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FROM NOTCHES TO ALPHABET: TRACING THE EVOLUTION AND DEVELOPMENT OF SCRIPTS FROM ANCIENT TO MODERN WORLD

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ABSTRACT

Human association that is societies necessitate communication and language is the elemental means of human communication. In primitive times, communication was generally done through oral means restricted by space and time. Writing surpassed these limitations, allowing man to raise civilization. Writing began at first in the form of noticeable signs or pictures understandable to men. And now it has emerged in various ways: in science it is a scholarly tool, in literature it is a cultural channel and in art it is a form in itself. This preliminary investigation of history of writing is intended to provide background knowledge on the evolution of text as an art element. The present research aspires to investigate the evolution and advancement of scripts from ancient times to the emergence of alphabets. It provides the genesis, forms, objectives and sequential changes of the world's major scripts. In the first section, what constitutes 'complete writing' has been defined with the assistance of scholarly theories. A brief insight of pictography and logography as prewriting has also been observed. Further in the second section the advancements in pictorial writing to phonetic writing is outlined. The third section traces the stories of Indian scripts and their development over the centuries. The study is based on qualitative research method acquiring data from museums, secondary sources and documentations. The research thus is an attempt to explore the value and objectivity of text used as a visual communication element. Eventually the study provides visualization of scripts in the form of notches, tallies, pictographs, graphic symbols and complete alphabets.

Keywords: Scripts, Knot Records, Tallies, Pictographs, Graphic Symbols, Phonetization, Alphabet, Modern Scripts

1. INTRODUCTION

1.1. DEVELOPMENT OF SCRIPTS IN ANCIENT WORLD – AN OVERVIEW

A study on the account of development of writing should be asserted with the awareness of what represents 'writing'. Exchange of human thoughts can be accomplished in several ways, verbal communication or spoken language is one of them. And writing is one of the forms to support human speech. Since we perceive writing only for its contemporary use, it might be challenging to determine an

interpretation of all previous, immediate and approaching meanings. It will be suitable to avoid the formal definition because writing would have, is and will mean diverse in all the ages. Although it is satisfactory that writing is actually the arrangement of certain symbols that it may distinctly represent human language. According to Fisher, "The three necessary components that define complete writing are: (i) Complete writing must have as its purpose communication. (ii) Complete writing must consist of artificial graphic marks on a durable electronic surface. (iii) Complete writing must use marks that relate conventionally to articulate speech." Fisher (2001), Coulmas (2003) In the theories of evolution of complete writing many people are inclined towards divine provenance. This narration remained alive in Europe till 1800s and up until now accepted in various countries such as US, but many considered it as an outcome of joint achievement or unintentional discovery. But there is definitely no natural evolution in the development of scripts. Writing system did not transform on their own, they were intentionally changed by humans. Fisher (2001) Prior to complete writing, man used to maintain information with the help of memory devices and graphic symbols called 'mnemonics'. One such repertory of universal symbols is Rock art. It had anthropomorphs, flora and fauna, celestial bodies and geometric designs. Similarly, mnemonics also served the linguistic context. Knot records, notches, pictographs, tallies, indexical symbols etc. linked physical objects with sound. Bühler (2023)

1.1.1. KNOT RECORDS

Knot records date back to the Early Neolithic age and are thought out to be the 'mnemonics' of the ancient world. Birket-Smith (1967) These records were plain loops in an individual or complex series of strings linked to higher order string. It was a detailed and precise counting method. (see Figure 1) According to some scholars not records was the only ancient writing form developed in the Andes. Prem & Riese (1983) It is necessary to acknowledge that knotted strings records do not include writing and are simple memory reminders. Although its sole purpose is communication, they do not qualify the standards of 'complete writing'. Neither are they artificial marks on a surface nor they have a conventional relation to articulate speech.

Figure 1

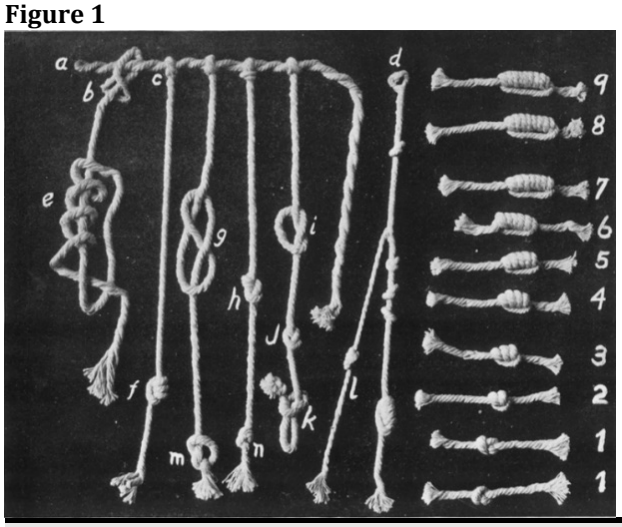

Figure 1 Knot Records

Note Number of Knots Represented Digits as Well as Values.

