

HOW WRITTEN LANGUAGE DEVELOPED

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Abstract

The evolution of written language marks one of humanity's greatest achievements, facilitating the recording and transmission of ideas, knowledge, and culture across generations. Written communication emerged relatively recently after hundreds of thousands of years of using a variety of signs to record meaning. Early humans, used basic verbal communication, but as populations grew and competition for resources increased, the need for reliable information recording became essential.

Initially, inspired by natural symbols, humans developed complex pictograms and symbol system of depicting environmental factors relevant to local survival. Drawings and symbols described local environmental essentials and served as educational tools to preserved survival information. The development of written communication was pivotal in this process with evidence of sophisticated pictorial records dating back around 40,000 years.

Recent discoveries, such as the Danube Valley symbol list from 10,000 BC, reveal the sophistication of early writing effort. These symbols enabled knowledge transfer and were distributed to all parts of the world and encouraged various cultures. Written communication allowed the recording of daily activities, becoming the primary method of information transfer. The Vinca Symbol List, makes clear that written Language emerged along the Danube Valley. Archaeological finds show that it existed thousands of years before any of the Literature acknowledged origins of the Written Language making the Vinca Civilization, the Cradle of Human Civilization.

Modern technology dictates new evolvement of the written language as advanced Artificial Intelligence Tools are developed and very sophisticated Quantum Computing processor technology is refined. The evolvement of machine language, will transform the human condition as it demands electromagnetic field dynamic that can cope with the speed of processing of new computational methodology. Humanity is on the cusp of exponential advances in written communication.

Keywords: *Written language evolution, Early pictograms and symbols, Danube Valley civilization, Vinca Symbol List, Artificial intelligence and quantum computing*

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INTRODUCTION

Archaeological finds, as the earliest evidence of recorded information, suggest a slow and gradual evolution of the practice of recording information that goes back to the origins of the human species. The earliest evidence of stone age humanoids actively making impressions on their surroundings have been identified in Auditorium Cave & Daraki-Chattan Rock Shelter at Bhimbetka Petroglyphs² in what is now South Africa and these markings are dated to 290,000-700,000BC). Hundreds of thousands of years ago, meaning that the humanoid species made impressions^{3,4,5,6} on their environment to record their presence far into prehistory. A directed effort to record existence indicated a quality of the humanoid brains that was not evident in other species.

This act of hammering the rock face to make a hemispherical depression is considered to be a deliberate excavation, recording some event that has not as yet been identified but given that they are also formed on grave stone coverings, the markings might denote recognition, that a respected member of the group had died?

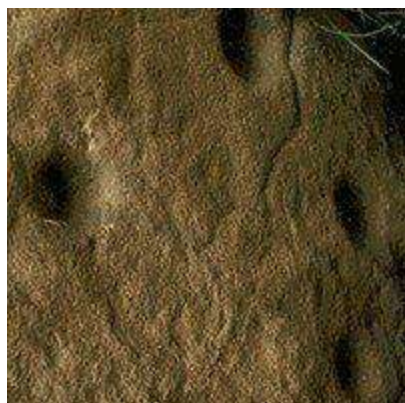


Fig 1

Example of Stone Age Couple the Oldest form of prehistoric art

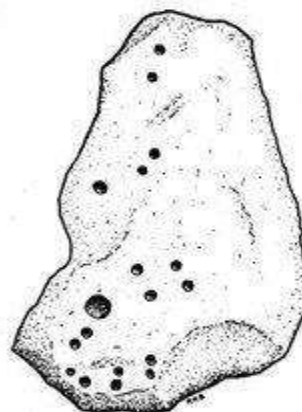


Fig 2

Grave covering with couple excavations

These non utilitarian depressions in rock faces are considered by authors to be purposefully hammered into rock surfaces and that act is regarded to be an important example of cultural evolvement. The squiggly symbol linking depressions is also deliberate and forms the first identified symbol in archaeological finds that could carry meaning. The caves in this region of South Africa yield other important artifacts that suggest the area was a long established, stable place for early stone age man to live.

