Development of scripts in India – A Study

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Abstract

The present paper intends to explore the applied growth of the evolution of Indian scripts, and also the nature of the development. The linguistic landscape of the subcontinent changed dramatically during the 2nd millennium BCE, so that is is impossible to determine if there is a connection between the IVC script and the next clearly attested script in India, the Brahmi script found in the inscriptions of the Mauryan Emperor Ashoka (ruled 268-232 BCE), especially since they probably represented vastly different, unrelated languages.

The sudden appearance of the Brahmi writing system is one of the great mysteries of writing in India, as there is no evidence of inscriptions beforehand. Another script, the (extinct, childless) Kharosthi of northwest Pakistan and Afghanistan seems to be clearly derived from the imperial Aramaic script used by the Persians who ruled over parts of the Indus Valley for two centuries until the arrival of Alexander the Great. It is unclear if the fully developed Brahmi script was invented by the Mauryan Empire as a result of exposure to Aramaic, but this seems unlikely, particularly since there were advanced states in the Ganges valley and a corpus of Vedic literature dating from before the Mauryan period.

It is more likely that pre-Mauryan inscriptions may still be discovered, and in fact, some Brahmi inscriptions have been found in Tamil Nadu and Sri Lanka dating to the 6th century BCE. Is it possible then, that writing spread from the south to the north, countervening the traditional notion that the Indic scripts originate in the Ganges valley? This may quite possibly be the case, especially since the coasts of southern India were more exposed to foreign trade from the Middle East than northern India, and scripts from traders could have been brought to India this way (the same way the Phoenicians brought their script to Greece). This long gestation period and overland route from southern to northern India may explain why the Brahmi script, even if it is vaguely derived from Middle Eastern alphabets, is so different and nativized, especially relative to the more obviously Middle Eastern-inspired Kharosthi. Only a few years ago, things did not seem to be going well for India's various alphabets, often known as the Indic or Brahmic scripts after the historical Iron Age script that is the ancestor of modern South and Southeast Asian writing systems. The present paper seeks to understand the growth and evolution of Indian scripts

Keywords— Middle Eastern alphabets, Phoenicians, Phoenicians, India, Vedic literature, pre-Mauryan inscriptions.

Introduction

The change in letter forms leading to new scripts was probably so slow, generation by generation, that the process did not necessarily involve conscious change from one script to another, but a slow evolution of differences in letter formation as texts were copied throughout the ages. A similar development occurred in medieval Europe with the Latin script, but the development of the printing press, and Renaissance ideas about how the Latin script ought to look like led to a typographical convergence.

Brahmi and Devanagari found together on a pillar. The evolution of Brahmi into so many scripts over time in India does however raise the question of what individuals and scribes thought about the changes upon becoming aware—and they were aware, as inscriptions in multiple different Indian scripts have been found together, like Kannada with Devanagari—of the fact that their contemporary writing systems were divergent in separate regions, and were also vastly different from the forms found in inscriptions and ancient documents. While 19th century scribes of Indian scripts were unable to tell the British what was written on ancient pillars from the Mauryan Era (the British deciphered Brahmi in 1837), this inability to read ancient forms of writing does not always seem to be the case. In fact, there have been examples of Mauryan, Gupta, and early Nagari inscriptions found together, with each subsequent script alluding to the content of what was written before it in a predecessor script. But that fact that this knowledge was lost over time and that Indian scripts differentiated into so many forms does seem to indicate that literacy was not widespread and was limited to pockets of individuals, a trend which probably accelerated due to the eclipse of a pan-Indian literary culture after the 12th century. Before the emergence of a modern, mass culture throughout India, writing styles and scripts were particular to regions, and even castes, with scribes and merchants often utilizing their own scripts, which were usually simpler forms of the more formal monumental alphabets used for official or religious purposes.

However, modern trends such as the emergence of a politically unified, subcontinent-wide state in India, new scholarship, and technology seem to be reversed the differentiation that has characterized Indian scripts for past 2,000 years. The literacy of hundred of millions of people in native scripts makes it unlikely that the shapes of letters used by millions of people everyday for communication will change anytime soon, as that would lead to confusion and a lack of communication. The standardization and use of some scripts for mass print and online have also led to the decline of caste and trade based scripts, as well as many local variations. Many hitherto unwritten modern languages are now written in established scripts, usually the script most prevalent in that particular state of India's, instead of evolving a new script for the language.

