

Variation in Perso-Arabic and Devanāgarī Sindhī orthographies

An overview

Arvind Iyengar

University of New England

The Sindhī language has been written in numerous scripts throughout its history. However, in the twentieth century, Perso-Arabic and Devanāgarī emerged as the dominant scripts for the language. Today, Perso-Arabic is the sole official script for Sindhī in Pakistan, while both Perso-Arabic and Devanāgarī are in concurrent use for the language in India. This paper identifies and analyses areas of orthographic standardisation and variation in the Perso-Arabic and Devanāgarī scripts for Sindhī, focusing primarily on practices in the Indian context. It first classifies orthographic variation into that stemming from phonological ambiguity, and that which is purely graphematic. The former includes the representation of reduced vowels, gemination, vocalic endings, loanwords, consonant clusters and sounds of unclear phonemic status. The latter includes the shapes and positioning of diacritics, allographs, derivative graphemes and collation orders. The paper concludes by summarising the possible pedagogical implications of such orthographic standardisation and variation.

Keywords: script, orthography, standardisation, Sindhī, Perso-Arabic, Devanagari

1. Introduction

This paper examines issues of orthographic standardisation and variation in the Perso-Arabic and Devanāgarī scripts for the Sindhī language, and their implications for pedagogy in the Indian context. The paper first describes the overall structure and main features of the Perso-Arabic and Devanāgarī scripts as used for Sindhī. It then scrutinises in detail issues of standardisation and variation in the Perso-Arabic and Devanāgarī-based orthographies for Sindhī. In doing so, it covers orthographic variation that emerges from corresponding phonological ambi-

guity as well as variation purely at the graphematic level. The paper concludes with a summary of the potential pedagogical and sociolinguistic implications of the aforementioned issues.

While the focus in this paper is on the Indian context, discussion of Sindhi orthography in the Perso-Arabic script necessarily entails examination of the Pakistani context as well. Therefore, this paper will include the analysis of Sindhi orthographic practices in Pakistan where relevant.

1.1 The Sindhi language

Sindhi is an Indo-Aryan language (Khubchandani 2007) native to the Sindh province of southern Pakistan. The language is also spoken in various parts of India, mostly urban. This is a direct outcome of the 1947 Partition of British India into Hindu-majority India and Muslim-majority Pakistan, and the accession of Sindh to Pakistan. Following the inclusion of Sindh in Pakistan, around 800,000 Hindu Sindhis migrated from Sindh to independent India (Daswani & Parchani 1978). According to Lewis, Simons, and Fennig (2016), Sindhi is spoken by just under 24 million people worldwide. Of these, 22 million are estimated to reside in Pakistan, primarily in Sindh, and 1.7 million speakers in various parts of India. An estimated 500,000-strong Sindhi diaspora, mostly Hindu, also exists in over a hundred countries worldwide (Falzon 2004: 6). In Pakistan, Sindhi is an official language in Sindh province, while in India, Sindhi is one of 22 constitutionally recognised or “scheduled” languages (Constitution of India Schedule VIII).

1.2 Phonology

Before proceeding to matters of script and orthography, the phonology of the Sindhi language and its salient features first need to be reviewed. The phonemic inventory of Sindhi is largely similar to that of most north-western and western Indo-Aryan languages. Table 1 shows the phonemic inventory of consonants in standard Sindhi, based on Nihalani (1999), Cole (2001) and Khubchandani (2007). However, scholars are not unanimous on the exact number and nature of phonemes in Sindhi. Sounds enclosed in parentheses in Table 1 are those listed by Nihalani (1999) as independent phonemes, but by Cole (2001) as phonemically ambiguous.

Certain consonants show up in allophonic form differently depending on their position within a word. /n/ is realised as [ɳ] when preceding dental stops in consonant clusters, as in /d̪əɳd̪u/ [d̪əɳd̪ʱ] ‘tooth’. /ɳ/ manifests as [ɳ̪] in intervocalic position, as in /maɳʰu/ [maɳ̪ʰu] ‘man’. This is reflected in the observation by early grammarians that /ɳ/ was occasionally interchangeable with /ɳ̪/ (Trumpp

Table 1. Phonemic inventory of consonants in standard Sindhī

	Labial / labio-dental		Dental	Alveolar	Retroflex	Alveolo-palatal / palatal	Velar	Glottal
<i>Plosive stop</i>	p	b	ṭ	ḍ	ṭ	ḍ	k	g
	p ^h	b ^h	ṭ ^h	ḍ ^h	ṭ ^h	ḍ ^h	k ^h	g ^h
<i>Implosive stop</i>	ɓ			ɗ		f	ɟ	
<i>Nasal stop</i>		m		n	ɳ	ɲ	ŋ	
		(m ^h)		(n ^h)	(ɳ ^h)			
<i>Affricate</i>						ʈʂ	ɖʒ	
						ʈʂ ^h	ɖʒ ^h	
<i>Fricative</i>	f			s	z	ʃ	x	ħ
<i>Approximant</i>		v				j		
		(v ^h)						
<i>Tap/Flap</i>				ɾ	ɽ			
					(ɽ ^h)			
<i>Lateral approximant</i>				l				
				(l ^h)				

1872:16). /v/ and /v^h/ tend to be pronounced [w] and [w^h] before back vowels, although this is subject to high idiolectal variation.

Sindhī has a system of ten vowels – /ə a ɪ u e ε o ɔ/ (Khubchandani 2007; Nihalani 1999). Vowel nasalisation is phonemic, and all oral vowels have nasalised counterparts. Based on the Sanskrit model, Sindhī vowels have been traditionally grouped into ‘short’ vowels (/ə ɪ u/), ‘long’ vowels (/a ɪ u e o/) and so-called ‘diphthongs’ (/ε ɔ/). However, vowel length in Sindhī is not phonemically significant (Nihalani 1978). Therefore, this paper characterises short vowels in Sindhī as ‘lax’, and long vowels and so-called diphthongs as ‘tense’. In general, lax vowels tend to be phonetically short, and tense vowels phonetically long (Keerio, Channa, Mitra, Young & Chatwin 2014), although this depends greatly on word environment (Nihalani 1978). Hence, the terms lax and tense have been employed in this paper primarily for nomenclatural convenience rather than as accurate descriptors of phonetic quality and quantity.

An oft-cited feature of Sindhī phonology is vowel-finality. Some authors assert that all Sindhī words are vowel-final (Buglio 2006:98; Cole n.d.-a; Grierson 1919; Hardwani 1991:iii). Others state that indigenous Sindhī words are vowel-final, while certain consonant-final loanwords that have not yet been phonologically indigenised remain as they are (Khubchandani 2007:691, 701). Conversely, if a loanword that is consonant-final in the source language is considered to have been assimilated into Sindhī, it may have a lax vowel suffixed. This word-final lax vowel manifests in a ‘reduced’ form (see Table 2).

Table 2. Assimilated loanwords in Sindhī with suffixed reduced vowels

Source word	Source language	Phonemically Indigenised Sindhī word	Gloss
/ʻɔfis/	English	[afis ^ə]	‘office’
/dʒʊn/	Persian	[dʒan ^ɪ]	‘life’
/yarib/*	Arabic	[yərɪb ^ə]	‘poor’

* The Arabic pronunciation shown is approximate, since it varies with dialect.

The reduced vowels [ə], [ɪ] and [ɔ] are essentially unstressed phonetic realisations of the lax vowels /ə/, /ɪ/, and /ʊ/, respectively, in morpheme-medial or morpheme-final positions in polysyllabic words (Addleton & Brown 2010:15). In monosyllabic words, they tend to be enunciated more clearly, due to their salience as the sole vowel. In polysyllabic words, the reduced vowels become grammatically significant in final position, since the quality of the vowel often contains person-number-gender (PNG) information (Grierson 1919:22). Compare, for instance, /kɪṭabʊ/ [kɪṭab^ə] ‘book’ and /kɪṭabə/ [kɪṭab^ə] ‘books’, or /masaṭʊ/ [masaṭ^ə] ‘mother’s sister’s son’ and /masaṭɪ/ [masaṭ^ɪ] ‘mother’s sister’s daughter’. Final reduced vowels are also semantically significant, as illustrated by the words /bāsə/ [bās^ə] ‘smell’ and /bāso/ [bās^ə] ‘bamboo’.

