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IMAGES AND CONCEPTS

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INTRODUCTION

Can we imagine an ape able of recording his thoughts with images? The image is an imitative reality deliberately produced by a hand, which is led by a mind. By conceiving image-making, the bipedal primate started a new era, the era of consciousness, a determining event in the evolution of the species.

Ever since, the graphic records of moments, visions, ideas and thoughts have been handed over to an external memory. It was the beginning of historical documentation. Considering that there were periods in which no images were produced, this gives us the sense of how relevant the image is for man. The ability of shaping working tools, the mastery of fire and the aptitude for creating images, are the paramount steps of cultural evolution.

Conceptual anthropology sees the ability of image-making as evidence of a being deserving the attribute of sapiens. It considers that by producing images, the bipedal primate became Homo sapiens. Despite widespread theorems, it is weird to consider the shape of the chin as an attribute to define a being as sapiens. Not the shapes of the facial features but the mental abilities expressed by testified outputs are the determinants of the presence of sapiens faculties. Definitions have to be redefined.

How come that the production of figurative images emerged in different parts of the world, with no apparent connection with each other? Do their first presence in Tanzania, Australia, Europe and Central Asia have a common denominator? As considered already in previous issues, how come that the faculty of image-making matured at the same age, in far distant regions of different continents?

Some researchers have suggested that isolated artistic images were produced much before the presence of Homo sapiens. Most if not all such early items are unlikely to be deliberate works of art. Some may have traces of functional human manipulations with no fig-

urative or artistic intents.

The ability to create images is a conceptual archetype; when it is present it is not just by an isolated image in millennia. The production of visual art is an acquisition of mental evolution and it is a cultural pattern present from that moment on.

As discussed in *Expression* 40, in Europe some cave paintings are attributed to the Middle Paleolithic and considered to be the production of Neanderthal man (traditionally defined as Sapiens Neanderthalensis), preceding the arrival in Europe of Homo sapiens (traditionally defined as Sapiens-Sapiens). These early graphic expressions have markings, signs and stamped stencils like hand prints, but no figures deliberately shaped by human hands. We do not know if the makers were indeed Neanderthals or rather an early phase of Homo sapiens, but in one case or another, if there are just signs and stencils without deliberately made figures, they are non-figurative or proto-figurative graphic productions. Where a deliberately drawn image is present, it is the expression of a mind having the abilities to make images.

Images are visual words. Words are rarely alone, usually they are part of a sentence. Images tend to be part of iconographic sequences, assemblages or scenes. The concept of an image is different from that of the assemblage in which it is included. Assemblages, sequences and scenes of graphic signs and images are expressions of logical concepts, those of their producers, which may or may not identify with those of different cultural backgrounds. It is the task of the researcher to understand what was in the minds of the people who produced the images in a different age and cultural setting.

Since its foundation, Atelier research center for conceptual anthropology has been investigating the means to acquire an understanding and defining of the mental processes causing the production of images. Some books published by Atelier and several articles in *Expression* journal aim to understand the meaning and

purpose. Why was that image produced? What was its function? What does it tell us about the cultural world of its maker? The figurative art of hunter-gatherer societies has been the foremost task. The present issue goes a step further, it considers what came next. It is mainly concerned with expressions of societies having a more diversified economy.

The Discussion Forum confronts dissimilar orientations of research. Is prehistoric art the result of philosophical thinking? The debate on the origins of philosophy has two different views. Another discussion topic faces two different concepts concerning the specific research attempts at identifying the location of the biblical mount Sinai. Images and monuments are seen differently by different eyes and minds. Is there a real Mount Sinai? Can it be identified with a real mountain on the ground? Other texts consist of discussions on the origins of scientific research and diverse ways of considering a topic or an image.

The main articles debate the significance of images and monuments. The puzzling standing monoliths known as menhir-statues are spread over various areas of Eurasia and elsewhere. Different functions have been attributed to them. The analysis of contexts on a vast geographical scale assigns them a single common origin, an original function and the regional development of different aspects of ancestral cults. The impact of the ideology they represent may have had a determining influence on later conceptual trends.

A study of anthropomorphic figurines and statues from the megalithic temples in the Maltese isles causes queries on the different social functions of male and female roles in cult and daily activities in the heart of the Mediterranean. Different hypotheses emerge about their function and role.

The rock art of Kyrgyzstan unveils both social and religious aspects of their makers. Images of the footprint appear to have a worshiping function. Anecdotal scenes record events and seem to have the role of his-

torical recording. But what was the aim and purpose of these rock-art producers?

New analysis of megalithic monuments in the British Isles reveals the role of stone circles and standing stones and that of their moving shadows subject to the moving place of the sun in the sky. Attempts at explaining natural phenomena gave birth to myths and beliefs.

The section of Notes and News presents newly published books, notes on institutions and their activities, and an updated index of authors and their articles.

Specific topics, like those gathered in the present issue, the widespread phenomenon of the menhir-statues of the Neolithic and Metal Ages, the case of the anthropomorphic figurines in the Neolithic temples of Malta, the footprints in the Bronze Age rock engravings of Central Asia, or the shadows produced by Neolithic and Bronze Age standing monoliths and stone circles in the British Isles are tesserae of a mosaic that acquires meaning, as expression of the many facets of the human conceptual world. They have in common the creative processes of the human mind, mingling facts, memories and imagination.

From one issue to the other, images and concepts are opening up new trails to the understanding of the human mind, revealing how much is yet to be understood. But understanding is a must in process. The material remains are the source for regaining their conceptual background. How did the spirits represented by the menhir-statues, the idols of the Maltese temples, the footprints of the rock art in Central Asia and the shadows of the standing pillars of the British Isles generate the traditions, beliefs, cults and rituals of the present? The recovery of the past is the core to the discovery of the present. Yes: understanding is a must in process.

Readers are welcome to participate actively with comments and proposals.

E.A.

A NOTE FOR THE AUTHORS

EXPRESSION is a quarterly journal on conceptual anthropology addressed to readers in over 90 countries. The readers are cultured scholars and students in anthropology, archeology, the arts, and other sectors of the humanities, eager to keep alive the dialogue, to communicate, to learn, and to contribute in opening up new trends of humanistic studies.

This journal offers space for expression and communication to researchers and authors from all over the world. Published papers are intended to be read and produce culture: they are addressed to learned and open-minded people. If you wish to contribute a paper, try to make it interesting and enjoyable to those who are not specialized in your specific research field. You talk to them, not just to the restricted circle of experts in your specific field. Articles are expected to be stimulating and pleasant to read. The target of EXPRESSION is to promote dialogue, knowledge, and ideas concerning the intellectual and spiritual expressions of non-literate societies. This journal is an open forum on conceptual anthropology, where over 250 authors from 50 countries, so far, have published their research and their ideas. Papers should be conceived for an audience involved in various fields of the humanities, mainly anthropology, archeology, art, sociology, and psychology. Your ideas, even if related to a local or circumscribed theme, should awaken the interest of an international and interdisciplinary audience. The visual aspect is important for communication with the readers: quality images and text should complement each other.

Authors should address readers openly, and avoid long descriptions, catalogues, and rhetorical arguments. Please refrain from unnecessary references and excessive citations; they make reading discursive and do not improve the scientific level of the article. Excessive quotations may be a symptom of an inability to express independent ideas. Do keep in mind that short articles are more read and appreciated than long ones. Avoid unnecessary words and sentences. Communications on current topics and short notes may be included in the 'Discussion Forum' or in the 'Notes and News' sections.

Publication in EXPRESSION quarterly journal does not imply that the publisher and/or the editors agree with the ideas expressed. Authors are responsible for their ideas and for the information and the illustration they present. Papers are submitted to reviewers, not in order to judge them but to help authors to better communicate with their readers, if needed. Controversial ideas are not censored if they make sense. New thoughts and concepts are welcome; they may awaken debate and criticism. Time will be their

judge. EXPRESSION is a free journal, independent and not submitted to formal traditional regulations. It offers space for ideas and discoveries, including debatable issues, healthy discussions, and imaginative and creative papers, if they contribute to research, are conceptually reliable, and respect the integrity, ethics, and dignity of authors, colleagues, and readers. Additional information on how to submit a paper is found in the 'Notes and News' section.



Front page image

Rock engravings of images called 'masks', likely representations of spirits, with a skeletal shape. Karakol, Kirgystan (see p. 28).

DISCUSSION FORUM

The Discussion Forum invites readers to be active protagonists in debates of worldwide interest in Conceptual Anthropology.

THE DEBATE ON THE ORIGINS OF PHILOSOPHY

From Wikipedia we learn that “The earliest beginnings of philosophy are traced back to the sixth century B.C.E. when the first scientists of Western history, the Pre-Socratics – among them Thales, Heraclitus, and Parmenides – advanced revolutionary theories concerning the natural world, human knowledge and human’s relationship with the gods”.

A few sentences from the book *The Origins of Religion* (Anati, 2023), awakened the debate on the origins of philosophy. For those who are not acquainted with the book, here are some of the debated passages:

From p. 171:

“The claim that philosophy started in sedentary literate societies appears to be obsolete. Philosophy, learning about reality and unreality, and religion, the beliefs and worship of reality and unreality, were born together, despite the fact that they may have developed in different directions.”

From pp. 180-182:

“In contrast with the traditional school of philosophy, we consider that philosophy existed ages before Plato, in fact since the beginning of religion. The primary core of religion is a quest to understand life and death, the future and the past. It has been a purely philosophical search since early attempts were made to understand the meaning of life and death.”

From p. 195:

“Science, philosophy and religion were one entity, with observations and deductions leading to primary hermeneutics: the same human ability to observe and prove beyond doubt that the sun revolves on top of the earth, and needs to sleep at night, like any other living being. Science has proved differently? Every era has its truth. Truth is a deduction of the human senses and may vary.”

Some Europeans may not like the claims that Indian or Chinese philosophies started before the Greek ones, but the question is not where but when deed philosophical thinking originate.

The debate questions whether concepts going back to prehistory may be considered as philosophical thoughts. Attempts at explaining the world have occupied the human mind ever since men tried to understand how the sun moved in the sky; human knowledge was challenged by different beliefs on birth and death ever since the deceased were buried with grave goods, including food and tools of daily use: what kind of logic led to the reasoning behind such habits? The search for humans’ relationship with supernatural beings must have already existed when men conceived the idea of supernatural beings and produced their images. What kind of logic gave birth to the worship of images?

As discussed in various issues of the *Expression* journal, visual art, the paintings and engravings in caves, rock-shelters and rock surfaces, going back over 30,000 years, in Europe, Tanzania or Australia, are the expressions of elaborate analytical concerns. Their makers asked questions and proposed answers. They reveal a conceptual background of myths and beliefs, totemic symbols and animistic views of man and nature, a vision of the living world. Do they imply the presence of philosophical thinking?

How far back can we trace the origins of philosophy? Is philosophy one of the basic components of the human mind?

Readers are welcome to participate in the debate.

E.A.

ORIGINS OF PHILOSOPHY

Terence Meaden

Reflecting on the question raised by Emmanuel Anati (2023) about whether philosophy could have begun in prehistoric times, I approach the matter by first reviewing what factors affected human mindsets, hence principles of behavior and world perspectives, during the progression from prehistory to history. In Europe this hugely positive cultural advancement began in Greece. I treat the subject by citing relevant historical knowledge from classical sources and by using prac-

tical knowledge from the studies of archeologists and anthropologists on the prehistoric peoples of Britain and elsewhere with which I am most familiar. Caution is needed from the start as to what the term philosophy means and the ideologies that it embraces, especially in so far as primitive religion can hardly be regarded as some aspect of philosophy, seeing that early religions only offered make-believe stories or myths (involving thunder gods, sun gods, volcano gods, for example) in the absence of scientific explanations. I accept that any such religion is a failed attempt at accounting for origins, but in prehistory the questions were hardly likely being posed at the level of philosophy, properly speaking. They would have been raised at too shallow a level for that – simplistic, childlike – and dealt with by guesswork. Believers who heard and accepted such fancies were not thinking in the strictest sense of the word. They merely clung to mystical sagas, indifferently unaware of their insubstantiality. Philosophy literally means loving wisdom, in Greek *philein sophia*. To me this means true wisdom, like the academic study of fundamental knowledge of the universe and everything in it (as treated at length elsewhere, Meaden 2022). So, the early religions are out, for being meritless “goddidit” types of fable with no attempt at realistic reasoning. These points are raised at times in the course of the present review.

In the Mediterranean the inhabitants of Greece emerged from the illiterate Dark Age that followed invasion by the Dorians. The Greeks in their city-states after a period of time were manifesting impressive features of a flourishing civilization with high arts and literature in which ink on papyrus began registering histories past and present. The first written sources in the classical Greek language date from about 700 BCE, after which science began to confront long-established supernatural explanations that had possessed the peoples’ spheres of mental and social activities, and encumbered their branches of knowledge. Together, measurement and writing facilitated and hastened the speed of a rapidly maturing civilization.

Theodor Mommsen, classical scholar, Nobel Prize winner in literature, wrote: “The art of measuring brings the world into subjection to man; the art of writing prevents his knowledge from perishing with him.”

Where there had been superficial curiosity, there cou-

ld now be resolute enquiry. Homer in the epic of the *Odyssey* observed, “how prone to doubt, how cautious are the wise.”

The philosopher Thales of Miletus, born about 624 BCE, sought natural reasons to explain phenomena like earthquakes, volcanoes, tornadoes, lightning, etc, instead of accounting for them, as previously claimed, as caused by deities. Thales is worthily viewed as the Greek founder of science, mathematics and natural philosophy. Because the Greeks had developed a systematic alphabet based on the Semitic alphabet of the Phoenicians but with distinct letters for vowels as well as consonants, the educated could readily record, share and refine their thoughts, evolve philosophies, explore science, and record biographies and histories. Poetry and drama, which had been the realm of actors and recitalists with fine memory skills, could now be committed to papyrus and, later, to parchment.

Gradually, some of the premier problems that had long troubled human minds were being overcome, particularly issues that over vast time scales had heretofore been addressed through delusory faiths, championed by raconteurs of myth and religion. Eudoxus (408–355 BCE) held that, at last, in scientific astronomy observational detail prevailed over the dogma of metaphysical speculation that had for so long disdained the facts.