While India's scripts are ancient, technology and modernity are changing their usage patterns, and are in fact allowing them to thrive as never before in standardized and widely used forms, as more people gain literacy and access to the internet. Digitalization and the widespread proliferation of Roman-alphabet keyboards in India meant that Indian users would often transcribe Indian languages using ad hoc Romanizations on the internet and via text.

Objective:

The present paper intends to explore the applied growth of the evolution of Indian scripts, and also the nature of the development

Indus script Growth and Acceptance

After the pictographic and petroglyph representations of early man the first evidence of a writing system can be seen in the Indus valley civilization. The earliest evidence of which is found on the pottery and pot shreds of Rahman Dheri and these potter's marks, engraved or painted, are strikingly similar to those appearing in the Mature Indus symbol system. Later the writing system can be seen on the seals and sealings of Harappan period. Most inscriptions containing these symbols are

extremely short (5 symbols), making it difficult to judge whether or not these symbols constituted a script used to record a language, or even symbolize a writing system. The long inscriptions are found in Gujarat particularly Dholavira where we find slabs of stone inscribed with inscriptions which might represent name plates of the houses with 24 to 34 symbols.

The characters are largely pictorial but include many abstract signs. The inscriptions are thought to have been written mostly from right-to-left (because there are several instances of the symbols being compressed on the left side, as if the writer is running out of space at the end of the row there), but they sometimes follow a boustrophedonic (sarphalekhana) style. The number of principal signs is about 400. Since that is considered too large a number for each character to be a phonogram, the script is generally believed to instead be logo-syllabic.

There were arguments that the Indus script is nonlinguistic, which symbolise families, clans, gods, and religious concepts and are similar to totem poles. Based on the extreme brevity of the inscriptions, the existence of too many rare signs and the lack of the random-looking sign repetition that is typical of language. But others have argued that it is a linguistic system and the debate shifted to whether it is the predecessor of Dravidian script or the Brahmi script. Some scholars, have argued that the Brahmi script has some connection with the Indus system, but others, such as Iravatham Mahadevan, have argued that the script had a relation to a Dravidian language. This debate has been further fuelled by the arguments of who were the initial and original inhabitants of India the Aryan's or the Dravidian's.

Brahmi script

Brahmi is the originator of most of the present Indian scripts, including Devanagari, Bengali, Tamil, and Malayalam etc. It developed into two broad types in Northern and Southern India, in the Northern one being more angular and the Southern one being more circular. It was deciphered in 1838 by James Prinsep. The best-known Brahmi inscriptions are the rock-cut edicts of Ashoka in north-central India, dated to 250–232 BCE. Many scholars support that Brahmi probably derives from Aramaic influence and others support that the Brahmi language can have some Indus script influence. The Brahmi script confirms to the syllabic writing system and was used more for writing Prakrit, the language spoken by ordinary people initially and later Sanskrit also was written in this script. According to the epigraphers- All Indian scripts are derived from Brahmi. There are two main families of scripts:

1. Devanagari, which is the basis of the languages of northern and western India: Hindi, Gujarati, Bengali, Marathi, Dogri, Panjabi, etc.

Dravidian which shows the formats of Grantha and Vatteluttu.

Kharosthi Script

It is the sister script and contemporary of Brahmi. It was written from right to left. It was used in the Gandhara culture of North-Western India and is sometimes also called the Gandhari Script. Its inscriptions have been found in the form of Buddhist Texts from present day Afghanistan and Pakistan.

Gupta Script

It is also known as the Late Brahmi script. It was used for writing Sanskrit in the Gupta period. It gave rise to the Nagari, Sarada and Siddhamatrika scripts which in turn gave rise to the most important scripts of India such as Devanagari, Bengali etc.

Nagari Script

It was an Eastern variant of the Gupta script. It is an early form of the Devanagari script. It branched off into many other scripts such as Devanagari. It was used to write both Prakrit and Sanskrit. It is the main script at present to write standard Hindi and Nepali. It is also used presently to write Sanskrit and is one of the most used writing systems in the world. It is composed of Deva meaning, God and Nagari meaning city, which meant that it, was both religious and urbane or sophisticated. It is written from left to right, has a strong preference for symmetrical rounded shapes within squared outlines, and is recognisable by a horizontal line that runs along the top of full letters. In a cursory look, the Devanagari script appears different from other Indic scripts such as Bangla, Oriya or Gurmukhi, but a closer examination reveals they are very similar except for angles and structural emphasis.