Reduced final vowels in Sindhī are not predictable from the phonemic structure of the word. Rather, they are lexically conditioned. Assignment of a reduced final vowel to a consonant-final loanword is arbitrary, much like the arbitrary assignment of grammatical gender in Sindhī to an inanimate loanword. Reduced vowels are typically imperceptible to a nonfluent listener (Cole 2001; Stack 1849:10), and are often dropped in rapid speech (Khubchandani 2007:692). Cole (2001) notes that reduced vowels in final position may also be devoiced following voiceless stops, adding to their imperceptibility. These reduced vowels are often lost in the speech of younger Sindhī speakers, particularly those who do not live in a comprehensive Sindhī-speaking environment. This has been attested both in Pakistan and India (Buglio 2001; Cole 2001, 2006). More accurately, reduced vowels tend to feature only epenthetically in the phonologies of younger speakers, rather than as a distinctive feature. This has resulted in the emergence of new homophones, and consequently impinged upon the morphology of the language. For instance, both [kɪṭab^ə] and [kɪṭab^ə] may be pronounced [kɪṭab] by younger speakers. Consequently, depending on the presence of reduced vowels, Sindhī phonology can be nominally classified as *old variety* or *new variety* phonology (Buglio 2001).

Reduced vowels are significant from the perspective of orthography. Perso-Arabic Sindhī orthography conventionally omits lax and reduced vowels, whereas Devanāgarī Sindhī orthography requires that all vowels, whether tense, lax or

reduced, be explicitly represented. This results in disagreement on how to spell certain words in Devanāgarī, since there is considerable intergenerational as well as idiosyncratic variation in the pronunciation of reduced vowels. Consequently, the implications of the representation of short vowels in both orthographies form a key area of investigation in this paper.

Since the subject matter of this paper includes issues of Sindhī orthography emerging from phonological variation, examples in this paper will be accompanied by transcriptions in the International Phonetic Alphabet (IPA) from a phonetic rather than phonemic perspective. This is to enable explicit phonetic representation of reduced vowels as [ə], [ɪ] and [ʊ]. Diacritical Roman transliterations based on Grierson (1919) are also provided where necessary.

1.3 Scripts

In Pakistan, the Sindhī language is written in a modified version of the Arabic script known as Perso-Arabic (ا ب پ ...ٲٲٲ) (Salomon 2007:75). In India, Perso-Arabic used to be the predominant script for the Sindhī language, but its use is currently on the decline in the country. The reasons for this are twofold. First, the Hindū Sindhī community in India tends to educate its children in languages other than Sindhī, chiefly English (Daswani 1989). Secondly, the Perso-Arabic script is very different in appearance and structure from other scripts commonly used in India (King 2001), due to which there is little scope of literacy transfer. For these reasons, attempts have been made in India for several decades now to supplement or replace Perso-Arabic with the Devanāgarī script (अ आ इ ई ...) for writing Sindhī (Daswani 1979). The stated rationale behind adopting Devanāgarī is the widespread use of the script in India for writing other languages, primarily Hindī. However, attempts to introduce Devanāgarī for Sindhī have only been partly successful (Shackle 2014). In other words, the situation of the Sindhī language in India is one where the Perso-Arabic script is dying out, and where the Devanāgarī script has not taken its place entirely. Against this background, this paper attempts to delve further into matters of script structure and orthographic standardisation in Perso-Arabic and Devanāgarī Sindhī, in order to enable appropriate engagement with questions of literacy in the language.

2. Perso-Arabic Sindhī

The Perso-Arabic script is the official script for Sindhī in Pakistan, and a co-official script for the language in India, alongside Devanāgarī (Daswani 1979). As

the name suggests, the script is based on the Persian version of the Arabic script (Khubchandani 2007: 696; see Table 3).

Table 3. Perso-Arabic Sindhī alphabet with standard phoneme-grapheme correspondences

s	س	t	ٺ	ٺ	bʰ	ب	b	alifu
ث	ث	ٽ	ٽ	ٽ	پ	پ	پ	ا
h	ه	ٿ	ٺ	ڙ	f	ڙ	pʰ	p
ج	ج	ج	ج	ڄ	ج	ج	ق	پ
ر	ر	ز	ڌ	ڌ	ڌ	ڌ	ڌ	x
ڙ	ڙ	ڙ	ڙ	ڙ	ڙ	ڙ	ڙ	خ
ڙ	Ø	ز	ٺ	ز	s	س	s	z
غ	ع	ط	ط	ض	ص	ش	س	ز
ڻ	gʰ	ڳ	g	kʰ	k	q		f
ڳ	ڳ	ڳ	ڳ	ڪ	ڪ	ق		ف
j	hamzo	ھ	و	ڻ	n	m		ل
ي	ء	ھ	و	ڻ	ن	م		ل

Note. Collation order based on Mewaram (1910)

2.1 Structure

As is the norm with Arabic-based scripts, Perso-Arabic Sindhī runs from right to left. It comprises compulsory graphemes or bases, and optional graphemes or diacritics. The script is inherently cursive; base graphemes within a word generally join the following base. This causes certain bases to have different shapes depending on their position within a word (Bauer 1996).

While consonants are represented as simple base graphemes, joined to the following one where applicable, vowels have slightly more complex representations. Vowels are shown by a diacritic alone, or by a combination of base and diacritic. Lax vowels are shown by a diacritic above or below a base. Tense vowels may have both a diacritic and a base component. When representing a vowel phoneme that follows a consonant phoneme, the vowel grapheme is written using the consonant grapheme as the base. When representing a vowel phoneme that occurs word-initially, a vowel-holder grapheme called *alifu* [əlɪfʊ] is used as the base. When two vowels occur consecutively, the second vowel is written using an alternative type of vowel-holder grapheme called *hamzo* [ɦəmzo] as the base.

A consonant that is not followed by a vowel is simply shown as a bare consonant grapheme. If the absence of a vowel needs to be explicitly indicated – for instance, in primers – then the diacritic ⟨ⱱ⟩ is placed atop the consonant grapheme. However, there is disagreement among Sindhī grammarians on the

possibility of vowelless consonants in word-medial and final positions. This is explained further in Section 2.3.

Examples of vowel graphemes written using *alifu*, *hamzo* and the consonant grapheme for /b/ as the base are shown in Table 4. Graphemes on the lower line are variant forms, which will be treated in greater detail in Section 2.3.

Table 4. Representation of vowels in Perso-Arabic Sindhī

Word-initial forms with <i>alifu</i>										
ا	o	ε	e	u	و	ي	ī	ا	ə	
او	او	اي	اي	اُو	اُ	اي	اِ	ا	ا	
او		از		او		اي				
Secondary forms with <i>hamzo</i>										
o	e	u	و	ي	ī	ا		ə		
نو	ني	نُو	ڪا	ني	ڪا	نا		ڪا		
		نُو		ني						
<i>In Sindhī, /ε/ and /ɔ/ do not occur as the second vowel of a vowel sequence</i>										
Forms using consonant as base										
bɔ	bo	bε	be	bu	bʊ	bi	bī	ba	bə	b
بَو	بو	بِی	بي	بُو	بُ	بي	بِ	با	بَ	ب
بَو		بَد		بُو		بي				بُ

Graphemes for Sindhī-specific phonemes have been created by adding or repositioning dots and diacritics on graphemes used in Arabic or Persian (Salomon 2007: 110; see Table 5).