A much shallower excavation of the Blombos Caves in South Africa yielded artifacts that are dated to about 100000 BC and these markings etched on ochre stone, again demonstrate deliberate etching into stone to form a series of lines evenly spaced, that are regarded as a way of expressing an aesthetic quality. A cognitive scientist, K. Tyler of Denmark Aarhus University Denmark, suggests that these drawings are a deliberate effort to express thoughts in an artistic way rather than an attempt to write. Similar attempts at recording some dynamic of the mind are found in other parts of the world and C Henshilwood⁷. from Bergen University Norway states that the markings are deliberate and not accidental.

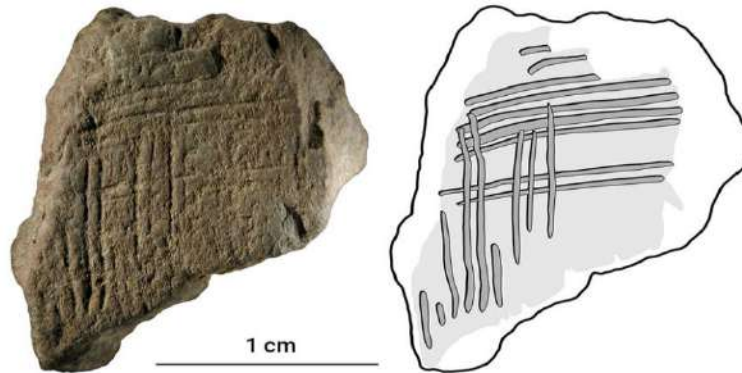


Fig 3

100000 year old hashtag symbols etched
into Ochre Stone in the Blombos Caves

Researchers think that the need to record things is evident much earlier than the Bloomberg Cave examples and point to other fines which are dated between 160000 to 200000 BC. The Neanderthal timeline seems to be an important developmental stage in humanoid evolution as intellectual traits relating to space and form become evident. Individuals were selecting areas of their dwellings in which to make their non essential marks and the size, shape and position of their deliberate markings, requiring effort and focused action over time, to record abstract thought, are all signs of developing cognition and is a characteristic of intellectual evolvment^{8,9,10}. Such intellectual traits are indicators that the species has advanced beyond the animalistic instinct for survival, food, reproduction and becomes obvious in species which have mastered their environment. Investing effort in non utilitarian pursuits is a way of demonstrating superiority and is seen in other animals. As the species evolves the drive to record existence¹¹ becomes more extensive and etchings become enriched with colouring, The first coloured drawing identified so far, was found in the Bloomberg Caves but all over the world, further fines emerge down the timeline, increasing in complexity as the cerebral cortex matures.



Fig 4

Earliest example of colour usee

A Hashtag coloured using red ochre dust dated to about 100000BC All available evidence demonstrates that information was recorded in drawings and by the late stone age, the humanoid species had evolved skills that gave them a means to record daily events in substantial detail. Extraordinary examples of drawings in the central European region wherein the humanoid species had developed very considerable skills in drawing demonstrating a surprising grasp of space and form. At this time, about 50000 BC¹² an extraordinary, rapid advancement in the humanoid species becomes evident and all over the world the quality and quantity of recorded information begins to emerge. At the Lascaux and Altamira sites^{13,14,15,16,17,18,19,20} outstanding images of daily life are recorded.

