Anju Saxena and Lars Borin
Synchronic and Diachronic Aspects of Kanashi

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Synchronic and Diachronic Aspects of Kanashi

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Abbreviations

For the phonetic and phonemic transcription conventions used in this volume, see the introductions to Chapters 2, 3, and 4.

The morpheme-by-morpheme glossing conventions used in linguistic examples are as far as possible those of the Leipzig Glossing Rules: https://www.eva.mpg.de/lingua/resources/glossing-rules.php. The following table shows the glossing abbreviations used, where items not provided in the Leipzig Glossing Rules are indicated by a preceding asterisk ("*").

Abbr.	Feature	Abbr.	Feature
1	first person	INTR	intransitive
*1/2o	first/second person object	LOC	locative
2	second person	M	masculine
3	third person	*MDL	middle
ABL	ablative	*m.name	male personal name
ACC	accusative	*N, N	noun
*ADE	adessive	N-	non-, not
Adj	adjective	NEG	negation, negative
Adv	adverb	NMLZ	nominalizer
ALL	allative	NOM	nominative
*ASP	aspect	*NP	noun phrase
Aux	auxiliary	OBL	oblique
*BE	auxiliary (<copula)	PASS	passive
*C	consonant	PFV	perfective
CAUS	causative	PL	plural
COM	comitative	*PLE	plural exclusive
*CX	case suffix	*PLI	plural inclusive
DAT	dative	*p.name	place name
DEM, Dem	demonstrative	POSS	possessive
*DIM	diminutive	*Pro	pronoun
*DIST	distal, distant	PROG	progressive
DU	dual	PROH	prohibitive
*EMP	emphatic	PROX	proximal, proximate
ERG	ergative	PRS	present
EXCL	exclusive	PST	past
F	feminine	Q	question marker
*FIN	finite	*Qnt	quantifier
*f.name	female personal name	REFL	reflexive
FUT	future	*SAP	speech act participant
GEN	genitive	SG	singular
*H	honorific	*TAM	tense-aspect-mood
*HAB	habitual	*TNS	tense
*IA	Indo-Aryan borrowing	TR	transitive
*IDX	index	*v, V	verb
IMP	imperative	*V	vowel
INCL	inclusive	*VIS	visible
INF	infinitive	*VOL	volitional
INS	instrumental	*VVB	vector verb

Synchrony: description

Anju Saxena and Lars Borin

1 Introduction: Kanashi, its speakers, its linguistic and extralinguistic context

Abstract: Kanashi is an indigenous language of India spoken by some 2,000 individuals in one single village in the Indian Himalayas. It is a Sino-Tibetan language, separated from the other Sino-Tibetan speaking communities in the region by a girdle of Indo-Aryan speaking villages. In the present volume we contribute to the documentation of Kanashi with a phonological and a grammatical description, as well as a basic vocabulary. We also address questions of genealogical classification of the Sino-Tibetan languages of the Himalayas, as well as their history of contact with other language families.

Keywords: Kanashi, Sino-Tibetan, South Asia, areal linguistics, comparative linguistics, Himalayan region

Chapter overview:

1 Kanashi and Malana

Kanashi (xns; <Sino-Tibetan [ST]) is also known in the literature as Malani and Kanasi, and in the speech of our oldest Kanashi language consultant as Kunashi. It is spoken by some 2,000 individuals in one single village, Malana (coordinates: 32°03′46″N 77°15′38″E) which is situated in the upper regions of the Malana river valley in the northern part of the Kullu district in the state of Himachal Pradesh in India (Figure 1).[1] The Malana village stands alone. Primarily due to its geographical location (at an altitude of 2,652 metres and with access only on foot), until recently Malana was more or less isolated from the rest of the world. Even today, getting there requires a two-hour mountain hike after a long, winding and difficult car ride from Jari, the nearest town. It is also linguistically isolated: the

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1 The number of Kanashi speakers given by the Ethnologue (Eberhard et al. 2021) is 1,400, but the source for this information is dated 2001. The population of Malana village as given in the 2011 Indian census was 1,722.

inhabitants of all the closest surrounding villages speak Indo-Aryan (IA; <Indo-Iranian<Indo-European) varieties.
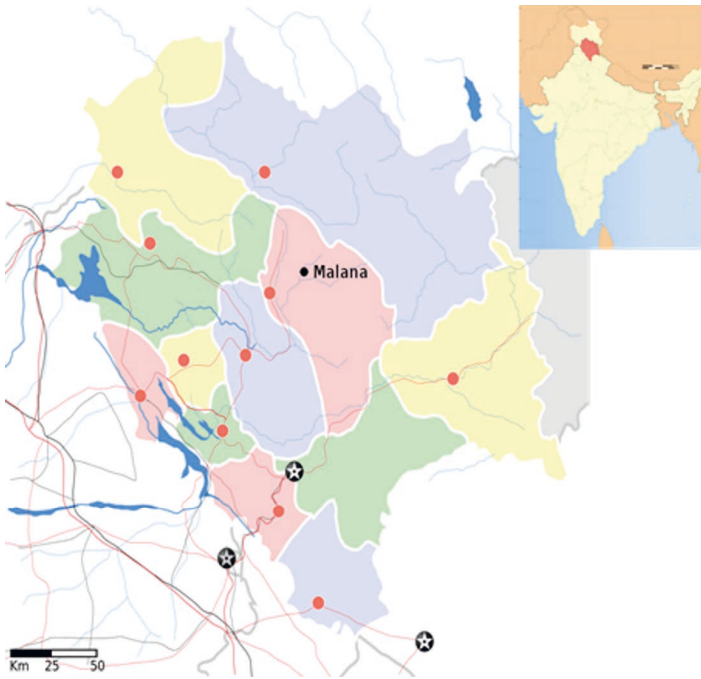
Figure 1: Map of Himachal Pradesh with location of Malana. Map created by Plane-Mad/Wikimedia, reproduced from https://en.wikipedia.org/wiki/File:Himachal_Pradesh_locator_map.svg under a CC-BY-SA license.