Table 5. Selection of Sindhī-specific graphemes derived from pre-existing Arabic graphemes

Arabic vowel grapheme	Derived Sindhī vowel graphemes	
إي /i/	اي	/e/
أو /u/	او	/o/
Arabic consonant grapheme	Derived Sindhī consonant graphemes	
ج /d͡ʒ ~ d͡ʒ/	ج /f/	ج /ɲ/
ت /t ~ t̪/	ث /t̪ʰ/	ث /t/ ث /t̪ʰ/
د /d ~ d͡/	ذ /d̪ʰ/	ذ /d/ ذ /d̪ʰ/ ذ /d/

In terms of typographical appearance, Perso-Arabic Sindhī is characterised by the multitude of dots in use. Another distinct feature is the conventional use of the *naskh* calligraphic style (Shackle 2014). These features visually distinguish the Sindhī version of the Perso-Arabic script from versions used for other Subcontinental languages such as Urdū and Kashmīrī.

2.2 Salient features

The Sindhī language lacks several phonemes that the Arabic language has. However, the distinct graphemes for these phonemes are retained as they are in the Perso-Arabic Sindhī script. As a result, the script contains superfluous graphemes that result in a many-to-one mapping of graphemes to phonemes. Table 6 shows a few homophonous graphemes in the Perso-Arabic Sindhī script, with their Arabic and Sindhī pronunciations.

Table 6. Arabic and Sindhī phonemic values of certain Perso-Arabic graphemes

Perso-arabic grapheme	ح	ه	ت	ط	ث	س	ص	ذ	ز	ض	ظ
Arabic pronunciation	/h/	/h/	/t/	/tʰ/	/θ/	/s/	/sʰ/	/ð/	/z/	/zʰ/	/ðʰ/
Sindhī pronunciation	/ɦ/		/t/			/s/			/z/		

A logical extension of graphemic retention is orthographic retention. This refers to the retention of source-language orthography for loanwords in the target language, when both the source and target languages use the same script. Share and Daniels (2016) refer to this phenomenon as *orthographic inertia*. Sindhī is a noteworthy case of a language that displays orthographic inertia both in its Perso-Arabic and Devanāgarī scripts. An example of orthographic inertia in Perso-Arabic Sindhī is that of the Arabic loanword <تعليم> ‘education’. In standard Arabic, this word is pronounced [tasli:m]. However, in Sindhī, its pronunciation is indigenised to [tɛlim^o]. In general, loanwords from Arabic and Persian retain their original orthography in Sindhī, apart from minor adaptations to Sindhī morphophonology. This retention of source orthography sometimes serves a disambiguating purpose, as can be seen in Table 7.

Table 7. Homophonous lexemes in Perso-Arabic Sindhī

Sindhī word	Pronunciation	Gloss
مُدو	[muɖo]	‘time period’
مُدعو		‘issue, matter’
بَسْرُ	[bəsr ^o]	‘livelihood’
بَصْرُ		‘onion’
حَالُ	[ɦal ^o]	‘condition, state’
هَالُ		‘hall’

Note. Adapted from Lekhwani (1996)

However, the retention of source orthography also means that the spellings of such loanwords often need to be learnt by rote. That said, such cases of homophony-but-heterography in Perso-Arabic Sindhī are few.

The converse, that is, homography-but-heterophony is also present in the orthography. In line with standard Arabic-script practice, diacritics for lax vowels are usually omitted in Perso-Arabic Sindhī orthography (Shahaney 1967 [1906]:11). This customary omission of lax vowel diacritics often results in homographs, as shown in Table 8.

Table 8. Homographic lexemes in Perso-Arabic Sindhī

Homographic form without diacritics	Possible reading	Pronunciation	Gloss
مٲ	مٲ	[məʔʰ]	‘earthen pot’
	مٲ	[mɪʔʰ]	‘cheek’
	مٲ	[mɪʔʰ]	‘relative’
	مٲ	[muʔʰ]	‘urine’
ڀڄڻ	ڀڄڻ	[bʰəɳəʔʰ]	‘to break’
	ڀڄڻ	[bʰuɳəʔʰ]	‘to roast’

Note. Adapted from Lekhwani (1996)

It is evident that the onus is on the reader to disambiguate homographs from the context. Such disambiguation necessitates fluency in the language.

2.3 Standardisation

The shapes of the individual graphemes in the Sindhī version of Perso-Arabic were standardised by the colonial Government of Bombay in 1853 (Pandey 2010:1). However, Lekhwani (2011:38) notes that matters of diacritics and spellings of words were not considered in depth. For this reason, there remains considerable variation in the finer points of the Perso-Arabic Sindhī orthography to this day. The most salient of these points of variation of are outlined below. Points of variation arising from phonological ambiguity include the representation of reduced vowels, gemination, vocalic endings, loanwords, consonant clusters and sounds of unclear phonemic status. Variation of a purely graphematic nature includes the shapes and positioning of diacritics, allographs, derivative graphemes and the collation order.

2.3.1 *Reduced vowels*

Due to lax vowels being conventionally left unwritten in the Perso-Arabic script, there is disagreement among scholars on the quality of medial and final lax vowels in certain words. For instance, the unmarked word <جھڙو> ‘which (correlative)’ is diacriticised by Cole (n.d.-b) as <جھڙو> (jiharō), which is phonemically /d͡ʒɪɦəɾo/. In contrast, Lekhwani (1996:62) diacriticises the same word as <جھڙو> (jahirō),

which is phonemically /d̪zəɦɪɾo/. Mewaram (1910:181) lists both forms. Compare these to the colloquial phonetic realisation of this word, which is generally [d̪zəɦ^ɛɾo].

2.3.2 *Gemination and vocalic endings*

Another area of disagreement is the representation of gemination and vocalic endings. In his classic grammar, Trumpp (1872:xxxiii f.n.) states that gemination is usually not marked in the orthography, except to avoid potential homographs. Trumpp cites the examples of ⟨اُنْ⟩ ⟨una⟩ ‘his/her/its (oblique form)’ and ⟨اُنْ﴾ ⟨unna⟩ ‘wool’, the diacritical spellings of which suggest the pronunciations [un^ə] and [unn^ə], respectively. However, the entry for ‘wool’ is cited by both Mewaram (1910:25) and Lekhwani (1996:15) as ⟨اُنْ﴾ ⟨una⟩, which reflects the pronunciation [un^ə]. Consequently, the variation spills over onto other scripts; in his Devanāgarī Sindhī dictionary, Hardwani (1991:403) lists both spellings under ‘wool’, effectively representing both pronunciations.

Variation is more pronounced when it comes to loanwords. Consider, for example, the Arabic loanword ⟨عَزَتْ⟩ ‘respect’ (§ 3.2). According to Khubchandani (2007:697), the diacritical version of this word is ⟨عَزَّتْ﴾ ⟨izzat⟩. This reflects the pronunciation [izzat̪], with a final vowel absent and gemination present. On the other hand, Lekhwani’s (1996:12) diacritical version of this word is ⟨عِزَّتْ﴾ ⟨izata⟩. This reflects the pronunciation [izata̪], with a final vowel present and gemination absent. Nevertheless, the colloquial pronunciation of both variants would be similar, varying on a spectrum between the two pronunciations cited.

2.3.3 *Loanword spellings*

A related phenomenon is that of the Perso-Arabic-script spellings of recent loanwords from languages other than Arabic or Persian, the pronunciations of which may not yet have undergone phonemic indigenisation in Sindhī. An example is the English word ‘mobile’. Since scholars are not in agreement whether unassimilated consonant-final loanwords should be written with a final reduced vowel appended to them or not, it is unclear whether this word should be transcribed in Perso-Arabic Sindhī as ⟨موبائِلْ﴾ ⟨mobāil⟩ or ⟨موبائِلُ﴾ ⟨mobāilu⟩.

2.3.4 *Consonant clusters*

The question of representing reduced vowels also surfaces with regard to medial consonant clusters. Since there is great idiosyncratic variation in the pronunciation of consonant clusters, there is corresponding variation in the orthography. This uncertainty regarding orthographic representation of consonant clusters occasionally results in variant orthographic practices by the same author and in the same context.

