ISSUES AND CHALLENGES IN DEVELOPING AN ORTHOGRAPHY FOR KUṚUX LANGUAGE

Anup Kumar Kujur
Department of Linguistics,Berhampur University, Berhampur-76007, Odisha.

Abstract
An attempt to preserve and revitalize an endangered language has given rise to the development of orthography. The development of orthographies is highly dependent on issues of acceptability and usability, which must be supported by linguistic soundness. Unfortunately, for orthographic development, sociolinguistic and political considerations trump linguistic considerations. The purpose of this paper is to introduce and highlight the distinctive characteristics of the Kurukh Banna script by comparing it to the Tolong Siki script for Kuṛux, a north Dravidian language. The relationship between the meticulously crafted 62 fonts of Kurukh Banna script and the sacred Ḍaṇḍa Kaṭna exhibits a significant role in the script's widespread recognition in Odisha and neighbouring states. Tolong Siki, the official script of the state of Jharkhand, is a well-balanced amalgamation of many sounds borrowed from different Indian languages. Certainly, the evolution and diversification of orthographic symbols for a language continue until it receives adequate political and social support from a state's governing establishment, an appropriate authority, or its native speakers. Two scripts, Kurukh Banna and "Tolong Siki", have emerged for writing the Kuṛux language in the states of Jharkhand and Odisha, respectively.

Keywords: Language Orthography, Kurukh Banna, Tolong Siki, Dravidian, Ḍaṇḍa Kaṭna.

Introduction
A Script for language is an essential for the development for a tribe's language, culture and literature. Using Devanagari or any other Dravidian languages' script will not reflect Kuṛux identity and may hamper its growth as compared to languages having individual scripts like, Odia, Hindi, Tamil, Telugu, Santhali etc. Distinctive qualities of Kuṛux language and culture can properly be expressed and maintained in its literature. The inventory of sounds of language A may or may not reflect that of language B. So, the development of 'Tolong Siki' or 'Kurukh Banna' has managed to address all the problems arising out of using other scripts, i.e. lack of glottal stop.

There are endeavours being made for the transition from non-literate to literate Kuṛux language through implementing the mother-tongue-based multilingual education from class I to V in the districts of Sundargarh and Sambalpur in Odisha. Till 2011, there were a total of 52 schools where it has been introduced. On the other hand, Kuṇhã, a speech variety of Kuṛux is used as a medium of instruction in 40 schools in Sambalpur district of Odisha.

Kurukh Banna
The name 'Banna' refers to the traditional and cultural shape or symbol generally inscribed on the doors, metal bowls and the place of rice winnowing in the Oraon society. Banna lipi is one of the fastest technically advanced script devised by Sri. Basudeo Ram Khalkho during 1990s to write and read Kuṛux language and other languages of the world.

The origin of Kurukh Banna script can explicitly be traced to Ḍanḍa Kaṭna which is a perfect representation of ancient tradition and religious practice in the Oraon history. Ḍanḍa Kaṭna is believed to be initiated by Dharmes, the god of the Oraons and later He taught it to the Oraons. The specific ingredients like raw rice, burnt soil from Oven, charcoal powder, egg and seven one inch stick pieces of cashew nut tree carrying vital meanings in the Oraon society are required to perform this holy ritual. The continuity of this religious practice in the sacred place signifies His glorification.

Tolong Siki

After ten years of hard work and unwavering commitment to create a new script, Dr. Narayan Oraon published his alphabet *Tolong Siki* on 15th May 1999. It was also introduced in some of the schools subsequently. In 2007, it was formally recognised by the Govt. of Jharkhand.

"Tolong" is a piece of cloth having 243.84 cm length and 12.7 cm breadth. Men belonging to Kuṛux, Munḍa, Kʰaṛia tribes etc. wear it from waist to knees by making a series of folds. It is an integral part of the tribals' attire for social functions, dancing and singing which used to bring a ray of hope in their difficult lives. The name of the script is derived from this shape. Siki refers to symbol or shape meaning lipi. So, Tolong Siki literally means '*symbol or shape made of Tolong cloth*'. *Tolong* is a general term found in most of the tribal languages in Jharkhand and Odisha. It is aimed at making the script acceptable by a large number of populations of different tribes.