Kanashi is an endangered language,[2] for which we, unfortunately, still have very little information available. Like many other languages of this region (and like most of the world's languages), Kanashi is an oral language with no established writing system. The only textual data available in Kanashi come from the few linguistic descriptions made of the language: some short word-lists (Harcourt 1871; Diack 1896; Konow 1909; Tobdan 2011), a short grammatical sketch (6 pages) and 2 short texts in Konow (1909), and linguistic sketches based on secondary data presented by D. D. Sharma (1992: 303–399) and Duttamajumdar (2013; 2015). Sax-

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2 Kanashi is "definitely endangered" according to the *UNESCO Atlas of the World's Languages in Danger* (http://www.unesco.org/languages-atlas/) and "threatened" according to the Ethnologue (Eberhard et al. 2021).

ena & Borin (2013) present a comparative Tibeto-Kinnauri study, which includes some Kanashi data.

While Kanashi undisputably is a Sino-Tibetan language, its exact position within ST remains undetermined. Based on a short wordlist, Diack (1896) concluded that Kanashi shows close affiliations to Kinnauri (kfk; Saxena 2017; 2022). Similar suggestions are also made by Bailey (1908), Konow (1909), Glottolog (Hammarström et al. 2018), and in a comparative investigation of a number of ST languages spoken in the Indian Himalayas by Saxena & Borin (2013). Based primarily on basic vocabulary data, Widmer (2017: 44) categorizes Kanashi as a West Himalayish language, closely related to Kinnauri. Figure 2 shows a classification of Kanashi within ST based on the account of Widmer (2017). It also shows the classifications of Kinnauri and Bunan (bfu), which will be used as closely related ST points of comparison in the description of the Kanashi numeral systems in Chapter 5, together with Zhangzhung (xzh), an extinct West Himalayish language.

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Sino-Tibetan
    Tibeto-Burman
        Bodic
            Bodish
                Tibeto-Kinnauri
                    West Himalayish
                        Eastern branch
                            Central subgroup
                                Zhangzhung (†)
                                Bunan
                        Western branch
                            Kinnaur subgroup
                                Kanashi
                                Kinnauri
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Figure 2: Genealogical classification of Kanashi (Widmer 2017)

One very characteristic feature of the Kanashi community is that both their language *and* their village are important identity markers, and they have a reputation as forming an extremely secluded community.[3] The physical isolation of Malana finds a parallel in that socioculturally, too, Kanashi speakers make a clear distinc-

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3 And this has been the situation for a long time: "[The village of Malauna] is perhaps one of the greatest curiosities in Kooloo, as the inhabitants keep entirely to themselves, neither eating nor

tion between themselves ("the Kanashi community in Malana") and others. There are guidelines as to what a non-Kanashi person can or cannot do. For example, which path in the village the non-Kanashi person should use. Non-Kanashis are prohibited from any type of physical contact with a Kanashi person. Those breaking these rules are liable to punishment in the form of fines. When the Kanashi speakers visit other places in Himachal or elsewhere, they maintain their system of not touching and/or eating with non-Kanashis. Literacy is low and very few Kanashi speakers work outside the village.

P. C. Sharma et al. (1985) investigated the prevalence of endogamy vs. exogamy in Malana. They collected information about all the 141 families residing in Malana at that time, and through personal interviews with the head (or the oldest member) of the family, they recorded their genealogies for up to 3–4 generations back. Their results show that 93.13% of all marriages took place between locals – i.e. exogamy is minimal.

The physical seclusion of the village and the social aloofness of the Kanashi community have contributed to the maintenance of its traditional culture and language, but recent developments are threatening the traditional lifestyle, including the language, where especially contact with Hindi[4] is becoming an integral part of the villagers' daily lives. This is the latest episode in a long history of continuous IA influence on Kanashi, which probably started before the Kanashi speakers settled in Malana, and which is continually reinforced by the circumstance that in all the villages closest to Malana local IA varieties are spoken, collectively referred to as Kullu Pahari.[5]

There are striking differences between the most recent influences and older contacts with IA languages, however. Earlier contacts with non-Kanashi were ritualized and periodical, but now the contacts are more pervasive, also inside the village. In the recent past there have been dramatic socio-economic changes in and around Malana, which have intensified the exposure to and the need to learn Hindi and Kullu Pahari for the Kanashi speakers as never before.

The Malana hydro-electric plant, which was commissioned in July 2001, is being built on the Kanashi people's traditional land. This is destabilizing their traditional lifestyle, including their farming, animal husbandry, and their tradi-

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intermarrying with the people of any other village, and speak a language which no one but they themselves can comprehend." (Harcourt 1871: 312).

4 Hindi (hin) is both one of the two national languages of India (together with English) and the official state language of Himachal Pradesh.

5 ISO 639-3 kfx. Also referred to as Kullui/Kulluvi and Inner Siraji.

tional stewardship of the local biodiversity.[6] Suddenly the villagers are finding themselves at the losing end on many fronts at once. The Indian judiciary system relies on written documents, but Kanashi people do not have written documents to prove their traditional ownership of land. During our fieldtrips, many episodes were told where the villagers lost their land to the hydro-electric dam construction company as they lacked written documents to support their claims. This also means that they are losing their traditional livelihood, forcing them to look outside their village to support themselves, where some other language is the lingua franca.