Sarada Script

The Sarada or Sharada script of the Brahmic family of scripts, developed around the 8th century. It was used for writing Sanskrit and Kashmiri. Originally more widespread, its use became later restricted to Kashmir, and it is now rarely used except by the Kashmiri Pandit community for ceremonial purposes. Sarada is another name for Saraswati, the goddess of learning.

Siddhamatrika script (Kutila)

This script was prominent in eastern India in 6th century AD leading to subsequent evolution of Gaudi script. This Eastern Nagari script or Bengali-Assamese script defines the unified usage of Bengali script and Assamese script thought minor variations within. Its usage is associated with the two main languages Bengali and Assamese.

Western India

Landa script

The Laṇḍa scripts, meaning "without a tail", is a Punjabi word used to refer to scripts in North India. Landa is a script that evolved from the Sarada script during the 10th century. It was used to write Punjabi, Hindi, Sindhi, Saraiki, Balochi, Kashmiri, Pashto and various Punjabi dialects.

Gurmukhi script

Gurmukhi is an alphabetic developed from the Landa scripts and was standardized during the 16th century by Guru Angad, the second guru of Sikhism. The whole of the Guru Granth Sahib is written in this script, and it is the script most commonly used by Sikhs and Hindus for writing the Punjabi language.

Deccan Scripts

Modi script Modi is a script used to write the Marathi language, which is the primary language spoken in the state of Maharashtra in western India. Modi was an official script used to write Marathi until the 20th century when the Balbodh style of the Devanagari script was promoted as the standard writing system for Marathi. Although Modi was primarily used to write Marathi.

Gujarati script

The Gujarati script, which like all Nagari writing system is a type of alphabet, is used to write the Gujarati and Kutchi languages. It is a variant of Devanagari script differentiated by the loss of the characteristic horizontal line running above the letters and by a small number of modifications in the remaining characters. The Gujarati script is also often used to write Sanskrit and Hindi.

Development of scripts in South India

The generally accepted theory that Tamil-Brahmi system is an adaptation of the Asokan Brahmi system has a number of difficulties, as any theory would have. With the addition of new symbols for the special Tamil letters such asAsokan Brahmi must have been fairly adequate to write the Tamil language. The difference between the long and the short medial e and medial o can be made out from the context and so also the pure consonants from a consonant-vowel combination. If the existing Tamil-Brahmi inscriptions were in fact written during the period of Asoka why is it that they do not follow strictly the Asokan system? It is widely known that the common Tamil word MA KA N was erroneously read as MAA KAA NA for decades by professional epigraphists who relied on the Asokan system to read the Tamil-Brahmi inscriptions. In other words a Buddhist monk from the Asokan capital would not have been able to read correctly the proper names and other words written in the Tamil-Brahmi script of his period. There are in fact a number of Prakrit words in early Tamil inscriptions and why did they follow a system of writing which reduced unnecessarily the mutual intelligibility between the people from the north and the people of Tamil Nadu?

Alternatively one may suggest that writing was introduced into Tamil Nadu only a hundred years after Asoka. This suggestion also would lead to some other difficulties. This would mean that during the period of Asoka's time, and for a hundred years after him, his neighbouring kingdoms of the Cholas, Keralaputras, the Satyaputras and the Pandyas did not make use of writing even though writing had spread to Ceylon in the south and Mysore in the north. The Brahmi script of Asoka had become such a standard script for Ceylon and the southern part of India there is no reason to believe why Tamil had to follow a system of writing different from the Asokan system. We are referring to the example of the Tamil word MA KA N which would be read wrongly as MAA KAA NA if one used the Asokan notational system for reading that Tamil word. Furthermore many of the archaic looking Tamil-Brahmi inscriptions do not follow the Asokan notational system.