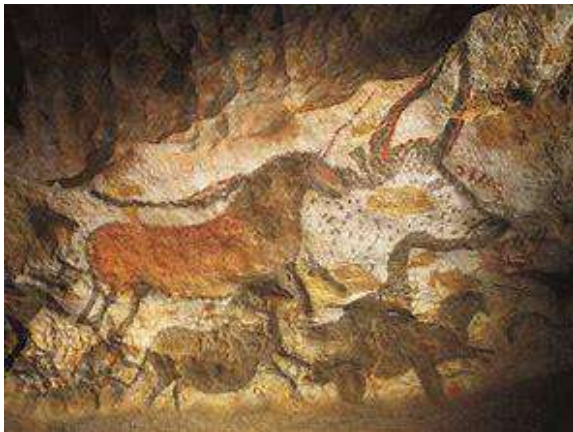


Fig 5
40000 year old drawings coloured with
stone dust

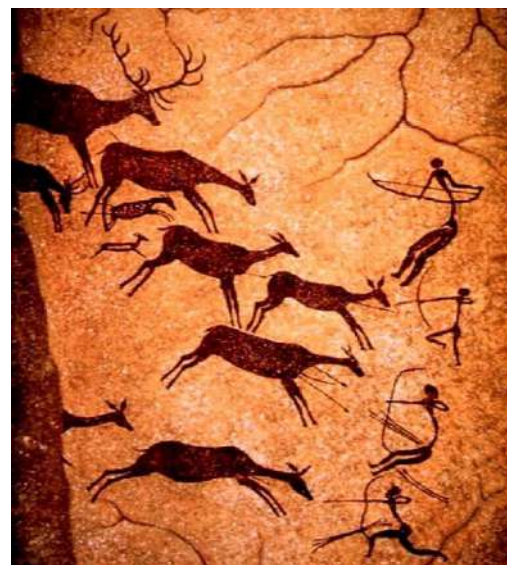


Fig 6
Educational hunting
scenes

In the European region, clear evidence of organised social administration began to appear and by the late stone age/neanderthal/palaeolithic period of history well organised groups formed permanent settlements. Recordings of what must have had educational purposes appeared in cave drawings and of particular interest are drawings showing hunting methodology. In Fig 6 drawings showing how to hunt animals are depicted and of particular interest, is the demonstration of how best to incapacitate an animal, by firing arrows at the region of the body where modern science has demonstrated a critical organ, the heart, is situated. This drawing shows a concentration of arrows embedded in the heart region, showing the hunting group where the animal can most effectively be brought down. Long before the early humans knew anything about the function of essential organs hunters knew through experience how best to disable their prey.

During this time cave drawings show a rapidly increasing number of signs, squiggles, symbols and markings which have no artistic value but are in some way related to the drawings. Symbols must have added to the information the drawings conveyed and symbols are evident which contribute to the information contained in the pictographs. Other squiggles are not obviously connected to the story that unfolds on cave walls but they are there and must have conveyed some meaning that was understood by those making them. Such symbols are found the world over including the caves at Altamira Spain, see ref. 19.



Fig 7
Cave symbols

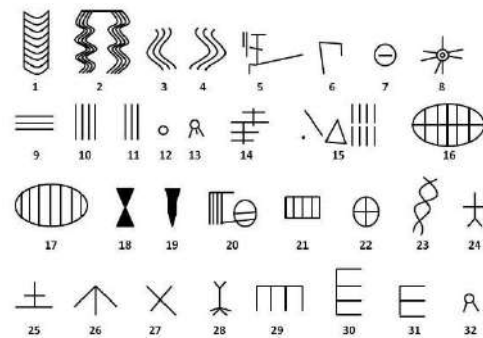


Fig 8
Identified symbols

The ever increasing numbers of individuals appear to result in increasing pressure on space and resources and the hunter gatherer groups were forced to split from their original enclaves and migrate²¹, setting up new enclaves so that migration was ongoing, to in effect spread the humanoid species far and wide. The migration routes were extensive.