Source https://www.jstor.org/stable/659935?seq=2

1.1.2. NOTCHES

Similar to knot records, notches were also mnemonics, used for the purpose of communication but did not support speech or hearing. They are cut lines on bones or bark of trees at regular intervals. As per some discoveries the cut lines are intentional engravings. The Ishango Bone discovered from Zaire suggest similar line scratches. (see Figure 2) The cut marks on these artifacts accord with lunar cycles, however these there are possibilities of additional explanations. Tens of thousands of years ago, ancient men perhaps for some reason was documenting something but again this was information storage and not writing.

Figure 2

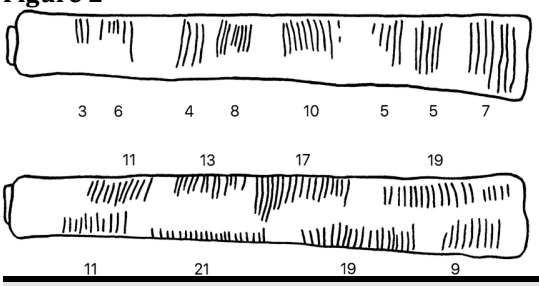

Figure 2 Ishango Bone from Zaire

Note Two Sides of Ishango Bone Representing Grouped Notches.

Source https://www.researchgate.net/figure/A-drawing-of-two-sides-of-the-Ishango-bone-showing-the-grouped-notches_fig1_334988609

1.1.3. TALLIES AND INDEXICAL SYMBOLS

Figure 3

Figure 3 Azilian Pebbles

Note Some of the Colored Designs on Pebbles from Azilian Culture, Southern France, c.8000 BC,

Source https://www.goldenageproject.org.uk/128azilianpebbles.php

Tally sticks can be regarded as an extension to notches. Tallies have long existed parallel to complete writing. It was convenient for illiterates, time saving and inexpensive than writing. Tallies were notches on wood that represented numbers. This method traced a simple rule: the bigger the number, the more amount of wood shall be incised in the tally stick. Though their purpose was to convey message and record information; and also, they were identified by marks on a durable surface, they did not articulate speech. Indexical symbols also tracked a general principle: ten objects for ten sheep. This system has been used for thousands of years by ancient men. According to some discoveries, the finest and earliest example of pictographic writing was found in Azilian culture of southern France in 8000 BC in the form of colored pebbles. (see Figure 3) Anyhow, the strips, circles, dots and other

designs on the pebble do not represent an identifiable natural phenomenon and does not seem to articulate speech. Claiborne (1974)

1.1.4. PICTOGRAPHS AND GRAPHIC SYMBOLS

Knot records, notches and tallies, all can be used for accountancy and prompts memory but are incapable to display qualities and characteristics. However, pictographs can, it is an unintentional blend of marks and mnemonics. In several ways, the Cave paintings are considered as a pictorial way of exchanging information. Bahn & Vertut (1988) Pictographs can communicate a very complex message but fails to put into words. However, unlike tallies, notches and knot records, pictographs surely acknowledge phonetic values by using particular objects and hence communicating their spoken description. Hood (1968)

As civilization advanced, the social needs such as administering goods, workers, incomes, expenditures etc. required something radical and thus time-honored mnemonics did not survive. Bernal (1971) Marking possession being a crucial part of book-keeping perhaps gave birth to some of the world's first graphic symbols occurring on seals. Martin (1994) The Vinca culture (5300- 4300 BC) in Romania holds numerous clay objects incised with symbols. (see Figure 4) A total of 210 symbols, out of which 30 being main symbols were identified. Winn et al. (1981) In 1961, three clay tablets were discovered at Tartaria, 20 kilometers east of Tordos. It is believed to be originally of the same Vinca culture. (see Figure 5) According to the modern belief, the earliest Balkan symbols seems to form a fancy or symbolic inventory, that is they are neither logographs nor phonographs. However, there are opinions for graphic symbols suggesting no relation to articulate speech.

Figure 4

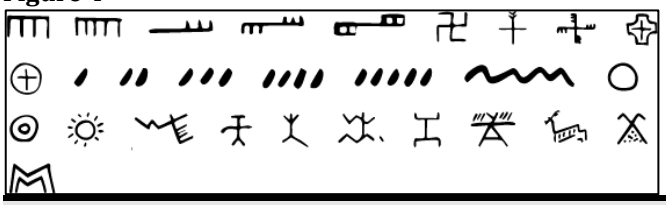

Figure 4 Incised Symbols from Vinca Culture.