The Mahavamsa,4 the Buddhist chronicle of Sri Lanka speaks of a monarch, King Vijaya of the fifth century B.C. having sought matrimonial alliance with a Pandya ruler. The ancient Pandya ruler is said to have sent a letter to Vijaya along with his daughter. This reference to a letter could indicate that writing existed in Tamil Nadu for many centuries before Christ. A commentator of Tolkappiyam5 speaks of the letters of the Tamil alphabet having or having been derived from forms such as the square, the circle etc. This shows that the Tamil grammarians had a theory of the origins and development of writing based on simple geometrical forms. Since it is not found in the original text there is no way of claiming much antiquity for this theory except that it could be based on an early tradition. We shall now discuss the different orthographic systems that were prevalent about 2000 years ago. For the sake of convenience we shall refer to the different systems of writing used in Tamil Nadu as Tamil-Brahmi I, Tamil-Brahmi II and the Tamil Pulli systems. We shall compare these with the Asokan Brahmi system and the Bhattiprolu relic-casket inscriptions from Krishna district of Andhra Pradesh.

The existence of two orthographic systems of writing Tamil-Brahmi was first demonstrated by Mahadevan.6 In the system that we call Tamil-Brahmi I, the letter NA is distinguished from the letter N by adding a horizontal stroke at the top of the letter N (Fig.1). This vowel-marker unambiguously distinguishes the consonant-vowel combination from the corresponding pure consonant. In the word NAVAMANI, for example, the letters NA, VA and MA have the medial vowel a inherent in them. In Fig. 1, all these three letters have the vowel-marker denoted by the same short horizontal stroke at the top right hand side. The letter NAA is written as two letters NA and A and this system unambiguously distinguishes the letters with the medial long a from the letters with the medial short a. In Tamil, pure consonants occur frequently at the end of a word as well as in the middle of a word. Letters with short medial a are more frequent than letters with long medial a. A short horizontal stroke on the left side would indicate the short medial e and two horizontal strokes one on the left and the other on the right would indicate the short medial o. The short medial i indicated by a short vertical stroke at the top and the medial u by a short stroke at the bottom. The sign for ai is a double horizontal stroke on the left. The lengthening of the vowels could be indicated by adding a pure vowel as in the case of NAA in Figure 1.

In Tamil-Brahmi II, the same sign is used to denote a pure consonant as well as the consonant with inherent a . For example the letter N as well as the letter NA will be denoted by the same symbol. In contrast to this, in the first system these letters would be distinguished by using a horizontal stroke to the letter NA to the top right hand side. In the second system an addition of the stroke would indicate letter NAA or N with the long medial a. Here the Tamil-Brahmi II system closely resembles the Asokan Brahmi system.

In the Asokan Brahmi inscriptions which are in Prakrit, pure consonants do not occur frequently. There is a special sign called the anusvara for the letter m which is represented by a small circle, and it represents the pure consonant m. All other pure consonants are denoted by a special device. If a pure consonant like K were to be followed by a letter like YA, then Y is written below K and a compound letter KYA is formed indicating that the top sign denotes a pure consonant. There is no way of unambiguously representing a pure consonant when it occurs at the end of a word. One way of getting over the

difficulty is to write the consonant as a consonant with short medial a and the correct value may be given depending on the context. This practice is not followed in any of the Tamil-Brahmi systems.

The third system of writing in Tamil-Brahmi inscriptions is the Tamil Pulli system. A pure consonant is distinguished from a consonant with inherent a in the form of a small circular dot or pulli placed near the symbol. In Tolkappiyam it is stated that the pure consonant will have a dot or a pulli and the sound M could also be in the form of a pulli. This fact that Tolkappiyam refers to the anusvara is not universally accepted. The Tamil pulli system unambiguously denotes the pure consonants, the letters with short medial vowels and those with long media! vowels. The short e is distinguished from the long e by the addition of a pulli to the sign for e.

The Bhattiprolu system is similar to the Tamil-Brahmi I system. The long medial a is denoted by a longer stroke at the top right hand side which bends down (Fig.1). A sign without any extra marking would denote a pure consonant, one with a short horizontal sign at the top right hand side would denote a short medial a sign and a sign with a long horizontal stroke bent down, would denote a long medial a sign. This system can be viewed as an improvement over the Tamil-Brahmi I system. The Asokan Brahmi system is closer to the Tamil-Brahmi II system.