By contrast, while Greece advanced and radiated its humanizing civilization through its Mediterranean colonies and beyond, much of the western world remained locked in unrecorded prehistory. This included the inhabitants of the British Isles whose social and religious practices we can deduce to a small extent through knowledge gained from studies in archeology, anthropology, symbology and comparative religion. The social stratum known as the Wessex Culture in the British Late Neolithic, Copper Age and Early Bronze Age centered upon Stonehenge and Avebury (c. 3000–1500 BCE), much lauded from 1938 by Stuart Piggott, had thrived precociously during the second half of the third millennium BCE. Civilization was impending, but unlike the contemporary Bronze Age Egyptians who we may praise for their acquirement of literacy, the ancient Britons were thwarted, though they knew it not, by lacking the art of writing. Sadly, they were unable to record their own history and biographies.

Nevertheless, planners and builders in Britain and Ireland continued to transmit specific and general meanings at significant sites using symbols and signs. Many symbols that were set in timeless stone survive. In stone circles meanings were also expressed by subtle positioning of stones, as, for instance, by aligning paired dimorphic stones relative to landscape features or to horizon points of the rising sun. To understand the cryptic complexities of stone circles we should try thinking similarly and recognize and interpret pertinent paradigms as best we can. For instance, many stone circles have a decipherable inbuilt calendar of the seasons (Meaden 2022, 2023). Regrettably, this promising culture in England ended around 1500 BCE. Britain had been on the fine line between prehistory and protohistory, but this early opportunity for a civilizing breakthrough, as the Egyptians had achieved, had been missed.

So, it was around a millennium later, in literate Greece and its provinces, that pioneering scientists were tackling problems in physics and mathematics that hitherto had relied on religion, myth and magic to explain them away.

We can now introduce the commonsense thinking of Christopher Hawkes (1977, 1–6) who linked language, a cerebral achievement, with aspects of material culture and their social context, which can often be reached through archeology. In writing about his view of late prehistory, he advanced:

“Three philosophical tenets to be seen as a plane of axioms. The primitive mind, which Frankfort [1949] studied for Egypt and Mesopotamia took all its environment as living, and answered all questions with myth. Psychology, sociology and history of literature and religion, show such a mind to have been universal throughout humanity. So, in Europe too, creation appeared as birth: divine parturition. This accounted for everything explained today by science through physics and biology: product of the movement that the Greeks began, from myth to logical thought”.

This is the first of Hawkes’ tenets. To cite an example that he provided, “... it was the heavenly bodies’ *divinity* that gave their light and their regular motion.” I do not consider such a supposition as resulting from philosophical thinking. There is no erudition. It was just a convenient notion to portray and preach, and would have seemed satisfying at the time, while Frank-

fort’s comment through Hawkes, that all environment was regarded as living, was a reference to the widely held concept of animism (Anati 2020; Meaden 2021). Furthermore, matters like mineral wealth (tin, copper, gold, silver, iron), the lands rich in hunting game or good pasture, and even the lands clearable for tillage, “all seemed preternaturally ordained, like climate itself, and of course like the rhythms of moon, sun and stars, which brought their votaries a calendar.”

Hawkes’ second tenet was disposal of the dead. “If the dead can somehow have life, their world of the spirit is the gods’ world.” Millions of burial sites and actual monuments worldwide testify to these timeworn unrealizable beliefs. The practice indicates a common customary hope, but is no pointer to formal philosophy.

Hawkes’ third tenet arises from comparing the materiality of archeology with language, which is cerebral, via a mediating factor that must be social. Language enjoins.

He writes, “Material culture and language are both expressions of social cohesion.” The third tenet is therefore an “insistence on social contexts, in interpreting the data of archaeology, and especially in matching them to those of linguistic science”.

Animals are not religious. They accept the world as it is. It had been the same with early humanity, until by stages, a limited degree of mental conjecture about life, the environment and what they have to offer, beyond reproduction, food and danger, evolved. Having no knowledge of the sciences, folk dreamt up myths to answer their problems. Spirituality, faiths, rituals and propitiations were improvised, which satisfied needful communities because the connotations blended with their low levels of education. Matters began changing in historic Greece when an untroubled lifestyle dawned for some of the brighter, educated people. They became the first deep thinkers and literati. They were being spared work-intensive, time-taking occupations either because of affluence or privileged circumstances; in consequence, we find the beginning of true philosophy and the first certain philosophers.

As they philosophized, many *sapienti e filosofi* escaped the mental restraints that had been imposed by mythological vassalage. Rationality took over. Anaxagoras, philosopher, 459 BCE: “The purpose of life is the investigation of the Sun, Moon and the Heavens.” The

pursuit of knowledge was regarded as an end in itself. As time passed, fewer intellectuals held to prevalent religious fictions (like Zeus, Apollo and so on), while the masses clung to long held superstitions, trapped by the mores of societal heritage, for which myths supposedly answered everything. Sometime later, the Roman Seneca of the first century CE expressed the crux of the matter frankly and persuasively: “Religion is regarded by the common people as true, by the wise as false, and by the rulers useful.”

Theism had been postulated, and was being used, to explain the everyday difficulties that agricultural folk hoped to dispel or at least wanted to reduce. Problems would have included untimely weather like storms, or too much or too little rain or sun, or cold or heat, that adversely affected farming and livestock, and which the people hoped would be set right through recognized ritual and prayer. Knowing this, we can better perceive the earthy and celestial sentiments of the labouring communities in the early millennia of pioneering agriculture. At the same time, we can appreciate the pious logic of how sites like Stonehenge came to be devised and put to use, while comparing and contrasting it with how in Greece the rulers and believers in the supernatural beheld the highly esteemed Delphi temples. Nonetheless, archaic theistic postulation is not philosophy. Worship is cerebral escapism, another means of satisfying unthinking ordinary folk.

Temples had a melancholy but inspiring function of offering reassurance to worshippers in need. Stonehenge and Delphi were high-status temples with internal icons positioned for veneration at any time of day or night on any day of the year, and not solely reserved for some prodigious occasion like a summer or winter solstice (Meaden 2023).

In summary, I do not regard science, philosophy and religion as a single entity when reasonable definitions are applied to each of them. So much depends on word selection, particularly when allowing for context sensitivity. Having considered cultures before and after the transition to civilization, my view is that philosophy started only with civilized, cogitating intellectuals. Religion, including Greek religion, offered only hopeless doctrinaire teaching of matters without proof, matters which instead warranted scientific reasoning

to explain them, science being held to be, since Aristotle’s time, natural philosophy. Religious philosophy is an oxymoron. Together, the words do not convince, being incongruent regarding the faiths of prehistory. Attempts at explaining anything in prehistory relied upon myth. Worthwhile philosophy only began in historical times and that was through science and serious deliberations about reality and existence. To ask simple questions about life, the world and religion, as even inquisitive children do, does not a philosopher make, otherwise too many of us, teachers and professors, would become instant philosophers. It is even less so when the same enquirers are satisfied with chimerical fables and non-testable “goddidit” answers. Philosophy would not appear to be a basic component in the prehistory of the human mind. It is a developed mature component unique to enlightened thinkers of the species *homo sapiens sapiens*.

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Brian Britten

Delta, BC, Canada

Anati shared excerpts from his “Origins of Religion” which nourished thoughtful discussions about a concept that has everything to do with human nature. Our philosophical core values of the known and unknown become worldviews mirrored upon our other planes of existence.

There is a question of how far back in evolutionary time have humans philosophized about their existence. At least 30,000 years ago, humans expressed their ‘nature of reality’ through artwork depicting beliefs, traditions, values and life experiences...everything that is defined as one’s ‘philosophy of life’.

regards, Brian

GOD DESCENDED ON JABAL AL MOSES

Majeed Khan (Saudi Arabia)

Abstract

It is written in the holy books of Judaism, Christianity and Islam that God descended on a mountain to reveal Himself to Prophet Moses. The Jews believe that the Mountain of Moses is located at St Catherine in Egypt, in the Sinai desert. A famous Italian/Israeli professor, Emmanuel Anati, claims it is Jabal Idied in Israel, while more recent explorers, Williams, Cornuke, Moller and Humphreys claim it is in Saudi Arabia. This author has visited these sites and believes that evidence provided by different archeologists, theologians and explorers are all baseless and manipulated. Nobody could or shall find the true Mountain of Moses. It is the secret of God and shall remain so.

The Riddle of Mount Sinai is a recent book by Professor Emmanuel Anati, an eminent rock art specialist and archeologist. He claims that Jabal Ideid in the Negev desert (renamed Har Karkom by the Israelis) is the real Mountain of Moses.

Anati’s suggestion is based on the archeological survey and excavations conducted by him and his Italian team in the Negev desert. “Har Karkom was a major cult site of the past, a sacred mountain for the people of the desert (Anati: 2001-8). He writes further, “the

immense concentration of cult sites at Har Karkom demonstrates that it was a major cult center, a sacred mountain. No other similar context has yet been found in the case of any other candidate for identification with Mount Sinai” (2001, 43).

Anati and his team provided impressive archeological information on the Negev desert. His book contains a large number of photographs of important finds. It is the first authentic and elaborate report on the archeology of the Negev. But, unfortunately, he tried to link his finds with the Mountain of Moses and interpreted these under the influence of his religious ideology. It would have been better if Anati had confined himself to the study of rock art and the archeology of the Negev, but he entered a highly controversial religious subject that he failed to deal with properly.

For centuries, theologians, clergies, biblical archeologists and explorers have been searching for the Mountain of Moses, and have written articles and books on the location of the Holy Mountain. Although each one of these writers claim that their evidence and finds are correct, nobody so far has been convincing, otherwise the search would have ceased long ago.

Muslims also believe in Moses, the Exodus of the Israelites and the revealing of God to Moses on a mountain; surprisingly no specific attempt by Muslim historians, archeologists and theologians has been made to locate this Holy Mountain. In recent years, likely due to political religious reasons, attempts have been made to try to prove that the Mountain of Moses is located in the present Saudi Arabia.

Manipulations by the American explorers Larry Williams, Colin Humphreys and Moller are evidenced by their claim about the burned peak of Jabal al-Lawz, although there are no signs of burning on the mountain. In the light of American and British writers’ claim that the Holy Mountain is located in Saudi Arabia, Anati’s new discovery of this mountain in the Negev indicates how controversial the subject is.

Williams in his book *The Mountain of Moses* writes, “The true mountain of God is in Saudi Arabia”, bringing as evidence “twelve pillars, petroglyphs of a bovine figure that appears Egyptian in nature, markers to set aside the mountain from the plains, camping ground large enough for the Exodus, and what local Bedouins call the caves of Moses” (1990, 17).

Williams and his friend Bob Cornuke claim to have

found the caves of Moses at Maghair Shu'aib, referring in fact to Nabataean tombs contemporary to those of Petra in Jordan and Madain Saleh in Saudi Arabia. Cornuke also claims to have found the Altar, the well of Moses, the 12 pillars and above all the buried gold of the Exodus. What a pleasant surprise, the gold remained buried for over 5,000 years and exposed just when Williams and Cornuke reached that site. They did not publish the picture of the gold object located on Jabal al Lawz.

Williams, Howard Blum and Humphreys claim that there are caves of Moses in Maghai'r shu'aib but none of them presented any image of those caves. It is because there are no caves in the area at all. The Nabataean tombs located at al-Bid' (Midian) are locally known as Maghair Shu'aib (the caves of Shu'aib) and are in fact tombs carved into the rocks and are contemporary to similar rockcut tombs of Petra in Jordan and Madain Saleh in Saudi Arabia. These tombs date back to the second century BC/second century AD. Hence there is no relation with the caves of Moses.

Williams did not bother to compare the cow figure located on Jabal al-Lawz with that of Hathor and Apis of the Egyptian bulls. The figures located by Williams on Jabal al Lawz, have absolutely no similarity to the Egyptian Apis or Hathor. Moreover, these figures were already recorded (Livingstone 1985; Khan 1993). Hundreds of cattle figures are located in the Tabuk area (Khan 1993) and other parts of Saudi Arabia. They are not exclusively limited to Jabal al Lawz, as stated by Williams and Blum (1998).

Humphreys (a professor of physics) writes, "Recently the Americans Ron Wyatt, David Fasold, Larry Williams, and Bob Cornuke have gained considerable publicity with their claim that the true Mount Sinai is in Saudi Arabia at a mountain called Jabal al- Lawz. However, Jabal al-Lawz is not a volcano, and thus it doesn't satisfy the Biblical description of Mount Sinai" (p. 311).

Cows were sacred animals and worshiped in Pre-Islamic Arabia. In the rock art they are located with deities and gods in several open-air temple sites. They were also depicted near the rock shelters and living sites, perhaps to be protected from evils and as a sacred animal to bring blessings and happiness. These cattle figures are located near a rock shelter in the Tabuk area near Jabal Laws or the so-called Mountain of Moses. Just in one sentence Humphreys rejected the entire

efforts of Williams and his companions, who put their lives at risk and penetrated illegally into Saudi Arabia to prove that Jabal al-Lawz is the true Mount Sinai.

Mount Bedr is located north of al-Ula. Humphreys connected Bedr with the moon-god (*bedr* in Arabic means "moon"). There are several mountains in this northwestern region that were once active volcanoes. Even Jabal al-Lawz is a volcanic mountain composed of hard igneous and granite rocks. Humphreys rejected it as the Mountain of Moses, claiming it was not volcanic. Thus, everybody rejects others' evidence and creates their own evidence to prove that they are right and all the others are wrong. For centuries people from various disciplines have been trying to find the mountain, one way or another.

In search of the Mountain of Moses, even ordinary people like Jim and Penny Caldwell, a husband and wife once residing in Saudi Arabia, visited the area of north western Saudi Arabia and found a rock they called the Rock of Horeb. The couple went into the area just for recreation and claimed the discovery of the Horeb Rock.

People like Williams and Blum who penetrated the area without passports and later with forged entry visas, Caldwell and his wife's visit to al-Bid', Jabal al-Lawz and the Rock of Horeb area, were free to move in the area. It shows that there are no restrictions for the free movement of foreigners in any place in the kingdom.

The couple's claims that the rock formation and Jabal al-Maqla' were related with Exodus events is another independent hypothesis. The site for Mount Sinai (Jabal al-Maqla') is 5 miles SSE of Jabal Lawz, the highest mountains in northwest Saudi Arabia (Glen and Jim 2002, 3).