These developments are accompanied by the growing presence and dominance of Hindi. Hindi is the medium of instruction in schools, the language of communication in employment-related situations outside Malana village, and also the language of modern broadcast-media entertainment, which have become an integral part of village life, thanks to the introduction of satellite television, internet and mobile phones in the village, so that even locals who never leave Malana are exposed to Hindi, Kullu Pahari and English on a regular basis. Today we also find many temporary daily wage workers in Malana, many of whom come from Bihar (east India) and Nepal. The lingua franca in such communications is colloquial Hindi. Adding to this, there is a recent influx of younger (Western and Indian) tourists (drawn by trekking, mountain climbing and marijuana) to Malana, introducing the villagers to modern social habits, and bringing with them the need to interact in Hindi and English.

Most Kanashi speakers understand Kullu Pahari and Hindi, and many younger villagers and children speak a mixture of Hindi, Kullu Pahari and Kanashi. Kanashi is not the language of media, education or employment, but it is, at present, the medium of communication among its native speakers in the "in-village" spheres. However, there are already signs of language shift, as will be seen in Chapter 5 in the differences observed in the use of numerals among older and younger Kanashi speakers.

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6 Villagers depend on the forest for traditional medicine and food, and on the other hand, their local traditions have contributed to the maintenance of the biodiversity in the region. According to their traditional belief, the village god prohibits excessive felling of trees, but this is, unfortunately, changing drastically, as large areas of land are being cleared off to build the dam and the roads needed to bring in heavy construction machinery.

2 Synchronic and diachronic aspects of Kanashi: this volume

In the present volume we present some results of an ongoing long-term substantial research and documentation effort targeting Sino-Tibetan languages spoken in the western and central Himalayas. In this volume the focus will be on Kanashi and its linguistic relatives and neighbors.

As noted above, Kanashi has been underdescribed. For this reason, this volume provides a basic descriptive part: a chapter on the phonology of Kanashi (Chapter 2), a substantial grammar sketch (Chapter 3), and as the last chapter of the volume, a basic vocabulary of Kanashi based on the IDS/LWT list (Borin et al. 2013; Haspelmath & Tadmor 2009), together with Kanashi–English and English–Kanashi versions of the vocabulary (Chapter 9).

Most languages in the world are like Kanashi: small, indigenous languages; about half of the world's languages have less than 10,000 speakers, and only a little over 5% of all living languages have more than one million native speakers (Whalen & Simons 2012: 163). The number of speakers per language follows a power law-like distribution, with a few extremely large language communities at one end and a long tail of very small languages at the other. Many of the approximately 7,000 currently spoken languages have not been described at all by linguists; Seifart et al. (2018: e332f) estimate that about 40% – or about 2,750 – of the languages do not have even a grammar sketch.

At the same time, there is now a fair amount of evidence indicating that the size of a language community correlates inversely with the grammatical – notably morphological – complexity of its language, and investigations are ongoing into the possible causal mechanisms involved (Wray & Grace 2007; Lupyan & Dale 2010; Nettle 2012; Atkinson et al. 2015; Reali et al. 2018; Raviv et al. 2019).

From this follows that we can expect that "almost every new language description still guarantees substantial surprises" (Evans & Levinson 2009: 432), and "there are few signs of our discoveries flatlining" (Seifart et al. 2018: e328). This as-yet far from fully described linguistic diversity – which flies in the face of too categorical a view of what constitutes language and how language universals should be construed (Dryer 1998; Evans & Levinson 2009; Whalen & Simons 2012) – resides mainly in indigenous languages spoken by small, close-knit, often multilingual communities.

There are at least two slightly different consequences for indigenous language description emerging from the above facts. First, we should expect gen-

uinely new,[7] previously unencountered linguistic phenomena to appear as a matter of course. Secondly, because of the sociolinguistic context in which modern (descriptive) linguistics has been developed and is taught, we may also come across linguistic phenomena which actually occur also in more well-described languages, but which have been neglected because of a descriptive bias towards written standard language of speakers similar to the linguists themselves, rather than, e.g., everyday spoken – perhaps multilingual – interaction (Linell 2005; Wray & Grace 2007).

Consequently, in the present volume we also discuss some surprising – to us – phenomena (in particular unexpected variation) encountered in our work on documenting Kanashi. Chapter 4 is devoted to a discussion of the considerable variation exhibited in the phonology of Kanashi and its consequences for the phonological description presented in Chapter 2. In Chapter 5 we turn to a description of the remarkable diversity observed in the Kanashi numerals, and discuss possible reasons for this state of affairs, in particular sociolinguistic factors.

After this, we turn to questions of language diachrony and genealogy. In the course of our work we have come across a number of linguistic features in Kanashi and its ST relatives with potential high relevance for the subclassification of the ST languages of the Himalayas and for uncovering the prehistory of Kanashi. In Chapter 6 we focus on nominal morphology and borrowed nouns and adjectives, while relevant verbal features (verb morphology and stratification of borrowed vocabulary) are investigated and discussed in Chapter 7.

Finally, in Chapter 8, we synthesize and summarize the findings from the diachronic part, attempt to place Kanashi in the ST family tree and draw inferences about the prehistory – including the contact history – of this language community on the basis of the features presented in Chapters 6 and 7.

Note that some information from the descriptive part of the volume may be repeated in the introductory and background sections of individual chapters This is deliberate and has been done in the hope that this will make each chapter reasonably self-contained.