Note Incised Symbols on Pottery Found from the Vinca Settlement at Tordos, 5300- 4300 BC. **source** https://omniglot.com/writing/vinca.htm

Figure 5

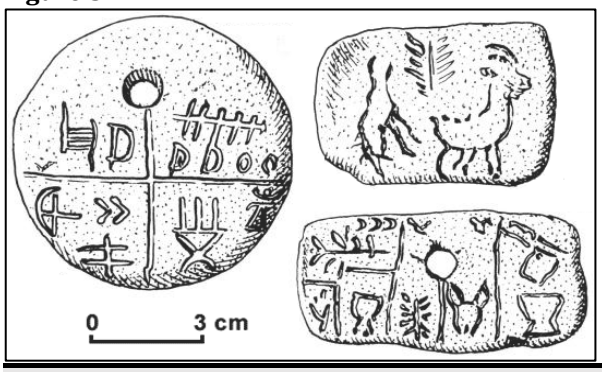

Figure 5 The Tartaria Tablets.

Note The three baked clay tablets discovered by archaeologist Nicolae Vlassa at a Neolithic site in the village of Tartaria in 1961.

Source http://www.ancient-wisdom.com/serbiavinca.htm

1.1.5. TOKENS

Tokens are well chosen as the pre-eminent origin of complete writing. One token equal one unit and therefore they directed to complete writing. Numerous token artifacts dating from 8000- 1500 BC have been discovered from Eastern Iran to Southern Turkey, Israel and ancient Sumer. Fisher (2001) The 4th millennium BC brought an advancement; the clay tokens were confined within little play envelopes called 'Bullae'. These bullae were marked on their outside which suggested the amount of particular commodity without breaking them. These series of actions were acknowledged to be the origin of perfect writing in 1930s. Schmandt-Besserat (1981) Archaeologist Denise Schmangt-Besserat, who is a noted exponent of these hypothesis compares the token with the first stylized Sumerian cuneiform. She also claimed the non-pictographic cuneiform to be in fact derived from bullae impressions. (see Figure 6)

Figure 6

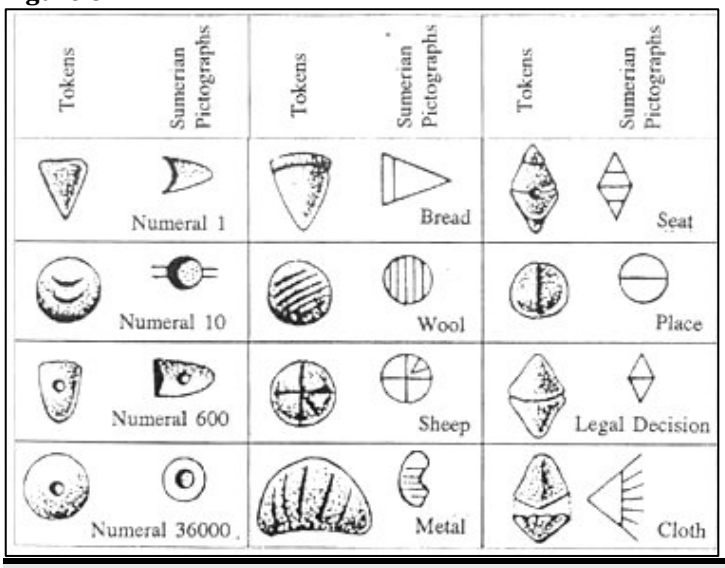

Figure 6 From Tokens to Pictographs.

Note The Figure Represents the Possibility of Mesopotamian Cuneiform Signs Being Derived from an Earlier Token or Bullae Impressions.

Source https://www.usu.edu/markdamen/1320hist&civ/chapters/16TOKENS.htm

2. EVOLUTION OF COMPLETE WRITING: FROM PHONETIZATION TO ALPHABETS

According to linguist Florian Coulmas- "The decisive step in the development of writing is phonetization." Coulmas (2003) Moreover, a person reading a sheep pictogram would have resonated out 'sheep' on recognizing the token's form. And thus, phonetization is also not a complete writing. Additional improvement was required and it was fixed by systemic phoneticism. Systemic phoneticism is coordinating symbols and their sounds in order to compose a sign of a writing system. This systemic phonetic key was perhaps inspired by the traits of Sumerian language and seems to have developed around 3200 BC. This transition inflated writing abilities exponentially and stimulated immediate adaptations in various parts of the world. The 'Rebus principle' is still believed to be the means of progression from pictography to perfect writing by numerous scholars. Jensen (1969)

