

## **Homo Loquens: Tracing the Evolution of Communication from Prehistoric Cave Art to the Invention of Alphabets**

**Anand Kumar**

Research Scholar, Department of JMC, IGNTU, Madhya Pradesh

**Dr. Krishna Murthy.B.Y**

Assistant Professor, Centre for Media Studies, Jawaharlal Nehru University, New Delhi

### **Abstract**

The history of human communication dates back to the ancient palaeolithic age (roughly 2.5 million years ago to 10,000 B.C.) marking the first major information revolution that shaped the way humans conveyed messages. The progression continues to different phases from oral communication (homo loquens) to writing (homo scriptors), reading (homo lector), mass media audio-visual entertainment (homo videns) and ultimately, the internet age (homo sonminas). Historical studies indicate that the emergence of the “push theory”- where information was disseminated rather than actively sought - can be traced back to the homo loquens phase in which natural ecology and sound played a crucial role in communication. The study adopts qualitative methods using the semiotics approach and highlights the development of push based communication (PBC) through the evolution of media - from oral traditions and early visual representations, such as cave paintings to the inventions of alphabets. PBC played a significant role in shaping ideologies and spreading knowledge. Over time, technological advancements in PBC have revolutionized modern communication (AI, AR, VR, etc). The study primarily focuses on the homo loquens phase in the pre-printing era, beginning with cave paintings 40,000 years ago to Phoenician alphabets. It highlights the Sumerians' cuneiform, Egyptian hieroglyphs and how the Phoenicians refined the Proto-Sinaitic alphabet, later enhanced by the Greeks with vowels. The study concludes by tracing the communication revolution from pictographs to the invention of alphabets.

**Keywords:** homo loquens, pictograph, cuneiform, hieroglyph, communication revolution, storytelling.

## Introduction

The invention of writing was a key turning point in human history that expanded human capacity for abstract thought and record-keeping, thus revolutionising communication. However, the earliest creative expression of humans during the pre-history era was cave paintings, a form of rock art that showcased our ability to create and store information and communicate visually. Rock art is human-made markings on natural rock surfaces that are created either by reductive, removing rock material (petroglyph or engraving) or additive, applying material (pictograms or rock painting) processes. When rock art occurs in caves, is called 'cave art', which mostly includes cave paintings (*Bednarik, 2008*). Writing and mathematics developed simultaneously around 3100 B.C. by Sumerians of the Mesopotamian region. Writing during this period were Pictographs, which are basic illustrations of objects on clay tablets. These pictographic clay tablets helped Sumerians to keep records of trade.

Archaeological surveys show that the Sumerians advanced to ideographic writing, in which an image or symbol might stand for one or more objects; a symbol could also represent a concept (*Fang, 2016*). These two mediums were useful only for small trades, but when the number of items increased, pictographs and ideographs were not helpful. Cuneiform was the solution to this issue. It was a genuine writing system that divides words into syllables using 600-1,000 symbols imprinted on clay, such as "ca-at" for "cat" or "mu-zi-um" for "museum." (*The British Museum, 2021*). Inspired by cuneiform, Egyptians developed their writing system called hieroglyph, which emerged around 2700 to 2500 B.C. They used it to record hymns and prayers, to register the names and titles of individuals and deities and to record various community activities. (*Danesi, 2006*). Hieroglyphs were a perfect blend of words and pictures. It was a bouquet of words describing images that were actually made of pictures (*Goldwasser, 1995*). Nevertheless, the invention of the alphabet is attributed to the Syro-Palestinian Semitic peoples in around 1700 B.C. (*Trigger, 1998*), who developed a writing system that denoted sounds using a limited number of symbols. The key characteristics of this early alphabet included a set of 22 letters representing consonants, which eventually travelled across different civilisations like Greek and Romans, ultimately becoming the foundation of modern alphabets (*Diringer, 1943*).

## Ancient Communication Methods during Pre-Printing Phase

The rock art, which also includes cave paintings (precursor of writing), has a long history of origin of almost 43,000 years (*Bradshaw Foundation, n.d.*). Out of 1223 sites of UNESCO's World Heritage List, 48 consist of rock art (*UNESCO, 2024*). It can be found on all continents

except Antarctica (*Bednarik, 2008*). The world's oldest cave painting has been found in the Leang Tedongnge cave on the Indonesian island of Sulawesi. This cave painting of a Sulawesi warty pig is at least 45,500 years old and is now considered the world's oldest creation of art by humans (*Brumm, Oktaviana, Burhan, Hakim, Lebe, Zhao & Aubert, 2021*). After cave paintings, evidence of earliest human communication in a physical form can be traced to the early 'tokens' by the Sumerians of Mesopotamia civilization (c.3700 B.C.). As humans started living in a more organised manner, the need for something for reproducing and storing spoken languages, especially for trade, was felt, which gave birth to geometrical shapes tokens such as small clay triangles, spheres, cones. Each token represented single items like sheep, measures of grain, jars of oil, and other trading goods. One major drawback with the Tokens was that they were placed in a hollow clay ball, a kind of envelope, for storage. Once the tokens had been sealed inside the ball, there was no way to determine what was inside without cracking the ball open. Gradually, Sumerian accountants started scratching representations of the token with a stylus on the surface of the clay tablets. These markings had symbolic meanings and were pictographs (*Fang, 2016*).

Unlike tokens, Pictographs were not repeated to show numbers. Instead, symbols for numbers were used for the quantity of items. For example, to show "33 jars of oil," a symbol for "jar of oil" would be used, followed by three circles (each representing "10") and three wedges (each representing "1"). Eventually, ideographic symbols evolved, representing abstract ideas rather than just objects. Later on, people started using a stylus, a tool made from a reed, to make these marks on clay, creating the wedge-shaped structure known as cuneiform. This was a new way to write, but the basic idea remained the same. (*Schmandt-Besserat, 2014*).

The earliest evidence of the proto-cuneiform writing on clay tablets comes from Uruk IV, at the end of the fourth millennium B.C. (c. 3200 B.C.) (Yushu, 2010). The cuneiform script was used in the Tigris–Euphrates region of the Middle East (land of the Sumerians, Elamites, Akkadians, Assyrians, Hittites, Chaldeans, and Babylonians). First developed by scribes as a bookkeeping tool to keep track of bread and beer rations in Uruk City, the system soon spread across the Middle East and was used continuously for over 3,000 years (*The British Museum, 2021*). Over time, these symbols became more abstract and, by c.3,000 B.C., had evolved into a phonetic cuneiform script (*Welsh, & Wright, 2010*).

Another significant development in the writing system was happening in Egypt. Early Egyptian writing system, which we call now Hieroglyphs, emerged around 2700 B.C. (*Danesi, 2006*). Hieroglyphs were complex symbols that represented sounds, words, concepts and metaphors.

What makes Hieroglyphs so fascinating is the same thing that makes metaphors powerful: they represent ideas in creative and meaningful ways. (*Goldwasser, 2010*). This writing system consists of a combination of logographic and alphabetic elements, where some signs represent words or concepts (ideograms), while others represent sounds (phonograms) (*Griffith, 1898*).