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Anju Saxena, Anna Sjöberg, and Padam Sagar
2 The sound system of Kanashi

Abstract: We present the first systematic description of the sound system of Kanashi. In addition to a thorough investigation and description of the Kanashi phoneme system based on fieldwork data, we also present a comparison of the Kanashi sound system with the phonologies of a number of closely related Sino-Tibetan languages, belonging to the same West Himalayish subgroup of Sino-Tibetan as Kanashi.

Keywords: Kanashi, Sino-Tibetan, phonology, phonetics, comparative linguistics. Himalayan region

Chapter overview:

1 Introduction

The aim of this chapter is to describe the sound system of Kanashi, based on our fieldwork data, collected during a number of field trips to Malana over several years. This is the first systematic description of the Kanashi sound system. In the last section of this chapter (Section 5) we will also compare the Kanashi sound

system with some other languages belonging to West Himalayish, the same Sino-Tibetan subgroup as Kanashi.[1]

2 Data collection and processing

This description is based mainly on 2,063 sound files from three Kanashi speakers for 975 words. In addition, our data also include material from other speakers which has been taken into account in this description. The two main etymological sources of the Kanashi vocabulary are Sino-Tibetan (ST) and Indo-Aryan (IA). In the analysis presented in this chapter, we have included all lexical items, regardless of their origin.

The three primary language consultants are one older male Kanashi speaker (older male, "OM" in the following) and two younger speakers – one man (younger male, "YM") and one woman (younger female, "YF"). At the time of the data collection the older speaker was about 50 years old, the younger male speaker around 22 years old and the female speaker around 28 years old. The female speaker had received some formal education. Both male speakers were illiterate; they had not received any formal education. All three speakers were born and brought up in the village. Like other Kanashi speakers, they leave the village occasionally. All three could understand Hindi (hin), the national language of India and Kullu Pahari (kfx), the locally dominant language (both are IA languages). While the female speaker could speak Hindi quite well, the male speakers (especially the younger speaker) spoke a mixed Hindi with strong influence of their mother tongue Kanashi.

Apart from lexical items, we have also collected elicited phrases and sentences and some narratives. The elicitation was done in Hindi. All recordings were done with a general documentary purpose, that is, not with a particular phonetic experiment in mind. This means that in some cases the materials are not optimal for the analyses performed on them (e.g. having list intonation, not having tokens of the same word from all speakers etc.). The sound files were processed using Audacity and Praat (Boersma & Weenink 2018).

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1 Our investigations of different aspects of the phonology of Kanashi have been presented at several conferences (Saxena & Sjöberg 2017; Saxena et al. 2018a,b,c). We would like to thank to the participants of these events for their comments and suggestions.

2.1 Transcriptions

Unless otherwise stated,[2] Kanashi examples are provided here in phonemic transcription, using the phoneme inventory presented in Sections 2.2 and 2.3. Stress is not indicated, as at this stage, we are not certain of its phonemic status. In Kanashi lexical items which end in a consonant in the transcription, a short final [ə] is heard when these words are spoken in isolation. Similarly, a short final [h] is heard when words ending in vowels in the transcription are spoken in isolation. In our transcriptions such word-final [ə] and [h] are not marked. Further, vowels preceding a nasal consonant tend to be nasalized. But there is also a restricted set of lexical items with nasal vowels without a following nasal consonant. Nasalization on vowels is only marked when there is no nasal consonant following them. Finally, between vowels and in word-final position, /ŋ/ is often pronounced [ŋg], resulting in variant forms ([ŋ] ~ [ŋg]). This seems to occur more commonly between vowels than word-finally. In some cases where this variation is absent or minimal – only [ŋg] is attested in our data – this is explicitly expressed in our phonemic transcription (e.g. /raŋg/ 'color').

For phonemic analysis, all speakers are considered together and as representing one sound system. This, at times, poses some challenges for describing the phonology of Kanashi. We will discuss some problematic cases below. For phonetic analysis, the transcription of one particular instance of recorded pronunciation is given. Most of the examples come from the female consultant and this is thus normally not indicated. When the transcription represents the speech of one of the male speakers, OM or YM is given in brackets following that transcription.

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2 Phonetic transcriptions are given in IPA notation in square brackets "[...]". Even though our transcription conventions for Kanashi are intended as phonemic, whenever we wish to stress that phonemes and phonemic representations are under discussion, we write single phonemes and phoneme sequences surrounded by "/.../". We represent geminate consonants as doubled (biphonemic) rather than long (i.e. we write *daddu* rather than *dadːu*), but we would like to stress that this does not imply a strong preference on our part for the one or the other analysis.

2.2 Consonants

	Bilabial	Alveolar	Postaveolar	Retroflex	Velar	Glottal
Plosive	p b	t d		ʈ ɖ	k g	
Aspirated plosive	pʰ	tʰ		ʈʰ	kʰ	
Fricative		s	ʃ			h
Affricate		ts dz	tʃ dʒ			
Aspirated affricate		tsʰ	tʃʰ			
Nasal	m	n		ɳ	ŋ	
Lateral		l				
Rhotics		r		ɽ		
Approximant	ʋ		j			
	(labiodental)		(palatal)			