An example of this is found in a programme run by the Karāchī-based Sindhī media group *Awami Awaz*. The programme is a talk show entitled [tʰkʰijũ mɪtʰijũ ɟalʰijũ] (*Awami Awaz* 2017), roughly meaning ‘tough and sweet talk’ in Sindhī. At the time of writing (October 2017), the name in the show’s title graphic was spelt in Perso-Arabic as <تیکھون میٹھون ڳالھيون>, orthographically <tikhiyũ mīṭhiyũ ḡālhyũ>. The first two words are spelt with the sequences <-کھ-> <-khiy-> and <-ٹھ-> <-ṭhiy->, that is, the potential consonant clusters <-کھ-> <-khy-> and <-ٹھ-> <-ṭhy-> have been avoided by inserting the vowel diacritic <◌◌> <i> [ɪ]. In contrast, the orthography of the third word shows a consonant cluster <-لھ-> <-lhy->, with no intervening <◌◌> <i> [ɪ].

The name of the show also appears in the background after the show commences. Here, though, the vowel diacritics are marked somewhat differently, as <تیکھون میٹھون ڳالھيون>, orthographically <tikhyũ mīṭhyũ ḡālhiyũ>. In other words, the first two words are now shown to contain consonant clusters, while the third one does not.

2.3.5 Diacritics

Another area of ambiguity in Perso-Arabic Sindhī orthography is that of the placement of the diacritic component in vowel signs. As shown in Table 4, the vowel signs for /i/ and /u/ are traditionally written <◌◌> <◌◌>, with the diacritic components <◌◌> and <◌◌> positioned below <◌◌> and above <◌◌>, respectively (Lekhwani 1996, 1997; Shahaney 1967 [1906]; Varyani & Thakwani 2003). However, due to Arabic and Urdū influence, these diacritics are often found positioned on the preceding base grapheme instead. Therefore, the signs for /i/ and /u/ may also appear as <◌◌> and <◌◌>, respectively. Occasionally, these alternative forms may appear in the same text, as evinced once again by the name of the television programme in Section 2.3.4.

Consider the first iteration of the name, namely, <تیکھون میٹھون ڳالھيون>. In the first two words <تیکھون میٹھون> <tikhiyũ mīṭhiyũ>, the two-part vowel sign for <ū> has been written <◌◌>, with the diacritic component <◌◌> positioned over the base component <◌◌>. However, in the third word <ڳالھيون>, <ū> has been written <◌◌>, with the diacritic component <◌◌> appearing over the preceding consonant base <◌◌> <y>. In contrast, in the second iteration of the name, <تیکھون میٹھون ڳالھيون>, the first two words <تیکھون میٹھون> <tikhiyũ mīṭhiyũ> feature the two-part vowel sign for <ū> written <◌◌>. That is, the diacritic component <◌◌> appears over the preceding consonant base <◌◌> <y>. The third word <ڳالھيون> is altogether devoid of a diacritic component for <ū>.

Similar variation prevails with regard to the vowel signs for /ɛ/ and /ɔ/. The commonly used forms for these vowels are <◌◌> and <◌◌>, respectively, but <◌◌> and <◌◌> are also seen (Lekhwani 1996: vi). Figure 1 shows a signboard at an intersection in the Khār suburb of Mumbāi, named after an Indian Sindhī educationist. The signboard displays the name of the intersection transcribed into Devanāgarī, Perso-

Arabic and Roman. In Perso-Arabic, the Sindhī word [t̪ɛʈkʰ] ‘square, intersection’ has been spelt (چونک) (or (چُونک), were vowel diacritics to be included). In contrast, Mewaram (1910: 211) and Lekhwani (1996: 57) both spell the same word (چونک).



Figure 1. Triscriptal Sindhī-language signboard in Mumbai

2.3.6 *Allographs and derivative graphemes*

Alternation is also seen between Arabic and Sindhī graphemic forms, and between visually similar Sindhī-only graphemic forms. As mentioned at the beginning of Section 2.1, the cursive nature of the Perso-Arabic Sindhī script means that graphemes have slightly differing forms depending on whether they appear at the beginning, middle or end of a word. These positional variants are known as the Initial, Medial and Final forms, respectively. When not connected to any other grapheme, the variant is known as the Isolated form (Bauer 1996).

However, Sindhī has a larger phonemic inventory than Arabic. Hence, new graphemes for Sindhī-specific phonemes have been created by spinning off positional variants in Arabic into independent graphemes in Sindhī. In other words, certain graphemic forms in the script that are only positional variants in Arabic orthography are considered independent letters in Sindhī orthography. Table 9

provides examples of how forms of the base grapheme for the Arabic phoneme /h/ (row 1) have been variously adopted in Sindhī to represent the following:

- the phoneme /ħ/ (row 2);
- a graphemic suffix to represent aspiration on certain consonants (row 3);
- a word-final silent ⟨h⟩ (row 4), also known as the “imperceptible ⟨h⟩” (Shahaney 1967 [1906]: 22).

Table 9. Positional variants of the grapheme ⟨h⟩ and derivative Sindhī variants

Final form	Medial form	Initial form	Isolated form	Phonemic value
Arabic				
ا	ه	هـ	هـ	/h/
1a	1b	1c	1d	
Sindhī				
ھ	ھ	ھ	ھ	/ħ/
2a	2b	2c	2d	
ھ	ھ	(ھ)	(ھ)	/ʰ/, /ʱ/
3a	3b	3c	3d	
ا	–	–	هـ	/Ø/
4a			4d	

Note. Adapted from Kew (2005:7)

While certain works adhere strictly to these graphemic distinctions (NCPSL 2005, 2014, 2015; Lekhwani 1996; Varyani & Thakwani 2003), others do not (Baloch 1962; Lekhwani 1997). For instance, the medial and final forms of the aspiration grapheme (cells 3b and 3a) may be replaced with the corresponding forms of /ħ/ (cells 2b and 2a). This means that graphemes such as ⟨هـ⟩ /g^h/ and ⟨هـ⟩ /dʒ^h/ may appear as ⟨هـ⟩ and ⟨هـ⟩, respectively. An example of this can be seen in Figure 1, where the grapheme ⟨هـ⟩ /dʒ^h/ has been replaced by ⟨هـ⟩ in the spelling of the word ⟨جهنم﴾ [dʒ^hənməʔ^hməʔ^h]. Conversely, the medial form of Sindhī /ħ/ (cell 2b) is often found replaced with the medial form of the aspiration grapheme (cell 3b) (Shahaney 1967 [1906]:9), which is visually identical to the medial form of Arabic /h/ (cell 1b). The final form of Sindhī /ħ/ (cell 2a) may also be swapped for the corresponding Arabic form (cell 1a). For instance, the word [fəmeɛʃ^h] ‘always’ is spelt by Lekhwani (1996:194) as ⟨فهميشه﴾, but by Shahaney (1967 [1906]:21) as ⟨فهميشه﴾. The reasons for variant usage include Arabic orthographic influence, idiosyncratic preference and font limitations (Cole n.d.-b: SIL International 2017).

2.3.7 Ambiguous phonemes

A related issue is that of the status of the phone $[\text{r}^{\text{h}} \sim \text{r}\text{h}]$, represented in writing as $\langle \text{ھ} \rangle$. Unlike most Arabic-script graphemes that join the following one, $\langle \text{ھ} \rangle / \text{r}/$ is an exception in that it does not. The grapheme $\langle \text{ا} \rangle$, which follows $\langle \text{ھ} \rangle$, is therefore written in its Initial form (see Table 9). This results in the status of $\langle \text{ا} \rangle$ being ambiguous. One interpretation is that $\langle \text{ا} \rangle$ represents aspiration (cell 3c), which would make $\langle \text{اھ} \rangle$ a single phoneme $/\text{r}^{\text{h}}/$. The other interpretation is that $\langle \text{ا} \rangle$ represents the phoneme $/\text{h}/$ (cell 2c). This would essentially make $\langle \text{اھ} \rangle$ a sequence of two separate phonemes, namely, $/\text{r}\text{h}/$. Both interpretations are found in the academic literature (cf. Section 1.2). Whereas the ambiguity concerning the formal classification of this phone may not be of any articulatory or semantic consequence, it poses complications for the transliteration of Perso-Arabic Sindhi into Devanāgarī Sindhi. This is explained in further detail in Section 3.3.