Literature Review

For the speakers of a language, the presence of a writing system and, subsequently, written literature elevates the language to "literary" status. The practice of writing has led to the common misconception that the written language is the "real" language (Ferguson, 1968).

Scripts are frequently named after the language for which they are intended. Roman, Nagari, Arabic, and Gurmukhi, respectively, are referred to by the language names English, Hindi, Urdu, and Panjabi. Like languages, scripts function as identifiers. As a result, some languages are written in multiple scripts, often based on which social group writes them. The choice of Arabic, Nagari, or Gurmukhi is sometimes made not based on the linguistic or communicative needs of the speech community, but rather on religious or political grounds (Jain 2014).

Language attitudes regarding the desire to have an orthography that is either similar to or distinct from another are irrational, yet they are social facts that frequently have a substantial effect on the success of a proposed-system (Coulmas, 2000).

All orthographies are language particular (Coulmas, 1996). Choosing a script and creating an orthography for a language that has never had one is a method of encoding the language visually so that it can be used effectively in written communication. Developing a writing system is fraught with difficulties and obstacles. In addition, sociolinguistic implications that transcend the confines of linguistic analysis in the narrow sense (Coulmas, 2000).

The endeavours of script choice and orthography design are influenced by linguistic and social factors. In this regard, Smalley et al. (1964) proposes five criteria for an optimal new writing system; however, it is unclear to what extent the choices involved in its realization can be reconciled with similar choices made to achieve maximum realization of the other criteria (Coulmas, 2000).

a. Maximum motivation for the learner - This is not a linguistic criterion; however, a systematically elegant orthography is useless if it is rejected by the community for extra-systemic reasons and any disagreement with linguists regarding the suitability of an orthographic system for a given language.

b. Maximum representation of speech - This is the appropriate domain for purely linguistic considerations. In the design of new orthographies, dialect differences pose a greater theoretical challenge than they do in practice, according to Venezky (1970). The significance of selecting one dialect over another for the written representation of a given language is amply demonstrated by linguistic history. It may be desirable to augment the phonemic representation with some higher-level distinctions (Coulmas, 2000).

c. Maximum ease of learning - An orthography should be easy to read and write by balancing the needs of the reader and those of the writer. Each requires a distinct set of psychological, perceptual, and linguistic skills, capacities, and processes.

d. Maximum transfer - Languages in modern times that are being provided with their first orthography are not likely to have a vast communicative range. Only if the to-be-created orthography uses the same script as the dominant contact language in the environment can transferability be expected to be straightforward (Coulmas, 2000). While avoiding obvious distortions such as the marking of distinctions that occur in the contact language but not in the language for which an orthography is being designed.

1. It should utilize the grapheme inventory of the primary contact language with the same or similar sound values where correspondences exist.
2. It should not utilize any graphemes of the contact language for which there are no corresponding values in the phonology of the unwritten language.
3. For phonemic units with a high functional load that have no counterpart in the major contact language and are therefore not represented in its orthography, the new orthography should introduce graphemic distinctions through the use of digraphs, trigraphs, diacritics, and, if necessary, additional letters.

e. Maximum reproduction convenience - The design of any new orthography whose purpose and intent is to promote literacy will continue to be heavily influenced by technical considerations.

From the discussion of Smalley's five criteria for the design of new orthographies, it should be apparent that they are in conflict with one another in certain ways. In a community that has strong feelings about its new orthography as a symbol of self-identity, for instance, the learner's motivation is likely to decrease if transfer to the orthography of the dominant contact language is increased by using the dominant contact language as a model (Coulmas, 2000).