Kanashi exhibits considerable phonetic variation in the realization of consonant phonemes. /ɖ/, /ɳ/ and /ɽ/ in Kanashi are found mostly in words of IA origin, where IA (Western Pahari) languages, too, have the same retroflex consonant. For example, Kanashi: /kaːɳas/ 'one-eyed person', Kotgarhi: *kaːɳɔ* 'one-eyed person'; /baːɳes/ 'nephew', Kotgarhi: *bʰaɳe* 'nephew').[3] At the same time these retroflex consonants also show a lot of variation in Kanashi. For example, [ɳ] in Kanashi shows variation with [n], [ɽ], [ɭ] and [ʈ]. For example, Kanashi: [kʰaːna] ~ [kʰaːɳa] 'food';[4] /baniɳ/ [b(ʰ)aniɳ] ~ [b(ʰ)ɔɳiɳ] 'utensil';[5] /baɳaɳ/ 'forest';[6] [baɳaɳ] ~ [baɽaɳ] ~ [baɭaɳ] 'forest';[7] /ʃaɳam/ 'make, do', [kʰaːna/kʰaːɳa ʃaɳm] ~ [kʰaːna/kʰaːɳa ʃaʈam] 'to cook'. At times, the retroflex nasal /ɳ/ seems to be realized as a retroflex flap or approximant, with the preceding vowel nasalized, e.g. /ʃaɳaɳ/ 'ice' with variations [ʃɑ̃ɽaɳ] ~ [ʃɑ̃ɭaɳ]. The retroflex /ɽ/ also shows variation with [ɖ] in the word-medial position, e.g. /buɽits/ [buɽits] ~ [buɖits] 'old(ꜰ)'.

Variation is also observed between [s] and [ʃ]. This variation is found both in the speech of the same speaker (e.g. YF: /aʃi/ [as(s)i] ~ [aʃi] 'eighty') as well as between speakers, e.g. YF vs. OM, where in some lexemes YF has [s] while OM has [ʃ]. For example, /ʃaʈʰ/ 'sixty' YF: [saʈʰ], OM: [ʃaʈʰ] ~ [ʃɔʈʰ]; /sat/ 'seven', YF: [sat], OM: [ʃɑt]; /sadraɳ/ 'autumn' YF: [sadraɳ], OM: [ʃadraɳ]. Note that in all these ex-

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3 Source: Hendriksen (1976).

4 Western Pahari *kʰaːɳ* 'food'. Information provided in this chapter on Western Pahari languages is from Turner (1966) and/or Hendriksen (1976).

5 Jaunsari: *bʰɑ̃̄ɖe* [utensil.ᴘʟ] (Turner 1966: 538).

6 Bhalesi: *baɳ* 'forest'.

7 Variation among /ɽ/, /r/, /l/ is also mentioned by Grierson (1928) (e.g. *chāɽi* 'forty'; *sōɽa* and *sōla* 'sixteen'; *khalas* and *kharas* 'standing').

amples /s/ or /ʃ/ precedes /a/. But at the same time, /a/ is by far the most frequent vowel, therefore it is impossible to say if this is significant.

There is also variation found in our material between [ʣ] and [z] (e.g. /ʣaːm/ [ʣaːm] ~ [zaːm] 'food, to eat'). In general, the voiced fricatives ([z] and [ʒ]) are quite rare in our material. They almost only occur as variants of the affricates (although there are instances where we have [z] and no attested variant with [ʣ], e.g. [zan] 'life' and [dazi] 'doorframe'). This may be a gap in our data. If they should be treated as phonemes, which currently seems unlikely, they appear to have a marginal status in the language.[8]

Similarly, [ʣ] and [ʤ], too, show variation. For instance, /ʤaŋgal/ [ʤaŋgəl] ~ [dzaŋgal] ~ [ʤaŋgal] ~ [ʤaŋgl] 'forest'. However, there are also near minimal pairs for /ʣ/ and /ʤ/, e.g. /ʤab/ 'rain' : /ʣam/ 'to eat'. For this reason they are treated here as separate phonemes.

Variation between aspirated stop and fricative is attested for /pʰ/, which is also realized as [ɸ] or [f]. Example: /kopʰi/ [kɔpʰi] ~ [kɔfi] ~ [kapʰi] ~ [koɸi] 'coffee'), and /kʰ/, which is also realized as [x]. Example, /naʈukʰ/ [naʈukʰ] ~ [naʈux] 'navel'.

Variation is further found in the realization of the rhotics. The alveolar trill /r/ is also realized as a tap or flap [ɾ] and sometimes also as a more approximant-like sound [ɹ] (e.g. /ʤuriŋ/ [ʤuriŋ] ~ [ʤɰɹɪŋ] 'glacier'). Further, /r/ is not always clearly audible in the word-final position.

/ʧ/ shows variation with [tsʰ] and [ʧʰ], e.g. /ʧets/ [ʧets] ~ [ʧʰets] ~ [tsʰets] 'wife' and /ʧaːri/ [ʧaːri] ~ [tsʰaːri] 'attic'.

In addition to a more vocalic /ʋ/ that contrasts with /b/ (e.g. /baː/ 'father' /ʋaː/ 'nest'), /b/ is also realized as [ʋ] (e.g. [bais] ~ [ʋais] 'twenty two'). This variation occurs in all positions in our material. In some items (e.g. /naːb/ 'tomorrow') with a final /b/, it is clearly realized as [ʋ] but in other instances it is difficult to tell, whether from listening or from inspecting the waveforms and spectrograms. Further, /b/ sounds at times like a [β] or a [f], as a fricative rather than a stop. This is also the case with /g/. It, too, is often realized as a fricative [ɣ]. Because of the small database, it is not possible to examine the distribution of these variants.

Generally speaking the degree of aspiration in Kanashi consonants is much less than in the corresponding aspirated consonants in IA languages such as Hindi. Voiced aspirates are almost entirely limited to the IA part of the Kanashi lexicon. Hindi is not necessarily – or even most likely – the source language for most IA vocabulary items in Kanashi, but is used here to represent IA. In all such examples we find both variants in our material – with and without aspiration.

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8 Grierson (1928) provides the following consonants: *ts, tsh, ʣ, zh*.