2.3.8 Collation order

Despite having been in official use for over 150 years, there is still considerable variation in the collation order, or alphabetisation, of Perso-Arabic Sindhī characters. According to Grierson (1919: 21), the earliest ‘standard’ collation order was that used by Shirt, Thavurdas and Mirza in their Sindhī-English dictionary of 1879. Grierson employs the same collation order in the *Linguistic Survey of India* (1919), which is as follows:

ا ب پ ت ث ط ظ ع ف ق ک گ گھ ل م
ن و ه ی

Mewaram (1910) uses the following collation order in his classic dictionary, as does Shahaney (1967 [1906]:2-3):

آ (ب ب پ ت ث ث ث پ ق ج ج ج ج ج خ د ذ ذ ذ ر ز س ش ص ض ط ط ع غ ف ک ک گ گ گ ل
م ن و ه) ء (ی)

This order differs from that of Grierson in the position of ⟨ȝ⟩ /ɲ/, and in the omission of ⟨ȝ⟩ /z ~ ʒ/. The phoneme /z ~ ʒ/ does not occur in Sindhī, and the grapheme ⟨ȝ⟩ is a relic inherited from the Persian alphabet. Jhangiani (1992) notes that subsequent attempts were made to reintroduce this grapheme into the collation order, without success.

Of late, the Sindhi Language Authority (SLA), which is the regulatory body for the Sindhi language in Pakistan, has put forward the following collation order on its website (Sindhi Language Authority 2015):

ا ب پ ت ث ط ظ ع غ ف ق ک گ گھا گ ل م ن
ن و ه ی

This order differs from that of Grierson (1919) and Mewaram (1910) mainly in the position of ⟨ق⟩ /p^h/, which now occurs after ⟨ف⟩ /f/ rather than after ⟨پ⟩ /p/. It also includes the vowel holder *hamzo* ⟨ء⟩ as an explicit character.

However, parallel standards or quasi-standards have been listed elsewhere. For instance, the PAN Localization project (styled ‘panlɔn’), an international consortium of several technological institutions across various Asian countries, cites the following collation order for Sindhī (Hussain & Durrani 2010: 83):

ا ب پ ت ث ٹ پ ڦ ج جھ چ چخ د ذ ڏ ڙ ز س ش ص ض ط ظ ع غ ف ق ک گ ڳ ڳھ ڳل م ن
ث و ه ء ي

In this order, ⟨ق⟩ /p^h/ has been restored to the position specified by Grierson and Mewaram. Peculiar is the inclusion of the Persian and Urdū dotless ⟨ی⟩ as opposed to the Sindhī ⟨ي⟩ /j/, since the dotless version is not used in Sindhī orthography. Curiously, the document states that the “Sindhī collation sequence has been standardized and published by Sindhi Language Authority for Pakistan” (p. 85). A few pages later (p. 88), ⟨و⟩ is listed as a separate character in the alphabet distinct from ⟨ھ⟩ /h/, although not included in the original list (p. 83).

The *Sindhī (Pakistan) Style Guide* issued by Microsoft Corporation specifies the following collation order (2013: 7):

آ ا ب پ ت ث ٹ پ ڦ ج جھ چ چخ د ذ ڏ ڙ ز س ش ص ض ط ظ ع غ ف ق ک گ ڳ ڳھ ڳل م ن
ث و ه ء ي

This list includes not just ⟨و⟩ but also ⟨ل⟩ /a/ as explicit characters. This gives a total of 54 characters as opposed to the traditional 52. Overall though, this is similar to the panlɔn order, and different from the SLA order in terms of the position of ⟨ق⟩ /p^h. That said, the *Style Guide* also contains the following statement, which appears just below the list of characters:

All these characters are used in Sindhi text and Collating Order is Standardized by Sindhi Language Authority.
(Microsoft Corporation 2013: 7)

It is therefore extremely unclear what the official collation order is for Perso-Arabic Sindhī in Pakistan. In India, the situation is similarly nebulous. Below are a few collation orders used in works by prominent Indian Sindhī authors:

Hardwani (1991:x):

ا ب پ پ ت ت ث ک گ گھ ف ر ز د ذ د ب ج ج چ خ ع غ س ش ص ض ک ق ط ط و ل م ن ن
ه جھ ڳ ڄ ڇ ڙ

Lekhwani (1997:xii):

ا ب پ پ ت ت ث ث د ذ د ب ج ج چ خ ر ز س ش ص ض ط ط ع غ ف ق ک گ گھ ل م ن ن
ه جھ ڳ ڄ ڇ ڙ

Varyani & Thakwani (2003:x):

ا ب پ پ ت ت ث ث ف ق گ گھ ک ی د ذ د ب ج ج چ خ ع غ ر ز م ن ل س ش و ق ص ض ن ط ط
ه جھ ڳ ڄ ڇ ڙ

Khubchandani (2007:697):

ا ب پ پ ت ت ث ث پ ج جھ ڳ ڄ ڇ خ د ذ د ب ج ج چ خ ر ز س ش ص ض ط ط ع غ ف ق ک گ گھ ل م ن
ن و ه ڳ ڄ ڇ ڙ

As is evident, such idiosyncratic variation in collation order can have significant consequences for lexicographic works. In an increasingly digital world, it also has implications for computer-aided sorting.

3. Devanāgarī Sindhī

In India, the Devanāgarī script (see Table 10) is used in parallel with the Perso-Arabic script for the Sindhī language, albeit not without controversy (Daswani 1979). Both scripts have constitutional recognition, and both are employed in Sindhī-language education in the country.

3.1 Structure

Devanāgarī is structurally an abugida, which Daniels and Bright (1996:xxxix) define as “a type of writing system whose basic characters denote consonants followed by a particular [inherent] vowel, and in which diacritics denote the other vowels”. In the Sindhī version of Devanāgarī, the inherent vowel in every basic character is [ə] (Bright 1996:387). All other vowels are denoted by diacritics when following a consonant. A consonant that does not have a vowel following it is shown in a half-form, or with the diacritic ⟨◌̣⟩ below it. However, as mentioned earlier, the representation of a consonant as vowelless is contingent on the writer’s view of consonant clusters and final vowels in Sindhī, and shows great idiosyncratic variation.

The representation of a vowel in Devanāgarī depends on its position within a word. When a vowel phoneme occurs word-initially, the vowel grapheme is written in a so-called independent or standalone vowel form. The independent form is also used for the second vowel in a sequence of two vowels. When a vowel fol-

Table 10. Devanāgarī Sindhī alphabet with standard phoneme-grapheme correspondences

	ə	a	ɪ	i	ʊ	u		
	अ	आ	इ	ई	उ	ऊ		
	ɾɪ	e	ɛ	o	ɔ	ō		
	ऋ	ए	ऐ	ओ	औ	ं		
kə	qə ~ kə	kʰə	xə	gə	ɡʱə	yə	ɡʱə	ɳə
क	क़	ख	ख	ग	ग़	ग़	घ	ङ
	t͡ʃə	t͡ʃʰə	d͡ʒə	fə	zə	d͡ʒʰə		ɲə
	च	छ	ज	झ	ञ	झ		ञ
	t̪ə	t̪ʰə	d̪ə	d̪ʰə	r̪ə	d̪ʱə	r̪ʱə	ɳə
	ट	ठ	ड	ड़	ड़	ढ	ढ़	ण
	t̪ʰə	t̪ʰə	d̪ʰə		d̪ʱə			nə
	त	थ	द		ध			न
	pə	pʰə	fə	bə	ɦə	bʱə		mə
	प	फ़	फ़	ब	भ	भ		म
	jə	rə	lə	və	ʃə	ʃə	sə	ɦə
	य	र	ल	व	श	ष	स	ह

Note. Collation order based on Khubchandani (2007: 698)

lows a consonant, it is written in a dependent or diacritic form attached to the consonant grapheme as the base. Examples of independent and dependent vowel graphemes in Devanāgarī Sindhī are shown in Table 11.