The origin of the alphabet remains complicated, with scholars proposing various influences from existing writing systems such as Egyptian hieroglyphs, cuneiform scripts from Mesopotamia, and potentially even Cretan linear signs (*Diringer, 1943*). Historical evidences suggests that Consonantaries were invented among the Semitic-speaking peoples of the Middle East beginning in the Middle Bronze Age (2000- 1525 BC) and were increasingly used in the Late Bronze (1525-1200 BC) and Iron Ages (after 1200 BC). Though the earliest well documented example of this type of writing is a cuneiform script consisting of 30 freely-invented letters that were used to record the West Semitic language spoken at Ugarit, Syria, in the 15th and 14th centuries B.C. By the beginning of the Iron Age, various poorly attested consonantaries dating from as early as 1700 BC had given rise to a cluster of Northern Linear consonantaries of approximately 22 letters that were used to write Phoenician. (*Trigger, 1998*). The Phoenician writing system is a purely consonantal alphabet initially used to write Semitic languages. It was later adapted to write Greek and other European languages, where consonant letters were repurposed as vowel letters. The Phoenician alphabets are the ancestor of many modern writing systems, including the Greek and Roman alphabets (*Aronoff, 2015*).

## **Study Background**

Communication is an exchange of information and messages (*Heyer, 1988*). It is a basic human activity. If communication does not exist, then human life will not be able to persist (Lal & Aarzo, 2026). Ruben defined communication as a process through which individuals in relationships, groups, organizations, and in society create, transmit and use information to coordinate the environment (*Ruben & Stewart, 1984*). We all need communication to live on and one of which is by using language as a means of communication (*Sari & Kholia, 2024*).

In the initial stages of human evolution, ancient peoples used nonverbal techniques such as cave drawings, signs, and signals. The evolution of writing systems and the invention of printing was a significant step forward in the history of communication since it enabled the recording and preservation of information from one generation to the next (Baidya et al., 2025). Hence, writing was the most precise way people could communicate and helped establish civilization by aiding governments with larger territories to manage more populated

communities effectively (*Ayub, Shehzad, & Ahmad, 2024*).

As we all know, the history of human communication, thousands of years ago, during the evolution of civilizations, originated through nonverbal gestures and posture by our ancestors (Sharma & Lal, 2025). Gradually these signs transformed with spoken language evolved in different geographically region. As human started living as a community, their world became increasingly complex; and needed more than just the shared memory of the group to recall important memories. They needed what is sometimes called an extra-somatic memory, a memory outside of the body. This led to the development of media to store and retrieve the growing volume of information (*Heyer, 1988*). There has been enough work available on research on the evolution of human communication, which focuses on various aspects like early oral, written communication, communication ecology, and different writing systems and so on. However, there is a dearth of a comprehensive study that traces the continuous developments of written communication (Mane et al., 2025).

*Fay et al. (2010)* investigated the evolution of communication systems, particularly focusing on the evolution of oral language. *Trigger (2010)* explores the intricate relationship between the writing system and cultural development, in which the prime focus is on the impact of culture on the development of writing. *Mullen (2011)* discusses how early humans used cave paintings as a form of symbolic expression for communication. The study explores the cognitive and creative aspects of early humans. *Droste (2014)* suggests that these prehistoric images functioned like a proto-language, where animals and symbols that conveyed messages similar to written sentences. In their book “Communication in History”, *Heyer and Urquhart (2019)* explore the historical evolution of communication technologies, from prehistoric cave symbols to modern digital media. It examines how each communication medium has influenced human society, shaping social structures, governance, and cultural development (Lal et al., 2025). Also, there are works available on different early writing systems in an exhaustive manner; for instance, Gong Yushu (2004) provides a fresh interpretation of the Sumerian account of the invention of writing, particularly focusing on the epic poem Enmerkar and the Lord of Aratta. *Griffith's (1898)* study speaks on exploration of Egyptian hieroglyphs, aiming to trace their historical development and usage. It compiles a vast collection of hieroglyphic signs from archaeological surveys, focusing on their origins, phonetic values, and symbolic meanings. *Nuessel (2006)* examines how pictographs, which represent words or ideas through images, have been used historically and in modern contexts. The paper differentiates pictography from true writing, emphasizing that pictographs do not directly encode language but serve as

symbolic representations within cultural frameworks.

This paper tries to fill the gap of an inclusive and continuous study of the development of different visual communication before the pre-printing era (till the invention of the alphabet). The study presents a comprehensive understanding of the historical path of recorded communication by investigating the shift from cave painting and early symbolic written communication to the first alphabets.

## **Methodology**

Based on an in-depth qualitative exploration, this paper analyses the visual aspects of pre printing communication systems (cave paintings, pictographs, ideographs, cuneiform, hieroglyph, demotic, and Phoenician writing systems) expanded from the Palaeolithic period till the invention of the alphabets, using a semiotic approach. Semiotics is the study of how meaning is generated and interpreted through signs and symbols. A sign is something that stands for or represents something other than itself. The human language is the most well developed sign system (Saussure, Bally, Sechehay, Riedlinger, & Harris, 2020). A sign can take different forms, such as “words, images, sounds, odours, flavours, acts or objects etc. These signs have no inherent meanings and do not act as signs unless we approach them as signs (Chandler, 2022). The current study adopts semiotic analysis that will help examine the meaning and uses of early communication forms. This approach will allow an in-depth exploration of the signs, symbols, connotations, and denotations associated with the ancient visual text.

A random sampling technique was applied to select a representative sample of 18 sources (18% of the total population), ensuring an unbiased and diverse data set for analysis. The data collection for the study is based on secondary sources. The visual data for the present study are images and illustrations of ancient communication forms like cave paintings, pictographs...etc that have been taken from different secondary sources, that is represented in Table 1 (Time period), Table 2 (Media form) and Table 3 (Art Communicative Elements).

The study also utilised the social semiotic approach that focuses on the relation between signified and signifier (Kress, 2009). The social semiotics is a communication theory that studies how people communicate in certain social circumstances (Leeuwen, 2005). In social semiotics, the arbitrary relationship between signifier and signified is replaced by "motivation" (Hodge, 1988). Further, this motivated relationship is between form and meaning stems from sign-makers' interests (Kress, 2010).

The study goes through a population of 102 secondary sources: Including academic portals such as **JSTOR** ([www.jstor.org](http://www.jstor.org)), **Google Scholar** ([scholar.google.com](http://scholar.google.com)), **Project MUSE** ([muse.jhu.edu](http://muse.jhu.edu)), **EBSCOhost** ([www.ebscohost.com](http://www.ebscohost.com)), **ScienceDirect** ([www.sciencedirect.com](http://www.sciencedirect.com)), **Taylor & Francis Online** ([www.tandfonline.com](http://www.tandfonline.com)), providing a wide range of academic journals in the humanities, social sciences, and sciences. Online repositories such as **ResearchGate** ([www.researchgate.net](http://www.researchgate.net)) and **Academia.edu** ([www.academia.edu](http://www.academia.edu)) are also used to access academic papers. Museums like **The British Museum** ([www.britishmuseum.org](http://www.britishmuseum.org)), **The Louvre Museum** ([www.louvre.fr](http://www.louvre.fr)), **The National Museum of Beirut** ([www.beirutnationalmuseum.com](http://www.beirutnationalmuseum.com)), and **The Metropolitan Museum of Art** ([www.metmuseum.org](http://www.metmuseum.org)) which houses a wide range of ancient collections, also contributed valuable primary data. Additionally, websites of various universities and prehistoric information platforms like **Biblic Archaeology Society** ([www.biblicalarchaeology.org](http://www.biblicalarchaeology.org)), **Phoenicians in Phoenicia** ([phoenician.org/alphabet](http://phoenician.org/alphabet)) etc. were included to enhance the academic depth of the study.