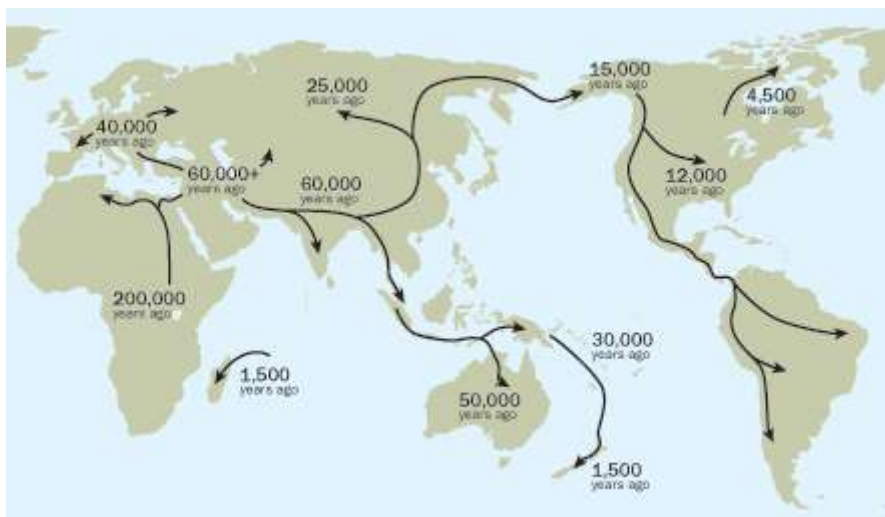


Fig 9
Map of humanoid migrations and their timeline

By Neolithic times people lived in large gatherings, some suggested to be many thousands strong. The Lapinski Vir²² settlement was estimated to be a vast metropolis by Neolithic standards and any large population must have had a structured society, requiring individuals to specialise and provide essential services. It was the need to record transactions and keep track of goods, services and resources, legal and social controls, cultural expression, educational purposes, standardization, specification of consistency, accurate measurements and agreed details, price, credits, debts, communication over long distances, etc. the need for a stable coexistence in overcrowded spaces that drove the innovation of the written language. Written documentation was binding proof of events that was essential in complex society. The innovation of writing was a transformative development that changed human conduct and remains one of humanity's major achievements without which the world we live in would be impossible.

There is considerable confusion in archaeology as to what is what relating to the identification of when and where written language evolved but what seems clear is that recording and transfer of information was a painfully slow process that lasted hundreds of thousands of years. It was only when the population pressures became so great that people were forced to live in confined spaces that the need for writing really gained import. Too many Learned Journals continue to support the concept of the written language emerging in the Middle East and yet, there is ample evidence of symbols and pictograms dating back hundreds of thousands of years. The argument for the origins of the written language can be restricted, for the benefit of this paper, to the identification of a list of reproducible symbols and pictograms that were repeatedly applied to specify any given meaning and that list is firmly rooted in the Danube Valley civilisations.

By Neolithic times, large aggregations of human populations were evident along the entire length of the River Danube and at the large Vinca site, extensive manufacturing facilities existed with farming, keeping of animals and a well established social administrative structure are well documented. It is to this region of the Danube Basin that the most substantial list of symbols and pictograms is attributed. A list of some 700 characters is recorded and symbols identical to those listed below are found in various written artefacts along the length of the Danube Valley and elsewhere.