Table 11. Representation of vowels in Devanāgarī Sindhī

Independent (standalone) forms										
ə	a	ɪ	i	ʊ	u	e	ɛ	o	ɔ	
अ	आ	इ	ई	उ	ऊ	ए	ऐ	ओ	औ	
Dependent (diacritic) forms										
b	bə	ba	bɪ	bi	bʊ	bu	be	bɛ	bo	bɔ
ब	ब	बा	बि	बी	बु	बू	बे	बै	बो	बौ
ब्										

Unlike Perso-Arabic Sindhī, Devanāgarī Sindhī requires all vowels to be explicitly represented. Only the inherent vowel, when following a consonant, remains unwritten and implicit.

The Devanāgarī Sindhī graphemic inventory is inspired by that of Hindi, which itself is based on the graphemic inventory as used for Sanskrit. Graphemes for phonemes absent in Sanskrit have been created by adding an underdot diacritic to existing graphemes. For instance, both standard Sindhī and Hindi have

the phonemes /z/ and /f/, which classical Sanskrit does not. Hence, graphemes for these phonemes have been created by adding an underdot to the graphemes for /ḍz/ and /pʰ/, respectively (see Table 10). Graphemes for the Sindhī implosives have been created by adding an underline diacritic to the corresponding plosives (see Table 12).

Table 12. Devanāgarī Sindhī graphemes for plosives and implosives

g	ḍz	ḍ	b
ग	ज	ड	ब
ḡ	ḥ	ḍ̣	ḃ
ग़	झ	ड़	ब़

Languages that use Devanāgarī may have typographical preferences in terms of glyph shapes. For instance, the graphemes for /l/ and /ɭ/ usually have the shapes ⟨ल⟩ and ⟨श्ल⟩ in Hindi text, but ⟨ल⟩ and ⟨श्ल⟩ in Marāṭhī text. No typographical trend seems to have emerged as yet for Devanāgarī Sindhī, and Sindhī works may feature either set of glyph shapes.

3.2 Salient features

In terms of orthographic conventions, Devanāgarī Sindhī is largely similar to the Devanāgarī orthographies of other modern South Asian languages, particularly Hindi. That said, Devanāgarī Sindhī differs from other Devanāgarī-based orthographies in a few notable ways. One of the key areas of difference concerns the representation of the reduced lax vowels [ə], [ɪ] and [ʊ], which are largely absent from the phonemic inventories of most other languages that use Devanāgarī.¹ As mentioned earlier, the diacritic ⟨◌◌̣⟩ is placed below the base grapheme if the inherent vowel sound /ə/ needs to be muted and a pure consonant sound is to be represented. However, in Hindi, the vowel /ə/ does not occur word-finally (Gumperz 1958: 216), except in some Sanskrit neologisms. For this reason, the diacritic ⟨◌◌̣⟩ is typically not used in word-final position in Devanāgarī Hindi orthography. Rather, the reader ignores all orthographic final schwas, and interprets such words as consonant-final. In Sindhī, on the other hand, the vowel /ə/ does occur word-finally, usually in the reduced form [ə]. Thus, in Devanāgarī Sindhī, if a final schwa exists in the orthography, it is pronounced. Table 13 shows a few words common to both Sindhī and Hindi. In both languages, they have the same orthography and meaning. However, they differ in pronunciation in terms of the final schwa.

1. Maithilī in Eastern India is the only other major Indo-Aryan language with attested reduced vowels that is commonly written in Devanāgarī (Grierson 1903; Masica 1991).

Table 13. Representation of [ə] in Devanāgarī Sindhī orthography

Devanāgarī spelling	Sindhī pronunciaton	Hindī pronunciation	Gloss
तार	[ʈar ^ə]	[ʈar]	‘wire’
खबर	[xəbər ^ə]	[xəbər]	‘news’
ज़मीन	[zəmin ^ə]	[zəmin]	‘ground, land’

It should be noted that the pronunciations of younger Sindhī speakers tend to be closer to the Hindī pronunciations shown in Table 13.

In contrast to the implicit representation of the schwa, Devanāgarī orthography requires the lax vowels /ɪ/ and /ʊ/ to be explicitly written. However, no orthographic distinction is made in Devanāgarī Sindhī between the full and reduced pronunciations of /ɪ/ and /ʊ/. The reader has to mentally discern the appropriate pronunciation of the vowel from its position in the word. This is illustrated by the examples in Table 14.

Table 14. Representation of [ɪ] and [ʊ] in Devanāgarī Sindhī orthography

Devanāgarī Sindhī word	Pronunciation	Gloss
दिलि	[dɪlɪ]	‘heart’
पुछु	[pʊtɐ ^{hʊ}]	‘tail’
गुज़िरणु	[gʊzɪrə ^ʊ]	‘to pass’

In each of the words in Table 14, the lax vowel in the first syllable is pronounced full, while the lax vowel in the final syllable is unstressed, and pronounced in its reduced form. However, the orthographic representation of both full and reduced forms remains the same.

The lack of orthographic distinction between full and reduced /ɪ/ and /ʊ/ does not usually pose a problem to older Sindhī speakers. When reading Devanāgarī Sindhī, such speakers mentally apply the phonological rule of unstressed lax vowels becoming reduced, and arrive at the correct pronunciation. However, the orthographic underdifferentiation has ramifications for younger Sindhī speakers. Younger speakers, whose speech may not feature the reduced vowels, may find the orthography of a word disagreeing with their own pronunciation of that word. For instance, new variety speakers typically pronounce [dɪlɪ] closer to [dɪl], which in Devanāgarī is more accurately represented by the spelling <दिलि>. Especially affected are younger Sindhī speakers who may be more familiar with Hindī orthography. According to Hindī orthographic rules, the vowel signs <ऎ> ⟨i⟩ and <ए> ⟨u⟩ which are usually pronounced /ɪ/ and /ʊ/, are to be read in word-final position as their tense counterparts /i/ and /u/, respectively (Gumperz 1958:216).

This rule may be unwittingly applied to Sindhī words. Consequently, the spelling <दिलि> may be interpreted as [d̪ili], which is a nonword in Sindhī.

As seen from the above, Devanāgarī Sindhī orthography, especially with regard to orthographic final lax vowels, is largely reflective of Sindhī old variety phonology. This poses an initial hurdle to inexperienced new variety readers. Besides, the question of orthographic final lax vowels also has implications for Sanskrit loanwords and neologisms in Sindhī. These issues are taken up in greater detail in Section 3.3.

Like Perso-Arabic Sindhī orthography, Devanāgarī Sindhī orthography too exhibits graphemic retention. Sanskrit loanwords in Devanāgarī Sindhī typically retain graphemes whose phonemic values are no longer distinct in Sindhī phonology (Khubchandani 2007:699). That is, the phonemic values of these graphemes have become identical to those of other graphemes in Sindhī. Specifically, the phonemic values in modern Sindhī of the Sanskrit-specific graphemes <ऋ>, <ॠ> and <ॡ> have merged with those of other Sindhī graphemes or syllables (see Table 15). Trumpp (1872) omits <ऋ> and <ॡ> from his version of the Devanāgarī Sindhī graphemic inventory. However, most modern-day Devanāgarī Sindhī authors tend to include them.

Table 15. Sanskrit and Sindhī phonemic values of certain Devanāgarī characters

Devanāgarī grapheme/syllable	Phonemic value in Sanskrit	Phonemic value in Sindhī
ऋ	ɾ	rɪ
ॠ	ri	
ॡ	d̪ɪɳ	gɪ
ग्य्	gɪ	
ष्	ʃ	ʃ
श्	ʃ	

In addition to graphemic retention, Devanāgarī Sindhī also exhibits orthographic retention. Source spellings of Sanskrit loanwords are often retained, even though they may conflict with the general rules of Devanāgarī Sindhī orthography. The manner in which Sanskrit spellings are retained is largely unstandardised, and will be discussed in detail in the following section.