Thus, today there are at least five mountains claimed to be the Mountain of Moses:

- St Catherine in Sinai, Egypt.
- Jabal Idied or Har Karkom in Negev, Israel.
- Jabal al-Lawz, northwest of Saudi Arabia.
- Mount Bedr, Saudi Arabia.
- Jabal al-Maqla', Saudi Arabia

For centuries Saint Catherine in Sinai has been the focus of Jews as the Mountain of Moses, even today they go by thousands every year and still it is the most acceptable Holy Mountain.

I was surprised when an eminent archeologist and rock art specialist like Anati claimed that Jabal Ideid is the

Holy Mountain. Although the Italian expedition he headed has conducted comprehensive archeological survey and excavations and discovered several sites of varying cultural periods from Paleolithic to recent, Anati almost destroyed the validity and dignity of his work by claiming Jabal Idied as the Mountain of Moses. Just because the mountain was a sacred place for centuries even long before the Exodus, it does not mean that God revealed Himself to Moses on the same hill.

In the desert of Arabia, Negev and Sinai there are hundreds of stone circles, cairns, tombs, standing stones, stone objects and rock art sites of various cultural periods. These structures are so similar that they may be the work of people with homogenous social, cultural and religious values.

Williams and Cornuke (1998) found similar stone circles, stone pillars and cattle figures on Jabal al-Lawz and claimed it to be the Mountain of Moses. Similarly, Humphreys (2003) found another location in Saudi Arabia and claimed that Jabal Bedr (or Moon Hill) is the true Holy Mountain.

Thus, we see different people claiming the location of the Holy Mountain in different places. None of them could provide any convincing evidence which may be acceptable to even an ordinary person. The Mountain of Moses is as important to the Muslims as to the Jews or the Christians. The revealing of God to Moses on Jabal Sinai is mentioned in the Holy Quran as well. It would have been a great honor and privilege for the Muslims if it were located in Saudi Arabia. How proud and honored we should feel to be the home of one more religion, but unfortunately, people like Humphreys and Williams and others are playing with the faith, minds and beliefs of people just to earn money by their publications. I as an archeologist and rock art specialist of the region have personally visited Jabal al-Lawz, Jabal al-Maql', Mount Bedr and St Catherine in Sinai, but I am extremely surprised that most of the evidence presented by all the authors is either false or manipulated. People like Williams, Blum, Koenig, Humphreys, Anati, Glen and others will continue writing about Mount Sinai and other biblical places. It is human nature and curiosity, but religious ideologies should not be manipulated or distorted for fame or money. I wish I could claim where Jabal Mosa is located. I wish I could locate it in Saudi Arabia, of course with solid scientific and acceptable evidence, to make this

country proud and honored to be the home of one of the cruelest and most suffering nations of the world.

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EDITORIAL REPLY

Dr Khan's paper on the identification of the biblical Mount Sinai is an interesting debate between different conceptual orientations. The view that the sacred mount Sinai will never be found because of the will of God, may well be widespread but, to our team it looks like a fatalistic approach hardly compatible with

the reasoning of scientific research. The statement that archeology manipulates religious beliefs is a surprising generalization by someone practicing archeological research. Is it expressing lack of trust for the discipline he is professing?

The proposal by Professor Anati of identifying Jabel Ideid (Har Karkom) with the biblical Mount Sinai was



Fig. 1. Traces of big fires on top of the Har Karkom mountain. The one in the centre of the photograph, a bright space surrounded by dark traces, is more than 12m long. (Site HK 109, photo ISR 84: LVI-13, from Anati, *The Riddle of Mount Sinai*, 2017).

first published by him in 1983. It created a worldwide debate and a number of opposers, but the identification has many more followers now after 40 years. Let us give it a few more years before dismissing it.

The biblical texts provide several hints on the geographical location of Mount Sinai. It does not hide it. It does not keep it secret. It mentions site names and distances, and 40 years of field survey allowed Professor Anati to locate some site names. They are not, as suggested by some researchers, imaginary mythical site names. Research is progressing and results were discussed in Anati's books, *The Mountain of God* (1986), *The Riddle of Mount Sinai* (2001), and *Exodus* (2018). The real judge is time. Let us wait and see.

Dr Khan claims that Prof. Anati lost scientific dignity by proposing the identification of the mountain as Mount Sinai. Does this imply that over 100 authors having proposed the identification of Mount Sinai on over 20 different mountains, have thus lost their dignity?

The point in Dr Khan's paper that Mount Sinai is a secret of God therefore not identifiable is followed by his stating that a mountain having no signs of burning cannot be the holy mountain. Are the two visions compatible?

Dr Khan mentions that the Sinai mountain should have signs of fires. We doubt that this should be a criterion for detecting Mount Sinai, but whatever this may mean, Har Karkom is the only mountain, among the 20 candidates, to have indeed important signs of ancient fires (see enclosed photo).

EXPRESSION journal stimulates debates and criticism about ideas, but refrains from criticizing individual people by name, which provokes gossip rather than constructive scientific reasoning. However, Professor Anati, who is the general editor of this journal, greets the article by publishing it, and agrees to this advocated reply and invites further discussion. It may provoke a stimulating debate; but please, not about colleagues, just ideas.

ON THE ROOTS OF SCIENTIFIC RESEARCH: THE PREDICTION OF SOLAR ECLIPSES

Leo Dubal (France)

How did science begin? Could Thales of Miletus have predicted a Solar eclipse? O. Neugebauer¹ denied that Thales could have done so. In the first place, one may argue about what is meant by prediction. Astronomical solar eclipse predictions are based on the Saros cycle of 223 lunations and on the 54 years Exeligos cycle. With the release in 2005 by Xavier Jubier, of his 5MCSE,² the *5 Millennium Canon of Solar Eclipses* (a user-friendly freeware coupled to Google Earth) one can say that ancient solar eclipses retrodiction became a scientific discipline. Of course, no such tools were available at the time of Thales, nor were protection glasses for the observation of solar eclipses. For the problem of short-term foretelling - 1 hour to 6 months - of a Solar eclipse, the neurosurgeon W.H. Calvin³ wrote: "It is potentially quite easy, so long as you can be wrong half of the time. The non-occurrence of a foretold event is not detrimental ... as long as it sometimes works fine."

The so-called rule #1 is: A solar eclipse may happen 6, 12 or 18 New Moons after a first solar eclipse. This empirical rule has no scientific support, though over a given geographical area solar eclipses statistically tend to cluster. For retrodiction, the date is important, i.e.: the date of Thales' eclipse was mentioned by Pliny the Elder as Ab Urbe Condita CLXX, corresponding to⁴ our Common Era 28 May 584 CE.

Though I started 30 years ago to get interested by Thales' prediction, as a physicist I obviously could not admit that he proceeded as "The Shaman who stole the Moon".⁵ In May 2023, I finally dared to list the 18 New Moons⁶ prior to Thales' famous eclipse!

With Table 1, thanks to Xavier Jubier "long term retrodiction freeware", I discovered that there has been

1 O. Neugebauer, *A History of Ancient Mathematical Astronomy* (1975), p. 604.

2 <http://xjubier.free.fr/5mcse>

3 <http://www.williamcalvin.com/bk6/bk6ch1.htm>

4 <https://www.archaeometry.org/timelines.html>

5 <http://www.williamcalvin.com/bk6/bk6ch1.htm>

6 <https://promenade.imcce.fr/fr/pages4/441.html>

Year	1	2	3	4	5	6
-585/-586	XII.14	I.13	II.11	III.12	IV.11	V.10
-585	VI.08	VII.08	VIII.06	IX.05	X.04	XI.03
-584/-585	XII.3	I.02	III.01	III.30	IV.29	V.28

Table 1. Dates of the 18 New Moons preceding the -584 Solar eclipse over Miletus.

Year	1	2	3	4	5	6
--587	VII.29	VIII. 28	IX. 27	X. 26	XI. 25	XII. 25
-586/ -587	I.23	II.21	III. 23	IV. 21	V. 20	VI. 19
--586	VII. 18	VIII. 17	IX. 16	X. 15	XI.14	XII.14

Table 2. Dates of the 18 New Moons preceding the -586 Solar eclipse over Miletus.

over Miletus, on **-586.12.14**, a Magnitude 74% partial Annular Solar Eclipse (somehow similar to the +2005.10.03 annular solar eclipse over Formentera. Thales might well have observed it.

At the time (a couple of years *before* the birth at Tyre of Pythagora, another great Phoenician scientist), in order to foretell, the **-584.05.28** Solar eclipse, comes the question of how Thales might have been aware of “rule #1”? Maybe this empirical rule was already known? Another possibility is that Thales observed it himself! Let us have a look at the 18 New Moon preceding the **-586.12.14** solar eclipse.

Again, thanks to Xavier Jubier 5MCSE,⁷ I found out that on **-587.07.29**, there has been over Miletus a Magnitude 88% double sun set Solar Eclipse! This 18

lunations time laps between those two solar eclipses might have led Thales to think there was there an empirical rule to foretell further solar eclipses?

Conclusion: In a way, O. Neugebauer was right: the Phoenician proto-astronomer Thales did not predict that famous Solar eclipse, the so-called SAROS 57/-04 of the NASA catalogue.⁸ Though, after the **-586.12.14** Solar eclipse, Thales made a *qualified guess* and boldly foretold to the king Alyattes the **-584.05.28** Solar eclipse. This strategical advantage allowed the Lydian king to stage triumphally⁹ the end of his too long-lasting war against the Medes.

Another provocative reading of this story credits

⁸ <https://eclipse.gsfc.nasa.gov/SEsaros/SEsaros057.html>

⁹ <https://irispublishers.com/oajaa/pdf/OAJAA.MS.ID.000583.pdf>

⁷ <http://xjubier.free.fr/5mcse>

Thales as the first scientist! He duly collected (in a lost diary?) his observations of Equinoxes, Solstices, New Moons and Solar eclipses and made the best out of them. He might have observed over Miletus the so-called SAROS 57/-05 Solar eclipse on -602.05.28 with a Magnitude of 50%. Therefore, one could guess that he might have had the idea of the 18 years long Saros cycle as a *scaling up* of the 18 lunations rule, a kind of mirror to his theorem! His observations of other natural events such as meteorological phenomena allowed him to anticipate a huge harvest of olives, which made him rich. Indeed, Natural Sciences did develop by such systematic recordings of observations and the trials & errors to make sense out of them. Isn't that an answer to our initial question of "How did Science begin?"

WHAT IS RELEVANT?

The awareness of what is relevant and what is not is defining the mind of whoever opens the mouth to say something. But...opinions vary on what is relevant. Two tribal groups living side by side: seriously relevant for the Bantu is totally irrelevant for the Sandawe! (From Anati's Tanzania notes, undated, likely 1988?).

FORTHCOMING NEW DEBATES

Readers are proposing themes for debate. When at least three articles are submitted on the same theme, the topic is considered for a forthcoming issue.

1. **IS *HOMO SAPIENS* THE INVENTOR OF FIGURATIVE ART?** Is visual art the sign of his presence?
2. **OUT OF AFRICA: THE ETERNAL DIASPORA. WHY DID STONE AGE PEOPLE MIGRATE?**
3. **MEGALITHISM: WHY? CAUSES AND EFFECTS**
4. **SEAFARING DEPICTIONS: RECORDING MYTHS AND EVENTS** Considering the story of seafaring and its earliest documentation.
5. **MYTHS OF ORIGINS: WHERE DID THE ANCESTORS COME FROM?** Global and local versions.
6. **VERNACULAR DECORATIVE PATTERNS AND THEIR SOURCES.** Decoration of objects, huts or rock surfaces as the expression of identity.
7. **THE ART OF HUNTERS AND GATHERERS:** Different patterns as expressions of different lifestyles and different resources.

PROPOSALS FOR NEW DEBATES

Proposals for papers and suggestions on these and other issues are welcome.

MENHIR STATUES AND OTHER IMAGES OF THE INVISIBLE

Emmanuel Anati

Atelier Research Center for Conceptual Anthropology (Italy)

Preamble ¹

Menhirs, standing pillars, and menhir-statues, or decorated menhirs, widespread in Eurasia and elsewhere, are the effect of human actions that have been performed for thousands of years. What is their function? Why are they often grouped to form circles, alignments or other forms of installation? What are the causes of this widespread phenomenon?²

Not all standing stones are menhirs and not all menhirs have the same function. These monuments are present all over the world and widespread in Eurasia. Menhirs, whether decorated or not, fit into the countryside as an imprint of man and add their shapes to the landscape. In the traditions of tribal societies, menhirs and menhir-statues are predominantly images of forefathers, real or imaginary. They are still revered in India, Central Asia, Papua New Guinea and other Pacific islands, as well as in Africa, in Ethiopia, Niger and elsewhere. Most of those preserving a religious function are related to ancestral cults.

About half a century ago, in Madhya Pradesh, India, in a village surrounded by forests, we witnessed a ceremony where a complex liturgy helped the soul of a defunct enter a standing stone (a menhir). Eventually, special songs, complex spells and prayers succeeded: according to the officiant, the wandering soul found his new body there. Then the faithful gathered in front of the menhir and food offerings were placed in a stone bowl at its feet. The monolith had become an object of worship for the local community, a receptacle for the soul of a deceased person to be venerated. In the middle of the forest, there were other monoliths still standing vertically, probably as results of previous similar events.

The Earliest Menhirs at Har Karkom

In and around a mountain, in the Negev Desert, a vast area is literally covered by standing stones, altars and boulders with evidence of rituals and worship (Anati, 2022). Similar sacred areas with standing stones are present in various regions of the world such as Arabia, Siberia and India.

Menhir-statues or stelae-statues are monoliths having natural anthropomorphic or peculiar features, or modelled by the work of man, often forming groups of similar monuments.³

For the most part, the datable groups of erected lithic monuments belong to the Holocene, to the last 12,000 years. Rare cases are earlier. The oldest known is located in Har Karkom, a sacred mountain in the Israeli Negev desert which has been considered to be the Biblical Mount Sinai. This site can give us a key to understanding the primary function of its monuments. (Anati, 2020b; 2022).

This site, recorded as HK82b, has an assemblage of 42 small monoliths, on the edge of a cliff. A few of them are still standing in their original location, others are fallen, others have been re-erected in recent periods. They are flint nodules, whose height is 1 m. to 1.50 m., some probably deriving from a local layer of flint, others, weighing tons, were brought there (Anati, 2020b). The natural features are vaguely anthropomorphic. Men did not alter the natural shapes, they selected them because of their shape, making them stand, fixing them in the ground with stones, thus conceiving an installation.

