

What Is an Akshara?



Keerthi Ramanujan and Brendan S. Weekes

Abstract The answer to the question of what is an akshara is complex. To understand the concept of akshara in Indic languages, it is necessary to consider multiple levels of meaning. In historical terms, the akshara is an example of the resilience of the human invention that we call writing. In purely linguistic terms, the concept can be defined as an example of an abugida writing system, which is by no means restricted to Asian languages. In sociocultural terms, akshara is beyond any simple description. Akshara can be viewed as connected to the metaphysical world in the liturgy of ancient philosophies.

Keywords Akshara · Alphasyllabary · Devnagari · Indian languages · Indic orthography · Sanskrit · Writing systems

Akshara is a Sanskrit word that refers to syllable. The syllable enjoys a high status in the Hindu Vedas, transmitted through an oral tradition. Akshara is the minimal articulatory unit for Indic languages. In Sanskrit, the word literally means that which is not destructible (destructible = *kshara*) in reference to the idea that sound (and its constituent syllables) is inherently indestructible.

Aksharas are typical of writing systems that are derived from the common parent, Brahmi (Bright, 1996, 2000). Brahmi is a writing system that dates to as far the fifth to third century BC (Patel, Pandey, & Rajgor, 2007; Vaid & Gupta, 2002) and is considered the common ancestor of several Indic scripts. Interestingly, the languages that these Indic scripts represent do not necessary belong to one common language family. For example, Punjabi is an Indo-Aryan language spoken in Northwest India. Its akshara Brahmi-derived script is called Gurmukhi. Tamil on the other hand, is a Dravidian language spoken in South India and Sri Lanka. The Tamil script can also be traced back to the Grantha branch of the ancient Brahmi.

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43

Despite belonging to several different language families, Indic scripts seem to share a common written ancestor.

Akshara is a unit of speech. In writing, it is represented as a vowel and consonant with an inherent schwa or as a consonant with a vowel marker, known as matra, which modifies the sound the consonant represents. This functional definition does not fully capture the linguistic uniqueness of Indic writing systems. Does one consonant-matra cluster equate to one akshara symbol – making the writing system a syllabary? Or do the matras/vowel markers also function as independent subunits, making the writing system more like an alphabet? Writing of vowels as appendages rather than as independent letters (as in alphabetic systems) is a more parsimonious way to represent sounds compared to a syllabary, which has unique graphemes to represent consonant-vowel combinations. However, this leaves open the definition of an akshara symbol in modern writing.

Origins

Linguists agree on the resilience of Brahmi writing systems in the languages of South and South-East Asia. A remarkable feature of these systems is longevity. All modern writing systems used in South Asia today are derived in part from Brahmi and derivations can be found across South East Asia – from Myanmar, Thailand, Indonesia, and the Philippines. Brahmi writing systems that evolved to record the various Indic languages, specifically, were developed in a way that would capture the language’s natural syllabification. This may be less true for non-Indic spoken languages. The Brahmi script family is depicted in Fig. 1.

