally assimilated to geminates, and then reduced to single stops during MIA (cf. Masica 1991: chapter 7). Sequences of homorganic nasal + stop, however, have been retained from OIA through to the reconstructed proto-Kamta vocabulary. For example: \*rand<sup>h̄</sup>- ‘cooks’ < {OIA} *randháyati* ‘subjects’. Comparable forms are given in Table 4-17.

English	‘cooks’	‘wears’	‘ties’	‘crocodile’	‘smells (perceives)’
Et. Id.	#1756	#1911	#1741	#255	#1698
*form	*rand <sup>h̄</sup> -	*pin <sup>h̄</sup> -	*band <sup>h̄</sup> -	*kumb <sup>h̄</sup> iro	*ṣuṅg <sup>h̄</sup> -
KS	naḍ <sup>h̄</sup> -	pin <sup>h̄</sup> -	band <sup>h̄</sup> -	-	suṅ <sup>h̄</sup> -
RL	naḍ <sup>h̄</sup> -	pin <sup>h̄</sup> -	ban <sup>h̄</sup> -	-	suṅ <sup>h̄</sup> -
MH	nan <sup>h̄</sup> -	pin <sup>h̄</sup> -	ban <sup>h̄</sup> -	-	suṅg-
TH	ran <sup>h̄</sup> -	pin <sup>h̄</sup> -	band <sup>h̄</sup> -	kumir	ṣuṅ-
SH	aṇḍ-	piṇḍ-	baṇḍ-	-	ṣuṅ-
RP	aṇḍ-, oṇḍ-	peṇḍ-	baṇḍ-	kumb <sup>h̄</sup> iṭ	ṣoṅg-
BH	raṇḍ-	peṇḍ-	baṇḍ-	-	ṣuṅ-
BN	rand <sup>h̄</sup> -	pinḍ <sup>h̄</sup> -	band <sup>h̄</sup> -	-	huṅ-
Etym.	<i>randháyati</i>	<i>pinaddha</i>	<i>bándhana</i>	<i>kumbhīra</i>	<i>*śṛṅkhati,</i> <i>śiṅghati</i>

**Table 4-17. KRNB forms with homorganic clusters of nasal + voiced aspirated stop**

Reduction of nasal stop clusters occurs in lects KS, RL, MH and TH, though the effects of this change are somewhat erratic. Reduction occurs for all four lects in item #1911, but the pattern is not repeated in other items. The repetition of irregular

reduction in only these four lects does not seem to be by chance. However, the reflex is not sufficiently consistent to justify a propagation event. The change may *support* a PE diagnosed on other grounds.

[PI 17.] Homorganic cluster of N C [+asp, +vc] > N[+asp] {irregularly in KS, RL, MH, TH} Supportive, not diagnostic.

Within this same set of lects there is also a case of metathesis involving a homorganic cluster of \*nḍ:

[PI 18.] \*eṇḍurō > /niḍur/ ‘rat’ {KS, RL, MH, TH}. Supportive, not diagnostic.

There are no other instances in the data of the word initial sequence Vnḍ. The diagnostic value of [PI 18.] can only be supportive of a PE—to be re-assessed based on a greater sampling of data.

#### 4.3.13. The inherited sibilant

While OIA had three sibilants *s* (dental), *ś* (lamino-postalveolar) and *ṣ* (apico-postalveolar), these distinct phonemes were merged into a single sibilant in most MIA dialects (Bubenik 2003: 216). In the Māgadhī Prakrit and Apabhraṃśa the single sibilant had *postalveolar pronunciation*, while elsewhere the pronunciation was alveolar. The postalveolar pronunciation, though now rare in Magadhan lects nonetheless *constitutes a retention* where it does occur, and thus is not diagnostic of propagation events.<sup>56</sup>

The correspondences for \*ṣ across KRNB are as follows (reproduced from Table 4-5):

---

<sup>56</sup> Masica writes: “In NIA the most widespread pattern consists of one voiceless sibilant, generally [s], plus /h/. In Standard Bengali, the dominant sibilant allophone is [ʃ] (becoming [s] before dental consonants). Although this is a Magadhan inheritance, it is not maintained in other modern Magadhan (Eastern NIA) languages (e.g., not in Assamese, Oriya, or “Bihari”)” (1991: 98).

	*ʃ		
	#_	V_V	V_V
Ks	s	s	s
Rl	s	s	s
Mh	s	s	s
Th	ʃ	ʃ	ʃ
Sh	ʃ	ʃ; ʃ <sup>j</sup>	ʃ
Rp	ʃ	ʃ; ʃ <sup>j</sup>	ʃ
Bh	ʃ	ʃ; ʃ <sup>j</sup>	ʃ
Bn	h s	s h	s

**Table 4-18. Reflexes of the inherited sibilant in KRNB**

Postalveolar pronunciation in TH, SH, RP and BH is a retention, and not diagnostic of a PE. The palatalisation change (> [ʃ<sup>j</sup>]) has been dealt with under section 4.3.3. This leaves for consideration: the anteriorisation > /s/ in KS-RL-MH, and the anteriorisation and lenition in Bongaigaon > /s/ > /h/.

Firstly, regarding the anteriorisation in KS-RL-MH. These lects are spoken in areas where the superposed lects are Standard Hindi and Nepali. Both these lects have an alveolar pronunciation for the sibilant. Contact through diglossia with these lects in Bihar and Nepal is a plausible explanation for the alveolar articulation in KS-RL-MH. The plausible role of diglossia in the change means that this shift in KS-RL-MH to alveolar pronunciation is not diagnostic of a propagation event. It does though support the diagnosis of contact relations (through diglossia) between KS-RL-MH and Hindi.

[PI 19.] \*ʃ > /s/ {KS, RL, MH (from Hindi, Nepali)}. Supportive, not diagnostic, of contact through diglossia with Hindi or Nepali.

In its treatment of the inherited sibilant phoneme, Bongaigaon is once again distinct from the other KRNB lects. Proto-Kamta \*ʃ gives:

- (mostly) /h/ in word-initial position;<sup>57</sup>
- either /s/ or /h/ for different etyma in inter-vocalic position;<sup>58</sup>
- (mostly) /s/ in word-final position.

The lenition of \*ʃ in BN bears partial similarity with Asamiya, in which the situation is as follows (Kakati 1962: 63, fn. 10):

- the MIA sibilant becomes /χ/ word-initially in both Tatsamas and Tadbhavas, and inter-vocalically but only in Tatsamas;
- the MIA sibilant becomes /h/ post-vocalically in Tadbhavas.

The lenition in BN is plausibly connected with the Asamiya lenition, though the difference in conditioning environments means that the connection is not direct. Word-initially, the BN lenition (>h) follows the Asamiya model (>χ), but takes it one step further. Word-finally, BN does not follow the Asamiya model, but maintains the sibilant. The value of the BN changes for diagnosing PEs is not yet clear.

#### 4.3.14. Approximants

The KRNB approximants /j/ and /w/ (also called semi-vowels) are uncommon segmental phonemes. In most of KRNB, as in SCB and SCA, their usual occurrence is as glide to a diphthong. Occurrences of non-diphthongal [w] are often either the result of \*b lenition, or of Perso-Arabic origin (e.g. ʒəwab < *javāb* ‘answer’, ɖəwal < *dīvār* ‘wall’). However, there are further occurrences of both /w/ and /j/ which cannot easily be classed as vocalic. Relevant reconstructed proto-words and their reflexes are given in Table 4-19.

<sup>57</sup> Some of the exceptions can be explained as Sanskrit loans (e.g. /sɔkti/ ‘power’ < śakti ; /sɔ̃sar/ ‘world, universe’ < saṃsāra), but some cannot (e.g. /hat ; sat/ ‘seven’ < sapta).

<sup>58</sup> BN /s/ is, in other instances, the regular reflex of proto-Kamta \*ʃ or \*ʃ<sup>h</sup>, and in yet other instances a less regular reflex of \*ʒ. See 4.3.9 for the reflexes of \*ʃ and \*ʃ<sup>h</sup>, and sections 4.3.1-4.3.2 for the devoiced reflexes of \*ʒ.

English	‘heavens, sky’	‘child’	‘new’	‘shadow’
P- Kamta	*d̥ewa	*tʰawa	*nɔja	*tʰa~ja
Et. Id.	#184	#792	#1340	#32
KS	-	tʰua	nɔja	tʰə~ja
RL	-	-	nɔja	tʰa~ha
MH	-	tʰua	nɔja	tʰi~a
TH	-	tʰua	nɔja	tʰia
SH	-	sawa	nɔja	tsʰema
RP	dæwa	sawa	nɔja	sæ~jæ, tsʰæ~ja
BH	d̥ewa	sawa	nɔja	tsʰɛja
BN	-	sawa	-	soja
Etym.	<i>div</i>	<i>śāvaka</i> ‘fledgling’	<i>naviya-</i>	<i>chājā</i>

**Table 4-19. Cognates with reflexes of non-vocalic \*j and \*w**

These data, along with others, justify the reconstruction of proto-phonemes \*j and \*w. They are generally retained in all KRNB lects, and so do not figure in the definition of any propagation event—though some phonologically irregular changes occur involving the approximants and adjacent vowels.