The flint artifacts display the typology of a flint in-

1 This article is a precis of the book *"Spirits in Stone"* (2023b) where additional details, explanations and references are found.

2 Men-hir is the Breton term for standing-stone.

3 Two terms meet in conventional terminology: menhir-statues and stelae-statues. The definition indicates a difference: the menhir-statues are modeled by the human hand while the stelae-statues have the iconography added on to the natural shape of the stone. However, the two terms are often used for both types, so this distinction, which is often debatable, is not considered in this text.



Fig. 1. Har Karkom, Negev desert, Israel, site HK 86b. Flint orthostats from the Paleolithic sanctuary (From Anati 2020b).

dustry, present in 22 sites on the Har Karkom plateau, an early phase of the Upper Paleolithic blade industry maintaining a flaking Levalloisian tradition, which is tentatively dated between 50,000 and 40,000 years ago (Anati, 2020b). In a sector of the Paleolithic paleo-ground, there are incrustations of flint flakes and nodules that form rounded motifs, perhaps remains of deliberate drawings on the ground or geoglyphs.

The landscape suggests a hypothesis. Towards the west, the view is dominated by the two summits of the mountain, like two breasts. For the non-urban world even today, every form of nature has a meaning. Urban society has lost this habit. The landscape makes suitable the site where to build a villa today or a sanctuary yesterday, it may have been a reason for choosing the site where the monoliths were erected. Those two heights, female breasts of the mountain, overlook the monoliths in the vale.

From the Paran desert below, one can see those black points that are the monoliths. Behind them, the two hills appear, two breasts that make up the mountain summits. The cliff on which this site is located, from the desert below, looks like a pair of spread legs, al-



Fig. 2. Har Karkom, Negev Desert. View of the Paleolithic sanctuary HK 86b. (From Anati, 2020b). On the Paleolithic treading surface level, in addition to the flint artifacts that help denote the age, there were over 40 small flint nodules with suggestive shapes and reshapes, evidently collected and concentrated there by human hands. Some of these objects had been retouched with incisions or chips to enhance their natural appearance.



Fig. 3. Har Karkom. Flint orthostat stuck in the ground with the help of support stones (From Anati, 2020b. Site HK 86 b, photo GC 92: CLXII-37).



A



D



B



C

Fig. 4a. Har Karkom, Paleolithic sanctuary. Flint nodule in the shape of a bird, retouched in the tail and at the base with chips. Finely engraved lines define the eyes and beak (Site HK 86b, photo EA 92: XXXV-16).

Fig. 4b. Har Karkom, Paleolithic sanctuary. Flint nodule with the natural shape of a human face completed by man with secondary retouching, some chipping and the finishing of the eye by engraving a thin line (Site HK 86b, photo EA 92: CXX-23).

Fig. 4c. Har Karkom, Paleolithic sanctuary. Flint nodule with the appearance of a female body. The man's only action is a thin incision around the protuberance that seems to indicate the right breast. Where the left breast is presumed there are traces of bituminous encrustation (Site HK 86b, photo EA 92: CXIV-6).

Fig. 4d. Har Karkom, paleolithic sanctuary. Flint nodule with three pecked points, indicating the eyes and mouth of a vaguely anthropomorphic face (Site HK 86b, photo EA 92: XXXV-21).



Fig. 5. Har Karkom. Flint orthostat from the Paleolithic sanctuary, intentionally man-modelled, with large chips on the sides. At the top they indicate the neck and head, at the bottom they have created a tip that can be easily inserted into the ground (From Anati, 2020b. Site HK 86 b).

most 1 km long, in the center of which the monoliths are located.

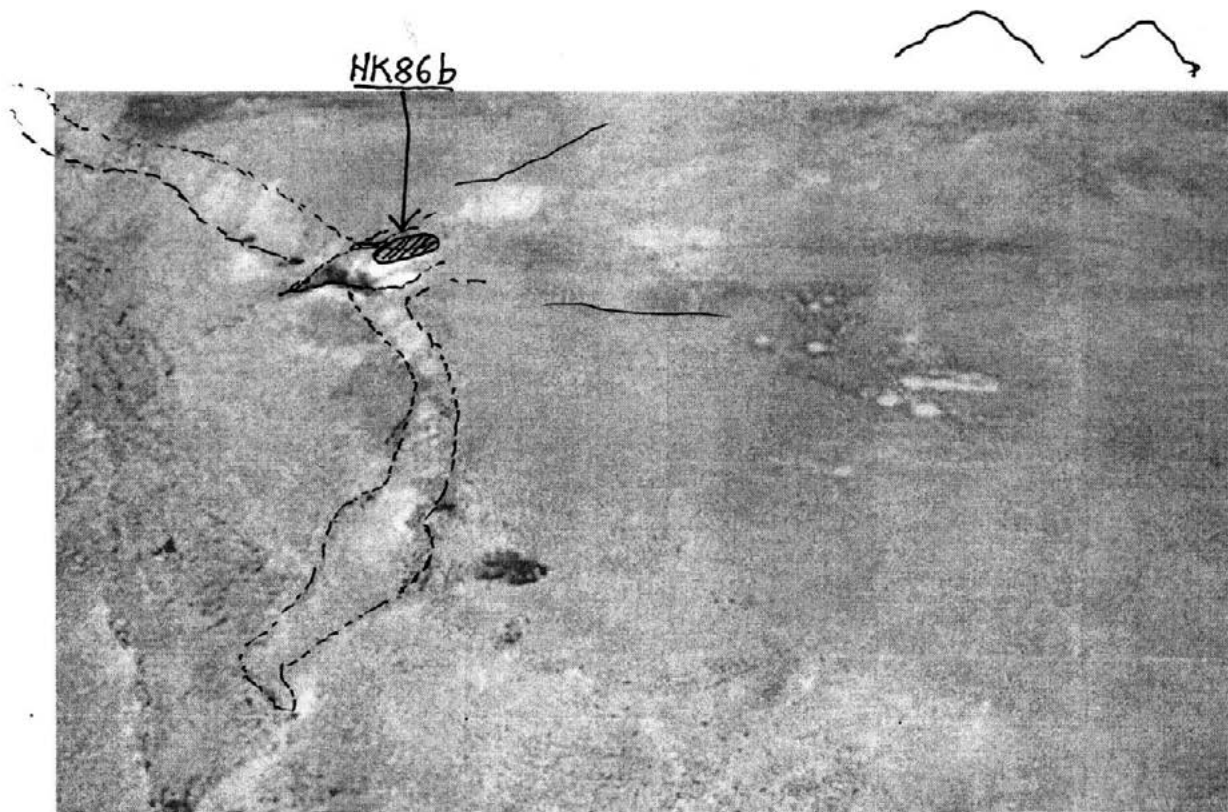
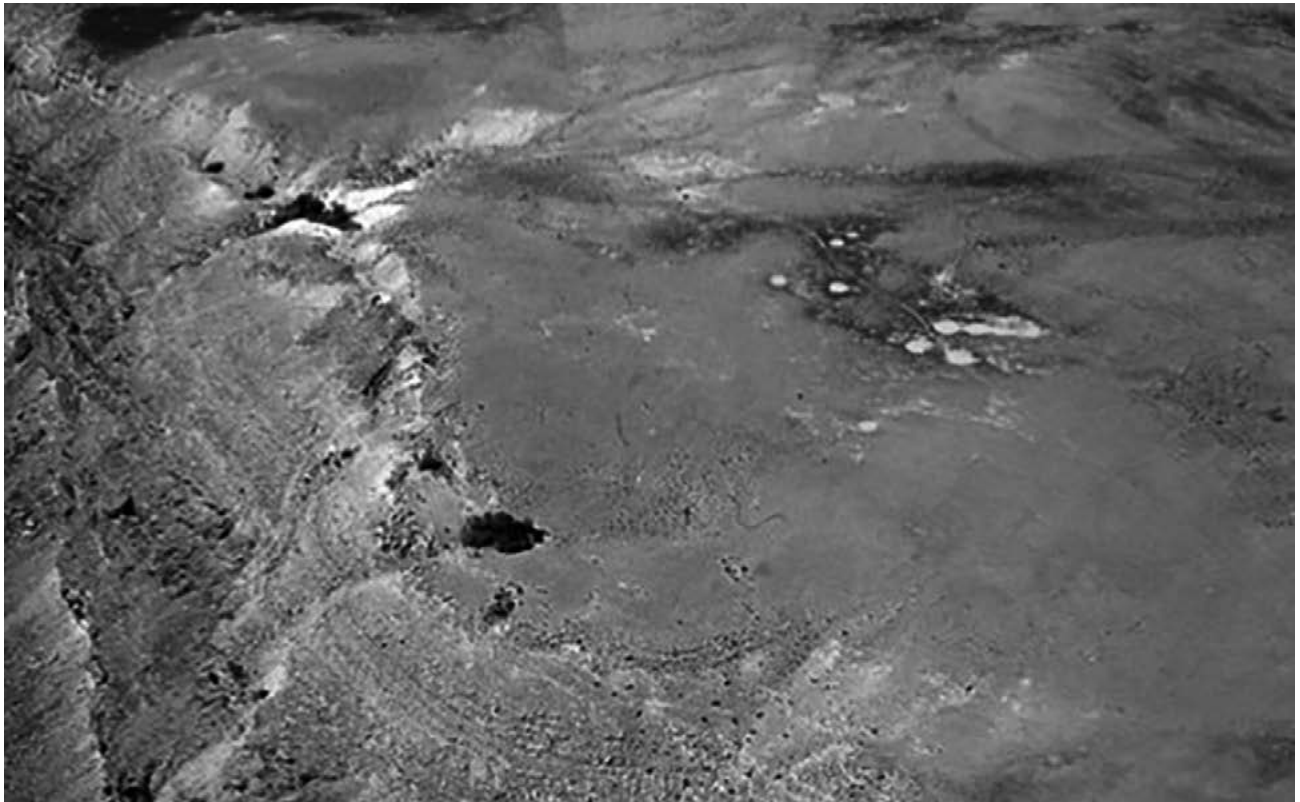
Considering interpretations of the landscape that occur in the tribal world, in the eyes of prehistoric clans the shape of the mountain could have suggested an immense female body stretched out. The two summits are breasts; the cliffs, from the desert below, appear as immense legs spread apart. The small shrine (HK86B) is located at the joining of the legs.

The stone spirits are gathered there as if they were born or resurrected out of the vagina of the mother mountain. Their profiles can be seen from afar, right there, above the crack that turns into a waterfall in the rare rainy days.

Considering the natural shapes still evident, the mountain appears as a large female body. The hypothesis is that the stone spirits were in their place in the saga that made stone spirits emerge from the vagina of the mother mountain (Anati, 2022).



Fig. 6. The two “breasts”, the two peaks of Har Karkom, seen from the HK 86b site. The light spots that stand out in the hammada ground are basements of huts from the Paleolithic site HK /149 (Site HK 86b, photo EA93: XVI-13).



Figs. 7a, b. Aerial view of the HK 86b site and of the cliff at its foot, and sketch of the anthropomorphic legs shape. The site is located in the light scrub that ends with a tuft of vegetation. On the right, a group of whitish spots indicates the bases of huts of a Paleolithic site (Site HK 86b, photo EA 93: XXX-10).

The Spirits of the Columns at Göbleki Tepe

About 30,000 years after the Har Karkom sanctuary, another site, this time in Anatolia, gives us a sense of continuity. We do not know how many standing stones were erected in these 30,000 years, nor how many there were when the megalithic sanctuary of Göbleki Tepe was operational 11,500 years ago.

A ceremonial area is made up of circular structures, with standing monoliths, sometimes clearly anthropomorphic but without facial features. Their body is rec-

tangular, well-shaped by human hands. According to Klaus Schmidt, head of the excavations, after at least a millennium and a half of activity, the site was intentionally buried. It had had its day. (Schmidt, 2010).

Göbleki Tepe is not the only place of its time of that kind, it is the best known. Erected or fallen monoliths are found in Anatolia and in the entire Middle East and elsewhere in Eurasia. Most of them have no chronological indications, but probably 11,000 years ago the habit of erecting monoliths was already widespread.



Fig. 8. Aerial view of the Göbleki Tepe excavations. (German Archaeological Institute, photo by E. Küçük)



Fig. 9. A temple area of Göbleki Tepe with its orthostats. (Photo by Beytullah Eles).

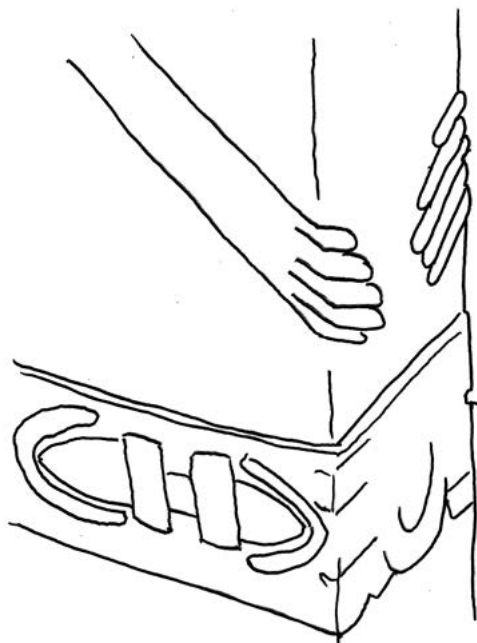


Fig 10. Göbleki Tepe. Proto-Neolithic sanctuary. Drawing of the details of a column. The arms and belt indicate the anthropomorphic intent of the faceless monolith. The relief appearing as two opposing daggers will again be present millennia later on Sardinian and other European menhir statues. The belt shows elements with probable value of indicators or attributes, including a hook with a schematic anthropomorphic effigy. (Drawing by E. Anati).



A



B



C



D

Figs. 11a, b, c d. Göbleki Tepe. Proto-Neolithic sanctuary. Details of the high reliefs in the columns with faceless heads. On the body there are images commemorating myths or events.