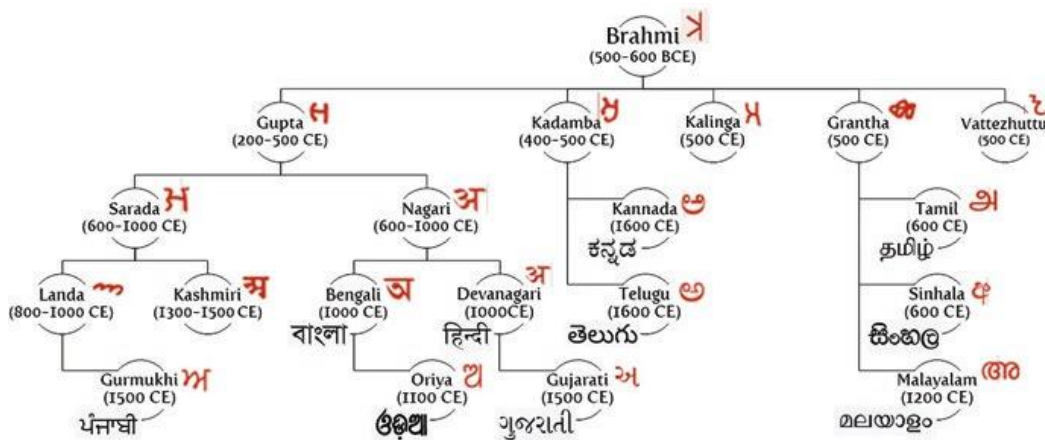


Fig. 1 Family tree and timeline of Brahmi based scripts. The first vowel “A” is depicted in red next to the names of the script. The names of the present-day languages of the Indian subcontinent that use these Brahmi-derived scripts are indicated at the bottom left corner. English transliterations are as follows: Punjabi (Gurmukhi), Bangla (Bengali), Odia (Oriya), Hindi (Devanagari), Gujarati, Kannada, Telugu, Tamizh (Tamil), Sinhala, Malayalam. (Figure adapted from: http://www.ancientscripts.com/sa_ws_cmp.html, Lawrence Lo, 2012)

Sanskrit is an ancient language believed to having originated around the second millennium BC (Benware, 1974; Burrow, 2001). Despite its near extinct status today, Sanskrit is a liturgical language in literature, music, and scripture, and is of spiritual importance across India. Other writing systems that evolved to write Sanskrit have become extinct. Kharosthi a writing system that developed in north-western India possibly in the fourth to fifth century BC (Salomon, 1996, 1998) disappeared by the beginning of the third century BC (Trigger, 2004), replaced by the Brahmi systems elsewhere in the Indian subcontinent (Chakrabarti, 2006).

Sanskrit was the language of the Brahminic liturgy. Prakrit vernaculars are derived from the Indo-Aryan family and typically dominate the Northern part of modern day India. Dravidian languages are spoken in the South and the script is derived from a Brahmi predecessor called Grantha. Sanskrit was the language of prestige, liturgy, literary arts, and scholarship and may well have been the lingua franca (Keown & Prebish, 2013), especially amongst the Brahmanical or the literate classes but also co-existing with other vernaculars (Deshpande, 2011) just as Latin was in medieval Europe. It is interesting that while alphabets developed to write Indo-European languages in Europe, the akshara-based scripts continued to endure as the principal writing system for the languages of the Indian subcontinent, despite well-established and flourishing cultural and commercial connections between the east and west. This illustrates how the distinctive features of spoken languages can constrain the evolution and refinement of written languages within one language family.

The earliest Sanskrit texts date back to the Rigveda at the second millennium BC (Meier-Brügger, 2003). The first grammatical documentation of a spoken language was written down for Classical Sanskrit (Ashtaadhyayi) by the scholar Paanini in 500 BCE (Houben, 1996; Keith, 1993). Inscriptions of Brahmi-based scripts can be found in Sri Lanka, Myanmar, and Indonesia due to the adoption of Hinduism that spread as far as East Asia when some Buddhist monks attempted to record Vedic scriptures in Sino-Tibetan languages.

Features of Brahmi Writing Systems

Brahmi writing systems have been classified as alpha-syllabaries (Nag, 2014; Pandey, 2007, 2014). Alpha-syllabaries separate vowels and consonants within large units (syllables) rather than small units (phonemes) but are not alphabets, as symbols cannot be reduced to constituent phonemes (Gnanadesikan, 2011). According to some linguists, a defining feature of Brahmi writing systems is use of an *abugida* – a category of segmental writing systems in which consonant–vowel sequences are written as a unit and each of the units is based on a consonant letter with vowel notation as a secondary and optional feature (Daniels, 1996). This concept resembles Gnanadesikan’s (2011) pithy definition of akshara symbols as “writing that specifies a vowel sign written as appendages to a consonant symbol.” By this definition, an abugida is a suitable term for many scripts including