3.3 Standardisation

In some ways, standardisation, or lack thereof, in Devanāgarī Sindhī orthography directly reflects corresponding standardisation in Perso-Arabic Sindhī orthography. Those aspects that are clearly defined in Perso-Arabic Sindhī orthography are consequently unambiguous in Devanāgarī Sindhī as well. For instance, Perso-Ara-

bic Sindhī has clear independent graphemes for the implosive sounds. Accordingly, new graphemes have been created for the implosives in Devanāgarī Sindhī. However, aspects such as representing orthographic gemination or consonant clusters remain as unclear in Devanāgarī Sindhī as they are in Perso-Arabic Sindhī.

3.3.1 *Reduced vowels*

With regard to Devanāgarī Sindhī orthography, variant spellings are extremely common. As mentioned earlier, Perso-Arabic Sindhī orthography usually omits lax vowels. Considering that lax vowels may be slurred over in unstressed medial and final positions, there may be disagreement on the quality of reduced lax vowels in certain words. For instance, the word [pĩṛ ~ pĩṛʰ] ‘also’ is spelt ⟨اڙ⟩ in Perso-Arabic Sindhī, with vowel diacritics conventionally omitted. The omission of diacritics allows for a degree of flexibility in interpreting the final vowel. However, the nature of the Devanāgarī script requires all vowels to be explicitly represented. Consequently, different authors use vowels in Devanāgarī Sindhī at their discretion, which results in diverse spellings. NCPSL (2005, 2014, 2015) and Lekhwani (2011) spell ⟨اڙ⟩ as ⟨पिणि⟩, which reflects the pronunciation [pĩṛ]. In contrast, Hardwani (1991:268) spells the same word as ⟨पिणु⟩, which reflects the pronunciation [pĩṛʰ].

3.3.2 *Loanword spellings*

Certain aspects of Devanāgarī Sindhī orthography are considerably influenced by orthographic practices in Hindī, which have consequences for learners. One such area is the spelling of Sanskrit loanwords. Numerous Sanskrit-origin words are often used in Devanāgarī Sindhī works (Lekhwani 2011:34). This is attributable at least in part to the influence of modern literary Hindī, which is rich in Sanskrit loanwords and neologisms (King 2001). Therefore, Sanskrit-origin words in Sindhī tend to retain their modern Hindī pronunciations. However, in Hindī, Sanskrit loanwords whose source spellings end in orthographic lax ⟨i⟩ and ⟨u⟩ are pronounced with the corresponding tense vowel instead. For instance, the Sanskrit loanwords ⟨शक्ति⟩ (shakti) ‘strength’ and ⟨वस्तु⟩ (vastu) ‘thing’, which end in orthographic lax ⟨i⟩ and ⟨u⟩, are pronounced in Hindī with final tense /i/ and /u/, respectively. That is, they are pronounced as /ɕəkʈi/ and /vəʂtu/, respectively (Shapiro 2007:284). This follows from the aforementioned phonological rule in Hindī that does not permit lax /ɪ/ and /ʊ/ word-finally (cf. Section 3.2). However, Sindhī phonology – at least the old variety – allows both lax and tense vowels in word-final position. Considering that the Sindhī pronunciations of Sanskritic words tend to be in line with their Hindī pronunciations, certain authors recommend that the orthography of Sanskrit loanwords in Devanāgarī Sindhī be

modified to reflect the modern Sindhī pronunciation. That is, if a Sanskritic word in Sindhī is pronounced ending in tense /i/ and /u/, it should also be written ending with tense ⟨i⟩ and ⟨ū⟩. However, writers are often loath to tinker with the spelling of Sanskritic loanwords, either due to the revered status of Sanskrit in India (Deshpande 2016), or due to a desire to maintain harmony with Hindi orthography. Therefore, Sanskritic words in Sindhī pronounced with a final tense vowel may continue to be spelled with a final lax vowel, in line with the source orthography. This results in potential ambiguity for the reader.

Table 16 illustrates this phenomenon with the Sanskrit-origin words ⟨लिपि⟩ (lipi) ‘script’ and ⟨कवि⟩ (kavi) ‘poet’. Both these words end in an orthographic lax ⟨i⟩. These words are pronounced [lɪpi] and [kəvi] in Hindi. Consequently, the same pronunciation is retained in Sindhī as well. However, if the source spellings with final lax ⟨i⟩ are retained in Devanāgarī Sindhī orthography, there is room for a mismatch. According to Sindhī orthographic rules, orthographic final lax ⟨i⟩ should be pronounced as reduced [ɪ]. Application of this rule results in ⟨लिपि⟩ (lipi) and ⟨कवि⟩ (kavi) potentially being realised as *[lɪpɪ] and *[kəvɪ], which are nonwords in Sindhī. Thus, the correct application of Sindhī pronunciation rules may result in incorrect pronunciations. To better reflect the pronunciations [lɪpi] and [kəvi], certain Sindhī lexicographers recommend respelling ⟨लिपि⟩ (lipi) and ⟨कवि⟩ (kavi) as ⟨लिपी⟩ (lipī) and ⟨कवी⟩ (kavī), respectively, with final tense vowels (Hardwani 1991: 67, 399; Lekhwani 1996: 23, 160).

Table 16. Realisation of orthographic final ⟨i⟩ in Hindi and Devanāgarī Sindhī

Devanāgarī spelling	Roman transcription	Theoretical Hindi pronunciation	Theoretical Sindhī pronunciation
लिपि	⟨lipi⟩	[lɪpi]	[lɪpɪ]
लिपी	⟨lipī⟩		[lɪpī]
कवि	⟨kavi⟩	[kəvi]	[kəvɪ]
कवी	⟨kavī⟩		[kəvī]

However, Devanāgarī Sindhī authors with Sanskritic or Hindi leanings may consciously or inadvertently retain the prevalent Sanskrit-Hindi orthography of words in Sindhī as well (Lakhani 2011, 2012).

A similar dilemma is posed by Sanskrit-origin words ending in lax ⟨u⟩. According to Sindhī spelling rules, final reduced [ʊ] is indicated by orthographic lax ⟨u⟩, whereas final tense /u/ requires orthographic tense ⟨ū⟩. Therefore, [sɪndʱ^hʊ] ‘Sindh’ is spelt ⟨सिंधु⟩ (sindhū), whereas [sɪndʱ^hu] ‘Indus river’ is spelt ⟨सिंधू⟩ (sindhū) (Lekhwani 2011:1). In Hindi, however, the name of the Indus river, [sɪndʱ^hu], is usually spelt ⟨सिंधु⟩ (sindhū), with orthographic final lax ⟨u⟩. This is due to retention of the Sanskrit spelling of the word in Hindi orthography (Monier-

Williams 1851:1217). However, if the Sanskritic spelling is used in a Sindhī text, the result might be phonetic and semantic ambiguity for the reader. Table 17 provides an overview of the various spellings in question.

Table 17. Realisation of orthographic final ⟨u⟩ in Hindī and Devanāgarī Sindhī

Devanāgarī spelling	Roman transcription	Sindhī		Hindī	
		Pronunciation	Gloss	Pronunciation	Gloss
सिंधु	⟨sindhu⟩	[sɪnd̪ ^h u]	‘Sindh’	[sɪnd̪ ^h u]	‘Indus’
सिंधू	⟨sindhū⟩	[sɪnd̪ ^h u]	‘Indus’	[sɪnd̪ ^h u]	–

In summary, retaining Sanskritic spellings in Devanāgarī Sindhī ensures a common orthography for these words across Sindhī and Hindī. This has potential advantages for a Hindī-literate reader or learner of Sindhī. However, Sanskritic spellings often conflict with Devanāgarī Sindhī orthographic rules, requiring such spellings to be treated as exceptions. This results in an increased learning curve.

3.3.3 *Derivative graphemes*

Another area of occasional variation is in the Devanāgarī Sindhī grapheme for the implosive /d/. As shown in Table 12 (p. 29), this phoneme is written ⟨ड़⟩ in Devanāgarī Sindhī, derived from the grapheme ⟨ड⟩ /d/. However, it has on occasion also been written ⟨द़⟩, by modifying the base grapheme ⟨द⟩ /d/ instead. Prominent instances of such usage can be found in Advani (1963 [1941]) and Shahaney (1967 [1906]). Khubchandani (2007: 699) terms usage of the dental ⟨द़⟩ as the base grapheme for /d/ “erroneous” and attributes it to the “unplanned switch-over” from Perso-Arabic to Devanāgarī.