The third approximant found in KRNB (recall 4.2) is /h/. The reflexes for \*h are as follows (reproduced from Table 4-5):

	*h		
	#_	V_V	_#
Ks	h	/	/
RI	h	h	
Mh	h	h	/
Th	h	h	/
Sh	h	/	/
Rp	h	/	/
Bh	h	/	/
Bn	h	h	/

**Table 4-20. Reflexes of \*h in KRNB**

The regular reflex of \*h in initial position is /h/ across all of KRNB. In medial position \*h is deleted in some KRNB lects (see further 4.3.4).

#### 4.3.15. Summary of reconstructed consonant system

Based on the phonological reconstruction contained in this chapter, Table 4-21 shows the reconstructed consonant system for proto-Kamta after it split from the Māgadhī Apabhraṁśa. References to the sections that deal with relevant changes are given in italics.

	Labial	Apical			Laminal	Dorsal	Laryngeal
	Labial	Dental	Alveolar	Post-alveolar	Post-alveolar	Velar	Glottal
	<i>4.3.5</i>	<i>4.3.6</i>		<i>4.3.6, 4.3.8, 4.3.7</i>	<i>4.3.5, 4.3.9</i>	<i>4.3.5</i>	
<i>4.3.3</i>	*p	*t̪		*t̪	*tʃ	*k	
<i>4.3.3, 4.3.4</i>	*p <sup>h</sup>	*t̪ <sup>h</sup>		*t̪ <sup>h</sup>	*tʃ <sup>h</sup>	*k <sup>h</sup>	
<i>4.3.1, 4.3.2, 4.3.3</i>	*b	*d̪		*d̪	*dʒ	*g	
<i>4.3.1, 4.3.2, 4.3.3, 4.3.4</i>	*b <sup>h̄</sup>	*d̪ <sup>h̄</sup>		*d̪ <sup>h̄</sup>	*dʒ <sup>h̄</sup>	*g <sup>h̄</sup>	
<i>4.3.3</i>	*m		*n	*ŋ		*ŋ	
<i>4.3.3, 4.3.4, 4.3.10</i>	*m <sup>h̄</sup>		*n <sup>h̄</sup>				
<i>4.3.3, 4.3.13</i>					*ʃ		
<i>4.3.4</i>							
<i>4.3.3, 4.3.11</i>			*r				
<i>4.3.3, 4.3.11</i>			*l	*ɭ			
<i>4.3.3, 4.3.4, 4.3.10</i>			*l <sup>h̄</sup>				
<i>4.3.3, 4.3.14</i>	*w				*j		*h

**Table 4-21. Consonant phonemes inherited into KRNB**

The justification for proposing these phonemes as a contemporaneous system results from the entire reconstruction of linguistic history which culminates in Chapter 7, and the post-Kamta chronology that is reconstructed for all the phonological changes outlined above.

A summary of all the phonological changes diagnostic or supportive of propagation events (and thus pertinent to the reconstruction of speech community events in Chapter 7) is given at the end of this chapter.

#### 4.4. Comparative reconstruction of KRNB vowels

The vowel systems of Magadhan NIA lects differ in two general ways from MIA and Midland NIA lects. Firstly, they differ by the loss of phonemic contrast between long and short vowels. This loss of contrast is found in Asamiya, Bangla, Bhojpuri (M. Verma 2003), Magahi (S. Verma 2003), Maithili (Yadav 2003), Oriya, as well as in KRNB. Secondly, the Magadhan NIA lects also show evidence of having inherited a backed articulation of the MIA short central vowel /ə/ > [ʌ, ɔ, ɒ]. This backed articulation is most strongly maintained in the Eastern Magadhan lects (Asamiya, Bangla, Oriya, KRNB), while the influence of Hindi /ə/ has partially eroded this articulation in Western Magadhan (Bihari) lects.

A summary of the reflexes of the proposed inherited vowel phonemes is given in Tables 4-22, 4-23, and 4-24, with the reflexes of inherited vowel nasalisation in Table 4-25.

*	*i				*u		
	_(C) ɔ;ɔ;ɛ	#C_C- <sup>59</sup>	CVC <sub>X</sub> C <sub>Y</sub> V where C <sub>X</sub> or C <sub>Y</sub> = l; n; r	else	_(C <sub>X</sub> )ɔ;ɔ;ɛ	#C_C- <sup>59</sup>	else
KS	i	i	i /	i	u	u	u
RL	i	i	i /	i	u	u	u
MH	i	i	i /	i	u	u	u
TH	i	i	i /	i	u	u	u
SH	i	i	i /	i	u	u	u
RP	e	e	/	i	o	o	u
BH	i	e	/	i	u	o	u
BN	i	i	i	i	u	u	u
see:	4.4.3	4.4.3	4.4.6		4.4.3	4.4.3	

**Table 4-22. Summary of inherited high vowels and their reflexes**

---

<sup>59</sup> Monosyllabic verb roots.



env.	#_	*o			*ε			
		V <sub>H</sub> (C)_	_(C)a	else	#_	_CV <sub>H</sub>	1st σ, else	else
KS	wo	o	Λ	o	jε	i ε	ε	ε
RL	o	o	Λ	o	ε	i ε	ε	ε
MH	o	o	Λ	o	ε e	i e ε	e ε	ε
TH	o	o	ɔ	o	ε	e	ε	e
SH	o	o	o	o	ε	e	ε	e
RP	o	u	o	o	æ	e	æ	e
BH	o	u	o	o	ε	e	ε	e
BN	-	-	o	o	e	e	ε e	e
<i>see:</i>		4.4.2	4.4.3	4.4.1		4.4.1		4.4.4

**Table 4-23. Summary of inherited mid vowels and their reflexes**

* env.	*a					*ɔ				
	<sub>60</sub> C <sub>X</sub> u(C <sub>Y</sub> )a	<sub>60</sub> C <sub>X</sub> i(C <sub>Y</sub> )a	<sub>61</sub> _(C)CaC	V <sub>H</sub> (C)_	else	1 <sup>st</sup> σ _CV <sub>H</sub>	1 <sup>st</sup> σ, else	_CV <sub>H</sub>	_#	else
KS	ə	ə	ə	a	a	ə <sup>62</sup>	ə	ə	/	ə
RL	Λ	ε	Λ <sup>63</sup> ,a	a	a	Λ <sup>63</sup>	Λ <sup>63</sup>	Λ <sup>63</sup>	/	Λ <sup>63</sup>
MH	Λ	ε	Λ <sup>63</sup> ,a	a	a	Λ	Λ	Λ	/	Λ
TH	a	o a ε	a	a	a	o	ɔ	o	/	o
SH	a	a	a	a	a	o	ɔ	o	/	ɔ;o
RP	a	a	a	æ	a	o	ɔ	o	/	o
BH	a	a	a	æ;ε	a	o	ɔ	o	/	o
BN	a	a	a	a	a	o	ɔ;o	o	/	ɔ
<i>see:</i>	4.4.7, 4.4.6		4.4.7	4.4.2		4.4.1		4.4.5		4.4.4

**Table 4-24. Summary of inherited low vowels and their reflexes**

<sup>60</sup> Where either C<sub>X</sub> or C<sub>Y</sub> is a sonorant consonant.

<sup>61</sup> This correspondence attests a change in the quality of \*a in KS, RL and MH. In RL and MH the change is variable when the final consonant is a liquid; e.g. Rangeli [katʰar, kətʰar] < \*katʰar ‘river bank’. In KS, where the change is most regular, it also occurs variably without a final C, i.e. in the environment C\_Ca. For example /gəla/ < \*gala ‘cheek’; /tʃəna/ < \*tʃana ‘chick-pea’. See further 4.4.7.

<sup>62</sup> Some instances of [Λ] but mostly the reflex is [ə].

<sup>63</sup> Varies phonetically with [ə]

*	*~		
	mono-σ	1 <sup>st</sup> σ of 2	2 <sup>nd</sup> σ of 2
KS	~	~	/
RL	~	~	/
MH	/	/	/
TH	/	/	/
SH	/	/	/
RP	~	/	/ <sup>64</sup>
BH	/	/	/
BN	/	/	~
<i>see:</i>	4.4.10		

**Table 4-25. Summary of inherited vowel nasalisation and its reflexes**

#### 4.4.1. Regressive vowel raising

The main type of change in the history of KRNB vowels is vowel harmony, whereby specific qualities of a vowel are assimilated by neighbouring vowels. The vowel harmony found in KRNB, and in Eastern NIA more generally, involves *partial assimilation to the height value* of a nearby vowel.

In regressive vowel harmony, vowel qualities are assimilated in a regressive direction—from right to left, as it were. For example, the Old Oriya word for ‘tamarind’ is /t̪ɛŋt̪ali/, but the modern Oriya equivalent is /t̪iŋt̪ili/. The height of the final vowel /i/ has been assimilated from right to left (regressively), changing the features of earlier vowels in the word.

The opposite direction of assimilation is termed *progressive* vowel harmony, and involves a left to right direction of assimilation. For example, in RP and BH \*ʃipa > /ʃip<sup>j</sup>æ/ ‘root’. In this case, the height of the first vowel conditions the raising of the latter vowel by one phonological ‘notch’ \*a > /æ/. Here and in the text to follow, ‘raising’ and ‘lowering’ are used as shorthand for ‘partial height assimilation’ conditioned by nearby high and low vowels, respectively.