The Ancestor-Fish at Lepenski Vir

At Lepenski Vir, on the Serbian shores of the Danube, near the Romanian border, the inhabitants of a fishing village, about 9,000 years ago, used to bury the dead below the trampling level of the huts. They erected statues above the burials. They are stone works about half a meter high, on the stepping floor of the hut, located near the central fireplace, as if they joined the living around the hearth. They were there, mute but present, as part of the family.

These spirits, in their stone bodies had peculiar features. The body had human arms, indications of breasts and sex, but they had no legs and the face was that of a fish. They also have high-relief indicators, motifs of zigzag, wavy lines, and chain patterns. Dragoslav Srejovich, who led the study, calls them fish-man spirits.

Apparently, they represent the totemic image of ancestral spirits related to fishing, which was the main economic resource of this proto-Neolithic Danubian people (Srejovich, 1969, 1975; Letica, 1975).

An animistic concept, still present among various populations, conceives the afterlife as a return to the origins. The spirit goes back to being the son and father of his own totem, master of his own myth of origin, waiting until the next reincarnation.

Here as elsewhere, the menhir-statues do not intend to be, as sometimes proposed, physical images of the deceased, but rather a model, albeit with their own character, of the image of the spirit, which does not have the physiognomy of the deceased. It is an icon of the conceptual features of the invisible, with indicators specifying the identity or the attributes.



Fig. 12a, b. Lepenski Vir, Serbia. Proto-Neolithic period. Ancestral spirits in stone. On the banks of the Danube, communities of incipient fishermen and farmers had well-planned and well-organized villages. Some huts had burials under the hut's decking. The stone spirit was located next to the hearth and virtually participated in the daily meal. (Drawing by E. Anati, from Anati 1990, DIS000338).

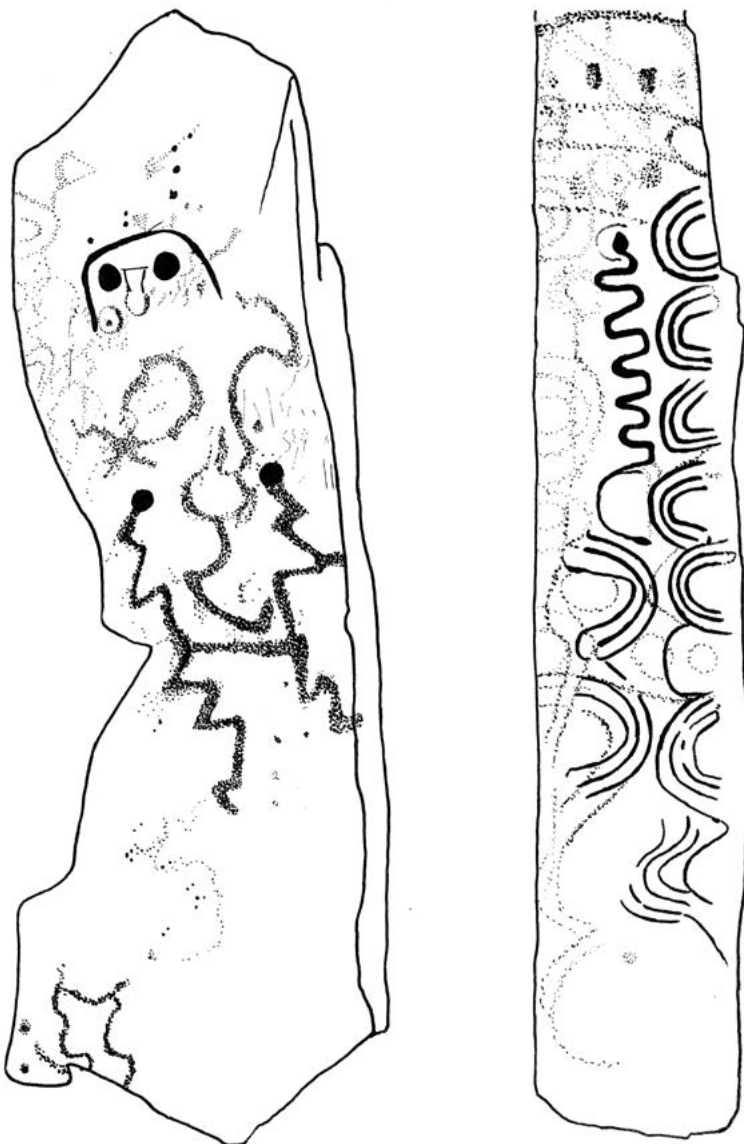
A Neolithic Confessional Colonization

In Eurasia the menhir-statues are present from the Iberian Peninsula to China, from the Middle East to the Arctic regions. The size of their diffusion is an exceptional phenomenon of a conceptual trend. (Anati, 2023a).

From the monumental funerary megaliths of Iberia, Brittany and Ireland, to the 'masked images' engraved on the rocks of Helan Shan in Ningxia and other regions of China, Mongolia, and Siberia, there are regional patterns (Anati, 1994; Devlet, 2017). The current term "mask" seems inappropriate if, as it seems, they represent visions of the invisible, conceived by human minds. Masks hide the real face. A conceived face is not a mask.

These graphic expressions that reflect beliefs and conceptual contents manifest themselves in various regions of Eurasia from the Neolithic period and the Copper and Bronze ages, with further persistence in some areas. The anthropomorphic orthostats of Kazakhstan and other Asian areas still maintain their spiritual role of ancestral souls among local populations. The engraved figures of the Helan Shan, as evidenced by local inscriptions on the rocks and by a local shrine, were still revered in recent times (Anati, 1994).

The idea that the souls of the deceased or of mythical ancestors were inside the rock, an impenetrable matter for the living, appears to have vast diffusion and long duration (Anati, 2015a).



Figs. 13a, b. Schematic tracings of stone spirits in the Iberian Peninsula: A - Menhir of Abamia, Asturias; B- Menhir of Pola de Allende, Asturias. How to read the monuments? As a hypothesis, the human body dissolves by transforming itself into meaningful ideograms, presumably indicating emanations of energy or other faculties of the spirit. The spirit image often keeps the eyes, indicating its ability to see and be conscious. The traces engraved by a human hand on the surface, or the practices that lead to the act of its erection, denote the presence of the spirit in the stone that hosts it. (From Anati, 1968).



Figs. 14a, b. A- Rock painting of the Dumas cave, Var, France. B- Menhir statue from Shafstadt, Germany. Schematic anthropomorphic images since the Neolithic period, present a tripartite subdivision of the image, marked by necklace and belt, separating between head, bust and lower part (From Anati, 1968a).



Fig. 15. Rock engravings of images called 'masks', likely representations of spirits, with a skeletal shape. Karakol, Kirgystan. (From Anati, 1997).

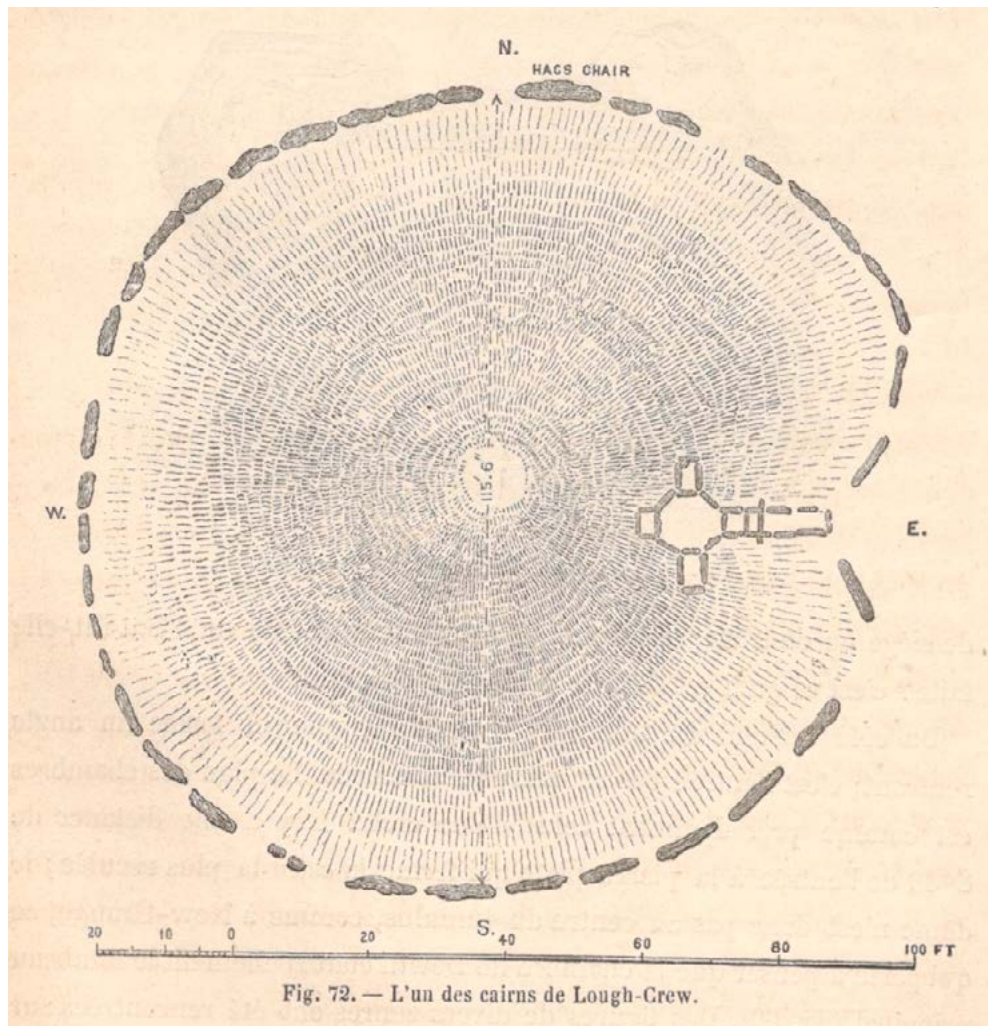
The Atlantic Coast Movement: the Soul Changes Look

After their oldest known appearance at Har Karkom in the Negev desert, anthropomorphic stones were present in Anatolia in the Goebekli Tepe culture already more than 11,000 years ago, along the Danube River, at Lepenski Vir, about 9,000 years ago, and on the shores of the Atlantic coast of Europe in Portugal, Spain and France, 8,000–7,000 years ago, expanding to Ireland and subsequently well beyond. In the late 5th and the 4th millennium BC in western Europe, they formed major areas of concentration, in the Italian Alps, the French Massif Central, Corsica and Sardinia, and in some regions of Iberia.

They appear to be expressions of beliefs in the afterlife and attempts at communicating with the souls of real or imaginary ancestors. From what we know of similar cults in recent times, the souls of the dead have posi-

tive and negative powers; they can be nasty or generous and prayers, acts of submission, and sacrifices can influence their attitudes and the destiny of the living. They were supposed to appreciate gifts and submission, as the living chiefs of their period.

Megalithic funerary monuments and standing menhirs are widespread in the Neolithic period along the shores of the Atlantic Ocean. In Ireland, France, Spain, and Portugal, their structure presents a peculiar detail. Immense monuments contain narrow spaces for the material remains of the dead but huge piles of stones. What logic justifies the discrepancy between the narrow passages reserved for the physical remains and the volumes of the mound that surrounds them? What function did these large masses of stones have? Inside the monuments, the slabs that delimit the mortuary passages are often ornate. The iconography is either vaguely anthropomorphic, or of compositions



Figs. 16a, b. A. Neolithic Burial Mound in Loughcrew, co. Meath, Ireland. The space reserved for the material remains of the deceased is minimal compared to the volume of the monument sealed by stone, inaccessible to the living, which is presumed to have been reserved for the souls of the deceased. Much more space for souls than for bodies. (From Fergusson, 1878). B. (next page) The mound and its entrance as it appeared in 1999 (Loughcrew co. Meath Ireland. Photo EA 99 LXI-32.tif).



Fig. 16c. One of the decorated slabs of the Loughcrew mound. Concentric circles, spirals and other ideograms cover this stone surface with a vaguely anthropomorphic shape. What is the meaning of these signs inside a tomb? (Loughcrew, co. Meath, Ireland, Photo EA 99 LXII-18.tif).



Fig. 17a. Megalithic tomb from Gavrinis, Brittany, France. Neolithic period. External view of the pile of stones and its entrance, as it appeared in 1991 (EA 91 Gavrinis Gulf of Morbihan XV-04).

Fig. 17b. One of the slabs engraved inside the Gavrinis mound, probable *churinga* of an ancestral spirit. (EA 91 Gavrinis Gulf of Morbihan XV-15).

of meanders, spirals and other motifs. (Pequart and Le Rouzic, 1927). Do the spirits reside inside the stone? The entire monument appears to be an envelope for souls. The space reserved for souls is far superior to that reserved for material remains. Why do untouchable and invisible entities need so much space?

These ancestral spirits take on particular abstract forms, expressions of the vitality that left the body of the deceased. Each soul has its own ideograms and psychograms, almost like the *churinga* represented by their signifiers.⁴

Explicitly phallic-shaped menhirs are present in areas of the Eurasian continent, likely expressions of fertility cults. In the south of Portugal, some monoliths are modeled in phallic form, with signs of ejaculation engraved or in relief. Various hypotheses about their



⁴ For the definition and function of *churinga* see Anati, 2011, pp. 47-58.

meaning, include a cult of virile energy, a cult similar to the Hindi one of *lingham*, vital energy transmitted by the gods, or an expression of masculine exaltation. Another hypothesis is that of a cult of male sperm as bearer of the soul, which is transmitted to the female body and generates the conception of new life. Whatever the case may be, it reflects a relation between what

the monument may represent and virile performance. The menhirs, decorated and not, may form large assemblages, in rows, clusters or circles. They were not necessarily all erected at the same time: each generation could have added the stones of their spirits in the sanctuary, as appears to be the case in Sardinia and Corsica, Evora in Portugal and Carnac in Brittany.



Fig. 18. Phallic menhir from the Algarve, on the south coast of Portugal, with probable schematic representation of ejaculation (From Gomes, 2007).

From the Neolithic to the Metal Ages

Male and female icons are represented with their attributes; the male ones are adorned with images of weapons and tools symbolizing power, virility, and skill, and the females are embellished with necklaces, bracelets, and other items that emphasize femininity and grace. These differences between male and female icons denote the social attitude of the time toward the functions attributed to the two genders.