2.1. MESOPOTAMIAN SCRIPT (CUNEIFORM WRITING)

The evolution from knot records to scripts proclaims that accounting is a precise reason for the development of writing. Writing being solely adopted for counting advanced when the Sumerian's interest for the afterlife gave rise to writings for funerary inscriptions. Around 3000 BC, a noteworthy evolution of Mesopotamian writing was the concept of phonetic signs. Each and every further writing system and script occur to be the descendants of this particular initial thought of systemic phoneticism. The best example of entire phoneticism and the first text that did not deal with counting commodities, are the inscriptions on vessels and seals stored in Royal Cemetery of Ur, dating 2700- 2600 BC. Schmandt-Besserat (1981) Later in 2600- 2500 BC, the Sumerian scripts became complicated with mixed ideograms and phonetic signs. Writing was now being modelled for spoken language with the help of syllabary (system of phonetic signs expressing syllables). A collection accompanying of 400 signs, developed a script that was capable of articulating any topic of human endeavor. (see Figure 7) This cuneiform writing was steady until next 600 years and eventually about 15 languages were using cuneiform inspired characters. Clayton (2019) The word 'Cuneiform' is derived from Latin word 'Cuneus' which means 'Wedge' and 'form' meaning shape. The history of Cuneiform traces the evolution of sound-writing from word-writing, with sound superseding iconicity entirely. Sumerian writing which is recognized as the world's earliest complete writing emerged as a response to commercial demands. Cuneiform writing largely appeared in clay, stone carvings, and inscriptions on metal, glass, wax and ivory. Nearby 2500 BC, the Cuneiform script was outright and can efficiently convey all sort of ideas and understanding. (see Figure 8)

Figure 7

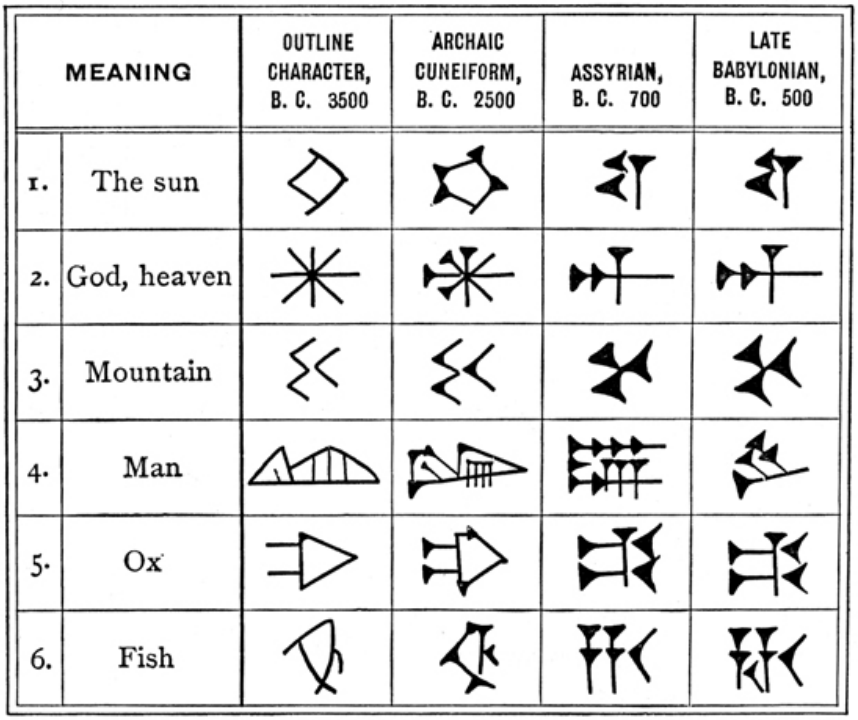

Figure 7 Cuneiform Writing.

Note The Figure Displays the Origin and Advancement of Cuneiform Signs from 3500 to 500 BC.
Source https://www.theshorterword.com/cuneiform

Figure 8

Figure 8 Sumerian Clay Tablet.

Note This Ancient Sumerian Clay Tablet that is Inscribed with Cuneiform Characters, Record the Distribution of Barley and Wheat. c. 3000 BC. In Collection- Metropolitan Museum, New York.

Source https://kids.britannica.com/students/article/cuneiform-writing/273879/media

2.2. EGYPTIAN SCRIPT

The following phase in the progression of Mesopotamian script expressed through phonetic signs spread out of Sumer to adjoining regions. Besides the idea of writing, Egyptians borrowed phonography, logography and linear sequencing from Sumerians. With the help of phonetic values, the Egyptian signs were easily codified. Ray (1986) El-Khawy in Egypt reviews large scale incised ceremonial in the form of rock art which seems to date around 3500 BC. Clayton (2019) They display characteristics of early Hieroglyphic forms. From 3200 BC onwards, these hieroglyphs surfaced as labels on small ivory tablets in tombs and ritual surfaces used to grind cosmetics. One such example is the Palette of Narmer. The hieroglyphs identified on it are the names and titles of the Pharaoh, his attendees and the enamored rivals. Egypt initiated writing in ink using pens and read brushes and Greek recognized this writing as 'hieratic'. Thus, the Egyptians had two main objectives for writing: first was for ritual purposes that used presentable script carved in metal or stone and second was ink written used for royal administrations. Gradually, the writing of Egypt matured in four unique but correlated scripts: Hieroglyphic, Hieratic, Demotic and Coptic. Ritner (1996) These scripts only differed in appearance but their function and form were similar. Hieroglyphic writing initially consisted about 2500 sign out of which 500 signs were in regular use. Islamic Heritage of India. (1981)