Both progressive and regressive directions of vowel height assimilation are found in KRNB lects. Regressive vowel raising is described in this section, progressive raising in section 4.4.2, and lowering (which is regressively conditioned) in 4.4.3.

<sup>64</sup> Subject agreement endings on the verb are an exception to this generalised correspondence set, cf. 6.3.6.

In KRNB lects, regressive vowel assimilation affects \*ε, \*ɔ and \*o, but not \*a. The change is most widely distributed for \*ε, more restricted for \*ɔ, and sporadic for \*o.

\*ε > [e] / \_ (C) V[+high] {MH, TH, SH, RP, BH, BN; SCB and SCA}<sup>65</sup>

\*ɔ > [o] / \_ (C) V[+high] {TH, SH, RP, BH, BN; SCB and SCA}<sup>66</sup>

I will now argue that the former of these two changes is an old allophonic change, and was inherited into proto-Kamta from an earlier proto-stage, with the allophony subsequently lost in RL and KS.

In order to evaluate the chronology of regressive raising of \*ε, consider the following comparative and textual evidence from various eMg lects. In present-day Asamiya and Bangla, the reflex of inherited \*ε is /e/ when a high vowel follows. While /e/ is always given the status of a phoneme in descriptions of Bangla and Asamiya, its phonemic status in these lects, distinct from /ε/, is quite marginal. Allophonic variation of /ε/ before a following high vowel can account for the vast majority of instances of /e/ in SCA words found in Kakati's (1962) index. The example given in Goswami & Tamuli (2003: 77) as evidence for the e/ε phonemic distinction is: /bel/ 'bell' (an English loan) vs. /beɪ/ 'wood apple'. Indeed the status of /e/ in Asamiya as a distinct phoneme (rather than an allophone of /ε/) seems to be based largely on loans. A similar situation pertains in MH through borrowing from Hindi (see below). Likewise, the status of /e/ as a phoneme of SCB (as opposed to an allophone of /ε/) is bolstered by loans. However, in SCB and some KRNB lects, several instances of /e/ result from a morphologically-conditioned lowering of \*i in verbal roots (cf. 4.4.3). This change produces minimal pairs in RP and BH such as /kene/ 'buys', /kene/ 'why'.

Irrespective of the present-day synchronic status of /e/, the instances of [e] in Bangla and Asamiya are derived for the most part from the vowel \*ε inherited from the common Magadhan stage. Before English loanwords and before morphologically-conditioned lowering of \*i, the sound [e] in earlier Bangla and Asamiya, was an allophone of /ε/. However, there is no grapheme to mark this phonetic contrast in the

<sup>65</sup> sporadically raised as far as [i], e.g. \*ᱫᱷᱟᱠᱟᱨ 'gecko' > /zi<sup>h</sup>i/ {SH}.

<sup>66</sup> sporadically raised as far as [u], e.g. \*ᱠᱚᱢᱚᱠᱟᱨ 'basket' > /tukuli/ {BN}.

Bangla-Asamiya script and therefore we would not expect to find evidence of allophonic [e] in historical written documents. What we do find, is some evidence of regressive raising of \* $\epsilon$  > *i* in Old Oriya:

The raising of the vowels -e- and -o- to -i- and -u- respectively is a notable feature in modern Oriyā. No doubt, the tendency had its origin in earlier times. In many instances of the earlier documents is to be found the old phonetic habit existing side by side with the new one. (P. C. Majumdar 1970: xxxiii).

Based on the argument given above, raising of \* $\epsilon$  to [e] was originally allophonic in Bangla and Asamiya (and not marked orthographically). In keeping with this argument, raising of \* $\epsilon$  to *i* is recorded variably in Old Oriya. It is reasonable to conclude that regressive vowel raising of \* $\epsilon$  is old and possibly even an allophonic innovation inherited from an early common e.Mg. stage.

Given this hypothetical reconstruction, we must now consider how it can be that present day RL and KS lack the regressive raising process. I propose here that proto-Kamta inherited an allophonic regressive raising process of \* $\epsilon$  > [e] before a high vowel; but because this process was allophonic, no inter-change of phonemes was entailed during or prior to the proto-Kamta stage. It is possible that the allophony may have been lost in RL and KS, and have left little trace of the reversal of the older allophonic process. Based on this argument, the following change is reconstructed for all of eMg lects.

[PI 20.] \* $\epsilon$  > [e] / \_ (C) V<sub>H</sub> {eMg}. Diagnostic value unclear.

A proper assessment of the diagnostic value of this change will depend on historical reconstruction at the wider Magadhan level. This allophonic process was lost in RL and KS by [PI 21.].

[PI 21.]\*[e] allophone of \* $\epsilon$  > [e] {RL, KS}. Not diagnostic.

The loss of allophony, similar to the loss of a variant discussed in 3.4.1.1, is of lower diagnostic value than the addition of an allophone, because of the possibility that the loss occurred independently and without interconnected propagation.

Regressive vowel raising of \* $\epsilon$  is a phonologically general process, and distinct from the morphologically-conditioned raising (umlaut) which characterises SCB verbal morphology. Bangla umlaut has its origin in the duplication of /i/ before a preceding consonant. Chatterji terms this process “epenthesis”, and dates the change (based on written sources) as “well-established in all the dialects of Bengali by the beginning of the 15<sup>th</sup> century” (1926: 388). The anticipatory /i/ was later lost everywhere except in verbal morphology, where, the sequence *vowel + anticipatory /i/* was contracted to a single vowel possessing the qualities of the original vowel, but with raised height. Though note that Maniruzzaman (1977:35-36) cites Sukumar Sen (without immediate reference, though perhaps Sen 1960 or 1971) as having disputed this explanation of the origins of Bangla umlaut. The historical details of Bangla umlaut need not concern us overly here, the point is rather that some KRNB lects have anticipatory duplication, or “epenthesis” along the lines of Middle Bangla, but the details are slightly different (see 4.4.6).

The other inherited phoneme affected consistently by regressive vowel raising in KRNB is \* $\upsilon$ .

[PI 22.] \* $\upsilon$  > [o] / \_ (C) V[+high] {TH, SH, RP, BH, BN, SCB and SCA}.

Supportive, not diagnostic.

Here again, written sources are of only limited use in assigning a chronology to the innovation because the raising of \* $\upsilon$  to /o/ before a high vowel is not reflected in Bangla-Asamiya orthographic conventions. (There are distinct graphemes  $\text{ঐ/ঔ}$  for  $\upsilon/o$ , but the grapheme  $\text{ঔ}$  is not conventionally used for higher vowel /o/ if that vowel results from / $\upsilon$ / by regular regressive raising.)

Unlike for \* $\epsilon$ , the raising of \* $\upsilon$  is not attested in the present-day MH lect (with the one exception of /poxi/ ‘bird’ < \* $\text{p}\acute{\text{o}}\text{k}^{\text{h}}\text{i}$ ). For example, the MH data include: /h $\Lambda$ rin/ ‘deer’ < \* $\text{h}\acute{\text{o}}\text{r}\text{i}\text{n}$ ; /n $\Lambda$ t $\text{̣}$ i/ ‘throat’ < \* $\text{n}\acute{\text{o}}\text{t}\text{̣}\text{i}$ ; /l $\Lambda$ ḍi/ ‘river’ < \* $\text{n}\acute{\text{o}}\text{ḍ}\text{i}$ ; etc. Furthermore, raising of \* $\upsilon$  to /o/ is not reported for Oriya or Old Oriya. Crucial pieces of evidence which justified reconstructing inherited raising of \* $\epsilon$  for all of KRNB (namely the presence of such raising in Old Oriya and MH) are absent for the regressive raising of \* $\upsilon$ . Therefore, the change [PI 22.] is not reconstructed as part of the linguistic history of

KRNB as a whole, but only for the subset of lects in which it is presently attested. Given that regressive raising was already present in these lects for \*ε, the raising of \*ɔ is not necessarily diagnostic of a unified propagation event because of the possibility of independent and parallel extension of regressive raising from the phoneme \*ε to the phoneme \*ɔ. Though the evidence may not be strong enough for [PI 22.] to be diagnostic of a propagation event in its own right, this change may constitute supporting evidence for the sociohistorical range of propagation {TH, SH, RP, BH, BN, SCB and SCA} if this same range is established by some other more diagnostic change.

#### 4.4.2. Progressive vowel raising

As stated earlier, both directions of vowel height assimilation are found in KRNB lects. Regressive vowel harmony has at least its roots in an inherited process, while progressive vowel harmony is a post-*proto-Kamta* innovation. Under the progressive process, a vowel is raised one phonological notch by the presence of a preceding high vowel, as described below.

[PI 23.] \*o > /u/ / V<sub>[+high]</sub>C<sub>-</sub> {RP, BH}. Diagnostic

[PI 24.] \*a > /æ ; ε/ / V<sub>[+high]</sub>C<sub>-</sub> {RP, BH}. Diagnostic.

These individual outcomes of progressive raising have not been unified within a single formulated change because the range of propagation is different for raising of these different proto-phonemes (see Appendix D).