### **Eligibility Criteria for Source Selection**

To ensure the academic integrity and relevance of the research, the inclusion and exclusion criteria mentioned in the above box were used when selecting sources.

#### **Inclusion Criteria:**

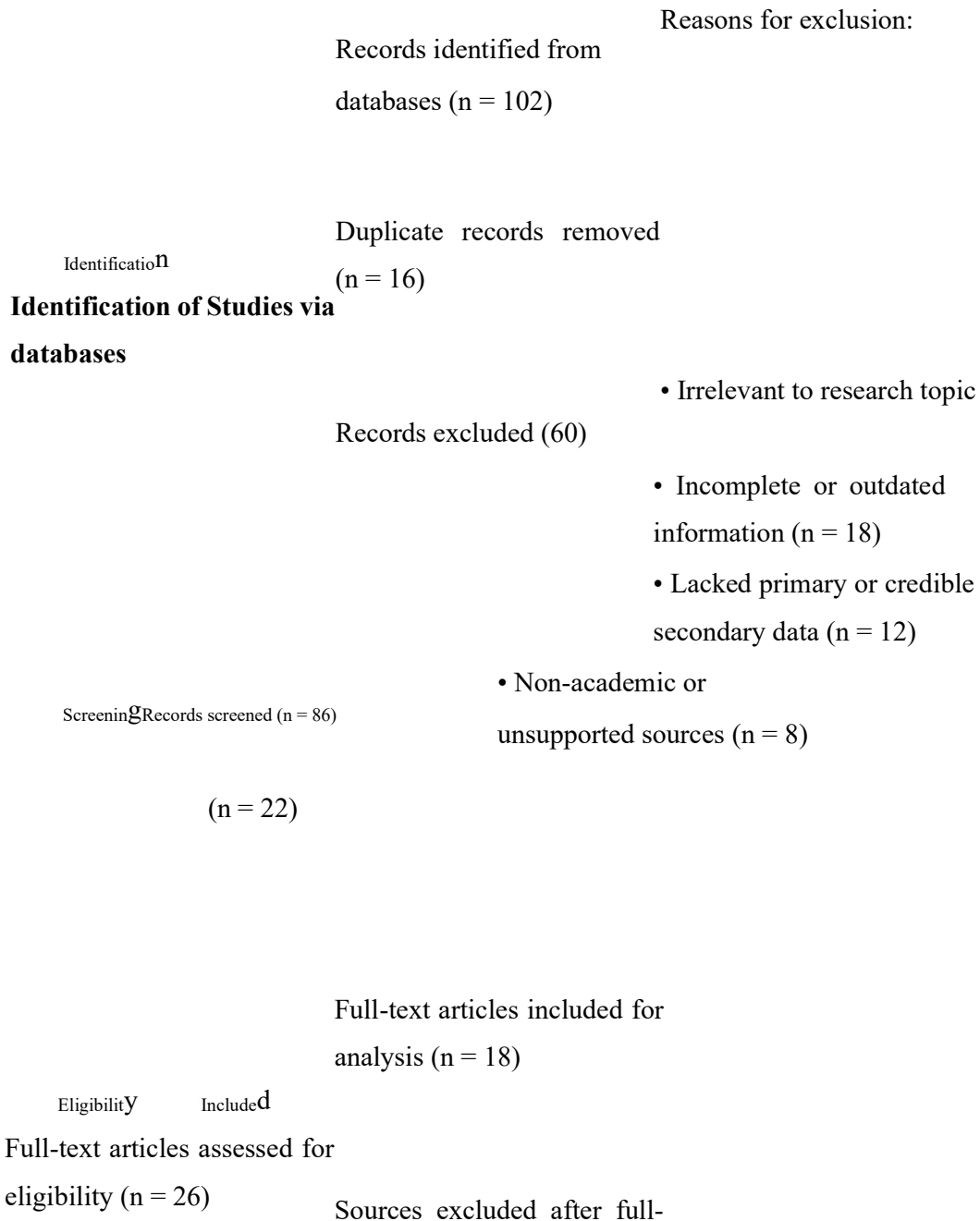
- o Academic Credibility: Peer-reviewed journals and articles from recognized academic databases and reputable academic institutions.
- o Only those sources have been picked where there is an Authenticity of Data
- o Studies, articles, and papers directly related to the research
- o Primary sources from museum collections that provide authentic historical and archaeological data.
- o Sources available through open-access platforms or institutional access, ensuring data verifiability.
- o Digital archives and credible online repositories that provide transparent citations and source references.