Semitic-Ethiopic scripts and Canadian Aboriginal syllabic scripts. Abugida consist of a syllable and a consonant cluster but differ from syllabaries because abugida symbols can be divided into consonants and vowels whereas a syllabary cannot (Gnanadesikan, 2011). An *abugida* is therefore a more precise description of the Brahmi-based alpha-syllabaries because it defines consonants and vowels as a cluster. The features of all Brahmic writing systems, do conform to abugida. The Akshara symbols are defined as the basic units of Brahmi writing (Padakannaya & Mohanty, 2004). Defining features of Brahmi are (a) symbols for syllabic (initial) vowels; (b) consonant symbols but also one inherent vowel schwa; (c) vowels in CV combinations denoted by vowel markers/matras; (d) consonant clusters represented by ligatures; and (e) an inherent vowel can be muted by a diacritic mark (known as virama). Akshara symbols meet all these criteria. However, there is a certain aspect of the akshara that is often glossed over: aksharas refer to the syllabic units of speech. The symbols/graphemes are merely written forms that were developed to depict acoustic syllables in print. The Vedas, for example, place a high degree of importance on sound (shabda) because of the oral method of its transmission and learning. The akshara as a unit of sound is of great importance in the context of Vedic literary meters (known as chanda, in Sanskrit). An example of a Vedic literary meter is the Anushtup chanda. A verse in this meter has exactly four stanzas with 32 aksharas (sound syllables), with eight akshara (syllables) per stanza. Breaking up of literary verses into akshara level also serves as prosody and stress based-retrieval cue to aide phonological recall for reciting sequences such verses.

Brahmi writing systems contrast with Protosemitic (Northern) ancestors (Canaanite, Phoenician and early Hebrew) and modern cousins (Cyrillic, Greek, Roman) because the Brahmi family evolved into dozens of visually distinct scripts, many of which are very much in use today.

What an Akshara Is and Is Not

Akshara are the basic units of writing found in writing systems of the Indian sub-continent. Akshara symbols represent several syllable compositions including CV, CVV, CCV, CCVV, CCCV, CCCVV, V and VV (long vowel). Akshara symbols are sub-syllabic because they represent the onset, or onset plus nucleus or nucleus alone. Uniquely, the coda in syllables is depicted in writing systems as a subsequent akshara symbol.

Akshara encode both syllable and matra values. In speech, a matra can be defined as a unit of prosodic marking, – matras are used to denote both shorth and long vowels. These are marked in akshara symbols at the sub-syllabic level. A syllable has a vowel that can be preceded and/or followed by a consonant but might also be a vowel only e.g., /a/. A consonant that precedes a vowel in a syllable is the onset, and the consonant that follows a vowel is the coda. A vowel is also referred to as the ‘nucleus’ or ‘peak’ of a syllable. The combination of onset plus nucleus can be called a ‘body’ while nucleus plus coda can be called a ‘rime.’ Syllables in Sanskrit

derived languages also have quantity, which is referred to as ‘heavy’ or ‘light.’ A syllable ending with a consonant (closed) is considered heavy (guru) whereas a syllable ending in a short vowel (open) or a stand-alone vowel is light (lagu). Akshara symbols represent onset, onset plus nucleus, or nucleus alone but not coda alone, which is always positioned in a subsequent symbol (Patel, 2004). This is different from alphabetic systems, although some systems do vary on this feature e.g., Cyrillic. Sequences of akshara symbols can be arranged linearly to form a ‘word’.