Apparently the most phenomenal innovation of the scribes from Egypt was the constant use of 26 uni-consonantal signs, each carrying separate consonants. Although, this set of 26 signs didn't have vowels, it was considered to be the world's first alphabet. It was from this Egyptian writing that an alphabet evolved later, around 1850 BC. Though the concept of writing may have appeared in Sumer, the method of writing and letters are descendants of ancient Egypt. (see Figure 9)

Figure 9

Figure 9 Ancient Egyptian Hieroglyphs to Present Day Latin Alphabet.
Source Fisher (2001). A History of Writing. Reaktion Books

2.3. SCRIPTS OF CHINA AND MESOAMERICA

In China the earliest instances of writing originated in a tributary of Yellow river in Beijing and the earliest scripts probably of late Shang dynasty (1300- 1050 BC) were found on fragments of animal bones. In 1899, scholar Wang Yirong identified characters carved on these bones also known as Oracle bones. Clayton (2019) Oracle bone inscriptions are called 'Koukotsubun' which translates to 'text on shells and bones.' (see Figure 10) These bone inscriptions extended Chinese linguistic and historical knowledge. The engravings recorded several questions regarding crop rotation, childbirth, warfare etc. About 4500 varied symbols were found, out of which some remain undeciphered, some evolved in terms of form and function and many of these characters identified are still in use today. Chinese characters were capable of expressing both concepts and sounds of spoken language.

Figure 10

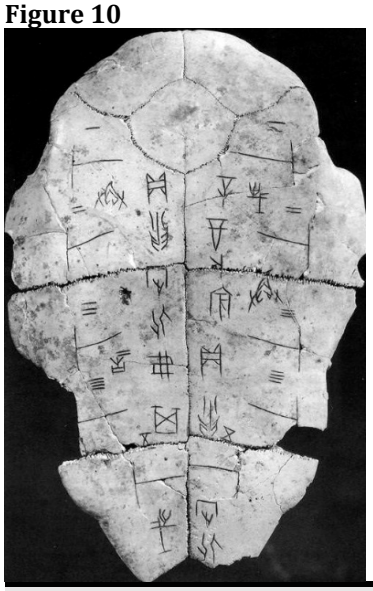

Figure 10 Oracle Bone Inscription.
Note Oracle Bone with Incised Script Found on Tortoise Shell, 13th Century BC.
Source https://beyond-calligraphy.com/2010/03/05/oracle-bone-script/

Figure 11

Figure 11 Mayan Script.

Note Mayan Script from Tikal, Guatemala. c. 700 AD.

Source Fisher (2001). A History of Writing. Reaktion Books.

Ancient Mesoamerica had several writing systems, the only true pre-Columbian writing. Mayan hieroglyphics writing is logographic, which means - an entire word is represented by a letter, symbol or sign. The Maya people of Mesoamerica used this writing up till the end of 17th century. These inscriptions can be seen on standing stone slabs called 'stelae', on stone lintels, pottery, sculptures and on Mayan books, only a few of which have survived. (see Figure 11) The Mayan writing order involves about 800 characters, combining phonetic signs that represent syllables and hieroglyphs. Till the middle of the 20th century, only symbols depicting dates and numbers, rulers' name and their associated events such as births, deaths and victories could be deciphered in the Mayan writing. A large number of scholars believed the Mayan writing to be completely logographic, which means an entire word could be represented by a single glyph. Moreover, Mayan inscription was widely proclaimed as religious in character. Britannica (2007)

2.4. THE ALPHABET AND MODERN SCRIPTS

Around 1500 BC in the ancient Near East, alphabet was introduced which is marked as the third phase in the evolution of writing. Limited sounds of any language were a benefit for the alphabets of Proto-Sinaitic and Proto-Canaanite, that developed in present day Lebanon. This writing system comprised of 22 letters, each representing a particular sound. These letters united in innumerable ways and paved a way for the original transcribing speech. Powell (1996) This recent alphabet was totally divergent from prior syllabaries and had an acrophony. Further, the consonantal alphabetic system travelled to Greece with the merchants of Lebanon, probably around 800 BC. The Semitic alphabet was now complete by adding vowels that is a, e, i, o, u. And thus the 27 letter Greek alphabet enhanced the speech transcription and this system did not undergo any fundamental change further.