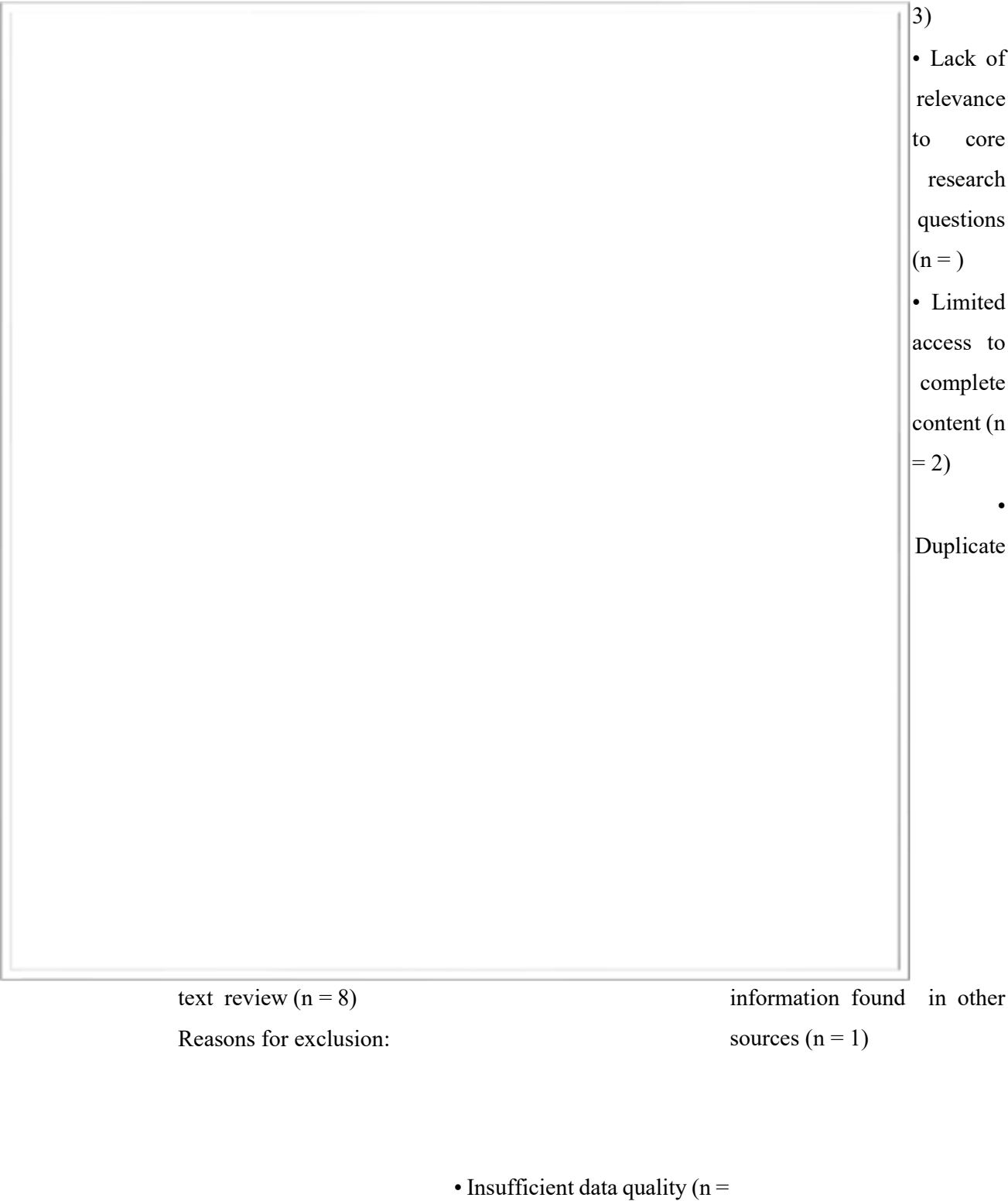
#### **Exclusion Criteria:**

- o Blogs, opinion pieces, personal websites, and other non-academic platforms lacking

scholarly review. Publications without clear authorship or institutional backing. o Websites and articles aimed at tourism, commercial sales, or entertainment rather than scholarly research.

o Museum gift shop resources or promotional content that lack academic value. o Incomplete studies that do not provide full datasets or verifiable references. o Sources behind paywalls or requiring exclusive institutional memberships without available access.





Here is the **PRISMA Flowchart** illustrating the study selection process for the current research. It highlights the number of sources identified, excluded, and finally selected

for analysis.

**Table 1:** Time period (It consists of the Samples, i.e. the visual communication forms, along with the time period).

|   | Sample                               | Source                                                                                                                                                                                                                                                                                                 | Time Period                                                                                                          |
|---|--------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------|
| 1 | Cave Painting                        | Prehistoric Sites and Decorated Caves of the Vézère Valley<br>( <a href="https://whc.unesco.org/en/list/85">https://whc.unesco.org/en/list/85</a> )                                                                                                                                                    | Palaeolithic period<br>(roughly 2.5 million years ago to 10,000 B.C.)                                                |
| 2 | Envelopes and tokens from Susa, Iran | Denise Schmandt-Besserat, The Envelopes That Bear the First Writing, Technology and Culture<br>( <a href="https://www.jstor.org/stable/3103153">https://www.jstor.org/stable/3103153</a> )                                                                                                             | Neolithic period<br>(roughly 8,000 B.C.)                                                                             |
| 3 | Pictograph                           | AGRICULTURAL PRODUCE (SECOND STAGE PICTOGRAPHS ON CLAY)<br>( <a href="#">The Schoyen Collection</a> )                                                                                                                                                                                                  | Neolithic period<br>(roughly 32,000 B.C.)                                                                            |
| 4 | Cuneiform                            | Proto-Cuneiform tablet with seal impressions: administrative account of barley distribution with cylinder seal impression of a male figure, hunting dogs, and boars<br>( <a href="https://www.metmuseum.org/art/collection/search/329081">https://www.metmuseum.org/art/collection/search/329081</a> ) | Neolithic period to <a href="#">the Bronze Age</a><br><a href="#">Bronze Age</a><br>(about 3,000 B.C. to 1,300 B.C.) |

|   |                     |                                                                                                                                                                                                                                                     |                                                                                          |
|---|---------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|
| 5 | Hieroglyph          | Ancient Egyptian Hieroglyphics<br><br>( <a href="https://www.ancient-egypt-online.com/ancient-egyptian-hieroglyphics.html">https://www.ancient-egypt-online.com/ancient-egyptian-hieroglyphics.html</a> )                                           | <a href="#">Bronze Age</a>                                                               |
| 6 | Phoenician Alphabet | The Phoenician Alphabet in Archaeology<br><br>( <a href="https://www.biblicalarchaeology.org/uncategorized/the-phoenician-alphabet-in-archaeology/">https://www.biblicalarchaeology.org/uncategorized/the-phoenician-alphabet-in-archaeology/</a> ) | Bronze age -<br>Iron age<br><br>Iron age<br>(roughly<br>1,300<br>B.C. to<br>900<br>B.C.) |

*Source of time period: <https://www.history.com/news/prehistoric-ages-timeline>*

**Table 2.** Media Forms (it consists of visual media forms which were used for early communication systems).

|   | Pre-Writing System                   | Media Forms  | Region of Origin                     |
|---|--------------------------------------|--------------|--------------------------------------|
| 1 | Cave Painting                        | Rock form    | Palaeolithic period                  |
| 2 | Envelopes and tokens from Susa, Iran | Clay form    | Mesopotamia (Particularly Sumerians) |
| 3 | Pictograph                           | Clay Tablets | Mesopotamia (Particularly Sumerians) |
| 4 | Cuneiform                            | Clay Tablets | Mesopotamia (Particularly Sumerians) |
| 5 | Hieroglyph                           | Papyrus      | Egyptian                             |

|   |                     |                             |                                             |
|---|---------------------|-----------------------------|---------------------------------------------|
| 6 | Phoenician Alphabet | Stones,<br>Papyrus,<br>etc. | Phoenicia (Eastern<br>Mediterranean Region) |
|---|---------------------|-----------------------------|---------------------------------------------|

**Table 3:** Communicative Art Elements (It focuses on the inherent art in early communication systems forms).

|   | Illustrations              | Source                                                                                              |
|---|----------------------------|-----------------------------------------------------------------------------------------------------|
| 1 | Art in Cave paintings      | What Is Paleolithic Art : Cave Paintings and the Dawn of Human Creativity by Jean Clottes (page 18) |
| 2 | Art in Tokens              | Neolithic informatics: The nature of information by Paul Beynon-Davies                              |
| 3 | Art in Pictograph          | The Sumerians: Their History, Culture, and Character by Samuel Noah Kramer (Page. 102)              |
| 4 | Art in Cuneiform           | The Sumerians: Their History, Culture, and Character by Samuel Noah Kramer (Page. 102)              |
| 5 | Art in Hieroglyph          | How the Alphabet Was Born from Hieroglyphs By Orly Goldwasser                                       |
| 6 | Art in Phoenician Alphabet | How the Alphabet Was Born from Hieroglyphs By Orly Goldwasser                                       |