Akshara symbols represent phonological units that resemble syllables (or precisely mora). However, akshara symbols differ from other depictions of mora e.g., Japanese kana, because they reduce to the sub-syllabic consonant and vowel structure. Akshara symbols also represent vowels and consonants as in alphabetic systems. However, akshara cannot be called alphabetic, as they never represent phonemes. Akshara are organized to represent diacritics and ligatures positioned around a root consonant, making the ‘alphabet’ more similar to Arabic or Hebrew than European alphabetic writing systems. Although all Brahmi scripts can be defined as abugida, members of the Brahmi family use a variety of visually distinct symbols. This is to support the phonology of the languages they encode. The size of the phonemic repertoire is different for the various Indic languages that use a Brahmi-based script. For example, Hindi and Malayalam both have nearly the same set of phonemes as Sanskrit. Therefore, a Sanskrit sentence or phrase may be transcribed in Devanagari and Malayalam script with high fidelity. Tamil and Sanskrit do not have a large shared phoneme set – so many Sanskrit words cannot be accurately transcribed into Tamil, using Tamil’s native script. The purpose of all writing systems is to support a spoken language (literary or vernacular) by representing the phonemes of the language. To be able to read and write a script in all Indic languages, it is necessary to learn the grapheme-phoneme associations of the language using akshara symbols. As Brahmic systems are a written language family with cousins in Northern and Southern India as well as other parts of South East Asia, they can be defined according to the use of abugida but vary in terms of scripts.

Cultural Context

The development of akshara symbols in Brahmi script testifies to a sophisticated phonetic knowledge acquired in antiquity. Prakash and Joshi (1995) argue that the concept of akshara was in place before widespread development of writing throughout South Asia. Indeed, they propose that the structure of Brahmi was intentionally crafted from early Semitic writing systems and then nativized for the Sanskrit language. Spoken syllables most certainly were available before the invention of any writing system. But the fact that a wide variety of Asian languages (Indic and non-Indic) spanning a large geographical region, all make use of the abugida writing design, is quite remarkable.

Diversity of scripts allows for the preservation and continuation of core values in a linguistically, culturally and politically diverse environment that is also geographi-

cally vast and varied. Whether such diversity in writing systems needs a preservation order in the twenty-first century is an issue worth pondering about, since in the age of globalization and high technology with today's societies attempting to converge and minimize differences. However, linguistic and cultural diversity is so enshrined in Modern India that official scripts (albeit a common writing system) number over twenty, and documents are routinely translated into several languages and scripts. It is the tolerance of diversity that is key to the preservation of akshara symbols today. In a way, the akshara based writing systems have indeed lived up to their name as indestructible since, despite socioeconomic and geopolitical changes through time, they are resilient. It is interesting to consider how electronic means of communication (texting) might preserve the grammar and script of the spoken languages in the coming century. Will the Akshara symbols be resilient even in the face of pressures to communicate with a global audience in our ever increasingly interconnected world?

Scripts in Contact – Urdu and Hindi

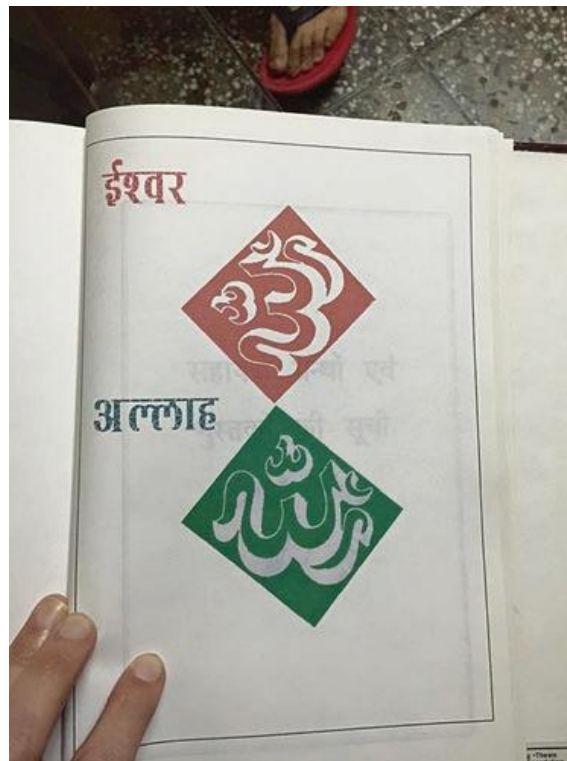
An interesting question to ponder is why related languages in the subcontinent would adopt different writing systems. Linguists agree that Hindi and Urdu are equal descendants of the Indo-Aryan branch of the Indo-European family with a common historical origin (Ahmad, 2008), and they exist in the same territories in Northern India, often in the same street or even building. There are differences between languages in phonology and vocabulary, however. Pure Hindi is more Sanskritized and lacks many of the phonemes in Urdu (borrowing from Arabic, Turkish, Persian, and Sanskrit). Mutual intelligibility is due to the fact that modern day vernacular Hindi uses a lot of Urdu words, and Hindi and Urdu share a large vocabulary. This has resulted in what some refer to as Hindustani (Siddiqi, 1994) – a vernacular that is a mix of both languages with pure Hindi and pure Urdu at the extremes of the spectrum. There are several Sanskrit-derived or Prakrit-derived words in Hindi not occurring in Urdu, and Urdu has words derived from Arabic, Persian and Turkish – that are not found in Hindi. Why have these “scriptages” evolved and coexisted for centuries?