According to Pattanayak (1978), a new script is produced almost every three months. Any policy that emphasizes transfer and ease of reproduction is frequently resented by speakers of nonliterate languages who perceive it as a threat to their linguistic identity (Srivastava and Gupta, 1983).

Cahill & Rice (2014) and Coulmas (2000) propose some criteria for creating a new orthography adhering to the following points: (1) based on a variety of the language which is acceptable to the majority of the speech community; (2) simple to learn; (3) simple to write; (4) simple to read; (5)

founded on a phonemic analysis of the language while allowing access to the morpho-phonemic and lexical levels; (6) transcending the limitations of the sign inventory of the orthography.

Hinton (2014) offers an intriguing and significant perspective on the consequences of developing an orthography. The conventions selected for the visual representation as part of language orthography can serve as a lightning rod for all of the personal, social, and political issues that plague speech communities. According to Sebba (2007), orthography is "fundamentally ideological" and not simply a systematized collection of letters and spelling rules. In addition, Hinton (2014) notes that orthographic design can become a divisive issue within a community, as well as a source of conflict between the members of a community and the linguists who work with them. Despite the fact that the problems are typically argued as "code-internal" issues — that one type of symbol or spelling principle is superior to another — there is actually a wide range of "code-external" considerations that drive such debates, both among community members and linguists.

Research Methodology
The primary data is collected from Sri. Basudeo Ram Khalkho through series of interviews. A set of questionnaire was prepared to elicit the data from the users of Kurukh Banna from Lathikata block of Sundargarh district, Odisha state, and Tolong Siki from Simdega district of Jharkhand state. There was a total of forty males and females from an average age group of 50+ who were selected through random sampling method. The secondary data was gathered from the books, newspaper, recordings and research articles.
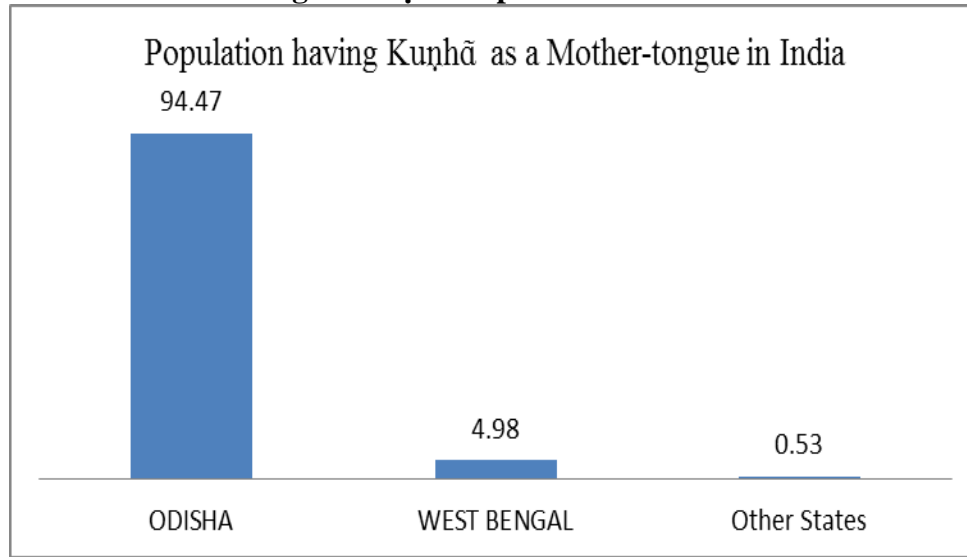
Fig. 1. Kuṛux Population in India
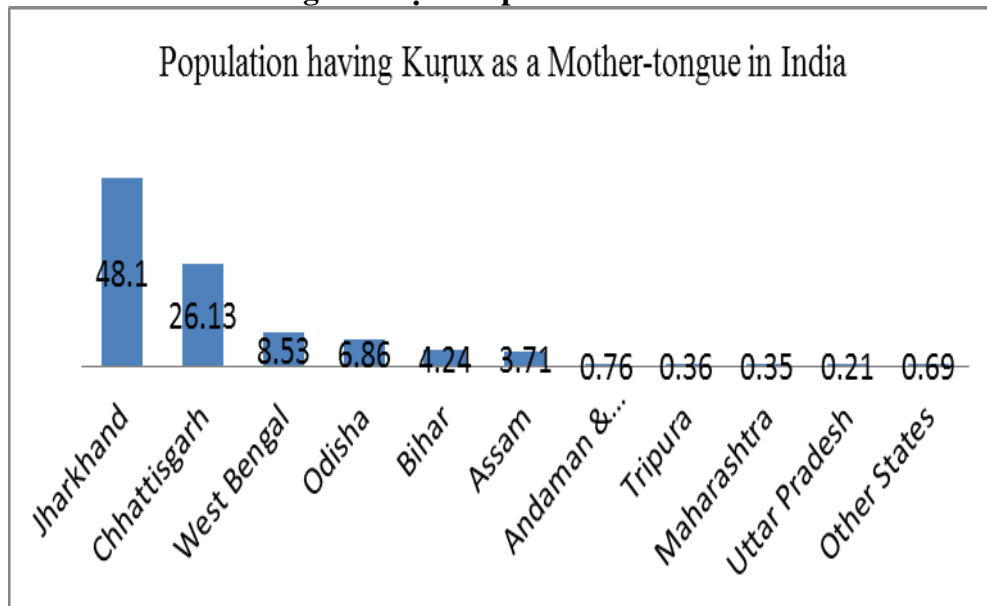
Kuṛux language has a total of 19,76,920 speakers in India.