## Images

### 1. Cave Paintings (Palaeolithic Period)



A



B

*Table 1 (Fig A): Prehistoric Sites and Decorated Caves of the Vézère Valley*

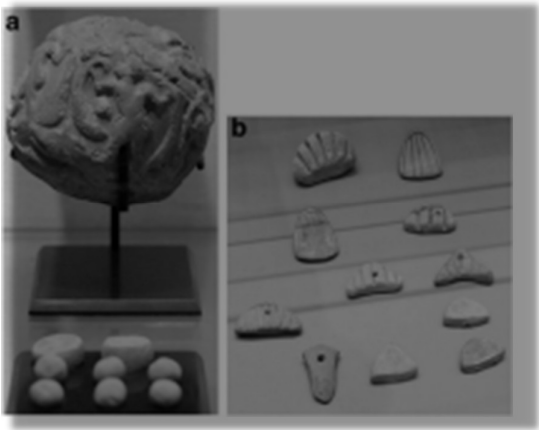
*Table 2 (Fig B): Prehistoric Sites and Decorated Caves of the Vézère Valley*



C

Table 3 (Fig C): Composite creatures, partly human and partly animal from the book 'What Is Paleolithic Art : Cave Paintings and the Dawn of Human Creativity by Jean Clottes (page 18)

2. Tokens (Neolithic Period)



E

D

markings, from Susa, Iran (Denise Schmandt-Table 1 (Fig D): Envelope, tokens and correspondingBesserat, The Envelopes That Bear the First Writing,

Table 2

(Fig E):

Near

Technology and Culture

*Eastern clay envelope (Not Just Counters:  
Clay Tokens and Ritual Materiality in the Ancient  
Near East by Joel W. Palka)*

F



*Table 3 (Fig F):*

*Token types. Neolithic informatics: The nature of information by  
Paul Beynon-Davies*

### **3.Pictographs (Neolithic Period)**

1.

6H

*Table 1 (Fig G): Agricultural Produce  
(Second Stage Pictographs On Clay) [The  
Schøyen Collection](#)*

I

*Table 2 (Fig H): 1Pictographic tablet*

Envelopes That Bear the First Writing,  
Technology and Culture

(Denise Schmandt Besserat, The

*Table 3 (Fig I): the Sumerians Their  
History, Culture, And Character by  
Samuel Noah Kramer*

**4.Cuneiforms  
(Neolithic  
period to  
Bronze Age)**

1.

**JK**

*Table 2 (Fig K): Side view, Proto-Cuneiform tablet with seal*

|                                                                                                                                                                                             |                                                                                             |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------|
| <i>Table 1 (Fig J): Proto-Cuneiform tablet with seal impressions: administrative account of barley distribution with cylinder seal impression of a male figure, hunting dogs, and boars</i> | <i>distribution with cylinder seal impression of a male figure, hunting dogs, and boars</i> |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------|

**L**

*impressions: administrative account of barley*

*Table 3 (Fig L): the Sumerians  
Their History, Culture, And  
Character Samuel Noah Kramer*

**5. Hieroglyphs (Bronze Age)**

**M**

*Table 1 (Fig M): Ancient Egyptian Hieroglyphics (<https://www.ancient-egypt-online.com/ancient-egyptian-hieroglyphics.html>)*

**N**

*Table 2 (Fig N): Papyrus conservator Helen Sharp looks at how ancient Egyptian texts have survived for so long and explains how she prepared papyri for the exhibition, Hieroglyphs: unlocking ancient Egypt ([British Museum](#))*

**O**

*Table3 (Fig O): How  
the Alphabet Was Born from  
Hieroglyphs by Orly Goldwasser*

## **6. Phoenician alphabets (Bronze Age to Iron Age)**

**R**

**P**

*Table 3 (Fig R): Table3 (Fig 5): How the Alphabet Was*

*Table 1 (Fig*

*P): The*

*Phoenician archaeology/)*  
*Alphabet in*

*Archaeology([\*\*Q\*\*](https://www.biblicalar<br/>chaeology.org/daily/biblical-<br/>artifacts/inscriptions/the<br/>phoenician-alphabet-in-</a></i></p></div><div data-bbox=)*

*Born from Hieroglyphs by Orly Goldwasser*

*Table 2 (Fig Q) : 3Phoenician  
Alphabet Origin  
(<https://phoenician.org/alphabet/>*

)

## Semiotic Analysis of Images

**Cave paintings (Proto-communication):** Cave paintings are a combination of artistic expression and knowledge transmission. Fig. A and B (<https://whc.unesco.org/en/list/85>) are the decorated caves of the Vézère Valley in France, which features 25 prehistoric painted caves. Palaeolithic people used charcoal, ochre, and other mineral-based pigments to draw paintings on rock walls, using their fingers and by blowing pigment through hollow bones. These caves contain paintings of the hunting scenes with over 100 animal figures, which are notable for their detailing, rich colours and lifelike appearance. However, the animals depicted in these cave paintings did not match the animals that the Palaeolithic people used to hunt. The selection of certain animals, like bison or horses, and the size of the paintings reflect social values and cultural myths about these animals, which symbolise danger, strength or holiness (Clottes, 2020). A composite creature of partly human and partly animal called a 'sorcerer' is very common in these paintings. Fig. C is the visual illustration of the sorcerer of Les Trois Frères cave in France. Jean Clottes points out that these cave paintings are part of spiritual and ritualistic practices as they were drawn inside uninhabited caves instead of residential areas. Images of sorcerers represent the theory of shamanism (*Shamanism refers to a tradition of religious specialists who establish personal connections with spirit beings by using altered states of consciousness. These shamans utilize their powers to heal, guide the deceased, influence nature, protect their communities, and engage in spiritual practices* (ScienceDirect. (n.d.)) and reject the belief of "art for art's sake. Cave paintings were not merely for knowledge transmission but also had cultural significance. The image's location inside deep caves and its symbolic contents show that palaeolithic people believed in spirituality. The representation of sorcerer figures matches with the shamanic theory, which suggests that Palaeolithic people used cave art as part of spiritual practices. They thought of sorcerers as mediators between humans and the spiritual world. These images represent the belief in humans' ability to connect with animal spirits.

According to Salomon Reinach's hunting magic hypothesis, which was developed upon by Henri Breuil, these hunting imagery served as tools to improve hunting success and assure food security. Palaeolithic people believed that showing animals being hunted or injured in the painting might affect the success of real-life hunts.

**Clay token (Proto-writing):** The tokens and envelopes in fig. D, E, and F are part of the Neolithic clay token system, which was utilized in ancient Mesopotamian city of Sumer for

record-keeping and economic transactions. These tokens were available in different geometrical shapes (cones, spheres, disks, oval-shaped, etc) and each shape represented a specific commodity like grain, oil or animals. These tokens were often enclosed in clay envelopes for transactions and sealed to validate the exchange (Schmandt-Besserat, 1996).

Different shapes of clay had different meanings. For example, a cone-shaped token indicated a small proportion of grain, whereas a spherical denoted a bigger measure of grain and oval shaped tokens indicated jugs of oil. The consistency in shapes and marks allowed individuals from different societies to interpret transactions without ambiguity, suggesting an early type of economic codification that became the foundation of written communication.

These tokens were the predecessors to early writing systems and played a symbolic purpose beyond just accounting. Within the social context, the tokens symbolise ownership, commercial obligations, economic value and a societal structure (Beynon-Davies, 2009). The impressions on the envelopes symbolized not just the items but also the authority of the parties involved in the transaction. Temple officials and rulers used the token system to control the distribution of goods. Sealed clay envelopes acted as official records, thus giving power to important leaders like the village headman or temple authorities to validate transactions (Schmandt-Besserat, 2014; Rowland, 2003). This system was also the beginning of the evolution of information technology, as there was a transition from oral memory to permanent record-keeping, which eventually led to writing.