A divergence of Hindi and Urdu likely first occurred during the period of Mughal rule over a substantial part of present day India (Rao, 2010). Hindi and Urdu took shape as a composite mix of regional dialects in and around Delhi, while influenced by Persian, the language of the rulers, as well as older languages and dialects used around Delhi such as Prakrit and Apabhramsh (Rao, 2010). According to Rao, the terms Hindvi (or Hindavi) and Urdu were used to refer to a newly evolving language: The term Hindvi was used to designate the vernacular of the people of Hind (a region near the Indus river), while the term Urdu originated from the Turkish word for army encampment. These terms were used to describe a single language

until the seventeenth century, by which time the name Hindustani (meaning Indian) gained currency. The official sanctioning of Urdu/Hindustani as a court language by the British fuelled many sociopolitical dynamics, leading to the separation of Modern Standard Hindi from the parent Urdu/Hindustani language. The gulf between Hindi and Urdu widened as Hindi speakers adopted words from Sanskrit as a source to expand Hindi vocabulary, thereby distancing it from Urdu (dominated by Perso-Arabic vocabulary). These tensions are reflected in the written texts wherein borrowed Arabic script (of the usurped Mughals) and akshara symbols were adapted by the occupied to sustain their own ideologies (Hinduism and Islam) in parallel worlds of liturgical texts, music, and philosophy co-existing in adjacent neighborhoods. Sulatana has translated the Qur'an into Sanskrit (2010) To be able to read the Qur'an, phoneme-grapheme mappings and Arabic itself (in terms of vocabulary) must be known, due to the abjad's context-based approach to reading. Indian Muslims learn the Arabic (in a limited manner and context) to read Qur'anic verses. This is because Hindi/Devanagari does not have graphemes to represent Arabic phonemes. This is why Sultana translated Arabic Qur'an into Sanskrit and did not transliterate it. According to a personal interview (November 2016, Deogarh, India) it took more than 12 years to complete this work because finding Sanskrit for Qur'anic words was difficult (Fig. 2).

The survival of Urdu depends in part on preservation of liturgical texts written in Arabic. A Hindi-speaker from India, as well as Urdu-speakers in Pakistan, are mutu-

Fig. 2 Qur'an written in Devanagari script. Red Font says: Īshvar = God in Sanskrit/Hindi; Red calligraphy is Devanagari symbol for "AUM" stylized in the manner of Arabic calligraphy; Green Font says Allah = God in Quran; Green calligraphy is Arabic script for "Allah"



ally intelligible to each other. But to be a self-defined native Urdu speaker signifies a specific linguistic and cultural identity.

Final Remarks

The evolution of all writing systems is marked by the tendency to graft dominant written codes on to native spoken languages. No spoken language affords a script naturally. The result is almost inevitably arbitrary links between printed text and phonology. Such adaptations can be seen in writing systems today, e.g., umlauts in Germanic languages, digraphs in English (and French), optional diacritic markers in Hebrew and Persian, and phonetic radicals in Chinese characters.