3.3.4 *Grapheme homophony*

Comparing homophonous graphemes in both scripts (see Table 6, p. 13 and Table 15, p. 33), it is evident that instances of graphemic homophony are considerably fewer in Devanāgarī Sindhī than in Perso-Arabic Sindhī. However, their use in Devanāgarī has not yet been standardised, and homophonous graphemes may occasionally be interchanged with each other. Some authors may retain the Sanskritic grapheme, while others may opt for the phonetically more transparent grapheme. For instance, the Sanskrit-origin Sindhī word [vɪɡjan̪] ‘science’ is spelt by Lekhwani (1996: 168) as ⟨विज्ञानु⟩ but by Hardwani (1991: 442) as ⟨विग्यानु⟩. That is, Lekhwani spells the syllable [ɡja] as ⟨ज्ञा⟩, while Hardwani spells it ⟨ग्या⟩.

⟨क्⟩ and ⟨क़⟩ form marginal homophonous graphemes. ⟨क्⟩ is found only in Arabic and Persian loanwords, and in the source languages is usually pronounced /q/. However, in Sindhī, its pronunciation is more or less equivalent to that of ⟨क़⟩

/k/. Scholars generally agree in this regard. Khubchandani (2007: 689) opines that <क्> in Sindhi is optionally pronounced as /q/ only in careful or formal speech. Masica (1991: 105) claims that /q/ is either absent or not well established in Sindhi. Varyani and Thakwani (2003: x) explicitly state that <क्> is pronounced /k/ in all instances, implying that its pronunciation is identical to that of <क>.

3.3.5 Ambiguous phonemes

Occasionally, there may be variation in Devanāgarī Sindhi spelling within the same author's writing, resulting in the same word or derivations thereof being spelt differently in the very same work. A notable example is seen in the following extract, where the Sindhi root word <paṛh-> 'read, study' has been spelt differently in the same sentence.

गैर सिधी स्कूल में पढ़दंड शागिर्दिनि लाइ सेकंड बोली सिधीअ जे दरसी किताब में बोलीअ सां वास्तो रखंदड लियाकतुनि बुधणु, गाल्हाइणु – बोल्हाइण, पढ़ण ऐं लिखण खे अभ्यास डिनो वियो आहे.

(Maharashtra State Bureau of Textbook Production and Curriculum Research 2009: v; emphasis added)

In Perso-Arabic Sindhi orthography, the root <paṛh-> would be spelt <پڙھ->. As mentioned in Section 2.3.7, there is ambiguity over the nature of <ڙ>. If interpreted as a single phoneme /ɽʰ/, its Devanāgarī transliteration would be <ढ़>. If interpreted as a sequence of phonemes /ɽ(ə)ɦ/, its Devanāgarī transliteration would be <ड़ह>. This uncertainty results in Perso-Arabic Sindhi <ڙ> being variously transliterated into Devanāgarī Sindhi as <ढ़> /ɽʰ/, <ड़ह> /ɽ(ə)ɦ/, or, as seen in the above extract, as the redundant <ढ़ह> /ɽʰ(ə)ɦ/. What makes the above extract all the more remarkable is that it appears in the Year 8 Devanāgarī Sindhi school textbook issued by the Board of Secondary Education of Mahārāṣṭra state. Also of interest is the use of the spelling <बोल्हाइण> <bolhāiṇa> rather than the more commonly attested form <बोलाइण> <bolāiṇa> [bolaiṭʰ] 'to cause to speak' (Lekhwani 1996: 131).

3.3.6 Collation order

In terms of collation order, there exist minor differences in the works of different authors. For instance, Lekhwani (1996: vi) does not explicitly list the graphemes <ऋ> and <ॠ> as independent letters of the Devanāgarī Sindhi alphabet, but makes extensive use of <ॠ> in the rest of his work. On the other hand, Khubchandani (2007: 698) includes not only <ऋ> and <ॠ> in his listing of the Devanāgarī Sindhi alphabet, but also the Sanskritic grapheme <ॡ>, which is rarely, if ever, used in modern Devanāgarī Sindhi. When used, <ॡ> is pronounced [ɦ]. Overall, though, the collation order of Devanāgarī Sindhi is much more defined compared to that of Perso-Arabic Sindhi.

4. Conclusion

This paper has highlighted areas of both orthographic clarity and ambiguity in Perso-Arabic and Devanāgarī Sindhī. Variant features in Perso-Arabic Sindhī orthographic can be classified into those stemming from phonological ambiguity, and those only involving graphematic variation. Progress on the former set of issues ultimately depends on progress on the underlying phonological questions. The latter set of issues seems directly influenced by Arabic and Urdū orthographic practices. For instance, Sindhī grammarian and lexicographer K.P. Lekhwani (personal communication, 8 December 2014) opines that Perso-Arabic Sindhī orthography in Pakistan increasingly tends to feature ⟨س|⟩ and ⟨ا|⟩ rather than ⟨س|⟩ and ⟨ا|⟩ for the vowels /i/ and /u/, respectively. This can be attributed to the former being standard in the Arabic and Urdū orthographies, and the social and religious influence of these languages in Pakistan. However, Perso-Arabic Sindhī orthography in India predominantly features ⟨س|⟩ and ⟨ا|⟩. This is contributing to differences in Perso-Arabic Sindhī orthography in the two countries.

In Devanāgarī Sindhī, certain areas of orthographic clarity and ambiguity originate from corresponding clarity or ambiguity in Perso-Arabic Sindhī. In other instances, they are a product of the sociolinguistic impact of prestige or dominant languages in India, such as Sanskrit and Hindī. Similar to the situation of Perso-Arabic Sindhī, Devanāgarī Sindhī authors may adopt orthographic practices that reflect their ideological affiliation. In the context of variation in the Devanāgarī orthography for Marāṭhī, Deshpande (2016:72) states that “seemingly trivial issues of signs and dots gradually emerge as part of larger ones about literacy, historicity, [and] community”. This statement appears to hold true for Devanāgarī Sindhī orthography as well. Eventually, such disagreement among intellectuals and creators of pedagogical content may result in students receiving exposure to pedagogic material with inconsistent or mutually conflicting orthographic practices. Whereas orthographic variation of this sort is tolerated by fluent readers, and may even go unnoticed by them, variant orthographic practices have the potential to snowball into confusion and disenchantment for beginners and learners.

Linguistically speaking, ‘standard’ orthographies, glyphs and collation orders are not critical components of language, and only serve as finishing touches to the written form of language. However, in a modern world where literacy is prized and written languages are considered of greater cultural value than oral ones (Coulmas 2014:1; Fishman 1997:154), the standardisation of the aforementioned finishing touches assumes importance for lay users. As Bunčić (2016:16) states, “the invention of the printing press made people think that every language had

(and had to have) a uniform orthography”. Jaffe echoes this sentiment in observing that:

it is not only important [from the layperson’s perspective] to have an orthography, but it is also critical for that orthography to have prescriptive power – to be standardized and authoritative... (Jaffe 2000:506)

Consequently, in a literate society, standardisation or lack thereof in matters of orthography, glyph inventory and collation order add to or detract from the popular image of a language. In the context of the Sindhī language in India, the lack of consensus on the aforementioned matters, namely the application of diacritics, the shapes of graphemes and the collation order of letters, may not impact those fluent in the language and in the scripts in question. However, it does carry significant ramifications for Sindhī pedagogical material such as dictionaries and primers, and consequently, for learners of the written form(s) of the language. Ambiguity over minute orthographic matters may seem insignificant in isolation, but may cumulatively result in learner frustration and consequent loss of motivation. This is a situation that Sindhī, as a language in which community literacy in India is far from healthy, can ill afford.

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Address for correspondence

Arvind Iyengar
 University of New England
 Discipline of Linguistics
 School of Behavioural, Cognitive and Social Sciences
 Room 178, Building E11
 Armidale NSW 2351
 Australia
arvind.iyengar@une.edu.au

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