The proto-phonemes \*o and \*ε are rare in non-initial syllables within the reconstructed *proto-Kamta* vocabulary.<sup>67</sup> The raising of \*o>/u/ is reconstructed by comparison of the 2<sup>nd</sup> person singular verbal endings (cf. 6.4.2.3).

Analysing the effects of progressive raising on \*ɔ in RP and BH is not straightforward because \*ɔ is regularly raised in non-initial position in RP and BH by prosodic vowel raising ([PI 28.], cf. 4.4.4). Thus raising of \*ɔ > /o/ after a high vowel

---

<sup>67</sup> It is possible that even in initial position \*o may be progressively influenced by a high vowel in the last syllable of a preceding word, though this remains to be tested. Similarly, occurrences of /e/ that result from regressive lowering [1.4.3]—e.g. /kene/ ‘buys’—should be tested for susceptibility to raising when a high vowel ends the preceding word, e.g. /priti k[e~i]ne/ ‘Priti buys’.

may equally be the result of progressive raising as of prosodic raising. All that can be said is that these two processes do not combine in any of the lects to give /u/ < \*ɔ. (Thus, /ʃoifʊ/ < \*ʃoifɔ ‘maize’, not ʃoifʊ ).

Raising of \*a is very frequent in RP and BH. For example, \*d<sup>h</sup>ula > /d<sup>h</sup>ul<sup>h</sup>æ/ ‘dust’. It is linguistically and historically related to the palatalisation and labialisation changes [PI 6.]-[PI 8.]. In the environments specified by those changes, the raising of \*a > /æ,ɛ/ results in merger with \*ɛ. This merger is regular and predictable in the speech of the less educated, in village domains. The merger is generally less regular in Bhatibari-Tufanganj and Cooch Behar district in the speech of educated speakers as well as in social domains where SCB has become dominant such as urban life.

SCB has also undergone progressive raising of \*a but the conditioning is considerably different to the process described here for the Cooch Behar and Rangpur areas of KRNB. The SCB process is summarised by Dasgupta as follows:

The Bangla vowel harmony system also exhibits a counter-normal pattern, where a preceding trigger affects a right-hand eligible /ā/, with verb and non-verb subpatterns. The latter turns the target /ā/ ... into a mid vowel copying the backness of the trigger: /bhije/ [[bhijā]] ‘wet’, /bhulo/ ‘forgetful’ ... The subpattern for verbs turns /ā/ uniformly, if unexpectedly, into /o/ (Dasgupta 2003: 358).

By contrast, the KRNB change described here is phonologically general and without morphological restrictions. The KRNB change is distinct from the Bangla pattern, and also distinct from the inherited regressive pattern of vowel harmony in eMg lects (cf. 4.4.1). As a result of this distinctiveness, changes [PI 23.] and [PI 24.] are both diagnostic of a propagation event.

#### **4.4.3. Regressive vowel lowering**

In addition to the raising of vowels before high vowels, some KRNB lects have also undergone regressive lowering of particular vowels under specific conditions. In western KRNB there is a general phonological lowering, and in the south-east of KRNB a different lowering process which is morphologically-conditioned in some lects, and phonological in others. The changes are not reconstructed as integrated

between the west and the south-east because they operate on different vowels, under markedly different conditions.

Taking the western phonological process first, the following etyma illustrate what is a mostly regular process of lowering in lects RL, MH and TH, and is also present (though obscured by Hindi loans) in KS. A few exceptions may also be found to this rule in RL and MH, but these are in a minority and do not take away from the general regularity of the change. They are also likely to be the result of Hindi influence.

gloss	‘light’	‘insect’	‘horse’	‘shop, store’	‘gold’	‘key’	‘fat’
	*ɕon <sup>h</sup> ak	*poka	*g <sup>h</sup> oɖa	*ɖokan	*ʃona	*tʃ <sup>h</sup> orani	*moɕa
KS	-	-	-	ɖukan <sup>68</sup>	sana	-	moɕo <sup>68</sup>
RL	ɕan <sup>h</sup> ak	paka	g <sup>h</sup> ara	ɖakan	sana	tʃ <sup>h</sup> erani	moɕo <sup>68</sup>
MH	ɕan <sup>h</sup> ak	paka	g <sup>h</sup> ara	ɖakan	sana	tʃ <sup>h</sup> arani	malɔ
TH	-	poka	g <sup>h</sup> ora	ɖokan	ʃona	-	mɔɕa
SH	-	poxa	g <sup>h</sup> ora	ɖoxan	ʃona	-	moɕa
RP	-	poka	g <sup>h</sup> ora	ɖokan	ʃona	ts <sup>h</sup> orani	moɕa
BH	ɕonak	poka	g <sup>h</sup> ora	ɖokan	ʃona	ts <sup>h</sup> orani	moɕa
BN	zonak, sonak	poka	k <sup>h</sup> ora	dokan, tokan	hona	-	mota

**Table 4-26. Example correspondences showing regressive lowering \*o > /ɔ/**

The change is reconstructed as follows:

[PI 25.]\*o > /ɔ/ / \_ C a {KS, RL, MH, TH}. Diagnostic.<sup>69</sup>

This lowering process is not a common feature of NIA or Magadhan languages—cf. e.g. SCB /g<sup>h</sup>ora/, SCA /g<sup>h</sup>ora/ ‘horse’, etc.—and as such, contact with these lects is an unlikely source of the innovation. The change has relatively complex conditioning, being restricted to a specific vowel, in the environment preceding another specified vowel. Given the complexity and the ecological distinctiveness in NIA, this change is unlikely to have developed independently in RL, MH, KS and TH, and is diagnostic of a propagation event between these lects, at some point in their history.

<sup>68</sup> suspected Hindi loanword.

<sup>69</sup> \*ɔ > ʌ by the phonetic change [PI 29.], see section 4.4.5.



A distinct, morphologically conditioned, vowel lowering process is found in southern and eastern KRNB lects, as well as in SCB. The change is as follows: the inherited high vowels \*i and \*u are lowered one notch in monosyllabic verb roots when followed in the next syllable by a non-high vowel. The value of this change for reconstructing a propagation event is diagnosed on the basis of the complex morphological and phonological conditioning.

[PI 26.] \*i, \*u > /e/, /o/ / #(C)\_C-V<sub>[-high]</sub> (verb root) {RP, BH, Bangla}.

Diagnostic.

For example, /ken-e/ ‘s/he buys’, vs. /kin-i/ ‘we buy’; /b<sup>h</sup>ok-e/ ‘it barks (as a dog)’, /b<sup>h</sup>uk-il/ ‘it barked’. This change only occurs in RP and BH out of the 8 KRNB lects.

Regressive vowel lowering of \*i and \*u is also found outside the verbal morphology in Rangpur, as the following examples illustrate.

*	*d <sup>h</sup> iɾe	*tʃikɔn	*bipɔɖ	*ɖʒibɔn	*ʃukər-	*uttər	*ʃundər
KS	d <sup>h</sup> iɾe	-	-	-	sukər	uttər	sundər
RL	d <sup>h</sup> iɾe	-	-	ɖʒiβɔn	sukər-	uttər	sundər
MH	d <sup>h</sup> iɾe	-	-	ɖʒiβɔn	sukər-	uttər	sundər
TH	d <sup>h</sup> iɾe	tʃikon	bipɔɖ	ɖʒibɔn	ʃukur-	uttər	ʃundori
SH	d <sup>h</sup> iɾe		bipɔɖ	-	ʃuxur-	uttər	-
RP	d <sup>h</sup> ere	tsekon	bepod	ɖzebon	ʃokər-	ottər	ʃondər
BH	d <sup>h</sup> iɾe	tsiknæi		-	ʃukur-	uttər	ʃundər
BN	-	-	bipɔɖ	-	hukur-, sukur-	uttər	hundər
gloss	‘slowly’	‘thin’	‘danger’	‘life’	‘Friday’	‘north’	‘pretty’

**Table 4-27. Example correspondences showing regressive lowering of \*i and \*u**

This lowering of \*i, \*u occurs whenever the following vowel is \*ɔ, or \*ɛ (though /d<sup>h</sup>ere/ is the only lexical example in the RP data of a high vowel followed by \*ɛ). This phonologically general lowering process is only found in RP out of the 8 KRNB lects examined here.

[PI 27.] \*i, \*u > /e/, /o/ / C\_CV<sub>X</sub>; where V<sub>X</sub> = \*ɔ, \*ɛ {RP}. Diagnostic.

As noted above, \*o is extremely rare in non-initial syllables, and there are no lexical cases in the data of a high-vowel followed by \*o.

There is one instance of lowering of \*i in a monosyllabic noun stem: \*ḍil > [ḍil, ḍel] ‘heart’ {RP}. However, this is a sporadic variation currently without broader effect in the lexicon.