In terms of a morphographic script (Chinese), it is notable that characters can be shaped into many spoken Sino-Tibetan languages including Cantonese in Hong Kong, as well as Japanese and Korean, but this always results in irregular mappings between orthography and phonology. A logograph always represents a syllable, but it is not usually marked for pronunciation at the sub-syllabic or sound-tonal level. Therefore, to correctly read a logograph character in any Chinese language, ‘lexical’ knowledge of the specific representations of syllable sounds is required (Weekes, 2012). It is possible that logographs will have similar pronunciations in different Chinese languages due to shared morpho-phonology. The same is true for Arabic script used in Persian or Urdu wherein the same orthographic symbols are pronounced according to the dominant language (see Bakhtiar & Weekes, 2015; for discussion of reading Arabic abjad in Persian). Morphographic scripts, e.g., Chinese characters and Japanese Kanji, contain thousands of written symbols representing morphemes (meanings) directly and syllables obliquely. In all writing systems, the productivity of the script depends on how effectively the sounds of a language can be depicted at the sub-syllabic level. Alphabetic scripts e.g., English, Greek, and Russian, have a limited number of sub-syllabic symbols and grapheme to phoneme correspondences to be learned. Exception spellings are the result of a Latin script imposed on unrelated languages (English and French).

The arbitrary nature of writing systems is illustrated by comparisons in Arabic and akshara to depict the same words in Urdu and Hindi. This is similar to adaptation of Cyrillic and Roman alphabets to read Serbo-Croatian and Kanji and Kana to read Japanese words. Comparisons between bi-script monolinguals can be informative in terms of the transparency-opacity continuum. Brahmi writing systems are transparent. That is, the symbol affords a pronunciation consistently and there is a requirement to infer missing vowels from context. Urdu also affords transparent pronunciations when context is added but pronunciation of an abjad is not always consistent and depends on context (as in Hebrew and Persian). Symbol-sound mappings in all Brahmic systems using abugida are consistent, predictable, accurate, and faithful transcriptions of spoken words. (Nag, 2014).

Conclusion

Western scholars tend to view literacy through a lens of alphabet supremacism. It is important to remind scholars of the arbitrary relationships between writing systems and spoken languages. This has been the rule for as long as humans have had written languages to communicate beyond the present. One exception to the rule comes from attempts to transcribe spoken languages with an invented script, e.g., missionary scripts developed in Africa and South America to depict the sounds in the entire language (Gnanadesikan, 2011). One interesting conjecture is that to survive, a writing system does not need to resemble spoken language at all. It is more likely (historically) for extinction to follow attempts to codify a local vernacular. However, the structure of the writing system whether abjad, akshara, or alphabet remains the same precisely because it is linked to a deeper, stronger cultural identity. Uniquely, the subcontinent is a living laboratory to study distinct scripts and languages in close contact with each other. Surrounded by orthographic hegemonies of Arabic, Cyrillic and Latin to the West and North and Sino-Tibetan writing systems to the East, no region on earth has been able to incubate and sustain as many diverse scripts. Geography is one likely factor since divisions between cultures, languages and their writing systems seem to coincide with impenetrable natural obstacles and barriers such as the Himalaya to the north, arid plains and deserts to the west, marshy wetlands to the east and oceans to the south. However, to understand the survival of akshara based writing systems it is necessary to put spoken and written languages of South Asia into a cultural context. Linguistic diversity in different scripts allows the DNA of shared wisdom to survive at least as it is perceived by a majority of the nearly 2 billion inhabitants.

Writing systems can only survive if they are generative, productive and resilient. Brahmi writing systems meet all these criteria. The key question is why did akshara symbols survive for so long (fourth century BC to the twenty-first century AD)? 2500 years is a long time for a cultural system to survive; only Chinese characters have a longer history. The answer cannot be reduced to one explanation. It is particularly informative to consider how a writing system can remain intact in the context of competitor systems that surround it, often within just a few miles. This contrasts with the hegemonies of Arabic, Cyrillic, Latin and Chinese writing that will dominate large parts of the globe in the twenty-first century.

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