Fig. 2. Kuṇhã Population in India

Kuṇhã language has a total of 2,06,100 speakers in India.

Script and Language

The Arabic script has been quite flexible as it has been adapted to the phonological structure of other languages (Kaye, 1996), while Nagari has rarely invented new symbols (Masica, 1991). Use of English in writing Odia, Hindi, Kuṛux etc. is gradually becoming universal among the young generation. Panjabi is written in three scripts: Arabic, Gurmukhi and Nagari, popularly identified with Muslims, Sikhs and Hindus, respectively.

Table 1. shows the association of script with religion

Place	Dialect	Script	Religion
Amritsar	Majhi	Gurmukhi	Sikhism
Lahore	Panjabi	Arabic	Islam
Jammu	Dogri	Nagari	Hinduism

Socio-cultural considerations

It has been important for the development of script in India that the tendency to see the oral form as being more primary than the written version. The speakers of Kuṛux are in constant contact with that of Indo-Aryan and Austroasiatic-Munḍa languages. The scripts of Dravidian and Indo-Aryan languages have evolved from the same source, Brahmi script and so, Kurukh Banna is developed graphically by taking it into consideration. One of the Austroasiatic-Munḍa scripts in the region is "Ol-Chiki" created by Pandit Raghunath Murmu for Santali speakers has no influence on Kurukh Banna (Kobayashi & Tirkey, 2017).
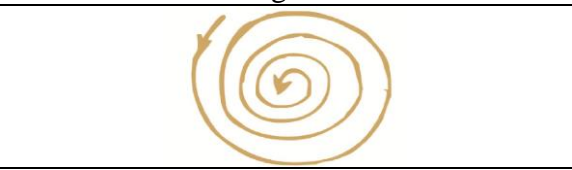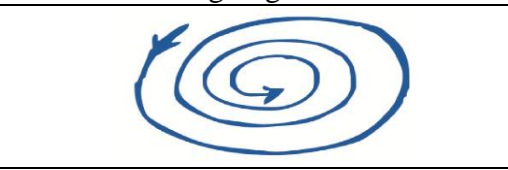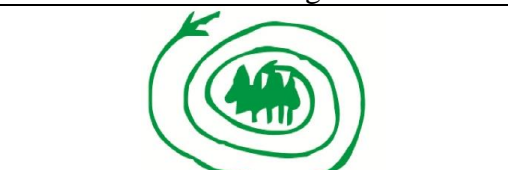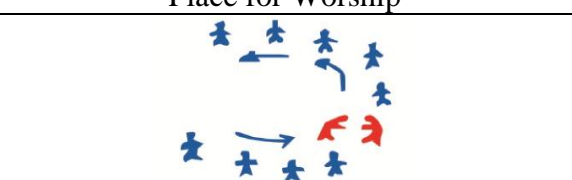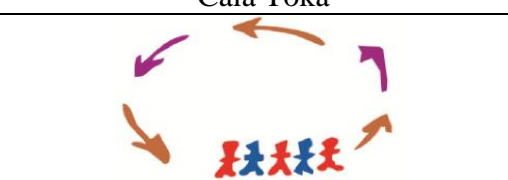
Hindi and/or Odia as the mediums of instruction are used in their primary education for all the tribal people in Odisha and Jharkhand. The literate tribal population is familiar with Roman and Devanagari scripts. Some of the letters in Kurukh Banna are similar to Devanagari script.