#### 4.4.4. Prosodic vowel raising

It has been stated above that \*o is rare in non-initial positions. However, the sound [o] has become very common in these positions in some lects through raising of \*ᵛ. This change is connected to the initial stress which characterises some KRNB lects, and is common also with SCB. Klaiman writes:

Vowel Raising, produces a neutralisation of the high/low distinction in the mid vowels, generally in unstressed syllables. Given the stress pattern of the present standard dialect, ... Vowel Raising generally applies in non-word-initial syllables (Klaiman 1990: 498)

It is common to define this change for SCB in terms of “the mid-vowels” (cf. also Dasgupta 2003), that is, the merger of /ᵛ/ and /o/, and /ε/ and /e/, in non-initial position. While such a statement may have synchronic value, it is historically over-defined. The phonemic distinction between /ε/ and /e/ was not inherited from Magadhi Apabhramsa, but is an innovation that characterises Bangla, Asamiya, and 6 of the 8 KRNB lects compared in this study (cf. section 4.2). In these lects, the phonemes /e/ and /ε/ contrast in word-initial syllables only, where /e/ occurs as a result of (i) borrowing, and/or (ii) regressive lowering of /i/ in some lects (cf. 4.4.3), and/or (iii) regressive raising of \*ε (cf. 4.4.1). To say that /e/ and /ε/ are merged in non-initial syllables is effectively to ‘undo’ a phonemic split in a position in which it never occurred. What can be said instead is that (i) the innovative phoneme /e/ is only found in word-initial syllables, and (ii) the inherited vowel \*ε has developed a lower articulation in word-initial syllables than elsewhere in certain lects—namely SCB and some of the 8 KRNB lects (SH, RP, BH, TH).

In contrast to the e/ε distinction, the o/ᵛ distinction is an inherited feature, i.e. both \*ᵛ and \*o are proto-phonemes. Therefore to describe the raising of \*ᵛ > /o/ in non-initial position as a loss of phonemic distinction in this position, is historically accurate. As noted above, the raising of non-initial \*ᵛ is related to the initial stress pattern found in these lects, and is termed “prosodic vowel raising”. It is curious that in BN and SH,

where there is no strong initial stress, \*ɔ has /o/ as an irregular reflex in the *first syllable of the word*. Also, note that in Asamiya “Post-accentual *a* is always short ... Often, however, this short sound is indicated by *o*” (Kakati 1962: 74-75). The linguistic and historical relations between these phenomena require further analysis, and no conclusion is possible at the present time.

[PI 28.] \*ɔ > /o/ / non-initial syllables {RP, TH, BH, variably in SH; also SCB}.

Diagnostic of contact with SCB through diglossia.

Prosodic raising of \*ɔ > o must have occurred *subsequent* to [PI 23.], the harmonic raising of \*o > u; otherwise it would feed that change, which it does not. For example, নিচত \*nitʃ-ɔt̪ ‘under-LOC’ > /nitʃ-ot̪/ in some lects due to prosodic raising, but this does not feed [PI 23.] to give nitʃut̪.

Prosodic raising of \*ɔ is found in SCB as well as in the KRNB lects located within the modern geo-political scope of Bengal. It seems highly likely that contact through diglossia with SCB has had some role in the spread of this change. As a change propagated through diglossia it would not be diagnostic of a unified propagation event (cf. 3.4.1.2).

#### 4.4.5. Unrounding

The reflexes of \*ɔ show a phonetic difference for the western lects, KS, RL, and MH, as compared with the other more central and eastern KRNB lects.

[PI 29.] \*ɔ > /ʌ/ {KS, RL, MH}. Diagnostic of contact relations of diglossia with Hindi.

Of the 8 sample lects, these three are the ones (i) located within or near the borders of Bihar, in which the official language is Hindi; and (ii) which also have most evidence of borrowing from Hindi, for example in the nominal postpositions (Ablative, Instrumental, etc.). As a plausibly diglossia-related change, the range is not diagnostic of a propagation event but of contact relations (cf. 3.4.1.2 & 7.5.2.2).

While [PI 29.] is a phonetic change, it has phonemic consequences due to the variable articulation of /ʌ/ as [ə] which leads to a merger with [ə] < \*a (see 4.4.7).

#### 4.4.6. Transposition and loss of medial high vowels

In several KRNB lects, medial high vowels are either lost or transposed to the position before the preceding consonant. The data in Table 4-28 illustrate the phonological correspondences:

Env.	_C <sub>X</sub> iC <sub>Y</sub> a <sup>70</sup>		
gloss	‘feather’	‘sickle’	‘skin’
et. id.	#245	#671	#462
*	*pakhina	katʃija	*ʃamiḍa
KS	pəkhina	kəʃia	ʃəmra
RL	pək <sup>h</sup> na	keʃia	ʃəmra
MH	pəxna	keʃia	ʃəmra
TH	poxina	koitʃa	ʃamra <sup>71</sup>
SH	paxena	kasi	tsameṛa
RP	pakna	kaiso	tsamṛa
BH	paxna	katsi	tsamṛa
BN	-	kasi	samra

**Table 4-28. Example correspondences for “shortening” and raising of \*a**

There are three processes affecting the vowels in this Table. Firstly, in some lects and in particular environments, high vowels are transposed to the position before the preceding consonant. This change reduces by one the number of syllables in the word.

[PI 30.]\*V<sub>1</sub>C<sub>X</sub>i > \*V<sub>1</sub><sup>i</sup>C<sub>X</sub> / \_ C<sub>Y</sub>V {irregularly in KRNB, Middle Bangla, Oriya of C15, Kamrupi Asamiya, ...}<sup>72</sup> Diagnostic value unknown.<sup>73</sup>

This change is quite an old change, as shown by its presence in middle Bangla and Oriya texts. In order to gauge the sociohistorical plausibility of a propagation event involving middle Bangla, middle Oriya and KRNB more information is required on the dialectology of this feature. Masica (1991: 196) notes the presence of \*i transposition in Sadani, a western Magadhan lect. Any conclusions regarding the

<sup>70</sup> Where either C<sub>X</sub> or C<sub>Y</sub> is a sonorant consonant.

<sup>71</sup> The loss of medial \*i in this etymon is not predicted by regular changes reconstructed in 4.4.6; instead the loss may be due to Bangla influence, in which the cognate form is /ʃamṛa/.

<sup>72</sup> Either C<sub>X</sub> or C<sub>Y</sub> is a sonorant consonant. See Chatterji (1926: 378ff.) regarding epenthesis in middle Bangla and Oriya.

<sup>73</sup> Chatterji holds that this change is diagnostic of eastern Magadhan.

diagnostic value of [PI 30.] for propagation events need to be based on a Magadhan wide reconstruction of linguistic history.

In the second process reconstructed from the data above, a transposed high vowel (termed “epenthetic” in traditional IA studies) is either deleted, or fused with a preceding \*a.

[PI 31.]\*a<sup>i</sup> > ɔ, ε / {TH irregularly}. Non-diagnostic.

[PI 32.]\*a<sup>i</sup> > ε / {RL, MH} (after [PI 30.]). Diagnostic.

[PI 33.]\*V<sub>1</sub><sup>i</sup> > V<sub>1</sub> / {RL, MH, SH, RP, BH, and irregularly in TH; also occurs in Middle Bangla & Oriya of C15} (after [PI 7.]-[PI 8.] and [PI 31.]-[PI 32.]). Non-diagnostic.

[PI 31.] is irregular in TH and cannot be used as diagnostic of a propagation event. [PI 33.] constitutes a simplification of the complexity of the sequence and, analogously to monophthongisation covered in 4.4.9, also seems unlikely to be diagnostic of a propagation event because of the possibility of independent and parallel simplification of the sequence.

[PI 32.] is a regular phonological process in RL and MH attested by correspondences in several etyma. The range of propagation across these two lects is sociohistorically plausible based on geographical contiguity. For this reason, [PI 32.] is diagnostic of a unified propagation event.

The third process attested by the data in Table 4-28 is the “shortening” of \*a to [ʌ ; ə] under certain conditions. This change is examined in the next section.

#### **4.4.7. “Shortening” of \*a > [ʌ ; ə]**

In MH and RL, /ɛ/ is found as a regular reflex of KRNB proto-phoneme \*a, under the conditions outlined in [PI 30.] and [PI 32.]. Under slightly different conditions, KRNB \*a gives /ʌ/ in these same lects, as well as in KS. (Recall from section 4.2 that the phoneme /ʌ/ in these lects includes sub-phonemic variation [ə, ʌ]).

[PI 34.]\*a > /ʌ/ / C\_C(C)aC {KS, RL, MH}. Supportive, not diagnostic of contact relations of diglossia with Hindi.

For example, RP [pahar] ‘mountain’ compared with KS-RL-MH [pəhaɾ] ‘mountain’. The same correspondence is found when two consonants intervene between the two instances of \*a, i.e. CaCCaC. This change is most regular in KS, with some exceptions present in the data for RL and MH. The change is less regular in RL and MH when the final C is a liquid. In KS, this change also occurs variably without a final C; that is, in the environment C\_Ca.

This interchange between \*a and [ʌ ; ə] is not unique to these lects, but also occurs amongst Hindi and Bihari lects. The development of [PI 34.] in the westernmost lects of KRNB is quite likely to have been influenced by contact relations of diglossia with Hindi and therefore [PI 34.] is not diagnostic of a PE in KRNB linguistic history. There is a noteworthy similarity also with the Asamiya change \*a > ɒ / \_Ca.