In the Late Neolithic and early Metal Age, in the fourth and third millennia BC, anthropomorphic stones are engraved with attributes, indicators or ideograms, in the form of tools, weapons, jewelry, and other significant graphemes. This trend takes up the tradition of the attributes or indicators on the stone body, present, albeit in a different form, at Goebekli Tepe in the Proto-Neolithic, over 11,000 years ago. Ideograms and concepts, follow a multi-millenary system of symbolic abstractions, and take on particular

features in the Alpine area.

Other concentrations of menhir-statues, with different ideograms, are in the Pontic area (Talgren, 1934), Lunigiana and other areas of Liguria (Anati, 1981), the French Massif Central, in the departments of Aveyron and Tarn, and various areas of the Iberian Peninsula (Arnal, 1980; D'Anna, 1977), as well as in major islands of the Mediterranean. Each area of concentration of menhir-statues takes on its own features, both in figurative style and the presence of significant attributes. (Octobon, 1931; Talgren, 1934; Kirchner, 1955; Leroi-Gourhan, 1963; Anati 1968a, 1968b).

A peculiarity in the diffusion of the menhir-statues in the Mediterranean should be noted. The high concentrations of this kind of monument in Sardinia and Corsica contrasts with the limited presence in Cyprus, Crete, Sicily and Malta, marking the difference of two main areas of conceptual influence, one continental and the other South Mediterranean or Near-eastern.



Fig. 19. Group of menhir statues near Evora, Portugal, Portela de Mogos. (Photo EA 97 LVI-17).



Fig. 20. Neolithic alignment of menhirs from Goni, Cagliari, Sardinia, Italy, attributed to the culture of Ozieri (4th millennium BC). The dimensions of the monoliths vary as well as their elaboration. Some have natural shapes, others have been shaped. (Photo E. Anati, W05675).



Fig. 21. Menhir field at Renaggio, Corsica (Anati Archive).

Such different tendencies in two areas of the Mediterranean Sea persist in cult monuments and cult traditions in later periods.

Overall, there are several thousand menhirs and menhir-statues in Europe attributed to the Chalcolithic period and the beginning of the Bronze Age. It is a phenomenon of remarkable proportions that implies the spread of the ideology they represent.

As discussed in *The Origins of Religion* (Anati, 2023a), the cult of spirits is the earliest indicator of the origins of religion, evidenced by the burial practices and the grave goods and food since the Middle Paleolithic. It has been a widespread custom for over 100,000 years. With the diffusion of the menhir-statues, in the Neolithic period, the concepts acquire a structured model. Large concentrations of these monuments indicate a consistent and persistent participation of believers, marking a significant change: beliefs and practices

turned into an organized and defined religion.

This trend is affirmed over Europe, becoming a faith practiced by different populations in an area that constituted the universe for its people at that time. Each ethnic group had its own spirits, but the primary concept was common, as were the essential iconographic attributes and the related monuments (Anati, 2023b). The conceptual background is a vision of an after-life, and a search of interaction with invisible powers conceived by believers as having anthropomorphic features. The size of diffusion of these monuments, spirits in stone, represents a case of affirmation of a faith, a 'truth', which shaped the cultural identity of populations over vast regions, for ages. It produced similar kinds of monuments all over, from Central Asia to the Atlantic Shores of Europe, with different fashions by different ethnic groups. For its time, it was a universal structured religion, the earliest documented so far.



Fig. 22a. Baku, Azerbaijan. Menhir statue, Kurgan culture, Chalcolithic or Early Bronze, found near Baku and preserved in the old caravanserai, near the Tower of the Virgin (photo E. Anati; EA 2002 XVI-24).

Fig. 22b. Rosseironne (Gard), France, Castelnau de Valence Museum. Menhir statue attributed to the late Neolithic. The ideological movement of the statue-menhirs develops centers in the Alpine area and in the French Massif Central, but the presence of these monuments is widespread from the Iberian Peninsula to Central Asia. They represent an ideology that acquires local features in the various areas where it manifests itself. (Photo E. Anati 2000, DIA002093).



Figs. 23a, b. Two menhir-statues from Aveyron, French Massif Central, attributed to the late Neolithic. From Saint-Sernin-sur-Rance and Mac Capelier. Tripartite female steles in three sectors of the body: head, bust and below the belt, lower part of the entity. The bucranium-shaped ideogram, called "the objet", is repeated on several statues of the same area. Are the faces of human beings or of spirits? (Drawings by E. Anati, 1961, DIS000180; DIS00046).



Figs. 24a, b, c. Typology of the menhir-statues of Lunigiana, Liguria, Italy. 1. Pontevocchio, Chalcolithic period; 2. Minucciano, Bronze Age; 3. Fillet, Iron Age. (From Anati, 1981).

The Signifiers in the Alpine Area

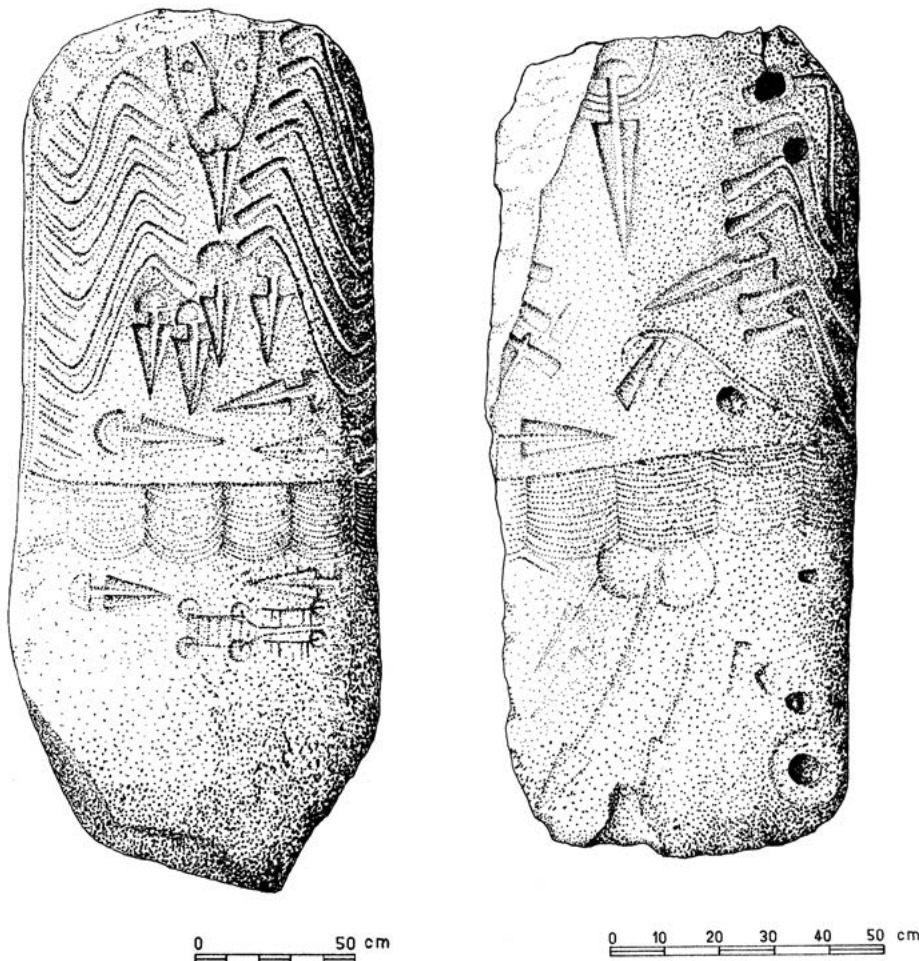
Among these concentrations of menhir-statues, a new iconography of attributes emerges between 3500 and 2000 BC on the body of these monuments in the Alpine area, Valcamonica, Valtellina, Alto Adige, Val d'Aosta, and the Swiss Valais. They are the so-called signifiers, whose typology denotes a singular conceptual evolution (Anati, 1961, 1972; Gallay, 1982; Mezzena, 1980). The iconographic variations from one valley to the other indicate the development of parishes or local gurus, as if small sects professed different tendencies, variations, and elaborations of the same cult of spirits.

In some cases, the general shape of the boulder or of the engraved rock neglects the anthropomorphic form and a new element appears, a rectangle, sometimes covered by parallel lines or a chessboard pattern. This 'mat' appears to be a stereotyped version of graphemes defined as topographic maps (Anati, 1961, 1968a, 2004, 2015b). The solar rayed disc, or just a simple

disc, represents the sky, which is round, while the territory is square or rectangular. The sky has no angles, the earth is framed by angles.

The resulting shape of the monument is no longer the anthropomorphic spirit, male with daggers and axes or female, with breast, necklace and other signifiers. The entity depicted incorporates attributes, weapons, and objects, but also human and animal figures. The very concept of the depicted entity changes, the stone is the container, and its anthropomorphic shape is no longer evident or necessary. The assemblage of signifiers is expressing a new vision of the spirit.

The context is that of the beginning of the age of Metals. Metalworking produced tools and weapons and caused a revolution that was not only industrial, also social and conceptual. The tribes, which became small nations, were the architects of the development of metallurgy and the core of a new society. The ideological ferment is manifested in the new iconographies of the menhir-statues.



Figs. 25a, b. Two menhir-statues from South Tyrol, Trentino, Italy, from Lagundo and Santa Verena. The stone body has anthropomorphizing decorations such as face, necklace and belt. The numerous axes in series appear as limbs, or multiple arms of the entity depicted. The Lagundo stele has the image of a wagon pulled by a pair of oxen, located in the lower part. The type of axes and daggers is that of the late Chalcolithic or the Early Bronze Age. The stele of Santa Verena has the later addition of an axe and a dagger from the Middle Bronze Age, an indication of reuse. (From Anati, 1990).

In the Alpine area these monuments sometimes have many arms, like certain Hindi deities. Axes or other hand-weapons represent limbs. Other visual elements express concepts similar to the Vedic mythology, albeit much older here than the related texts (Anati, 1986, 1990). The wagon pulled by oxen is, as in the Vedic mythology, an object of authority and reverence; the belt, often made of wavy parallel lines, likely referring to the river or water, is a mark of abundance and purification; the spectacle-spiral pendant is the icon of fertility and procreation, daggers and axes represent

strength and power; the solar disc, master of the sky, is a revered source of light and heat; and the animals and humans guarantee the symbiosis between the supernatural powers, man, and the animal kingdom. These analogies with Vedic concepts, centuries earlier and 5,000 km away from India, pose the problem of their origins and a clarification of whether they indicate relationship or coincidence, between two spiritual conceptions that have remarkable similarities (Anati, 2004). This trend is not diffused all over, it is specific to a defined Alpine area. It appears to represent a new conceptual pattern, a new vision of the invisible.

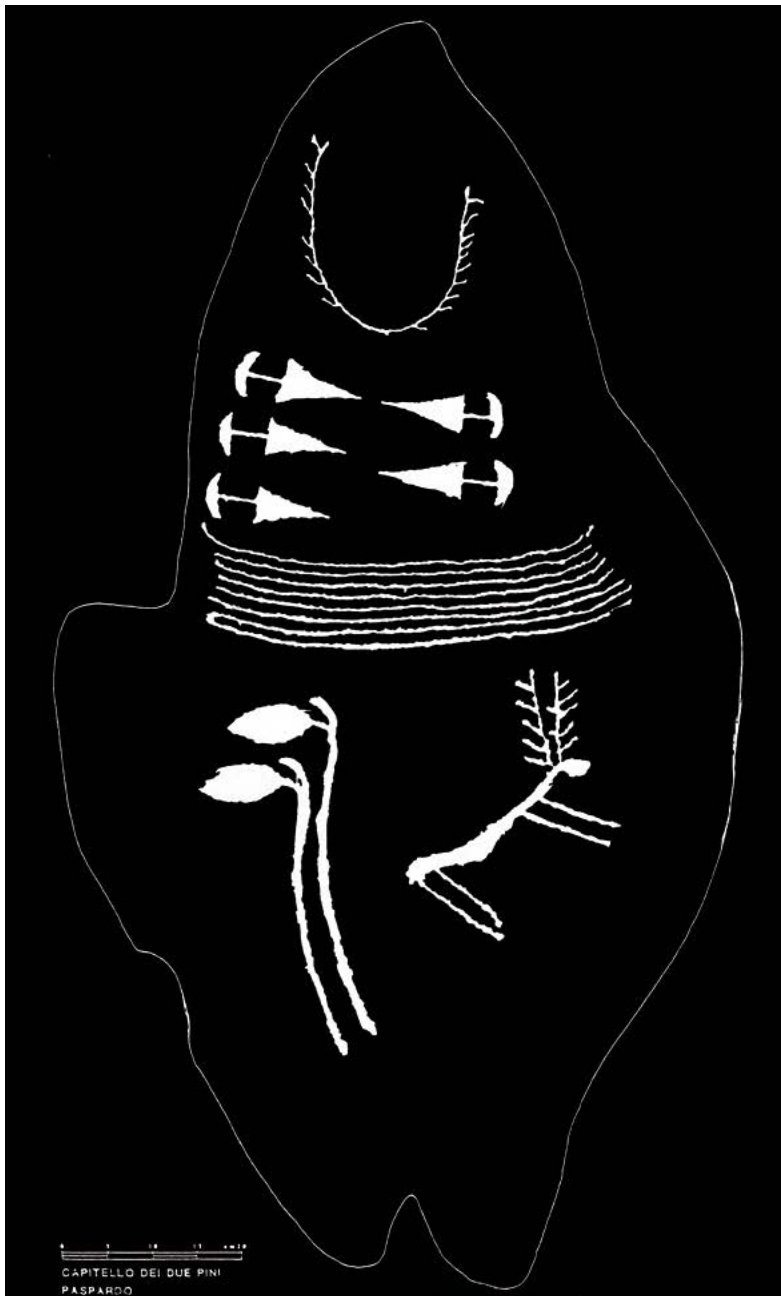


Fig. 26. Monumental composition on a rock surface in Paspardo, Valcamonica, called "Capitello dei due pini". A vaguely anthropomorphic form of the vertical wall has this composition in which deer antlers (identified as a solar disc?) represent the face, the belt (8 parallel lines) defines the body, daggers seem to indicate multiple arms, two halberds or spikes replace the legs and a deer figure completes the composition. The use of weapons or tools as metaphorical limbs indicates the power of the icon. (From Anati, 1990).