**Pictographs (Logographic writing):** Fig. G, H and I depict the pictographic writing system, which evolved from token-based documentation to impressions on clay tablets. It brought the transition from three-dimensional tokens to two-dimensional pictographs, which was a more convenient and efficient record-keeping technique (Fang, 2016). Fig. G is an accounting tablet for agricultural produce, which suggests a structured system for storing and managing food supplies. It has impressions of items like grains, bread, beer, oil, goat and sheep (The Schøyen Collection, n.d). Whereas in fig. H, 3 impressions of circles and 3 wedges represent the numbers 10 and 1, respectively (Schmandt-Besserat, 2014). The fig. I are pictographic signs used by Sumerians for communication which represent Plow, Sledge, Boat (with Sails?), Boat, Chisel, Ax, Saw, and War Mace in chronological order from top to bottom, illustrate their practical significance in daily life (Kramer, 2010).

Over time, pictographs lost their direct visual resemblance and became more abstract, requiring specialized knowledge to interpret. For example, pictograph of the disk-type figure ‘cross within a circle’ represents sheep. There are 6 disk-type figures with different markings inside,

which can be seen in the Clay tablet (fig. G), which actually represents the real counting of commodities like grains, bread, etc (The Schøyen Collection, n.d). It demonstrates how pictographs evolved beyond their literal representations into conceptual markers of commodities. It also suggests that writing and numbers originated simultaneously. Ultimately, the materiality of writing (clay tablets) reflects the technological environment of early Sumerian civilization.

The images describe significant socio-cultural aspects of Sumerian life, such as agriculture, commerce and technology. The clay tablet served to record crops and other commodities, signifying an organized system of economy. The pictographs of beer indicate its cultural importance that was consumed in daily life and in special rituals. Pictographic writing was not only a means of communication, it facilitated trade and government functions. When business increased, pictographs on clay tablets became more common. Record-keeping was made simpler, and trade, taxation, and administration were better with this change.

**Cuneiform (Ideographic writing):** Fig. J, K, and L contain images of Sumerian cuneiform writing that developed from pictographs to abstract symbols, symbolizing objects, actions, and sounds instead of direct visual representations. As shown in (fig. L, from top to bottom in chronological order), these new cuneiform symbols are the replacements of old pictographs (fig. I), which represent Plow, Sledge, Boat (with Sails?), Chisel, Ax, and War Mace (Kramer, 2010). Carving these new symbols on clay tablets needed expert skill and knowledge, which suggests literacy was a privileged skill. The Proto-Cuneiform tablets (fig. J & fig. K) show barley markings representing grain distribution. The significance of barley as a symbol signifies its role as a staple crop and a unit of exchange (barter system) in an organized economic system (Newton et al., 2011). Alongside, the seal impressions of a man, hunting dogs, and pigs (fig. K) point to social and economic activities like hunting and controlling of resources. The medium of the tablets, clay, talks about the technological environment of early Mesopotamian record-keeping, in which clay was widely available for administrative purposes.

Cuneiform writing was used for administrative accounting that reflects the centralization of authority, where control over writing lay in the hands of temple institutions (priests), palace administration, and scribes. The cylindrical seal impression on the tablets implies that record keeping was only allowed among the elite class; thereby, literacy became an instrument of ownership and power. Distribution of food rations and wages based on temple and palace economies demonstrates the development of an organized system of labour, indicating how writing served as a powerful tool in the regulation of economics and management of resources.

In addition to economic purposes, Cuneiform writing promoted social status and hierarchy, as the images of the hunter with dogs and boars represent power and the ruling class's position of dominance over both human and natural resources (Kramer, 2010).

**Hieroglyph (Logophonic Writing):** Egyptian hieroglyphic writing was the foundation of the Latin alphabet that we are using today (Goldwasser 2010). Fig. M, N and O are ancient Egyptian hieroglyphics written on a rock wall, papyrus-based texts, and illustrations showing symbols of hieroglyphic writing, respectively. Numerous hieroglyph symbols make it a complex system of communication, and the conservation of papyrus shows its historical importance and elite control over knowledge.

Hieroglyphs function as both ideograms/ideographs (symbols representing ideas) and Phonograms/Phonographs (symbols representing sounds). Its complexity suggests that Egyptian script required trained scribes, which made it an elite form of communication. This was the reason Canaanites, who were an Egyptian illiterate labour class, adapted these symbols and created a more simplified phonetic symbol, which was later adopted by Phoenicians (Griffith, 1898). Fig. N of papyrus conservation highlights how ancient Egyptian texts were preserved over the years. Papyrus scrolls were the primary medium of written communication for Egyptians. Unlike inscriptions on stone, papyrus facilitates everyday writing, which makes hieroglyphs convenient for administrative and religious documentation (Sharp, 2023). Hieroglyphic symbols in fig. O were the foundation of Latin alphabets, that we are using today. These Egyptian hieroglyphic symbols (fig. O, in chronological order from up to down) represent ox head, house, raised arm, flowing water, snake, eye, mouth and cross mark, which later became A, B, E, M, N, O, R and T. (Goldwasser 2010). In Egypt, writing was closely associated with religion and power. Reading and writing were reserved for scribes, priests, and officials, thus creating a social hierarchy in which literacy was a symbol of status. The representation of hieroglyphs in religious temples and tombs represents how writing was employed to define divine authority. The exclusivity of papyrus writing represents how ruling elites manage access to knowledge.

**Phoenician alphabets (Alphabetic Writing):** The Phoenician alphabet has one of the most significant contributions to human communication. It laid the foundation for modern writing systems, like Greek and Latin. The Phoenicians people played an important role in the development of written communication due to their widespread trade across the Mediterranean. Their alphabets, derived from earlier Semitic scripts. It's simplicity and efficiency, made it easier for different cultures to adopt. The Phoenician alphabet had 22 consonantal characters,

each derived from pictorial representations (Quinn, J2022). Fig. R represent some of the key symbols of the Phoenician script which later translate into English alphabets. The symbols are derived from early Egyptian hieroglyph and proto-sinaitic signs. Symbols in fig R (in chronological order, from up to down) developed into A, B, E, K, M, N, O, R, S and T (Goldwasser 2010). These symbols followed an acrophonic principle, meaning that the first sound of the depicted object corresponded to the phonetic value of the letter. This made the script easier to learn and use across different languages (Kenanidis, 2022).

As can be seen in fig. P and Q Different materials like rock, metals, papyrus etc. were used to write The Phoenician script, reflecting its resourcefulness and flexibility. Most inscriptions, especially those religious or commercial in nature, were cut into stone and metals. Some inscriptions were also engraved on bronze tablets or weapons, testifying to their employment in formal statements or as ownership indicators. The Phoenicians, as traders, would have also made documentation of transactions and administrative information on papyrus and parchment (Quinn, 2022; Holst, 2024). The Phoenician alphabet democratized the written communication. Egyptian hieroglyphs, though falling into disuse for religious or royal reasons, the Phoenician writing was used for everyday trade and commerce (Richey, 2019).