#### 4.4.8. Vowel insertion between consonant clusters

In an almost opposite process to that analysed in section 4.4.6 above (medial high vowel deletion), in Shalkumar a vowel is regularly inserted between consonant clusters if the second consonant of the cluster is either /l/, /n/, or /r/, e.g. \*hamra > /hamera/ ‘we’. The inserted vowel is regularly conditioned by features of the vowel in the preceding syllable. The relevant features are +/- high, +/- back.

	+high - back	+high +back	-high - back	-high +back		
Preceding vowel:	*i	*u	*ɛ	*a	*o	*ɔ
Inserted vowel:	/i/	/u/	/ɛ/	/ɛ/	/o/	/o/
SH:	/imira/	/umura/	/b <sup>h</sup> ɛxera/	/paxena/	/t̪omora/	/b <sup>h</sup> ɔt̪ora/
Inherited form:	*imra	*umra	*b <sup>h</sup> ɛkɖa	*pak <sup>h</sup> ina	*t̪omra	*b <sup>h</sup> ɔt̪ra
Gloss:	‘they, PROX’	‘they, DIST’	‘crooked’	‘feather’	‘you NOM PL’	‘blunt’
SH:	/b <sup>h</sup> iṭira/	/suxulaṭi/	/nɛxənai/	/ɖamera/	/boɣoɾi/	/pɔsonɔ/
Inherited form:	*b <sup>h</sup> iṭɔr- <sup>74</sup>	*t̪ukl-	*nɛknai	*ɖamra	*bogri	*pɔɟnɔ
Gloss:	‘inside’	‘slander’	‘mouse’	‘bullock’	‘jujube berry’	‘question’

Table 4-29. Example words showing vocalic insertion in SH

The change is analysed as follows:

<sup>74</sup> \*b<sup>h</sup>iṭɔr- {p-KRNB} > b<sup>h</sup>iṭora > b<sup>h</sup>iṭra > b<sup>h</sup>iṭira {SH}

[PI 35.]\* $\emptyset$  > V[ $\alpha$  back,  $\beta$  high] / V[ $\alpha$  back,  $\beta$  high] C\_C<sub>X</sub>V, where C<sub>X</sub> = /l/, /n/, or /r/ {SH}. (After [PI 30.] & [PI 33.]). Diagnostic.

As the examples show, this change is fed by other changes which establish the conditioning environment. The presence of medial / $\epsilon$ / in SH /paxena/ is not best explained as a mutation of the inherited \*i in \*pak<sup>h</sup>ina, as we find medial \*i with reflex /i/ in other items, e.g. / $\dot{d}$ orina/ ‘river bank’ < \* $\dot{d}$ orina. The / $\epsilon$ / in SH /paxena/ is best explained by reconstructing medial transposition and deletion of \*i ([PI 30.] & [PI 33.]) as occurring prior to the medial insertion rule [PI 35.]. The conditioning of this insertion is complex, and as a result the change is diagnostic of a propagation event.

#### 4.4.9. Inherited diphthongs

Inherited diphthongs are treated in this study as a sequence of one of the proto-vowels followed by approximants \*j or \*w. Such sequences reconstructed in proto-Kamta vocabulary are usually retained without change in the present day lects, though an exception requires some further comment here as it affects the reconstruction of verbal morphology.

The exceptional case is \* $\omega$ . This reconstructed proto-sequence is justified by the following comparable Tadbhava forms. The only irregularity is in the cognate set for \*k $\omega$ wn- ‘where’. In some cases this irregularity is the result of raising due to a high vowel in the pronominal base, e.g. BN /kuti/; in other cases it is not explained, eg SH /kunt $\dot{a}$ /.

gloss	‘straw’	‘iron’	‘blacksmith’	‘where?’	‘when’	1:SG in AGR:I
et. id.	#58	#99	#816	#1230, #1233	#1214	
*	*pɔwaɭɔ	*lɔwha	*lɔwharɔ	*kɔwn-	*kɔwn-	*-ɔw̃
KS	pwal, pol	lua	luhar	kun <sup>h</sup> a	-	-u
RL	pual	luha	luhar	kun <sup>h</sup> a, kun-t <sup>h</sup> a, kun-t <sup>h</sup> ina	kun-bela	-u
MH	pual-i	luha	-	kunt <sup>h</sup> ε, kunt <sup>h</sup> in	kun-bela	-u
TH	pwal	luha	-	kunt <sup>h</sup> e	kunbela	-u
SH	poal	noha	-	koɽe, kun-ɽa	-	-o
RP	poal	nowa	-	koɽe	konbæla	-õ
BH	poal	noha, noa	-	koɽe, kuɽi	konbela	-oŋ
BN	-	loha	-	kuti	konbela, kunbela	-õ

**Table 4-30. Example correspondences for \*ɔw**

Reconstructing the morpheme in the rightmost column as \*-ɔw̃ also fits well with attested late MIA forms. The Apabhamsa primary ending for 1<sup>st</sup> person singular is *-aum̃*, alternatively Romanised as *-aũ* (Bubenik 2003, see Table 6-16) where *-a* represents the short central vowel from which we get e.Mg. /ɔ/. This reconstruction involves the following changes:

[PI 36.] \*ɔw > /u/ {KS, RL, MH, TH}. Supportive, not diagnostic.

[PI 37.] \*ɔw > /o/ {SH, RP, BH, BN }. Supportive, not diagnostic.

The diagnostic value is at best suggestive or supportive of a propagation event because the monophthongisation of this diphthong is far from a unique case in NIA.

#### 4.4.10. Vowel nasalisation

In some KRNB lects, vowels are distinguished as +/- nasalisation—a phonological feature inherited from MIA. The retention of this feature is not uniform across KRNB, and is also conditioned in certain lects by the position of the nasalised vowel



in a word. Though certain generalisations are possible, there are a few exceptions to these rules. In Bongaigaon, nasalisation has generally been lost in initial syllables, while in Kishanganj and Rangeli it has been retained in initial syllables. In Rangpur, the nasalisation is retained only in monosyllabic words and in verbal suffixes (cf. 6.3). In the other lects, nasalisation is generally lost. These patterns of correspondence are illustrated in Table 4-31, with dark shading indicating the loss of nasalisation.

	monosyllabic <sup>75</sup>		disyllabic, 1st $\sigma$	disyllabic, 2nd $\sigma$
gloss	‘camel’	‘grass’	‘thorn’	‘mud’
	#293	#51	#48	#117
p-Kamta	*u <sup>h</sup> ʈɔ	*g <sup>h</sup> a <sup>h</sup> ʃɔ	*ka <sup>h</sup> ʈa	*kaɖɔ <sup>h</sup>
KS	u <sup>h</sup> ʈ	g <sup>h</sup> a <sup>h</sup> s	ka <sup>h</sup> ʈʌ	kaɖo
RL	u <sup>h</sup> ʈ <sup>h</sup>	g <sup>h</sup> a <sup>h</sup> s	ka <sup>h</sup> ʈa	kaɖʌ
MH	u <sup>h</sup> ʈ <sup>h</sup>	g <sup>h</sup> as	kaʈə	kaɖʌ
TH	u <sup>h</sup> ʈ <sup>h</sup>	g <sup>h</sup> aʃ	kaʈa	kaɖa
SH	u <sup>h</sup> ʈ	g <sup>h</sup> aʃ	kaʈa	kaɖo
RP	u <sup>h</sup> ʈ	g <sup>h</sup> a <sup>h</sup> ʃ	kaʈa	kaɖo
BH	u <sup>h</sup> ʈ	k <sup>h</sup> aʃ	kaʈa	kaɖo
BN	u <sup>h</sup> ʈ <sup>h</sup>	k <sup>h</sup> as	kata	kaɖɔ <sup>h</sup>
etym.	<i>uṣṭra-</i>	<i>ghāsa-</i>	<i>kaṇṭaka-</i>	<i>kardama-</i>

**Table 4-31. Examples of inherited nasalisation, in different positions**

Nasalisation is generally retained in the neighbouring related lects SCA, SCB and SCO, as well as in Hindi, Nepali and Bihari. The neighbouring presence of nasalisation contrasts with its loss in some KRNB lects. This contrast suggests that the range of the loss should be explained with reference to propagation events. However, there are four distinct patterns to the loss of nasalisation in KRNB: BN vs. RP vs. KS-RL vs. the rest. Furthermore, there are several logical possibilities for how these four patterns came about. For example, nasalisation could have been lost in non-initial syllables in all but BN, with the other three patterns subsequent to this change. Alternatively, nasalisation may have been lost firstly in non-monosyllabic words in all lects but RP, with the other patterns a later development, etc. etc.

<sup>75</sup> After the loss of final \*ɔ by [PI 38.].

Unlike in the case of the palatalisation vs. labialisation in 4.3.3, there is no clear linguistic diachronic principle which provides a natural ordering to the loss of nasalisation in the three specific environments: first syllable, other syllable, monosyllable. The best candidate for a guiding linguistic principle may relate to the loss of nasalisation in non-stressed position. However, testing this hypothesis requires closer synchronic study of the conditioning of stress in KRNB lects than has been undertaken to date. At present therefore, loss of nasalisation cannot be used to reconstruct propagation events in KRNB history.