The Tripartite Concept

Some menhir-statues, all over Europe, are anthropomorphic figures which have a necklace between the head and the torso and a belt between it and the lower part of the body. Since the Neolithic, necklace and belt mark a division into three registers: head, torso, and lower part.

The upper part of the monument may have an anthropomorphic face or a solar disc, or a central disc with lateral discs. The solar disc and the lateral discs or stars are assumed to represent the sky. The central register is the bust, between the necklace, separating sky from earth, and the belt (river?) separating the earth from the underworld. In it, tools and weapons, spectacle-spirals and pectorals are significant attributes. The lower register, below the belt, is the least decorated. It has the figure of a wagon or a plough, or serpentine markings, or the pubic triangle. Part of this register was meant to be under the surface of the ground.

The three registers appear to reflect a conceptual system composed of three horizons that form the unity: the head or sun, is the sky; the bust is the earthly activities; the lower register is the world of the underground. Three basic elements of the world, geometry are united in the cosmic body: sky round, earth rectangular, underworld triangular, a geometric view of the universe

The trinity of the logos forms the cosmic body with allegoric anthropomorphic features encompassing the three components of the universe, a mirror of the three sectors of society in the guise of a conceptual body. The head-sun represents the sky, light giver; the bust, the active world, the economy, daily life; the lower part, the work of the plough. It is the same concept as the Vedic social structure, with the tripartite society of three levels or castes, the Brahmins, holders of wisdom, the intellect and light of society, the merchants and soldiers, comprising the heart of society, and the pariahs and workers of the earth, the lower part of the social body.

The giant Purusha of Vedic mythology, the tripartite cosmic entity that unites heaven, earth, and the underworld in a single body, seems to have here an ancestor or precursor (Piantelli, 1983). The tripartite body of the menhir-statues predates it by at least two millennia. The presence of various aspects of Vedic ideology in Europe, earlier than in Asia, raises the question:

are they consequent or only convergent concepts? The question touches on a fundamental dilemma about the origins of Indo-European conceptions (Anati, 1990).

Birth of the Concept Of Divinity

The iconography of the signifiers in the menhir-statues of Valcamonica involves other relevant questions. The images depicted on the body of the stelae multiply both in number and content. They illustrate the breeding of livestock with images of cattle, goats, and pigs, hunting with images of deer, ibex, and other wildlife, agriculture with the image of the plough pulled by oxen, metalworking, crafts, and trade with tools and weapons, such as axes and daggers, (some of which display shapes of exotic origins). The anthropomorphic stones have the attributes and activities of human society, that is, hunting, herding and agriculture, craftsmanship, and trade. They embody the resources and the economy of society. The menhir-statues of this particular type in Valcamonica pose a fundamental question: are they representations of various spirits or different versions of the same entity?

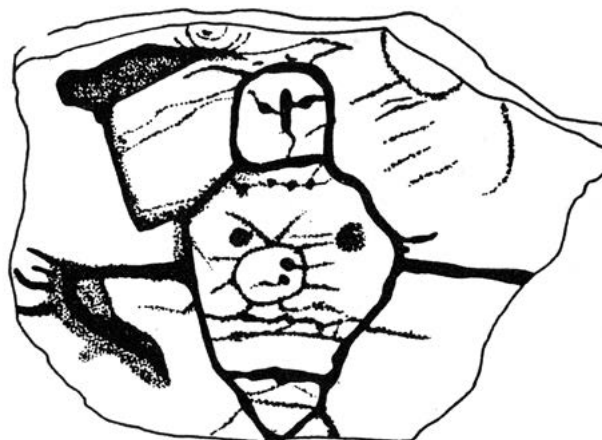
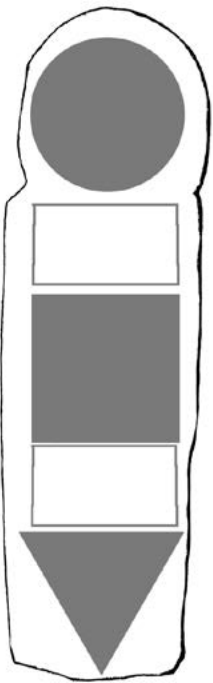
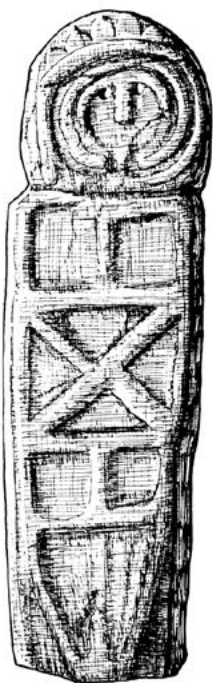
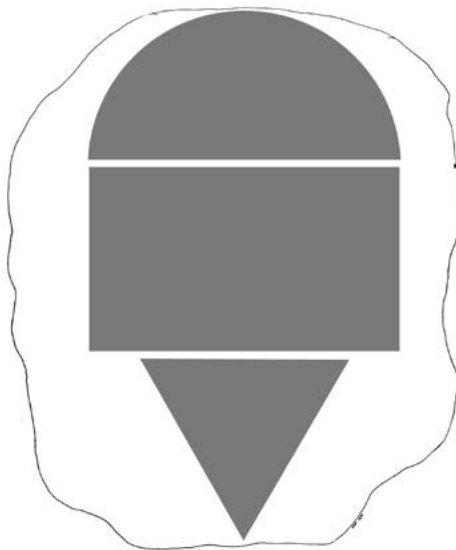
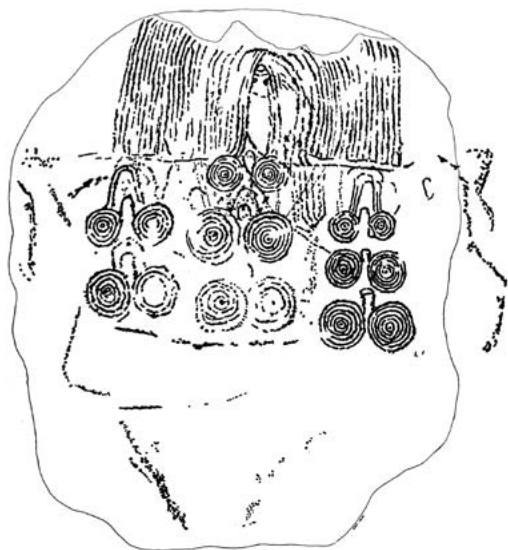
The lithic body becomes a container of images that materialize attributes or faculties: 'powerful, generous, giver of game and so on'. It is no longer the determined ancestor but a spirit encompassing, giving or receiving, the various aspects of life.

These changes in the iconography indicate a conceptual transition from an ancestral spirit, father of the family or tribe, to a generating spirit, master of the sky and earth. It is no longer the spirit of a specific ancestor.

The worship of real or imaginary ancestors had crossed ethnic and linguistic barriers in a world of small nations and tribal entities. Some basic concepts appear to evolve differently in the various regions.

In the Alpine area the iconography of the solar disc accompanied by the so-called mat, round sky and angular earth, is no-more that of the previous ancestors. It is that of a cosmic entity that includes within itself the entire world, the sun as head and the river as belt, with humans and animals, endowed with attributes of fertility and power.

The cosmic vision of what governs the world which emerges from these monuments seems to mark a new conceptual reality at a time when the very conditions of



Figs. 27a, b, c, d. Examples of tripartite bodies of stone spirits attributed to the Chalcolithic or the Early Bronze Age: a-Ossimo1, Valcamonica, Italy; b- Troitosenda, Spain; c-Channel of Rivoli, Veneto, Italy; d- Miandassa, Pinerolo, Piedmont, Italy (From Anati, 2015b).

society were changing, with the introduction of metallurgy, a new dimension of trade, and the affirmation of the socio-political formula of tribe-state. Tribal chiefs became kings. And the worshiped spirits evolved adequately, adapting to the social changes. Could the concept of a divinity, king of the universe, have preceded that of the Olympus of multiple divinities?

A Universal Religion in Prehistory?

In the Chalcolithic and the Early Bronze Age the development of new social models may be deduced from the decorations of the menhir-statues and the rock art. The images are planned and organized, associating groups of figures and locating them in appropriate spaces like the top, center, and lower spaces of the assemblage. When compared with previous phases of rock art, the new order of iconography appears to be the mirror of a new order in human minds and probably also in the structure of society. The conceptual variants of the spirits and their accompanying identifying graphemes imply an imaginative society, which conceives the realm of the supernatural in its own semblance and image.

A new emphasis is given to the depictions of weapons, tools, and body decorations which may act as status definitions. They are images of metal objects, and at the time metal became the spring of wealth and power. The role of metal as a source of means and authority at the beginning of the metal ages may have analogies with a more recent phenomenon, the exploitation of petrol that transformed pastoral nomads into wealthy sedentary people and tribes into emirates. It can give us an idea of the impact that the exploitation of metal may have had.

The images of the tripartite body and those that losing the anthropomorphic shape acquire that of the entity englobing heaven and earth, illustrate conceptual visions of the worshipped entity. Side by side, other variants indicate the formation of regional and local trends in various Eurasian regions. In several areas, the more or less anthropomorphic menhir-statues of ancestral spirits persist with local characteristics in Lunigiana, the French Massif Central, parts of the Iberian Peninsula, in islands of the Mediterranean, the Pontic area and southern Ukraine, and various river valleys of Central Asia.

The common denominators are the basic figurative

concept implying a common spiritual ideological background, highlighted mainly by the anthropomorphism of the monuments and the recurrence of signifying elements. The phenomenon manifests itself as a conceptual movement with various local tendencies, which reaches an apex of diffusion and popularity in Europe in the late fourth and third millennium BC, overcoming ethnic, linguistic, and cultural borders.

The analysis of the graphic elements of the menhir-statues indicates the presence of a faith, with proto-Indo-European characteristics or similarities, and provides a vision of the roots of its ideology still in a formative phase. For centuries Val d'Aosta, Valcamonica, Valtellina, Swiss Valais, and Alto Adige were territories of small nations that had similar monuments and similar ideologies. Although each with its own variants of iconography, in their basic cult of ancestral spirits they were not much dissimilar from those of the Iberian Peninsula or the Crimea and the other coasts of the Black Sea.

It is the formative age of Europe. There was a common vision of ancestral spirits marking a landmark for the history of religion and for the history of Europe. In this social setting of small territorial identities, can we figure out some sort of unifying cult, bearer of a liturgy and possibly also a ritual *lingua franca*, 5,000–6,000 years ago?

A Conceptual Movement from Birth to Expansion to Recession

Menhirs and menhir-statues, are monuments that have marked conceptual trends since the earliest known manifestation of erecting monoliths, in the Near East, over 40,000 years ago. After millennia, the trend is evidenced by the anthropomorphic columns of Göbekli Tepe. We do not know how many of the undated standing stones can go back to these millennia. From the ninth millennium BC, the menhir-statues are associated with archeological contexts datable in various areas of the Eurasian continent.

Overcoming the limits of purely descriptive vision, the monuments appear to be the effect of a faith centered on the concept of the survival of souls in their stone body.

Thousands of menhir-statues spread over large areas of the Eurasian continent show the success and expansion of this conceptual movement. The beliefs, myths,

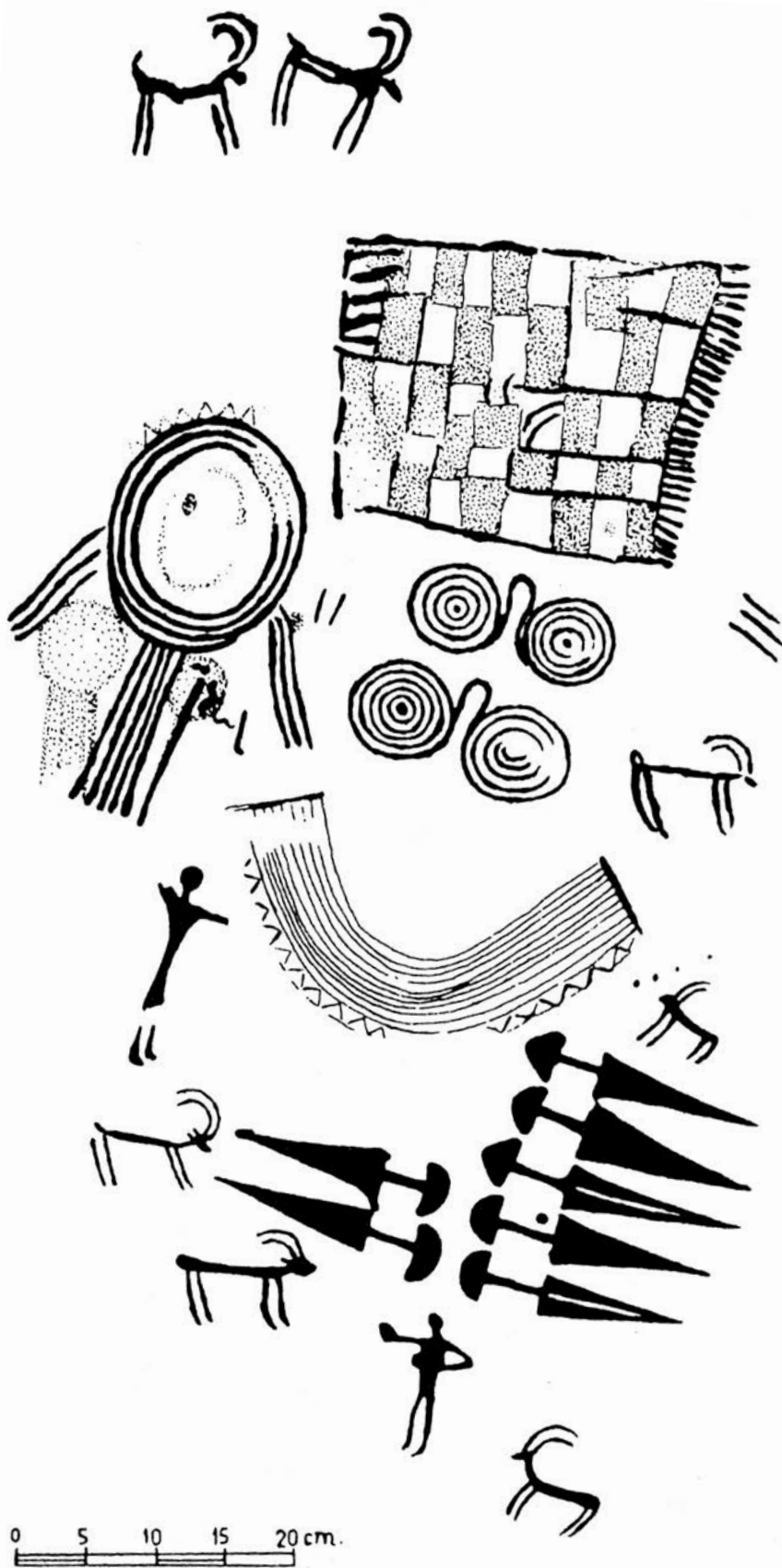


Fig. 28. Tracing of the main Borno menhir-statue (boulder 1). To the images of daggers, spectacle-spiral pendants, collar and solar disk is now associated the so-called "mat", symbol of the territory. The composition includes human and animal figures (From Anati, 2015).