They appear to be in free variation, both in the speech of the same speaker and across speakers.[9] IA words beginning with [bʰ], [dʰ] and [gʰ] are realized as [bʰ] ~ [b], [dʰ] ~ [d] and [gʰ] ~ [g] respectively (e.g. /bukamp/ [bʰukamp] ~ [bukamp] 'earthquake'; /daram/ [dʰaram] ~ [daram] 'religion'; /ganʈa/ [gʰanʈa] ~ [ganʈa] 'hour'). The status of voiced aspirated stops in Kanashi ([bʰ], [dʰ], [ɖʰ] and [gʰ]) is problematic in some respects. There is one potential minimal pair in our materials: [g(ʰ)oɽa] 'horse' and [goɽa] 'ankle'. There are, however, two problems with treating this minimal pair as conclusive evidence for their phonemic status. First, the already mentioned free variation: 'horse' is often realized as [goɽa], homophonous with 'ankle'. Postulating voiced aspirated stops as phonemes means that they are only occasionally contrastive on the surface and often have the exact same realization as another phoneme. Additionally, this merger is not rule-bound but completely free. The problem with treating voiced aspirated stops as "allophones" brings a very strange kind of allophony with it. There is free variation, but this free variation occurs only in certain lexical items. Something being lexically restricted is generally taken to be a criterion for phonemicity. This problem complex is discussed in more detail in Chapter 4 in this volume.

Even though retroflex and alveolar consonants have phonemic status in Kanashi, there are also instances of free variation between retroflex and alveolar consonants. The last-mentioned could be due to the fact that the position of the retroflex consonant in Kanashi is closer to alveolar. This has the effect that the retroflex consonant is heard often as a non-retroflex consonant. This variation is heard in the speech of almost all language consultants that we have worked with.

Finally, in the word-final position voiced stops generally exhibit what appears to be free variation between voiced and voiceless consonants. In Section 4 we will discuss this in more detail.

2.2.1 Examples of occurrence

2.2.1.1 Stops
/p/ – a voiceless unaspirated bilabial stop

/paːn/	[paːn]	'stone'	/puʣa/	[puʣa] ~ [puza]	'fifty'
/ʈaːpu/	[ʈaːpu]	'island'	/ipiʧ/	[ipiʤ] ~ [ipiʧ]	'behind'
/bukamp/	[b(ʰ)ukamp]	'earthquake'	/ʃep/	[ʃẹp] ~ [ʃep]	'foam'

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9 There are also instances where the locus of aspiration fluctuates (e.g. [kʰakaŋ] ~ [kakʰaŋ] 'mouth').

/pʰ/ – a voiceless aspirated bilabial stop

/pʰuts/	[pʰu̯ts] (YM), [puts]	'mouse'		/pʰasam/	[pʰasəm] ~ [pʰasm]	'to vomit'
/kopʰi/	[kopʰi] ~ [kɔpʰi] ~ [kɔfi] ~ [koɸi] ~ [kapʰi]	'coffee'		/gupʰa/	[gupʰa]	'cave'

/b/ – a voiced unaspirated bilabial stop

/biːg/	[biːg] ~ [bi(ː)kʰ] (YM)	'ant'		/baː/	[ʋaː] ~ [baː] (OM), [ba] (YM)	'father, uncle'
/bube/	[bube] ~ [bəbe]	'father's sister'		/kubaːr/	[kubaː(r)] ~ [kuʋar]	'in, inside'
/suraːb/	[suraːb] ~ [suraːʋ]	'alcohohol'		/naːb/	[naːb] ~ [naːʋ] ~ [naːpʰ]	'tomorrow'

/t/ – a voiceless unaspirated alveolar stop

/ta/	[ta]	'nose'		/tiːr/	[tiːr]	'arrow'
/bitiŋ/	[b⁽ʰ⁾iti(ː)ŋ] ~ [b⁽ʰ⁾ɪtiŋ̣]	'wall'		/batak/	[ba̠tak] ~ [ʋatak]	'duck'

/tʰ/ – a voiceless aspirated alveolar stop

/tʰar/	[tʰar] ~ [tʰaː(r)]	'lion'		/tʰiːd/	[tʰiːd] ~ [tʰiːt⁽ᵊ⁾]	'today'
/mattʰa/	[mattʰa] ~ [matʰa] (YM)	'forehead'		/katʰaː/	[katʰaː]	'story'
/pod/	[pod] ~ [potʰ] (YM)	'dandruff, ash'		/parsed/	[parsed] ~ [pərsetʰ] (YM)	'sweat (N)'

/d/ – a voiced unaspirated alveolar stop

/dil/	[di̯l] ~ [dɪl] (YM)	'heart, soul'		/das/	[das]	'ten'
/gidaɾ/	[gi̯daɾ] ~ [gɪdal]	'jackal'		/dʑaddu/	[dʑaddu]	'magic'
/iːd/	[iːd] ~ [i̯d] ~ [it] ~ [i(ː)]	'one'		/bud(d)/	[büdd] ~ [bud(dᵊ)]	'Wednesday'

/ʈ/ – a voiceless unaspirated retroflex stop

/ʈaːŋg/	[ʈã̠ːŋ(g)]	'leg, foot'		/ʈulem/	[ʈülẹm] ~ [ʈulem]	'to sleep'
/beʈiŋ/	[b⁽ʰ⁾eʈiŋ] ~ [b⁽ʰ⁾eʈɪŋ] ~ [bɪʈɪŋ]	'tree'		/gaʈaːŋ/	[g⁽ʰ⁾aʈã̠ːŋ]	'watermill'
/seʈ/	[seʈ⁽ʰ⁾]	'rich'		/ūʈ/	[ūʈ⁽ʰ⁾]	'camel'