3. ORIGINATION AND DEVELOPMENT OF INDIAN SCRIPTS: AN OVERVIEW

In India the earliest script was of Indus valley civilization that owned logo-graphic or word picture writing in the 3rd- 2nd millennium BC. Following with an extended gap of over 1000 years, an alphabetic writing noted as Brahmi script

emerges in 3rd century BC. The invention of writing was highly valued and was often attributed to divinities and folk heroes. The Indian Brahmi script is associated with Brahma and was evolved to write the Vedic literature which was earlier handed down orally in Guru-shishya tradition. The Brahmi script is regarded as the parent of all Indian scripts. The story of these scripts and their development over the centuries is defined in the following subsection. Kalyanaraman (2010)

3.1. INDUS VALLEY SCRIPT

Following the earliest pictographic and petroglyph representations, the first evidence of writing can be noticed in the Indus valley civilization. After the discovery of this extensive civilization which is regarded as the first urban culture of South Asia, scholars suggest that the Indian script is established around 2500 BC. Parpola (1994) Considering the fact that the Indus writing system has not been deciphered yet, it uses remains unknown. Indus valley script was probably used from 3500 to 1200 BC. It remained abandoned for almost four thousand years until it was discovered by European archaeologists in 1870s. The early evidence of writing found from Indus valley civilization and in Harappan cultures of eastern Baluchistan (3500 BC) is believed to proceed phonetic signs of Egypt and Samaria. (c. 3200 BC). This earliest Indus valley writing is evident on pottery as ownership marks. Around 2600 BC, known as the period of 'cultural unification' a systematic and broadly recognized Indus valley script emerged. It occurs on the seals or seal impression of Harappan period. The seal inscriptions are extremely short, making it suspicious to symbolize a writing system. (see Figure 12) The Indus writing characters are mostly pictorial and consist 400 to 500 signs. The signs are believed to have been written from left to right because various instances of the signs compressed on left side suggest the lack of space at the end of the row. Rahman (n.d.)

Figure 12

Figure 12 Seal Inscriptions from Indus Valley Civilization. 2500- 2000 BC.
Source Fisher (2001). A History of Writing. Reaktion Books.

Considering the large number of signs, the Indus script is believed to be logo-syllabic. It is also assumed that the script was used as an administrative tool for trade purposes. Contemporary studies on seal inscriptions made scholar believe that the language or script neither belongs to Indo European family, nor it is influenced by Sumerians or Elamites. It has probably developed from rock art of India. Thus, the script of Indus valley civilization evolved and matured in isolation, inspiring no other writing system. Rajgor (2000)

3.2. THE INDIC SCRIPTS OF INDIA

The writing system of Indus valley remained inactive and dead for thousand years leaving no descendants and writing did not initiate until 8th century BC in the Indian subcontinent. But as soon as writing flourished, India displayed world's most elegant and assorted scholarly customs. Coulmas (2003) Apart from being just a speech recording tool, Indian writing is the emblem of social franchise. The history of Indian script is stuck amidst many conflicting theories. The folklore of India honors Ganesha (Lord of wisdom) as the inventor of writing. On the other hand, scholars believe that writing in the Indian subcontinent probably derived from Aramaic script. Although there are several evidence of earlier Indian writing, the famous Ashokan edicts from c. 253 to 250 BC are considered to be the first longest documents. The edicts were inscribed in both Indian scripts - Kharosthi and Brahmi.

1) **The Kharosthi script**: The Kharosthi script developed out of the Aramaic script, which belongs to the Semitic group of scripts and was derived from the Phoenician script. The derivation of Kharosthi from Aramaic had already been suggested in the mid-19th century and was finally demonstrated in 1895 by Georg Buhler, one of the greatest names in Indian paleography. Kharosthi script is alone among Indic scripts that is written from right to left. This script remained predominant in Gandhar until the 3rd or 4th century CE. From the 2nd century CE onward, the Gandharian region was ruled by non-Indian dynasties- Indo-Greek, Scythian, Parthian and Kusana, as a result of the expansion of these kingdoms the Kharosthi script spread from Gandhar to the northwest, South and Northeast of Asia. In northern India Kharosthi flourished especially in and around the city of Mathura, a major administrative center of the Scytho-Parthian and Kusana kings. A number of inscriptions in Kharosthi mainly on stone and of Buddhist affiliation have been found in and around Mathura. Kharosthi was also widely used in South Asia in the coin legends of the Indo-Greek and Scythian rulers usually in combination with Brahmi or Greek (sometimes all the three scripts are used on the same coin). (see Figure 13) This script fell out of use during the 3rd or at the latest the 4th century CE. The decline of the Kharosthi script in South Asia was probably determined by the fall of the Kushan empire and by the subsequent geographical shift of the center of political power towards northern and northeastern India, where Brahmi was in use. Thus, in contrast to Brahmi, the Kharosthi script died out without any descendants.

Figure 13

Figure 13 Coins Belonging to Kusana Empire.

Note Four Gold Coins of the Kusana Emperor Vima Kadphises, (Obverse in Greek, Reverse in Kharosthi) 2nd Century CE.