## **Discussion**

The process of human communication has experienced profound changes over the course of history. Non-verbal signals, gestures, and pictographs were used by early humans to pass messages. Cave paintings, which date back to the Paleolithic period, were one of the earliest methods of visual narrative (Clottes, 2020). The use of symbolic tokens in Mesopotamia circa 8000 BCE enabled the documentation of economic exchanges, resulting in the development of cuneiform script (Schmandt-Besserat, 2014). Egyptian hieroglyphs, which emerged around 3100 BCE, were a mix of logographic and phonetic aspects, indicating a more organized method of record-keeping (Danesi, 2006). With increasingly complex societies, alphabetic writing systems like the Phoenician script made literacy easier and enabled trade and administration (Trigger, 1998). These writing systems eventually developed into Greek and Latin alphabets, which became the basis of contemporary linguistic communication (Diringer, 1943).

The development of the Phoenician script was a revolutionary change in the history of written communication. In contrast to Egyptian hieroglyphs and Sumerian cuneiform, which were mainly utilized by religious leaders and administrative powers, the Phoenician script brought

literacy to the masses through its use by merchants and traders (Goldwasser, 2010). This change corresponds to Halliday's social semiotic theory that argues meaning is built through social practice. The utilitarian nature of the Phoenician alphabet was a reflection of the requirements of a commercial society, illustrating how linguistic development is inextricably linked with socio-economic purposes (Kenanidis, 2022). As opposed to pictographic and logographic writing systems, which needed a lot of training, the Phoenician alphabet could be learned easily and fitted to varying cultures. The flexibility played a great role in its large spread throughout the Mediterranean, shaping the Greek and Latin alphabets (Richey, 2019). Among the key reasons behind the script's success was the Phoenician networks of trade, via which the passage of the alphabet to other cultures, for instance, the Greeks, who enhanced the system by adding vowel sounds, was facilitated (Diringer, 1943).

The socio-cultural value of Phoenician alphabet's lasting influence is manifest by its spread of literacy and writing, leading to the decentralization of knowledge. It empowered traders and other social groups and classes of people. but also craftsmen and ordinary citizens. The transition paved the way for intellectual and administrative achievements seen in later civilizations, like those of Greece and Rome (Houston, Baines, & Cooper, 2003). Apart from that, the creation of the set of alphabets paved the way for future writing innovations, which would ultimately form the modern scripts utilized across the world (Schmandt-Besserat, 2014).

## **Conclusion**

From the early oral tradition to the development of writing system, human communication evolution has covered a long journey. It Starts from shamanism (cave paintings), a belief in 'communication with spirits', practised around 40,000 B.C. in the Old Stone Age (Palaeolithic period). Followed by clay tokens by Sumerians during the Neolithic period, roughly 8,000 B.C. to 3,000 B.C., the first record-keeping system used to denote language, commodities and numbers. Pictographs in the Neolithic period in 3200 B.C. were based on drawings that represented physical objects used to communicate ideas in agrarian society. The standardized symbols helped to communicate effectively in different languages in the region of Mesopotamia and Egyptian civilizations. Cuneiform is a wedge-shaped logo-syllabic writing considered as the oldest form of writing. This also facilitates the evolution of message delivery by portable mediums like clay tablets. Cuneiform represents the royal dynasties' messages used for administrative purposes between the Neolithic and Bronze Age. Hieroglyphs, which means 'sacred carvings'/'god's words' in Egyptian phrases during 2700 BC (Bronze Age), were carried with pictures and symbols to represent ideas in temples, monuments and tombs.

These communication systems validate the “push theory”- where information was disseminated rather than actively sought. The peak of this development was the alphabet system by Phoenicians during the Bronze Age, which made literacy accessible to everyone and formed the basis of contemporary communication systems. These were the first true alphabets used for trade throughout the Mediterranean zone. It paved the path for modern languages like Greek, Latin, Arabic and Hebrew.

## References:

1. Bednarik, R. G. (2008). Rock art. In D. M. Pearsall (Ed.), *Encyclopedia of archaeology* (pp. 1940-1952). Academic Press. <https://doi.org/10.1016/B978-012373962-9.00273-9>
2. Fang, I. (2016). *A history of mass communication: Six information revolutions*. Routledge.
3. The British Museum. (2021, January 21). How to write cuneiform. <https://www.britishmuseum.org/blog/how-write-cuneiform>
4. Danesi, M. (2006). Visual semiotics. In *Encyclopedia of language & linguistics*. Elsevier. <https://doi.org/10.1016/B0-08-044854-2/01461-9>
5. Goldwasser, O. (1995). *From icon to metaphor: studies in the semiotics of the hieroglyphs* (Vol. 142). Fribourg: University Press.
6. Houston, S., Baines, J., & Cooper, J. (2003). Last writing: script obsolescence in Egypt, Mesopotamia, and Mesoamerica. *Comparative Studies in Society and History*, 45(3), 430-479.
7. Dinger, D. (1943). The origins of the alphabet. *Antiquity*, 17(66), 77-90.
8. Trigger, B. G. (1998). Writing systems: A case study in cultural evolution. *Norwegian archaeological review*, 31(1), 39-62.
9. UNESCO. (2024, August 1). 26 new sites inscribed. UNESCO World Heritage Centre. [https://whc.unesco.org/en/news/2706?utm\\_source=chatgpt.com](https://whc.unesco.org/en/news/2706?utm_source=chatgpt.com)
10. Bradshaw Foundation. (n.d.). UNESCO World Heritage Sites: Rock Art. Retrieved from [https://www.bradshawfoundation.com/rockartnetwork/unesco\\_world\\_heritage\\_sites\\_rock\\_art/index.php](https://www.bradshawfoundation.com/rockartnetwork/unesco_world_heritage_sites_rock_art/index.php)
11. Brumm, A., Oktaviana, A. A., Burhan, B., Hakim, B., Lebe, R., Zhao, J. X., ... & Aubert, M. (2021). Oldest cave art found in Sulawesi. *Science Advances*, 7(3), eabd4648.
12. Schmandt-Besserat, D. (2014). The Evolution of Writing. In Wright, James (Ed.), *International Encyclopedia of Social and Behavioral Sciences* (pp. 1-15). Elsevier.