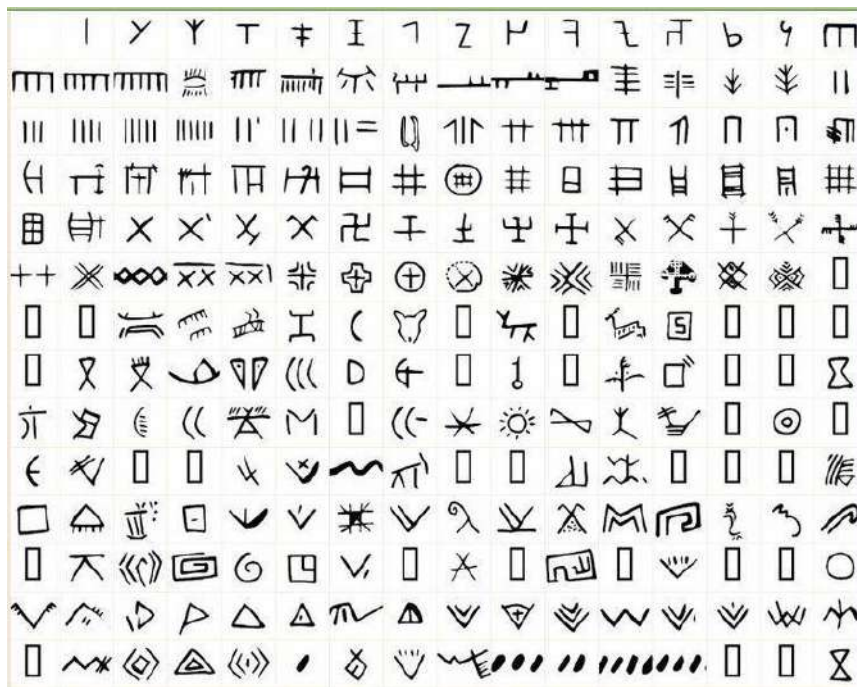


Fig 10
 Vinca symbols and pictograms dated 10000 BC

Given the migratory patterns of trade and human movement along the River Danube^{23,24} it becomes clear that early writing efforts were taken by the migrants to all parts of the Valley and beyond. A Recent and very important excavation at the Dispilio Neolithic lakeside settlement at Kastoria, Northern Greece, discovered a Wooden Tablet^{25,26,27} that reproduces the Vinca Symbols. No scientific effort or learned Journal has so far published any contextual message relating to this find. But, the importance of this cedar wooden tablet, carbon dated to about 5250 BC, is vital to the historical chronology of the written language and not only because the Vinca symbology predates the acknowledge emergence of written language in Sumaira by thousands of years.



Fig 11

Cedar tablet carved with 10 rows of linear (vertical and horizontal) signs, some of them resembling the letters Δ, E, or Λ. Dated to 5202 ± 123 BC (5324 - 5079 BC) within 2σ (DEM-321). was 14C dated to 5260 ± 40 BC. I

THE DANUBE HIGHWAY

The Vinca Symbology and Pictograms were evident thousands of years before the academically acknowledged birthplace of written language. However, excavations continue to uncover evidence of earlier symbology. Accurate carbon dating is essential for researchers to successfully argue that the Vinca Symbols should be recognized as the origin of written language. The River Danube was the primary route for long-distance travel across the 10 countries it meanders through. It becomes clear that the spread of the Vinca Symbols likely followed the Danube Valley and beyond.

Indeed, excavated materials along the entire length of the river demonstrate symbology identical to that found on the Vinca List, extending far beyond the Vinca site. The Dispilio Tablet symbols closely relate to the Vinca listing. Although the symbols are not an exact reproduction of the original list, it seems reasonable to consider that the Tablet markings were an attempt to record and transcribe the Vinca Symbols in northern Greece. Some scholars argue that the jumble on the Tablet does not relate to the Vinca List, but considering the effort children make when learning to write, the fumbled attempt to copy the Vinca Symbols is understandable.

There are many examples of Vinca Symbology on various artifacts along this thoroughfare, confirming the river as a major route for migration and the transport of goods. The Vinca pottery and cultural events are seen in the Mycenaean Culture, among others. However, Vinca symbols faded out around 3500 BC as more sophisticated and contextually structured languages emerged.

Published materials provide a chronological list of the progression of written language to record its development. However, these lists often restrict discussions to written contextual text, excluding the important formative developments of written language before the Sumerian Civilization's written texts. By the time the Sumerian Cuneiform or Egyptian hieroglyphs were in use, the story of the evolution of written language was well established. Further developments in the mechanics, construction, and presentation of context were secondary to the evolution of writing.