Source
https://commons.wikimedia.org/wiki/File:Four_sets_of_Gold_Coins_of_Vima_Kadphises.jpg

2) **The Brahmi Script**: In contrast with Kharosthi, the origin of the Brahmi script is still debated. Since the last decades of the 19th century a wide range of hypothesis have been put forward by scholars. This hypothesis can be divided into two broad categories: first those proposing an indigenous (Indian) origin of the Brahmi script which would have derived from the Indus valley script or invented from scratch in Ashok's time or just before it, second those assuming that Brahmi derived from a non-Indian prototype -Greek together with Kharosthi or a later north semitic script that is the Aramaic script. Brahmi is marked as the originator of most Indian scripts. It originated around 8th or 7th century BC and was first defined by James Prinsep in 1838. Evolution of Script in India. Journals of India. (2018) Brahmi script is usually written from left to right, as it is evident from Ashokan inscriptions, although the earliest inscriptions are written right to left similar to Semitic scripts. (see Figure 14) Approximately 2000 years ago, Brahmi script developed into two main script families- North Indian and South Indian, each consisting various scripts. The northern script was more angular and southern script being more circular. Both families share the original Brahmi principles of consonantal signs with required diacritics that suggest walls and differ only externally. Another significant north Indian script that flourished in 4th century AD is Gupta script, also known as the late Brahmi script or Brahmi's first main daughter. After the decline of Mauryan empire (3rd century BC) and up to the end of Gupta empire (early 6th century CE) the Brahmi script went through new stages of development named after the ruling dynasties of the time: Sunga Brahmi, Kusana Brahmi and Gupta Brahmi. Further in the coming centuries after the collapse of the Gupta empire the process of regional differentiation of the Indic scripts was favored by political fragmentation, to the point that distinct local derivatives of the Brahmi became discernible.

Figure 14

Figure 14 Edicts of Ashoka.
Note This Ashokan Edict is a Metal Cast of Inscribed Rock at Girnar, Gujarat. 3rd Century BC.
Source National Museum, Delhi.

The major regional scripts that evolved from Gupta Brahmi are: Proto-Sarada- in the far northwest of the subcontinent (Kashmir). This is an isolated variety of the Gupta Brahmi script, Siddhamatrka- in the north and Northeast but also in the West

(present day Maharashtra) and occasionally even in the deccan and the far South. Being the parent script of the Devanagari as well as of the northeastern scripts, Siddhamatrka delivered an important role in the history of Indic scripts. Proto Telugu-Kannada- in upper southern India. Grantha, Tamil and Vatteluttu in the South of the Indian peninsula. (see Figure 15) The Gupta alphabets emerged as the ancestor of Indic scripts and influenced the valuable scripts such as Sarada, Nagari, Pali and Tibetan. Evolving around 633 AD and later developing fully in the 11th century, Nagari script became 'Devanagari'. Devanagari was the main vehicle for Sanskrit literature and with time it became India's principal script. It conveyed several languages such as Hindi, Nepali, Marwari, Kumaoni and other non-Indian Aryan languages. Later it also became the parent of Gurumukhi script, which was detailed in 1500s to write Punjabi language. Another important north Indian script derived from Nagari is Proto-Bengali, that further conveyed many significant languages such as Bengali, Assamese, Manipuri, Maithili and Santhali. Further Sarada and Pali scripts, daughter of Gupta script gave rise to many scripts and were specifically elaborated to write Prakrit languages. Pali script grew with the expansion of Buddhism. The southern Indian scripts primarily convey their native Dravidian language which consists of Tamil, Telugu, Malayalam, Kannada and others. To sum up, it seems that Indians according to their phonological principles, purposely redesigned their scripts, referring the Semitic script.

Figure 15

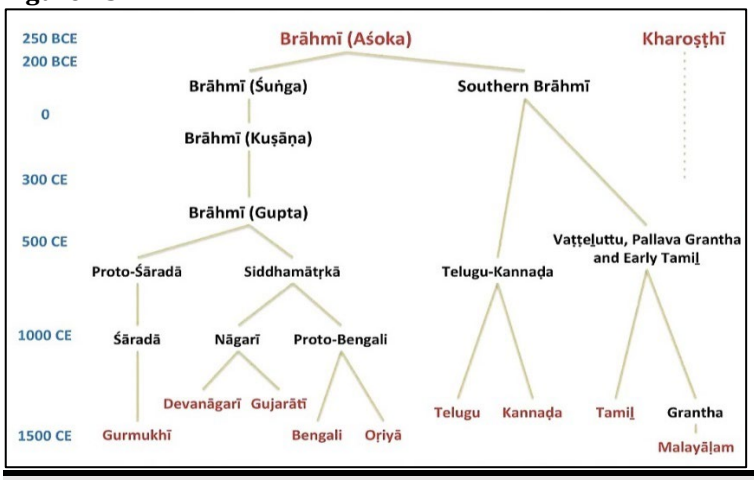

Figure 15 Tree Diagram of the Important Indic Scripts.