Origin of the Scripts

Kurukh Banna and Tolong Siki share Kuṛux traditional, cultural, religious symbol of Ḍanḍa Kaṭna apart from other signs and symbols for developing the scripts. As per Oraon (2003), the scripts in Tolong Siki were taken from the following sources:
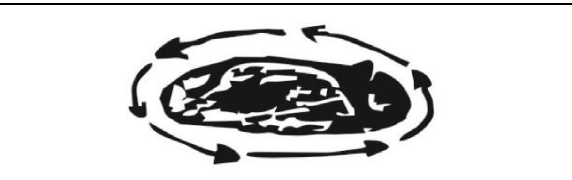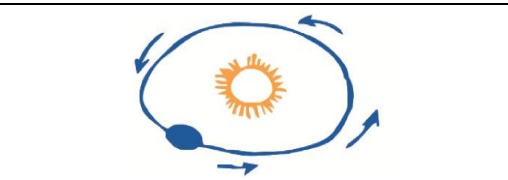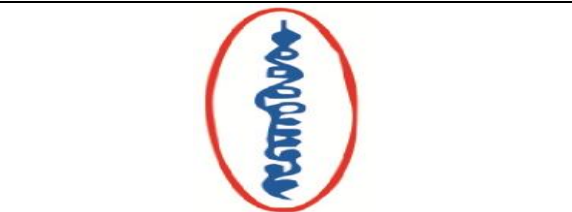
1. A series of shapes made of Tolong.
2. Symbols drawn during traditional worships like Ḍanḍa Kaṭna.
3. Shapes created while ploughing a land.
4. Artistic shapes drawn on walls on different occasions.
5. Creepers climb up the trees rising anticlockwise and so is the writing style.
6. Lines created by the movements of small insects.

Fig. 3. Signs from Nature and Kuṛux culture (Oraon, 2003)

Tolong Cloth	Ploughing a Land
Making Roti	Grinding
Place for Worship	Cala Toka
Welcome	Dance
Death	Earth rotating around the Sun
Signs made by Insects and Animals	Creeper climbing up a tree

Research Paper
Impact Factor: 6.089
Peer Reviewed Monthly Journal
www.ijmdrr.com

IJMDRR
E- ISSN –2395-1885
ISSN -2395-1877

Ḍanḍa Kaṭna	

Linguistic Considerations

Kurukh Banna can be considered to be a script with technically advanced font developments. There are around 62 fonts related to each clan of Kuṛux communities. Most of the writing systems in India related to Brahmi writing systems are alphasyllabaries in nature. So, Kurukh Banna is designed to follow it. According to Oraon (2003), each sound was needed to be represented by a letter or symbol. Alphabetic System is applied to Tolong Siki as it is said to be easy for phonemic analysis. This has led to more number of graphemes used for a single word.