#### **4.4.11. Treatment of inherited final vowels**

In section 4.3.9, it was argued that two consonant phonemes—postalveolar (retroflex) nasal and equivalent lateral—must be included within the proto-Kamta phoneme system in order that it be a realistic reconstruction of the probable consonant system of p-Kamta. The loss of these two phonemes throughout KRNB, as well as much of NIA, does not alter the reconstruction—attested by textual and comparative evidence—that they were in all likelihood present in KRNB lects up to at least the 15<sup>th</sup> century, as in Bangla and Maithili.

An analogous situation pertains for the reconstruction of final vowels in KRNB linguistic history. Some inherited final vowels have been recently lost in KRNB, as is the case for most NIA lects. However, textual evidence from earlier NIA, not to mention MIA and OIA clearly shows them to have been present during these earlier stages. Furthermore, regular retention of these final vowels still persists in a few unconnected NIA lects—including Sindhi, Maithili and Oriya. Chatterji analyses the chronology of this change based on Middle Bengali literature:

Final vowels of OIA. were continued down to Late MIA. and Early NIA. times. The long final vowels «-ā, -ī, -ū», however, were shortened to «-ă, -ĭ, -ŭ», and «-ē, -ō» were weakened and shortened to «-ĭ, -ŭ» in late MIA. (Apabhraṁśa), and these shortened vowels «-ă, -ĭ, -ŭ» fell together with original short «-ă, -ĭ, -ŭ». All NIA. inherited these short vowels, but in later times in Bengali, during the Middle Bengali period, they were all dropped, or assimilated: except «-ĭ, -ŭ» where they were preceded [with no intervening consonant—MT] by vowels of a different quality. (Chatterji 1926: 301)

The chronology proposed by Chatterji for the loss of final vowels (Middle Bengali period) is similar to that proposed for the merger of dental and postalveolar nasals and laterals (cf. 4.3.7). These changes are also alike in being widely distributed across NIA lects (see section 7.4.4). Note that in Indic scripts a final sequence of \*Cɔ̃ is only distinguishable from a final sequence \*C# if the ‘halant’ is used consistently to indicate consonant final syllables. In NIA, it is questionable whether the use of the halant is sufficiently consistent to justify this assumption. It is thus difficult to determine, on textual criteria, the chronology of the loss of final \*ɔ̃.

The pattern in Asamiya with respect to loss of final vowels is generally the same as for Bangla, with the exception of inherited final \*i. In the case of some Asamiya words this vowel has been lost in word final position, for example (from Kakati 1962: 94): /tɔ̃rowal/ < *taravāri* ‘sword’; /gab<sup>h</sup>in/ < *garbhini* ‘big with young’.<sup>76</sup> In the case of other Asamiya words, the final \*i is retained, for example (*ibid.*): /rati/ < *rātri* ‘night’; /sari/ < \**cattāri-*, *catvāri-* ‘four’. Kakati hypothesises that in the case of the latter set of words the final \*i was retained due to suffixation with pleonastic *-ka*, *-kā*. (These segments would have then been eroded during early NIA through lenition of inter-vocalic *-k-* and loss of the final vowel *-a*, *-ā*). A different explanation is given by Masica for the variable retention of final \*i in Asamiya, which he links to similar reflexes in a western Magadhan lect:

final *-i* is “preserved” in [Sadani] by being in effect transposed to the preceding syllable: *āig* ‘fire’ (< \**āg*’ < MIA *aggi*), *dāil* ‘split pulse’ (< MIA *dāli*), *rāit* ‘night’ (< MIA *rattī*). This occurs occasionally elsewhere in NIA (most frequently in Assamese) (Masica 1991: 196).

Transposition of this kind (which Chatterji and Kakati term “epenthesis”) “while ... not a noticeable feature in the standard colloquial [i.e. eastern Asamiya—MT], ... is a distinguishing characteristic of Western Assam colloquy” (Kakati 1962: 148). It is possible that this difference between eastern and western Asamiya lects with regard to /i/ transposition lies behind the variable retention of final /i/ in Asamiya. In the history of western lects, final \*i was transposed to before the preceding consonant. In this position the \*i would not be deleted, as it is no longer in final position. Contact

---

<sup>76</sup> Oddly, Kakati also gives the form /gab<sup>h</sup>ini/ < *garbhini* ‘big with young’ as evidence for the retention of inherited final \*i.

between speakers of western and eastern Asamiya plausibly led to the sporadic reintroduction of final \*i in some words through copying the \*i element *which was maintained in Western Asamiya by transposition*. A precise reconstruction of this hypothetical process requires close knowledge of the historical Asamiya literature, and is beyond the scope of this study.

The regular reflexes of inherited final vowels in KRNB (shown in Table 4-32) are similar to Asamiya in that final \*i is retained, but in KRNB final \*a and \*u are also frequently retained. KRNB final \*a does not go back to OIA final *-ā*—that etymological phoneme merged with etymological final *-a* (> KRNB \*ɔ) during a late MIA process (see quote from Chatterji above). Hence, there are no Tadbhava words retained in KRNB with a final \*-a traceable to OIA final *-ā*. Nonetheless there are regular reflexes of \*a in final position that are well distributed across KRNB. The distribution across KRNB of these forms with final \*-a is unlikely to be the result of recent propagation—the appropriate sociohistorical conditions for such a propagation have not been present for almost five hundred years—but more likely to have been inherited from the common p-Kamta period of linguistic history. Occurrences of final \*-a in KRNB are either (i) the result of innovative affixation of a nominal suffix \*-a, e.g. \*ɕjib<sup>h</sup>a ‘tongue’ < *jihvā*’; (ii) a Tatsama (Sanskrit loanword), e.g. \*indra ‘well’; or (iii) a Persian loanword, e.g. \*hawa ‘wind, breeze, air’. The function of the nominal suffix \*-a mentioned here is described by Chatterji as follows:

the «-a» in the form কালী «kala» is an affix giving a definite force,=*the black one* ; and this can only be from some affix like «-ā-ka», with a definiteness that came to be associated with «-ā» ... The «-ā» nouns and verbal adjectives of Bengali and other NIA. are probably to be referred to oblique (genitive) forms of Late MIA. and Early NIA. Where the original nominative affixes were lost, in some forms of NIA., it is this oblique in «-ā» that took its place (Chatterji 1926: 348-49).

The suffixation of particular nouns with this morpheme \*-a is innovative, and possibly could be diagnostic of propagation events. However, as this suffixation process is found across NIA, the reconstruction of the propagation events involved is beyond the scope of this study.

With the exception of some morphological suffixes, the phonemes \*o and \*ε are not reconstructed in word final position. This is largely because in final position OIA *-e* and *-o* merged during late MIA (Apabhramsa) with OIA *-ī* and *-ū* respectively (see the quote from Chatterji above). Shaded cells in Table 4-32 are proposed in this reconstruction to be borrowings from Hindi (in the case of KS and RL) or Bangla (in the case of TH and RP).

		‘stick’	‘tamarind’	‘night’	‘wall’	‘rain’		‘palate’	‘eye’	‘thin’	‘some’
Et.id		#16	#70	#1495	#617	#149		#446	#365	#1315	#1198
	*-j	*laṭ <sup>h</sup> i	*ṭeṭoli	*raṭi	*ṭaṭi	*ḷ <sup>h</sup> oḍji	*-u	*ṭaḷu	*ṭḷoku	*ḷoru	*kiṭ <sup>h</sup> u
KS	i	laṭ <sup>h</sup> i	ṭeṭul <sup>77</sup>	raṭ	ṭaṭi	-	u	ṭalu	ṭḷouk	-	kuṭ <sup>h</sup> u
RL	i	laṭ <sup>h</sup> i	ṭeṭli	raṭ	ṭaṭi	ḷ <sup>h</sup> ari	u	ṭal-ka	ṭḷak <sup>h</sup> u	suru	kiṭ <sup>h</sup> u
MH	i	laṭ <sup>h</sup> i	ṭiṭli, ṭeṭli	raṭi	ṭaṭi	-	u	ṭal-ka	ṭḷoxu	suru	kiṭ <sup>h</sup> u
TH	i	laṭ <sup>h</sup> i	ṭeṭul	raṭ, ait	ṭaṭi	-	u	ṭalu	ṭḷok	-	kiṭ <sup>h</sup> u
SH	i	naṭ <sup>h</sup> i	ṭiṭili	aṭi	ṭaṭi	z <sup>h</sup> oṭi	u	ṭalu	tsou <sup>h</sup> u	ḷoru, ḷoṭu	kesu
RP	i	naṭi	ṭeṭol	ait	ṭaṭi, ṭaṭi	ḷ <sup>h</sup> ori	u	ṭalu	tsouk	ḷoru	-
BH	i	naṭi	ṭeṭli, ṭeṭili	raṭi, naṭi	-	ḷ <sup>h</sup> ori, ts <sup>h</sup> ori	u	ṭalu	tsou <sup>h</sup> u	ḷoru, ḷoṭu	kisu
BN	i	laṭ <sup>h</sup> i	ṭiṭili	raṭi	-	-	u	ṭalu	suku	horu	-

**Table 4-32. KRNB reflexes of p-Kamta final high vowels**

In some words listed in Table 4-32, the high vowel has been transposed to before the preceding consonant. This process has already been analysed in 4.4.6 and need not detain us here.

<sup>77</sup> Bengali loanword.