We wish to put forward the hypothesis that Asokan Brahmi is a close adaptation of the Tamil-Brahmi script. This hypothesis is not startlingly new. In 1954 T. N. Subramaniam proposed that Brahmi was originally meant for a language like Tamil.7 However we shall not follow the main lines of his arguments here.   We wish to propose that the Tamil-Brahmi system I belongs to the pre-Asokan period and the Asokan Brahmi is an adaptation and elaboration of that system. Is there any evidence to support such a hypothesis? First we note that there are fewer symbols in the Tamil-Brahmi script compared to the Asokan Brahmi script. It is quite plausible that signs other than the ones used by Tamil grammarians could have been used along with the letters of the Tamil Brahmi script, from the earliest times. There do exist some Asokan Brahmi symbols which could be thought of as resulting from an elaboration of certain Tamil letters For instance the letter PHA is obviously an elaboration of the letter PA and it is obtained by adding a cur! to the PA sign. The fish-shaped form of MA used in Asokan Brahmi inscriptions could be treated as a form evolved from the Tamil form for MA (Fig. 2). Other things being equal a more elaborate script is a later development of a less elaborate one.

As we have described earlier, there exist three systems of writing followed in Tamil-Brahmi inscriptions. The Asokan Brahmi inscriptions, however, follow a single orthographic system which is different from the Tamil systems as well as the Bhattiprolu system. Here we wish to make use of a principle followed in the Life Sciences for fixing the original home of a plant or an animal which occurs over a vast area. When the same kind of plant is found all over the world, certain criteria are used to fix the original site from which the plant eventually spread. The first objective criterion is this. If many related species are found in the wild in one region of the world then that region is reckoned to be the original home of the plant even though it may be found extensively in other parts of the world. If we apply this principle to the area of ancient scripts

then Tamil Nadu would be original home of the Brahmi script since a variety of systems were in use for writing Tamil. One may wonder whether this methodology is applicable to the area of scripts. We can verify it by looking at the Grantha script used in Thailand.8 The original home of the Grantha script is southern India and many varieties of that script are found there. We conclude that the objective scientific principle is also applicable to ancient scripts.

Another objective criterion used in the Life Sciences is to assign an area as the original home of a plant if that area harbours a more primitive and wild variety of the plant in question. For instance, chillies were introduced into India less than about 500 years ago. Wild chillies are found in the American continent, and South America is the original home of the chilli plant. Let us apply this objective principle to the field of epigraphy. Let us once again take the example of the Grantha script from Thailand. The original home of the script is Andhra Pradesh and Tamil Nadu wherein we find the earlier forms of that script. Let us apply this principle to the study of the Brahmi script. We shall show that the Tamil-Brahmi I system is more primitive than the Asokan system. In the former system every consonant sign stands for a pure consonant. If a vowel were to follow a pure consonant it is represented either by printing an initial vowel sign next to the consonant or by modifying the consonant sign by the addition of a short stroke or two which represent an appropriate medial vowel sign. For example consider the case of the consonant K which is written in the form of a cross. A cross with the addition of a horizontal stroke at the top right hand side will represent KA, a stroke at the bottom right hand side will represent KU, a stroke on the top left hand side will represent KE and so on. The same principle is used for all the vowels and vowel a does not get any special priority over other vowels. This system is more logical and more basic than the Asokan system. We recall that in the Asokan Brahmi system, a cross sign stands for KA or K+A. A vertical stroke on the top right hand side makes it KI or (K+A)-A+I. The Asokan system, therefore, is less primitive and less logical than the Tamil-Brahmi I notational system. The fact that there exists a system of writing in Tamil which is more logical and more basic than the Asokan system supports our hypothesis that Tamil-Brahmi is a little more ancient than Asokan Brahmi.

Grantha Script

It is one of the earliest Southern scripts to originate from Brahmi. It branched off into Tamil and Malayalam scripts, which are still used to write those languages. It is also the predecessor of the Sinhala script used in Sri Lanka. A variant of Grantha called Pallava was taken by Indian merchants in Indonesia, where it led to the development of many South-East Asian scripts. It was used in Tamil Nadu to write the Sanskrit Granthas and hence, was named Grantha.

The Grantha script was widely-used between the sixth century and the 20th centuries by Tamil speakers in South India, particularly in Tamil Nadu and Kerala, to write Sanskrit, and is still in restricted use in traditional Vedic schools. It is a Brahmic script, having evolved from the Brahmi script in Tamil Nadu. The Malayalam script is a direct descendant of Grantha.