The Time Line of the written language starting from the Sumerian historical period is published:

Quote: Timeline. Take BCE as (BC)

c. 3200 BCE First instance of written language in Sumerian.

c. 2500 BCE Beginning of literature in Sumerian.

2285 BCE - 2250 BCE Life of Enheduanna, daughter of Sargon of Akkad, and world's first author known by name.

c. 2150 BCE - c. 1400 BCE The tales of Gilgamesh written which inform The Epic of Gilgamesh

c. 2000 BCE - c. 1650 BCE Cretan Hieroglyphic script is in use.

c. 1900 BCE - c. 1600 BCE Composition of The Descent of Inanna.

c. 1850 BCE - c. 1450 BCE The Linear A script of the Minoan civilization is in use.

c. 1640 BCE - c. 1700 BCE Written form of the Atrahasis Myth of the Great Flood.

c. 1600 BCE Canaanite alphabet.

1600 BCE - 1046 BCE Writing develops in China during the Shang Dynasty.

c. 1600 BCE - 1000 BCE Jiaguwen Script develops in China.

c. 1500 BCE - c. 1200 BCE The Linear B script of the Mycenaean civilization is in use.

c. 1500 BCE - 1100 BCE The Rig Veda written, mentioning the god Rudra (Shiva) and goddess Tara (among others) for the first time.

c. 1500 BCE - c. 500 BCE The Vedic Period in India after a greater migration of the Indo-Aryans from Central Asia

c. 1400 BCE Ugaritic alphabet of 30 letters is invented.

1100 BCE Phoenician alphabet.

c. 1000 BCE Death of Ahirom (or Ahirom) of Byblos, whose sarcophagus bears the oldest inscription of the Phoenician alphabet.

c. 1000 BCE - 700 BCE Dazhuan Script develops in China.

800 BCE Earliest examples of Greek alphabetic script.

c. 700 BCE Xiaozhuan Script develops in China.

c. 647 BCE - c. 629 BCE Extensive collection of clay tablets acquired known as Ashurbanipal's Library at Nineveh.

c. 500 BCE Lishu "Clerky Script" develops in China.

196 BCE The Rosetta Stone was made, a stela carrying a priestly decree from the reign of Ptolemy V in three languages: Egyptian hieroglyphs, demotic and Greek script.

23 CE - Aug 79 CE Life of Pliny the Elder.

c. 350 CE - c. 950 CE Estimated use of the Ogham in Ireland and southwestern England.

626 CE - 649 CE Woodblock printing process develops under reign of Emperor Taizong of the Tang Dynasty.

1234 CE Movable metal type printing is invented in Goryeo, Korea.

The evolvement of the early written language can be traced along migratory routes and major transportation thoroughfares and the Vinca Symbols and Pictograms are clearly seen along the entire length of the Danube. The river was the only way for long haul transportation of people and goods and the reason for that can clearly be seen

even in our own time. The entire length of the river was densely wooded and for the most part impenetrable and any long distance commerce had to be done by river transport.



Fig 12

Extensive impenetrable woods all along the Danube Valley so the river remains a major means for long distance transportation

DISCUSSION

The journey of written language's evolution spans hundreds of thousands of years and is essential to understanding how information transfer developed. Published material assert the Danube Valley as the "Cradle of Human Civilisation," referencing the 700 characters in the Danube written symbology. This civilization employed phonetic symbols reflecting the sound of the spoken language and formed a substantial list of vocal specifications in a written form which enabled knowledge transfer and were adopted by other societies. Fig 9 illustrates migration routes, showcasing how written text was introduced worldwide.

The earliest symbols and pictograms in the Danube Valley date back to around 10,000 BC and spread to introduce the concept of the written language to many civilizations. It became an essential method for recording events, making lists, securing trade agreements, communicating daily events and documenting various human activities. By around 5,000BC, written language was accessible in many regions and in various forms widespread by 2,000BC. Symbols and hieroglyphs related to sounds of spoken language established according to localised factors was translated by early Greek scholars and others confirming that the pictograms were linked to the meaning of the spoken words.