3.3. COMPARATIVE ANALYSIS: INDIAN AND WESTERN SCRIPTS

1) **Origins and Development**: Indian scripts have evolved from the ancient Brahmi script, dating back to at least the 3rd century BCE. The Brahmi script itself is believed to have been influenced by Aramaic and Kharosthi scripts. The key Indian scripts include Devanagari, Tamil, Telugu, Kannada, Bengali, and many others, each developed from regional variations of Brahmi. Whereas Western scripts primarily evolved from the ancient Phoenician script, which dates back to around 1200 BCE. The Greek script developed from Phoenician, and subsequently, the Roman (Latin) script evolved from Greek. The Latin script is the most widespread, forming the basis of most Western European languages.
2) **Cultural and Linguistic Diversity**: The diversity of languages in India led to the evolution of numerous scripts to cater to different languages. Scripts like

Devanagari became standardized for multiple languages (e.g., Hindi, Marathi, Sanskrit), while others like Tamil remained specific to their language.

3) **Religious Influence**: The spread of Buddhism and Hinduism played a significant role in the dissemination and adaptation of scripts across Asia. The scripts often carried religious texts and were used in inscriptions and manuscripts, influencing regions beyond the Indian subcontinent.
4) **Alphabetic System**: Western scripts, particularly the Latin script, utilize an alphabetic system where each letter represents a sound. The Greek and Latin alphabets influenced the development of other European scripts, including Cyrillic.
5) **Standardization and Printing**: The invention of the printing press in the 15th century by Johannes Gutenberg significantly standardized the Latin script. The Renaissance and subsequent periods emphasized the standardization and reform of orthography in Western languages.

4. STRUCTURAL AND FUNCTIONAL CHARACTERISTICS

Similarities: Both Indian and Western scripts are phonetic to varying degrees. Letters or characters represent sounds or combinations of sounds. The systems have shown remarkable adaptability, evolving to accommodate new languages and technological advancements. Both have rich literary traditions, with extensive bodies of literature in classical and modern languages.

Differences: Indian scripts are often more complex, with characters representing consonant-vowel combinations, and the use of diacritics to modify sounds. Whereas Western scripts, particularly Latin, use a simpler alphabetic system with separate vowels and consonants. Indian scripts are typically abugidas (each consonant has an inherent vowel sound that can be altered with diacritics). And Western scripts, like the Latin script, are true alphabets with distinct letters for each vowel and consonant sound. If we consider the visual form, Indian scripts are often more intricate and visually complex, with rounded forms and connected characters (e.g., Devanagari's horizontal line on top of words). Western scripts tend to have more distinct, separate letters, making them more straightforward in their visual form.

If we compare the evolutionary pathways, we see that the evolution of Indian scripts was heavily influenced by regional, cultural, and linguistic diversity, leading to the development of distinct scripts for different languages. The need to transcribe religious and philosophical texts played a crucial role in the script's evolution and standardization. Modern technology has necessitated the digitization and encoding of Indian scripts, leading to the development of Unicode standards. In case of Western scripts, the influence of Classical Languages such as Latin and Greek provided a strong foundation, influencing the development of scripts across Europe. The spread of Western scripts was accelerated by colonial expansion, trade, and globalization. The printing press, typewriters, and digital technology have all played significant roles in the evolution and standardization of Western scripts.

Thus, the evolution of Indian and Western scripts highlights both their unique trajectories and shared characteristics. Indian scripts evolved in a culturally diverse and linguistically rich environment, resulting in a variety of complex writing systems. In contrast, Western scripts followed a more unified path influenced by the spread of Greek and Latin, leading to widespread standardization and adoption. Despite these differences, both traditions share a commitment to phonetic

representation, adaptability, and a profound impact on literature and communication.

5. CONCLUSION

Since the evolution and development of languages and script, every generation has been fascinated and embraced the wonder of writing. It proved to be a society's most accomplished, adaptable and functional tool. Thanks to the scribes who developed the concept of complete writing after several years of incomplete writing using knot records, notches, tokens and other graphic symbols on various surfaces. Around 4000 – 3500 BC, different forms of systemic phoneticism that explains complete writing, possibly appeared in Mesopotamia. At the hand of stimulus diffusion, that is – the scattering of an idea or practices from one place to another; the functions and capability of writing inspired neighbors to construct their own script and writing system. But remarkably, all over the history we find only three main writing traditions: Afro-Asiatic, Asian and American. And perhaps they all share one Sumerian origin. Further, the three main writing systems that dominated were – a. 'logography' also called as word-writing, in which the writing signs or a minimal unit represents words, b. 'syllabography, also called syllable-writing, in which the graphemes express individual syllables and c. 'alphabet' in which signs called letter stands for an individual consonant and vowel. Each generation and society maximized these three writing systems based on their languages. These three writing systems are neither the classification nor levels in the evolution of writing. They are merely distinct forms that serves diverse linguistic and social needs of a society. The one lesson that is clearly learned from this study of history of writing is that writing did not emerge from mute pictures. Instead, it came out to be the graphic expression of actual speech. However, this thought seems to be changing now. According to modern studies, the reading sequence of written letters or words, directly gets linked to thoughts and entirely escapes the speech.

CONFLICT OF INTERESTS

None.

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