/ʈʰ/ – a voiceless aspirated retroflex stop

/ʈʰiːk/	[ʈʰiːk]	'right (= not wrong)'	/ʈʰullaŋ/	[ʈʰu̱lla] (OM), [ʈʰullaŋ]	'leg'
/uʈʰras/	[uʈ(ʰ)əras] ~ [uʈ(ʰ)ᵊras] ~ [uʈ(ʰ)aɾas]	'high'	/kaːʈʰiŋ/	[kaːʈʰi] ~ [kaːʈʰiŋ]	'mountain top'
/aʈʰ/	[aʈʰ] ~ [aʈʰ]	'eight'	/paʈ/	[pɔʈʰ] (YM), [paʈ]	'threshing stone'

/ɖ/ – a voiced unaspirated retroflex stop

/ɖeb/	[ɖeb] ~ [ɖep]	'left (direction)'	/ɖugas/	[ɖugas] ~ [ɖugɔ̱s]	'deep'
/goɖiŋ/	[goɖiŋ] ~ [godīː(ŋ)]	'foot'	/ɖoɖre/	[ɖɔɖre̱] (YM)	'beehive'
/guɖ/	[guɖ] ~ [gɵt] (YM)	'arm, hand'	/hoːɖ/	[hoːɖ]	'bread'

/k/ – a voiceless unaspirated velar stop

/ka/	[ka] ~ [kə]	[2sg]	/keb/	[keb] ~ [kep]	'needle'
/bakar/	[ba̱kar] ~ [bɔkar]	'goat'	/tsʰika/	[tsʰi̱ka] ~ [tsʰeka]	'early, soon'
/jak/	[jak] ~ [ja(ʔ)]	'yak'	/ɖeːk/	[ɖ(ʰ)eːk]	'fence'

/kʰ/ – a voiceless aspirated velar stop

| /kʰas/ | [kʰɔs] (OM), [kʰəs] ~ [kʰɨs] (YM) | 'sheep' | /kʰili/ | [kʰi̱li̱] (YM) | 'neck' |
| /bikʰaːrija/ | [bi̱kʰaːrijə] | 'beggar' | /dukʰe/, /dukʰis/ | [du̱kʰe] ~ [dukʰis] | 'disease, grief' |

/g/ – a voiced unaspirated velar stop

/gaːr/	[gaː(r)] ~ [gaː(ɹ)] ~ [gar] (YM)	'tooth'	/gun/	[gun]	'winter'
/dauga/	[d(ʰ)auga] ~ [d(ʰ)aga]	'thread'	/rigiːn/	[rɪgiː(n)]	'above'
/biːg/	[biːg] ~ [biːkʰ] (YM)	'ant'	/ɖag/	[ɖag] ~ [ɖʰo̱g]	'cliff'

2.2.1.2 Fricatives

/s/ – a voiceless alveolar fricative

/sa:t/	[sa:(t)] ~ [ʃɑ:t]	'seven'		/su:ru/	[surŭ] ~ [su:r] ~ [suru]	'pig, swine'
/gasa/	[gasa]	'dress'		/ba:saṱʰ/	[ba:saṱʰ] ~ [ʋa:saṱʰ]	'sixty two'
/ti:s/	[ti:(s)]	'thirty'		/ba:s/	[ba(:)s] ~ [ʋa:s]	'scent, smell'

/ʃ/ – a voiceless postalveolar fricative

/ʃa/	[ʃa]	'skin, hide'		/ʃiŋ/	[ʃịŋ] ~ [ʃɪŋ]	'wood'
/dʒuʃaŋ/	[dʒу̯ʃaŋ] ~ [dʒʉʃaŋ]	'cloudy weather, fog'		/oʃaŋ/	[oʃaŋ]	'dew'
/buʃ/	[bʉʃ] ~ [bɵʃ]	'rope'		/niʃ/	[nɪʃ],[nɪʃ] ~ [nis]	'two'

/h/ – a voiceless glottal fricative

/ha:r/	[ha:r]	'necklace'		/ho:m/	[ho:m] ~ [hom] (YM)	'bear'
/samhetaŋ/	[samhetaŋ]	'get someone ready.FIN'		/ʃeher/	[ʃɛhẹr] ~ [ʃɛr]	'town'

2.2.1.3 Affricates

/ts/ – a voiceless alveolar affricate

/tsa:m/	[tsã:m]	'wool'		/tsu:mu/	[tsu:mu]	'catch, hold'
/ketsi:/	[kɛtsi:]	'alone'		/tsʰutsurug/	[tsʰʉtsʉrɵg]	'a kind of wild mushroom'
/barits/	[b(ʰ)ɵrịts] ~ [b(ʰ)ɔrɪts] ~ [b(ʰ)arits]	'many, more'		/sõts/	[sɔ̃ts]	'place'

/tsʰ/ – a voiceless aspirated alveolar affricate

/tsʰa:m/	[tsʰã:m]	'hear, listen'		/tsʰika/	[tsʰịka] ~ [tsʰeka]	'early, soon, fast'

/dz/ – a voiced unaspirated alveolar affricate

/dʑa:ŋ/	[dʑa:ŋ]	'gold'		/dʑeher/	[dʑɛher] ~ [dʑɛr]	'poison'
/badʑug/	[badʑu(g)] ~ [badʑuk] ~ [bazuk]	'thigh'		/nidʑa/	[nidʑa] ~ [niza]	'twenty'
/ʋa:dʑ/	[ʋa:dʑ]	'hawk'		/rodʑ/	[rodʑ] ~ [roz]	'daily'