13. Yushu, G. (2010). The Sumerian Account of the Invention of Writing—A New Interpretation. *Procedia Social and Behavioral Sciences*, 2(5), 7446-7453.
14. Welsh, T., & Wright, M. (2010). *Information literacy in the digital age: An evidence-based approach*. Elsevier.
15. Goldwasser, O. (2010). How the alphabet was born from hieroglyphs. *Biblical Archaeology Review*, 36(2), 40-53.
16. Griffith, F. L. (1898). *A collection of hieroglyphs: a contribution to the history of Egyptian writing* (No. 6). Sold at the offices of the Egypt exploration fund.
17. Aronoff, M. (Ed.). (2015). *The Routledge handbook of linguistics*. Routledge.
18. Hubbe, Martin & Cindy, Bowden. (2009). *Handmade paper: A review of its history, craft, and science*. BioResources. 4. 10.15376/biores.4.4.1736-1792.
19. Papermaking, R. C. (n.d.). *History of Papermaking around the world*. Retrieved from Georgia tech: <https://paper.gatech.edu/sites/default/files/2021-04/History%20of%20Papermaking%20Around%20the%20World.pdf>
20. Gunaratne, S. A. (2001). Paper, printing and the printing press: A horizontally integrative macrohistory analysis. *Gazette (Leiden, Netherlands)*, 63(6), 459-479.
21. Forrester, R. (2020). *History of printing-From Gutenberg to the Laser Printer*. Available at SSRN 3512249.
22. Heyer, P. (1988). *Communications and history. Theories of media, knowledge and civilization*. London.
23. Sari, N. M., & Kholia, S. L. (2024). The function of communication in human life. *Semantik Journal of Social Media Communication and Journalism*, 2(1), 24. <https://doi.org/10.31958/semantik.v2i1.11396>
24. Ruben, B. D., & Stewart, L. P. (1984). *Communication and human behavior*. (No Title). Ayub, A., Shehzad, Y., & Ahmad, S. (2024). *Evolution of Communication: A Comparative Study from Cave Paintings to Emojis*. *Qlantic Journal of Social Sciences*, 5(3), 68-74.
25. Fay, N., Garrod, S., Roberts, L., & Swoboda, N. (2010). The interactive evolution of human communication systems. *Cognitive science*, 34(3), 351-386.
26. Mullen, L. (2008). Cave art and the origins of typography. *Visual Communication Quarterly*, 15(1-2), 6- 16.
27. Droste, F. G. (2014). Cave paintings of the Early Stone Age: The early writings of modern man. *Semiotica*, 2014(202), 155-165.
28. Urquhart, P., & Heyer, P. (Eds.). (2018). *Communication in history: Stone age symbols to social media*. Routledge.

29. Yushu, G. (2010). The Sumerian Account of the Invention of Writing—A New Interpretation. *Procedia Social and Behavioral Sciences*, 2(5), 7446-7453.
30. Griffith, F. L. (1898). A collection of hieroglyphs: a contribution to the history of Egyptian writing (No. 6). Sold at the offices of the Egypt exploration fund.
31. Nuessel, F. (2006). Pictography: Semiotic approaches. In K. Brown (Ed.), *Encyclopedia of Language & Linguistics* (2nd ed., pp. 591–599). Elsevier. <https://doi.org/10.1016/B0-08-044854-2/01462-0>
32. Gunaratne, S. A. (2001). Paper, printing and the printing press: A horizontally integrative macrohistory analysis. *Gazette (Leiden, Netherlands)*, 63(6), 459-479.
33. Saussure, F. D., Bally, C., Sechehaye, A., Riedlinger, A., & Harris, R. (2020).
34. Shivakumar, H., & Batra, R. Semiotics and Qualitative research: Strange bedfellows or Jodi no.
35. Chandler, D. (2022). *Semiotics: the basics*. Routledge.
36. Karimi, E., Barfi, C., Jafari, S., Samghani, S., & Norouzi, R. (2024). The pictographs of Chel-Dokhtaroon in the Southern Zagros Mountains, Fars, Central Southern Iran. *Archaeological Research in Asia*, 38, 100521.
37. Kress, G. (2009). *Multimodality: A social semiotic approach to contemporary communication*. routledge.
38. Van Leeuwen, T. (2005). *Introducing social semiotics*.
39. Hodge, R. (1988). *Social semiotics*. Polity.
40. Beynon-Davies, P. (2009). Neolithic informatics: The nature of information. *International journal of information management*, 29(1), 3-14.
41. Rowland, W. D. (2003). Foreword. In D. Crowley & P. Heyer (Eds.), *Communication in history: Technology, culture, society*. Boston: Pearson Education.
42. Mattessich, R. (1989). Accounting and the input—output principle in the prehistoric and ancient world. *Abacus*, 25(2), 74-84.
43. Rudgley, R. (2000). *The lost civilizations of the stone age*. Simon and Schuster.
44. Beynon-Davies, P. (2009). Neolithic informatics: The nature of information. *International journal of information management*, 29(1), 3-14.
45. Schmandt-Besserat, D. (2014). The evolution of writing. *International encyclopedia of social and behavioral sciences*, 1-15.
46. Clottes, J. (2020). *What is Paleolithic art? Cave paintings and the dawn of human creativity*. University of Chicago Press.
47. ScienceDirect. (n.d.). Shamanism. In *Topics in social sciences*. Retrieved February 27, 2025, from <https://www.sciencedirect.com/topics/social-sciences/shamanism>
48. The Schøyen Collection. (n.d.). Agricultural produce (second stage pictographs on

- clay). Retrieved February 27, 2025, from [https://www.schoyencollection.com/palaeography-collection/introduction/early-writing-introduction/sumerian-early-writing/agricultural-produce-pictographs-clay ms-4551](https://www.schoyencollection.com/palaeography-collection/introduction/early-writing-introduction/sumerian-early-writing/agricultural-produce-pictographs-clay-ms-4551)
49. Kramer, S. N. (2010). *The Sumerians: Their history, culture, and character*. University of Chicago Press.
50. Thorpe, S. K. (1931). Barley trade of the biblical and early times. *Journal of the Institute of Brewing*, 37(5), 482-487.
51. Newton, A. C., Flavell, A. J., George, T. S., Leat, P., Mullholland, B., Ramsay, L., ... & Bingham, I. J. (2011). Crops that feed the world 4. Barley: a resilient crop? Strengths and weaknesses in the context of food security. *Food security*, 3, 141-178.
52. Sharp, H. (2023, January 27). Preserving papyrus: Caring for 4000-year-old documents. British Museum. <https://www.britishmuseum.org/blog/preserving-papyrus-caring-4000-year-old-documents>
53. Quinn, J. (2022, March 15). The Phoenician alphabet in archaeology. *Biblical Archaeology Society*. <https://www.biblicalarchaeology.org/daily/biblical-artifacts/inscriptions/the-phoenician-alphabet-in-archaeology/>
54. Kenanidis, I. (2022). The origin of the Phoenician alphabet. ResearchGate. <https://doi.org/10.13140/RG.2.2.21242.16323>
55. Holst, S. (2024, September 3). Phoenician alphabet origin. Phoenicians in Phoenicia. <https://phoenician.org/alphabet/>
56. Richey, M. (2019). The Alphabet and Its Legacy. In *The Oxford Handbook of the Phoenician and Punic Mediterranean* (p. 241). Oxford University Press.
57. Lal, R., & Aarzoo. (2026b). Innovative tools and strategies for issue and crisis management in the digital era. In *Reshaping corporate communication* (pp. 108–130). Routledge.
58. Baidya, R., Kumar, D., & Lal, R. (2025). Effects of lean branding-based digital marketing pedagogies on student brand literacy in media education. *Медиаобразование*, (4), 525–538.
59. Sharma, G., & Lal, R. (2025). AI-generated and human-generated images in digital advertising campaigns to examine user engagement and perception on social media. *Cahiers Magellanes-NS*, 1470–1481.
60. Lal, R., Deb, N., & Gogoi, D. M. (2025). Assessing the role of digital data visualization tools in the advertising industry for informed business decision-making. In *Data visualization tools for business applications* (pp. 189–208). IGI Global.

61. Mane, N., Lal, R., & Rout, S. (2025). The management and organizational paradigm of Chaitra Parva and its role in the sustenance of Chhau. In *Fresh perspectives on India's organizational dimension* (pp. 291–326).