Ancient societies recorded information on mud tablets and carvings on wood and stone and the earliest mud tablet recordings from the Danube Valley used pictograms. As messages became more complex, symbols evolved representing spoken language sounds. Written language became essential for transference of information, allowing

documents to be written in one place and understood by readers in another even across vast distances. Written text became the primary method for information transfer and in time, source documents could be copied and dispatched to millions of recipients, mass information became possible.

In the 21st century, humanity heavily relies on written symbology. Modern societies could not function without written text and over time, agreed symbols were refined and localised by various cultures to convey specific meanings. Different societies developed unique symbols related to cultural factors so that the Chinese symbols for example, reflected social factors associated with their culture and the same dynamic applied to Islamic, Greeks and other groups of peoples. Many millennia ago, people lived in isolated groups and evolved customs according to their local needs. Although many variables are evident in the evolution of the written language, the basic principle remained the same phonetic characteristics were translated into specific symbology.

Despite attempts to establish a universal written language, none have succeeded, except for the language of mathematics. Mathematical symbols are understood by mathematicians even if they don't understand each other's spoken languages but by applying the symbology to express concepts, mathematicians can communicate very successfully by writing symbols to express their thoughts. Extraordinary that after hundreds of thousands of years of effort to establish a written means of communication that humanity in the 21st Century is returning to symbology but it is proving to be the most useful way for cross-cultural exchange of ideas. Scientific advancements have introduced new symbols for machine languages and the computer language uses sequences of on/off electrical pulses instead of symbology. These sequences of electronic impulses are specified to assign a given property to the given symbol or parameter. This language continues to evolve and will become substantially more complex as the autonomous AI (artificial Intelligence) and Quantum Computing technology is refined.

Researchers anticipate discovering more pristine examples of early written language in the Danube Valley. The Danube River has been a major migration and trade route for many millennia and must contain pristine archaeological artifacts in its anaerobic river mud. Oxygenated environment supports microbiology activity which consumes organic matter but when there is no oxygen in any given environment like the silt at the bottom of waterways, no microbiology can survive to consume organic materials and artefacts remain pristine. The high density of the silt excludes oxygenation of the mud. Aerobes cannot survive in anoxic environments so that organic material remains preserved. The recent discovery of a wooden tablet with Vinca symbology dating to around 5250 BC, at the Dispilio archaeological site in Greece, is immensely important to the chronology of written language as it challenges the currently accepted claims that written language originated in Sumaira.

Modern technology, such as NASA's electronic search facilities, Google's satellite images, LIDAR, drone technologies, and ground-penetrating systems, the Zvonimir Jankovic ground penetrating technology can aid in locating archaeological sites and hopefully, pristine examples of early contextual text of the Danube Valley. Researchers are confident that these methods will uncover contextual written examples of the

Vinca symbology and that would confirm the Danube Valley to be the Cradle of Human Civilization.

CONCLUSION

The physical manifestation of the spoken language appears to have been an early drive seen thousands of years ago in the indentations and squiggly lines the Homosepienes hammered out on rock faces and has very slowly but inexorably, evolved to be seen as simple lines which became coloured and then more deliberate and complex were used to record the lives that were. In the recent humanoid history about 50000 years ago self awareness exploded into a flurry of recording effort and all over the world, the species used whatever was to hand to record its presence by making drawings, using lines in all sorts of shapes and forms to tell its story. Population pressures forced the evolution of symbols that carried meaning and drove the need to refine a written method which could be used to record not just life but to provide a means to formulate a structured system of communication. Writing allowed all to dispatch thought processes, present music, poetry, philosophical discussion and it was all structured by grammatical rules that guided individuals in the way they communicated with withers. The written language is an astonishing development that transformed human coexistence and continues to evolve shaping the way we live.

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