Vatteluttu Script

It was a script derived from the Brahmi and was used in the Southern part of India. It was used to write Tamil and Malayalam. It removed those signs from Brahmi, which were not needed for writing the Southern languages. Presently, both Tamil and Malayalam have moved on to their own Grantha derived scripts. Vatteluttu is one of the three main alphabet systems developed by Tamil people to write the Proto-Tamil language, alongside the ancient Granthi or Pallava alphabet and the Tamil script.

Kadamba Script

It is a descendant of Brahmi and marks the birth of the dedicated Kannada script. It led to the development of modern Kannada and Telugu scripts. It was used to write Sanskrit, Konkani, Kannada and Marathi. The Kadamba script was developed during the reign of the Kadamba dynasty in the 4th-6th centuries. The Kadamba script is also known as Pre-Old-Kannada script. This script later became popular in what is today the state of Goa and was used to write Sanskrit, Kannada, Konkani and Marathi.

Tamil Script

It is the script used to write the Tamil language in India and Sri Lanka. It evolved from Grantha, the Southern form of Brahmi. It is a syllabic language and not alphabetic. It is written from left to right.

Kannada script

Kannada script is widely used for writing Sanskrit texts in Karnataka. Several minor languages, such as Tulu, Konkani, Kodava, Sanketi and Beary, also use alphabets based on the Kannada script. The Kannada and Telugu scripts share high mutual intellegibility with each other, and are often considered to be regional variants of single script.

Telugu script

The Brahmi script used by Mauryan kings eventually reached the Krishna River delta and would give rise to the Bhattiprolu script found on an urn purported to contain Lord Buddha's relics. The Bhattiprolu Brahmi script evolved into the Telugu script by 5th century C.E.

Malayalam script

The Malayalam script, also known as Kairali script is a Brahmic script used commonly to write Malayalam, which is the principal language of Kerala, India. Malayalam script is also widely used for writing Sanskrit texts in Kerala. Malayalam was first written in the Vatteluttu alphabet, an ancient script of Tamil. However, the modern Malayalam script evolved from

the Grantha alphabet, which was originally used to write Sanskrit. Both Vatteluttu and Grantha evolved from the Brahmi script, but independently.

Conclusion

The antiquity of writing in India stretches back to the period of the Indus civilization which lasted for about a thousand years from 2500 to 1500 B.C. After a gap of over a thousand years we come across inscriptions of Asoka in the Greek, Aramaic, Kharosthi and Brahmi scripts. Brahmi was the most common script used by Asoka who ruled from 269 to 232 B.C. Brahmi inscriptions which belong to the period of Asoka have been found in Sri Lanka in rock-shelters. The language used in the Brahmi inscriptions of Ceylon and those of Asoka is Prakrit, a colloquial form of Sanskrit. Inscriptions using Brahmi characters have also been discovered in Tamil Nadu in rock-shelters and potsherds of different types, and the language used is Tamil with a mixture of Prakrit words. The earliest writings so far discovered in Tamil are written in characters which closely resemble Asokan Brahmi inscriptions. These inscriptions are said to be written in the Tamil-Brahmi script to denote the fact that it is a script closely resembling Brahmi and used for writing the Tamil language. The language of these inscriptions is a peculiar kind of Tamil and not really the classical Tamil of the Sangam poetry. Both the modern Tamil script1 and the Vatteluthu script evolved from this parent script. No other script earlier than the Tamil-Brahmi (also called the Dhamili or Tamil) script has so far been discovered in Tamil Nadu.

The Asokan Brahmi is the parent script from which all the modern Indian scripts evolved over many centuries. However there is no unanimity of opinion about the origin of this parent script. It is either an indigenous script or a script borrowed from outside the country, and some of the earlier theories were based on the similarities in shape between the Brahmi and some west Asian scripts. Some letters were similar between the scripts but there were many letters which were not similar and the sound values were often different. If the script were to be of indigenous origin then it could have developed from the Indus signs and some of these signs which resemble Brahmi characters have formed the basis for the theory of indigenous development of the Brahmi script. There is another logical possibility, viz., that the script could be indigenous but need not have evolved over centuries from a different set of signs such as the ones found in the Indus system.

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