DEVNAGRI – कछनखरना = 7
S C R I P T नगहय करम परब तली **=13**

KURUKH BANNA- ᱢᱹᱣᱮᱹᱡᱣᱹ **=7**
S C R I P T ᱣᱹᱮᱹ ᱢᱹᱡᱢ ᱫᱹᱡᱜ ᱫᱢᱡ **=13**

TOLONG SIKI - ᱢᱡᱮᱢᱡᱮᱡᱢᱮᱢᱡ **=10**
S C R I P T ᱢᱡᱣᱢᱡᱜ ᱢᱡᱮᱡᱣ ᱣᱡᱮᱡᱣ ᱮᱡᱣᱮ **=20**

The graphemes both consonant and vowels in Tolong Siki are arranged based on places and manners of articulation such as [p], [pʰ], [b], [bʰ], [t], [tʰ], [d], [dʰ]etc. The examples like *iŋgyo* 'my mother', *embas* 'my father', *urbas* 'master, landlord' are another factor used in support of the arrangement of vowels as [i], [e], [u], [o], [a] (Oraon 2003:164).

Kurukh Banna represents a logical composition of individual script symbols by following a common logical structure like other Indian scripts. It shares the features of Indian scripts. (a) Each consonant represents a distinctive sound. (b) The sounds are arranged into different classes based on the articulatory mechanism. (c) They are divided into +_ voice followed by nasal sounds and +_ aspirated.

Vowels

There are 10 vowel graphemes. The Different representation of vowel depending upon its position in a syllable; initial or alone, full graphemes are used and non-initial (second member of a syllable, i.e. post consonantal, matras merge with consonants to present a unified graphic representation.

This is a two way graphic representation of vowels, a feature of most of the Indian scripts; whereas, there is a single representation in Tolong Siki. It has also sound contrast between long and short vowels. Diacritics are marked on the top or right side (except short i) of a character to maintain the smooth flow of writing.

Research Paper
Impact Factor: 6.089
Peer Reviewed Monthly Journal
www.ijmdrr.com

IJMDRR
E- ISSN –2395-1885
ISSN -2395-1877

Kurukh Banna	अ	आ	इ	ई	उ	ऊ	ए	ऐ	ओ	औ	अं	अँ
Symbols	none	a	i	I	u	U	e	E	o	O	N	M
	k	ka	ik	kI	kU	kU	ke	kE	ko	kO	kN	kM

Longer than Aa (आ)	[
Glottal Stop	]

Consonants

There are 39 consonant graphemes. The basic consonant grapheme stands for syllable, i.e. [k] representing [ka] in the initiation position of a syllable. There is a contrast between aspirated and unaspirated sounds.

	Voiceless Plosives		Voiced Plosives		
	Unaspirated	Aspirated	Unaspirated	Aspirated	Nasal
Velar	क	ख	ग	घ	ङ
Palatal	च	छ	ज	झ	ञ
Retroflex	ट	ठ	ड	ढ	ण
Dental	त	थ	द	ध	न
Labial	प	फ	ब	भ	म

Sonorants	य	र	ल	व
Fricatives	श	ष	स	ह

Special Conjuncts					
ḳ (क्)	+	{ (ष)	=	क्ष	
ẓ (त्)	+	r (र)	=	त्र	
ĵ (ज्)	+	} (ञ)	=	ज्ञ	

		Unaspirated	Aspirated
Retroflex Voiced Tap or Flap	ड़		ढ़
Velar Voiceless Fricative	ख़		

Inclusion of Letters from other Scripts

Kurukh Banna can be viewed as belonging to one of the Indo-Aryan languages. There are 12 letters (24% of similarity) which can be identified with northern Indic scripts. Whereas, Tolong Siki resembles southern Indic scripts and has around 38 identifiable letters (73% of similarity).

Challenges

This is of paramount importance to address the problems lying ahead of us as far as the implementation of Kurukh Banna is concerned.