		'cold'	'potter'	'farmer'	'bed'		'tongue'	'iron'	'insect'	'kite'
		#1267	#828	#826	#692		#468	#99	#246	#327
	*-ɔ	*ɕʌɔɔ	*kum <sup>h</sup> arɔ	*kiʃaŋɔ	*k <sup>h</sup> atɔ	*-a	*ɕib <sup>h</sup> a	*lɔwha	*poka	*ʃil <sup>h</sup> a
KS	/	-	kum <sup>h</sup> ar	kisan	k <sup>h</sup> at	-a	ɕiβa	lua	poka	ʃil <sup>h</sup> a
RL	/	-	kum <sup>h</sup> ar	kisan	-	-a	ɕiβ <sup>h</sup> a	luha	pɔka	ʃil <sup>h</sup> a
MH	/	ɕar	kum <sup>h</sup> ar	kisan	-	-a	ɕib <sup>h</sup> a	luha	pɔka	ʃil <sup>h</sup> a
TH	/	ɕar	kum <sup>h</sup> ar	kiʃan	-	-a	ɕiβ <sup>h</sup> a	luha	pɔka	ʃil <sup>h</sup> a
SH	/	-	kumar	kiʃan	k <sup>h</sup> at	-a	ziβ <sup>h</sup> a	noha	poxa	tsilɔ
RP	/	ɕar, ɕaɾ	kumær	-	k <sup>h</sup> at	-a	ɕib <sup>h</sup> æ	nowa	poka	tsilæ
BH	/	ɕar	kumær	kiʃ <sup>h</sup> æn	k <sup>h</sup> at	-a	ɕib <sup>h</sup> æ	noha, noa	poka, poya	tsil <sup>h</sup> æ
BN	/	-	kumar	-	k <sup>h</sup> at	-a	ziβ <sup>h</sup> a, siβ <sup>h</sup> a	loha	poka	sila

**Table 4-33. KRNB reflexes of p-Kamta final low vowels**

The etyma in columns on the left in Table 4-33 show the loss of a hypothetical final \*-ɔ. The evidence from Oriya suggests that final \*-ɔ was inherited as part of the common Magadhan stage, derived from OIA final *-a* and *-ā*. Final \*ɔ was then lost subsequent to the breakup of proto-Magadhan. Further chronology is presently uncertain.

[PI 38.]\*ɔ lost word finally {KRNB, Bangla, Asamiya, Hindi, Bhojpuri etc.}  
(chronology uncertain)

As the chronology of this loss is presently unclear, the proto-Kamta vocabulary has been reconstructed to *include* the final \*ɔ though this reconstruction may need to be revised if it can be shown that [PI 38.] occurred prior to 1550 AD when the proto-Kamta speech community is reconstructed as having undergone division (see section 7.3.1).

While proto-phoneme \*ɔ in final position represents both OIA *-a* and *-ā*, the actual historical change that occurred sometime after proto-Magadhan was not the loss of final \*a because this had already been merged with final \*ɔ during late MIA. Instances of final proto-Kamta \*a are not traced back to OIA *ā*, rather they result from the suffixation process described above. Evidence for this suffixation is found in the columns on the right of Table 4-33.

The loss of final vowels during the NIA period turns out to be restricted in KRNB to only final \*ɔ out of the six inherited p-Kamta vowel phonemes.

#### 4.4.12. Summary of reconstructed vowel system

Based on the arguments presented in this chapter, KRNB is reconstructed as having inherited six segmental vowel phonemes from the proto-Kamta stage (cf. 7.3.1) after its split from proto-Magadhan or some intermediary protolanguage.

	Front, unrounded	Back, rounded
High	i	u
Mid	ɛ	o
Low	a	ɔ

**Table 4-34. Vowel system inherited by KRNB lects**

References to the relevant sections dealing with the changes to proto-vowels are given in Tables 4-21 through 4-24 and are not repeated here. The inherited KRNB vowel system has no phonemic length contrast—a feature whose loss is shared with other Magadhan lects, and inherited from a proto-Magadhan stage. Vowel nasalisation has been reconstructed as an inherited feature of KRNB, despite the fact that individual changes to nasalisation are not recoverable at present.

## 4.5. Summary of diagnostic phonological innovations

The following changes are found to be either diagnostic of propagation events in the linguistic history of KRNB or supportive of PEs diagnosed by other changes:

[PI 1.] Devoicing of the obstruent element (not the aspiration) of initial voiced aspirates {regular in BN, variable in BH}. Diagnostic.

[PI 3.] \*d̥, \*d̥ʰ, \*d̥ʒ, \*b̥ʰ, \*g̥ʰ > [-voice] / \_# {SH, BH, BN}. (after rhoticisation). Diagnostic.

[PI 6.] \*C > C<sup>j</sup> / i \_ a {SH, RP, BH} (co-occurrent with [PI 7.]). Diagnostic.

[PI 7.] \*C > \*C<sup>w</sup> / u \_ a {SH, RP, BH} (co-occurrent with [PI 6.]). Diagnostic.

[PI 8.] \*C<sup>w</sup> > C<sup>j</sup> {RP, BH} (after [PI 7.]). Diagnostic.

[PI 9.] \*C[+breathy voice, +continuant] > [+modal voice] / V\_ {SH, RP, BH, BN, Oriya, Asamiya, Bangla} ([tentatively] after C16th, after rhoticisation). Diagnostic.

[PI 10.] Loss of aspiration in all inter-vocalic consonants {RP, BH, ?Bangla, ?Oriya}. Diagnostic.

[PI 11.] Apical series > alveolar articulation {BN and Asamiya} (during or before C15 in Asamiya, C20 in BN). Diagnostic of contact relations with SCA through diglossia.

[PI 12.] \*ŋ, \*l̥ > /n, l/ {KRNB, Bangla, Asamiya, Maithili, Hindi, etc.} (15<sup>th</sup> century or later). Diagnostic value unknown.

[PI 14.] \*l > /n/ / #\_ {RP, SH, BH, and TH Hindus}. Supportive, not diagnostic.

[PI 15.] \*r > Ø / #\_ {RP, variably in SH, BH and among TH Hindus}. Diagnostic

[PI 16.] \*r > n / #\_ {BH variably}. Diagnostic.

[PI 17.] Homorganic cluster of N C [+asp, +vc] > N[+asp] {irregularly in KS, RL, MH, TH} Supportive, not diagnostic.

[PI 18.] \*eṇḍurɔ > /niḍur/ 'rat' {KS, RL, MH, TH}. Supportive, not diagnostic.

[PI 19.] \*ʃ > /s/ {KS, RL, MH (from Hindi, Nepali)}. Supportive, not diagnostic, of contact through diglossia with Hindi or Nepali.

[PI 22.] \*ɔ > [o] / \_ (C) V[+high] {TH, SH, RP, BH, BN, SCB and SCA}. Supportive, not diagnostic.

[PI 23.] \*o > /u/ / V[+high]C\_ {RP, BH}. Diagnostic

[PI 24.] \*a > /æ ; ε/ / V[+high]C\_ {RP, BH}. Diagnostic.



[PI 25.]\*o > /ɔ/ / \_ C a {KS, RL, MH, TH}. Diagnostic.

[PI 26.]\*i, \*u > /e/, /o/ / #(C)\_C-V[-high] (verb root) {RP, BH, Bangla}.  
Diagnostic.

[PI 27.]\*i, \*u > /e/, /o/ / C\_CVX ; where VX = \*ɔ, \*ε {RP}. Diagnostic.

[PI 28.]\*ɔ > /o/ / non-initial syllables {RP, TH, BH, variably in SH; also SCB}.  
Diagnostic of contact with SCB through diglossia.

[PI 29.]\*ɔ > /ʌ/ {KS, RL, MH}. Diagnostic of contact relations of diglossia with  
Hindi.

[PI 30.]\*V<sub>1</sub>C<sub>X</sub>i > \*V<sub>1</sub>iC<sub>X</sub> / \_ C<sub>Y</sub>V {irregularly in RL, MH, TH, SH, RP, BH, Middle  
Bangla & Oriya of C15, Kamrupi Asamiya, ...} Diagnostic value unknown.

[PI 32.]\*a<sup>i</sup> > ε / {RL, MH} (after [PI 34.]). Diagnostic.

[PI 34.]\*a > /ʌ/ / C\_C(C)aC {KS, RL, MH}. Supportive, not diagnostic of contact  
relations of diglossia with Hindi.

[PI 35.]\*∅ > V[α back, β high] / V[α back, β high] C\_C<sub>X</sub>V, where C<sub>X</sub> = /l/, /n/, or  
/r/ {SH}. (After [PI 34.] & [PI 37.]). Diagnostic.

[PI 36.]\*ɔw > /u/ {KS, RL, MH, TH}. Supportive, not diagnostic.

[PI 37.]\*ɔw > /o/ {SH, RP, BH, BN }. Supportive, not diagnostic.

[PI 38.]\*ɔ lost word finally {KRNB, Bangla, Asamiya, Hindi, Bhojpuri etc.}  
(chronology uncertain)

The sociohistorical conditioning of the propagation of these changes is examined in  
Chapter 7. The next two chapters use the phonological reconstruction of this chapter to  
inform reconstruction of inherited morphemes and the changes which have led to the  
present day nominal and verbal morphology.