/tʃ/ – a voiceless unaspirated postalveolar affricate

/tʃara/	[tʃara] (YF, OM)	'child'	/tʃeka/	[tʃeka] (YF, YM)	'back'
/pʰakutʃ/	[pʰakutʃ] ~ [pʰakudʒ]	'small, young, short'	/tʃaːtʃi/	[tʃaːtʃi(ː)]	'paternal uncle's wife'

/tʃʰ/ – a voiceless aspirated postalveolar affricate

/tʃʰo/	[tʃʰɔ]	'boy'	/tʃʰets/, /tʃʰetsaŋ/	[tʃʰets] ~ [tsʰets] (YM), [tʃʰetsaŋ]	'wife'
/katʃʰua/	[katʃʰua]	'turtle'	/magarmatʃʰ/	[magarmatʃʰ]	'crocodile'

/dʒ/ – a voiced unaspirated postalveolar affricate

/dʒab/	[dʒab]	'rain'	/dʒuʃtʰa/	[dʒuʃtʰa] ~ [dʒɵʃtʰa] ~ [dʒʉʃt(ʰ)a]	'moon'
/adʒaŋ/	[adʒã(ŋ)] ~ [adʒãŋ] (YM)	'intestines'	/tʃudʒaŋ/	[tʃudʒaŋ] ~ [tʃʉdʒaŋ] (YM)	'beak'
/huːdʒ/	[hu̞ːdʒ] ~ [hʉːdʒ]	'cow'	/suradʒ/	[su̞rə(ː)dʒ]	'sun'

2.2.1.4 Nasals

In the word-final position, nasals (especially [n] and [ŋ]) are not always clearly articulated; instead the preceding vowel is nasalized and in some cases also lengthened. See Section 4.

/m/ – a voiced bilabial nasal

/mig/	[mig] ~ [mik(ʰ)]	'eye'	/muːl/	[muːl]	'silver'
/dumaːŋ/	[d(ʰ)u̞maːŋ]	'smoke'	/tʃime/	[tʃi̞me]	'daughter'
/hoːm/	[hoːm] ~ [hom] (YM)	'bear'	/liːm/	[liːm]	'pine (tree)'

/n/ – a voiced alveolar nasal

/naːb/	[naːb] ~ [naːʋ] ~ [naːpʰ]	'tomorrow'	/niʃ/	[nɪʃ],[nɪʃ] ~ [nis]	'two'
/baniŋ/	[baniŋ] ~ [b(ʰ)anɪŋ]	'pot'	/munuk/	[mu̞nɵk]	'person'
/gun/	[gun]	'winter'	/tʃiːnɖ/	[tʃiːnɖ] ~ [tʃiːn]	'fingernail'

/ɳ/ – a voiced retroflex nasal. There are no instances of /ɳ/ word-initially

/baːɳes/	[b(ʰ)aːɳɛs]	'nephew'	/ʋaɳam/	[ʋaɳᵊm]	'to be hungry'
/kraːɳ/	[kraːɳ]	'brain, mind'	/poɳ/	[poɳ] (OM)	'straw shoe'

/ŋ/ – a voiced velar nasal

/ŋa/	[ŋa] (OM), [na]	'five'		/maŋgal/	[maŋgal]	'Tuesday'
/toŋ/	[tɔ̃ŋ]	'face'		/bitiŋ/	[b(ʰ)ti(ː)ŋ] ~ [b(ʰ)ɪti̥ŋ]	'wall'

2.2.1.5 Lateral
/l/ – a voiced alveolar lateral approximant

/luk/	[luk]	'itch'		/laːr/	[laː(r)] ~ [laː(ɹ)]	'rice (uncooked)'
/kʰili/	[kʰi̥li̥] (YM)	'neck'		/sulus/	[suləs] ~ [sulus] ~ [ʃulus]	'slow'
/laːl/	[laːl]	'red'		/ʃeːl/	[ʃeːl]	'medicine'

2.2.1.6 Rhotics
/r/ – a voiced alveolar trill

/rag/	[rag(g)] ~ [rag(g)] ~ [rak(k)]	'green, blue'		/reːt/	[reːt]	'sand'
/aːri/	[aːri]	'dough'		/kʰiraŋ/	[kʰɪraŋ] ~ [kʰiraŋ(g)]	'milk'
/duːr/	[duː(r)] ~ [duː(ɹ)]	'far'		/gaːr/	[gaː(r)] ~ [gaː(ɹ)] ~ [gar] (YM)	'tooth'

/ɽ/ – a voiced retroflex trill. There are no instances of /ɽ/ word-initially

/boɽits/	[boɽɪts]	'butterfly'		/doɽag/	[doɽag] ~ [doɭag]	'twins'
/gidaɽ/	[gi̥daɽ] ~ [gɪdaɭ]	'jackal'		/tʃamgaːdaɽ/	[tʃamgaːdaɽ]	'bat'

2.2.1.7 Approximant
/ʋ/ – a voiced bilabial approximant

/ʋaːʣ/	[ʋaːʣ]	'hawk'		/ʋeraŋ/	[ʋerã(ŋg)]	'evening'
/tʰauʋis/	[tʰauʋis] ~ [tʰauʋi̥s] (OM)	'traditional wooden house builder'		/talaːʋ/	[talaːʋ] ~ [tulaːʋ] (OM)	'pond'

/j/ – a voiced palatal approximant

/jaː/	[jaː] ~ [ja(ː)] (YM)	'mother'		/juʃk/	[juʃk] ~ [jɥʃk]	'old'
/baːjlits/	[baːjlits]	'mad'		/ʋajaŋ/	[ʋəjaŋ] (YM), [ʋaiŋ] (YF)	'honey bee'
/maːj/	[maːj] ~ [mai]	[NEG.BE]		/ettej/	[e̥tte(j)]	[1PLI]