1. Along with popularising and creating awareness Kuṛux and Kisan among the speakers, regular discussions must focus on the benefits of using Kurukh Banna.
2. Kuṛux being minority language needs to change the perception of its speakers built by dominant languages like Hindi and Odia.
3. There is a lack of mother-tongue based education in most of the schools.
4. There is a fear that learning new script may hamper a Kuṛux child's acquisition of the other dominant languages.
5. There are evidences of political recognition, financial support and marginal social acceptance.

Conclusion

Many of the speakers of Kuṛux in Odisha prefer Kurukh Banna to Tolong Siki. The former follows the north Brahmi script and the latter south Brahmi script. The arrangement of graphemes in Tolong Siki is done as per the IPA chart starting with bilabial plosives. Generally people are accustomed to alphabet chart beginning with velar plosives. So, learning the graphemes in Tolong Siki poses difficulties. Kuṛux, a north Dravidian language, is spoken amidst the dominant Indo-Aryan languages like Hindi, Bengali and Odia. Kurukh Banna has retained the features of these scripts and one can witness its gradual use in different social and traditional functions in the Kuṛux villages. Oraon (2003) has expressed inclusion of any future development of a new script by adequately comparing its usefulness with that of Tolong Siki.

References

1. Kobayashi, M., & Tirkey, B. (2017). *The Kuṛux Language*. Brill.
2. Oraon, N. (2003). *Origin and Development of Tolong Siki*. NAV Jharkhand Prakashan.
3. Oraon, N. (2013). *Kailgā: Tolon Siki meṃ Kuṛux Praveshikā* (15th ed.). Satya Bharati.
4. *Tolong Siki alphabet*. (n.d.). Tolong Siki Alphabet; www.omniglot.com. Retrieved May 18, 2022, from https://www.omniglot.com/writing/tolongsiki.htm
5. *http://censusindia.gov.in/2011-prov-results/prov_results_paper1_india.html*. (n.d.). Census of India, Govt. of India.
6. Cardona, G., & Jain, D. K. (2014). *The Indo-Aryan Languages* (2nd ed.). Routledge. https://doi.org/10.1604/9780700711307
7. Emeneau, M. B. (1956). *India as a linguistic area* (Vol. 32, Issue 1, pp. 3–16).
8. Pandit, P. B. (1972). *India as a Sociolinguistic Area*. University of Poona.
9. Ferguson, C. A. (1991). *South Asia as a Sociolinguistic area* (E. Dimock, B. Kachru, & Bh. Krishnamurti, Eds.; pp. 25–38). Oxford and IBH.
10. Coulmas, F. (2000). *The Writing Systems of the World*. Wiley-Blackwell. https://doi.org/10.1604/9780631180289
11. Cahill, M., & Rice, K. (2014). *Developing Orthographies for Unwritten Languages*. SIL International.

12. Hinton, L. (2014). *Orthography wars* (M. Cahill & K. Rice, Eds.; pp. 139–168). SIL International Publications.
13. Smalley, W. A., & Societies Staff, U. B. (1964). *Orthography Studies*. United Bible Societies.
14. Sebba, M. (2007). *Spelling and Society*. Cambridge University Press. https://doi.org/10.1604/9780521848459
15. Coulmas, F. (1996). *The Blackwell Encyclopedia of Writing Systems*. Wiley-Blackwell. https://doi.org/10.1604/9780631194460
16. Venezky, R. L. (1970). *The Structure of English Orthography*. Mouton.
17. Pattanayak, D. P. (Ed.). (1978). *Papers in Indian Sociolinguistics*. Central Institute of Indian Languages.
18. Srivastava, R. N., & Gupta, R. S. (1983). *A linguistic view of literacy* (Vol. 7, Issue 5, pp. 533–549). https://doi.org/https://doi.org/10.1016/0378-2166(83)90080-2
19. Kaye, A. S. (1996). *Adaptations of Arabic Script* (P. T. Daniels & W. Bright, Eds.; pp. 743–762). Oxford University Press.
20. Masica, C. P. (1991). *The Indo-Aryan Languages*. Cambridge University Press. https://doi.org/10.1604/9780521234207.