Fig. 29. Rock engraving from Luine, Valcamonica, Italy, The anthropomorphic image is made up of weapons and tools that act as limbs and attributes. The eyes and nose are made up of axes. The warrior spirit is accompanied by shield, sword and spear whose typologies define it from the late Bronze Age. (From Anati, 2018).

and cults of souls who free themselves from the body of real or imaginary ancestors form the first universal religion of which substantial traces are known. A successful ideological process emerges, relevant to the history of religions, the history of art, and also to the significance it holds as a model of social trends of collective indoctrination.

A relevant repetitive aspect is that of the accompanying signifiers. In the Paleolithic sanctuary of Har Karkom, the anthropomorphic monoliths are accompanied by small anthropomorphic and zoomorphic objects at the Paleolithic footpath level, together with other lithic artefacts. The monoliths had a function and the collection of these small iconic objects at their

feet is unlikely not to have been intentional.

The anthropomorphic columns of the Goibleki Tepe temples were covered with reliefs of anthropomorphic and zoomorphic figures, unlikely also of not having been intentional. The stone bodies that represent the invisible are decorated with attributes or signifiers.

A few millennia later in the megalithic tombs of Brittany, alongside meanders, spirals, concentric circles, and other ideograms, there are images of axes, probable metaphors of strength and might. Then, in the subsequent menhir-statues in the Alpine area, these signifiers, the figures of symbolic objects, multiply and manifest themselves in their allegoric iconography in the Chalcolithic period and at the beginning of the

Bronze Age.

Since the earliest manifestations, for 40,000 years, many of these stone spirits have been associated with objects or icons. They are significant elements, memorizers which, while changing from period to period and from region to region, trace a common thread. Monuments, from the Middle East to the shores of the Atlantic, to Siberia, had their accompanying attributes, icons or objects, which fulfilled the conceptual functions of various tendencies of a common doctrine.

In the Alpine area, the ancestral spirit is transformed, the spirit of heaven and earth is born as a super-spirit. Can we postulate that the cult of ancestral spirits gives birth to the concept of divinity? If this is the case, it takes place around 3000 BC, well before the time attributed to the Sinai Mosaic event or to the pantheon of the Olympus.

The iconography of the menhir-statues and monumental compositions of Valcamonica seem to mark the embryo of a conceptual turning point bound to dominate Europe and the entire globe. Why and how did it emerge just there, in a narrow mountain valley? Another relevant aspect consists of the anthropomorphic images with a series of axes or daggers having the function of arms. Similar types of icons of spirits or divinities is present two millennia later in the Vedic Indian divinities (Anati, 1961).

The widespread presence of menhir-statues in different cultural areas and the limited variety of their typology are witness to the development of local characters of their conceptual contents. The universal religion based on the cult of ancestral spirits evolved into ethnic or regional sects.

While the movement of the menhir-statues shows a stagnation in the later phases of the Bronze Age, some revival hearths occur in the Iron Age, as in Lunigiana, in the south of Italy, Portugal, Andalusia and other parts of the Iberian Peninsula, the north of the British Isles, and also central Asia, Mongolia and China. There is both a revival in certain regions where the presence of menhir-statues already had a millenary tradition, and an expansion to the peripheries.

Conclusions

The story of the menhir-statues is that of an idea with a millenary evolution. Its core is a search for commu-

nication with the after-world. In the Near East the anthropomorphic proto-statuary is present with a flint industry of an early phase of the Upper Paleolithic.

Anthropomorphic and pseudo-anthropomorphic statues modeled by human hand are documented 11,500 years ago in Anatolia. In Europe, the menhir-statues are a cultural factor attested from 9,000 years ago, a major cultural feature from the Neolithic to the Early Bronze Age, with subsequent persistence. In some corners of Eurasia, menhir-statues are still object of worship and veneration.

Stone monuments survive longer than the ideas that generate them. It is a recurring phenomenon, not just for the menhir-statues. The same can be said of the Greek temples of classical times or those of the Aztec ceremonial compounds. The material remains are rarely complete but, almost always, are better preserved than the ideas that caused their production. The recovery of the causes from the effects is the challenge of the new archeology.

The cult of menhirs, menhir-statues and related monuments expressed a double reality: affirming the survival of the soul beyond the body thus denying that death marks the end of existence; and creating the presence of ancestors, real or imaginary, which offered an ever-present past, with values that united generations with tradition and beliefs supported by related monuments.

The evolution of the iconography reveals the metamorphosis of ancestral spirits that take on different appearances in time and space, giving rise to a diversity of tangible expressions. As it looks at present, the transition from the ancestral spirit to a divine entity took place when tribal entities grew, becoming small nations, and tribal chiefs became kings. Tribal chiefs became lords, both, on earth and in the sky. The territorial ambitions of human chieftains gave birth to the concept of a lord of heaven and earth, a daring ambition for both kings and divinities.

The cult of the dead, the belief of souls surviving the body, is documented by tomb goods in the Paleolithic, even before the presence of *Homo sapiens* (Anati, 2020d). The proliferation of menhirs and menhir-statues, testimony of a broadly diffused conceptual iconography, acquires its dimension in the Neolithic, expression of a faith shared by different ethnic groups over vast areas.



Fig. 30. Ithyphallic anthropomorphic characters in a praying position are in front of a totem pole or menhir equipped with a sword. Probably describing a ceremony connected to manhood. Vitlycke rock carving, Bohuslän, Sweden, Late Bronze Age. (From Anati, 2007a. Base of the tracing about 80 cm.).

The repeated patterns and the large assemblages of these monuments, hint at the binding means of a structured religion. Considering the imposing size of Carnac and other major sanctuaries, in addition to the monuments and the concepts they imply the presence of a priestly class, a liturgy, and perhaps also a common liturgical language.

The cult diversified into sects or local varieties. Then a decline followed, maintaining an active persistence mainly in peripheral areas. Meanwhile new religious concepts were born in the Late Bronze and Iron Age, which gave rise to the deities specializing in various activities of a society of specialists that had farmers, artisans, blacksmiths, merchants, warriors, and leaders. The cult of the spirits was a remarkable spiritual adventure, a significant chapter in the history of religions, whose conceptual traces are still present in contemporary cultures and whose monuments remain a source of history, art, and culture, and the pride of sites and museums. The collective trend they represent and the mental processes behind it are an enlightening case of conceptual phenomenology and a relevant chapter in the history of art, religion and culture.

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ANTHROPOMORPHIC IMAGERY (STATUES AND FIGURINES) OF THE MALTESE PREHISTORIC TEMPLE PERIOD: A BRIEF REASSESSMENT

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Introduction

The Maltese islands' archeological heritage is endowed with an outstanding prehistoric culture. We can even call it a civilization, as it is understood in both French and Italian terminology, that has left its mark not only in a series of spectacular megalithic buildings the purpose of which is generally thought to be a religious one, and a unique subterranean cemetery with hollowed-out architectural features and emulating in the negative the same megalithic buildings, but also in a conspicuous repertoire of figurative plastic art.

Chronological parameters

This essay is only concerned with the Late Neolithic period of Maltese prehistory (3700-2300 BCE),¹ the so-called temple period, named after its exclusive characterizing architectural monuments. It was preceded by the Early Neolithic period (5800-4800 BCE) which in its second phase saw the rise of a modest religious shrine containing a small number of clay anthropomorphic female figurines with overt sexual attributes, but with no hint of continuity in the following period, as can now be confirmed by the identified hiatus of almost a millennium separating the two cultures. The temple period was succeeded by the Bronze Age with its radically different figurative repertoire marking a clear break from the previous cultural expressions.

Overview of sculptural repertoire

The corpus of sculptural art of the temple period includes also an impressive range of spiral motifs carved in low relief, each one different from the other, which must have had a symbolic meaning presumably immediately comprehensible both to its creators and to

their intended recipients, the people who frequented these buildings, but are difficult, if not impossible, to decipher by our contemporary cognitive powers. Most of the free-standing artistic expressions, on the other hand, are figurative and their message is therefore rather more direct and easier to interpret, at least at face value. A few of them depict domestic animals, and even fewer show avian creatures; but the outstanding majority represent human (anthropomorphic, to be more precise) beings.² The most conspicuous and enigmatic of them is a large group of statues and statuettes carved in stone, as well as figurines moulded in clay, representing a somewhat schematic corpulent human body, curvy but generally without evident sexual or gender attributes (with a couple of exceptions that will be discussed at a later stage). It is on and around these that the archeological and art historical debate has mostly focussed. But the sculptural repertoire includes also a very limited number of more naturalistic nude figurines (like the so-called Venus of Malta, a miniature nude clay squatting figurine, and two crude clay figurines with apparently pathological features). On the opposite end of the naturalistic spectrum is a group of six anthropomorphic figures carved in stone with plain, limbless and featureless bodies and, in contrast, very naturalistic human heads (found together with three smaller hybrid figurines) which deserve to be discussed separately). To these one should add a consistent group of human heads and faces, some of which could have fitted with their respective bodies that have not survived. Finally, a small group of phallic symbols, freestanding or in relief inside a niche, constitute the only sculptural expressions of overt male sexuality.

1 The dates adopted in this essay are those suggested by the recent publications of the joint and interdisciplinary research project FRAGSUS (Malone *et al.* 2020; Stoddart *et al.* 2022).

2 The most complete and stupendously illustrated publication of this repertoire is Vella Gregory & Cilia 2005. It includes also the rich collection of figurative material from the 1987-1994 excavations of the Xaghra Circle, Gozo, hypogeum (Malone *et al.* 2009, 219-313).



Fig. 1. The first seven statuettes in the typical soft local stone, discovered during the clearance operation of 1939 on the left side of the first courtyard beyond the main entrance of the main megalithic building at Haġar Qim.



Fig. 2. One of two alabaster figurines of diminutive size “found in soil filling one of the rooms in the hypogeum [of Hal Saflieni] in 1907”.

In terms of methodology, I believe that the reading and resulting interpretation of all the above figures depends on six main factors, not necessarily in the following order: a) the material used (stone, clay or, to a very limited extent, animal bone); b) the size (ranging from miniature to larger than life-size); c) the figurative component, that is, how the figure is represented (whether standing/sitting/squatting/lying, sexual or gender attributes, if any, presence or absence of head, other body parts, and of facial hair); d) the style of the representation (naturalistic, stylized, or schematic); e) the intentionality, or otherwise, of the style; f) the archaeological context, ranging from the macro (the type of building) to the micro (the precise recorded findspot) of the object.³ For the last factor it is imperative to avoid as much as possible circular arguments, such as using the class of objects to designate the type

3 The importance of the contextual consideration for ritual evidence, including figurative objects, has already been highlighted by the present writer (Bonanno 1995).

of building, and vice versa. The more of these factors are taken into objective consideration, the closer one can get to a reliable interpretation.

The enigmatic corpulent figures

It is this first group that immediately comes to mind as soon as one embarks on an assessment of the figurative production of the Maltese temple culture. The main reason is because they were the first to emerge out of the ground in 1839, but also because they retain their exclusive characteristics even in most of the ones discovered since then. Seven of them were the first to come to light during the earliest clearance operation of the Ħaġar Qim temple complex in 1839,⁴ at a time when the Maltese megalithic buildings were being attributed to the Phoenicians (Vella 2007).

So much so that the statuettes were dubbed as the “*septem kabiri*” in an album of photographs compiled by the local Society of Archaeology, History and Natural Science in 1868, now housed in the National Library of Malta, even though J.G. Vance, the author of a report of the clearance operation, had identified them as “imaginary deities or mythological heroes” (Vance 1839: 231-32). Since then, these statuettes and others of the same typology found mainly in the Hal Saflieni hypogeum and the Xagħra Circle hypogeum, as well as in the Tarxien temple complex, have been variously labelled, ranging from the demeaning “fat ladies” in popular tourist literature, to the sublime “Mother Goddesses” (James 1959; Neumann 1961; Gimbutas 1982, 1989), even though they bear neither sexual indicators nor secure gender attributes. But let us assess this group against some of the criteria set out above.

Criterion A: material. The figures are mostly carved in the softer globigerina limestone, then (as now) abundantly available in the eastern part of Malta and in smaller pockets all over Gozo. While the material was easy and costless to procure, time and energy, as well as artistic talent, were invested in their production. A miscalculated error in carving the limestone

4 The Ġgantija complex had been cleared in the early 1820s but had not yielded any statues. Only two stone heads that presumably formed part of similar statues are said to have been discovered by General de la Marmora in the meantime (De la Marmora 1836).



Fig. 3. A diminutive headless figurine in terracotta found in an unspecified location inside the hypogeum of Hal Saflieni. It has similar iconographic characteristics as the statuettes in Fig. 1.

meant that the product was disposed of and the whole operation would need to be started afresh. Only two examples in harder alabaster are known, and both come from the Hal Saflieni hypogeum, documented to have been “found in soil filling one of the rooms in the hypogeum [of Hal Saflieni] in 1907” (Zammit and Singer 1924, 88-89, nos. 19-20).

Apart from the time invested in carving such figures in a harder material, these two miniature figurines carry a potential further significance of social status, given the imported exotic mineral. One other miniature-sized figurine of the same type and from the same source is moulded in clay, probably unfired clay, given the pervasive cracks.

Apart from being much smaller (4 cm in height), the cheaper material suggests possible multiple production using moulds.⁵ It is tempting to classify with this group a score of slightly bigger clay figurines predominantly from a specific area in the Xagħra Circle hy-

5 Even though no signs of the use of moulds for the production of this and other contemporary clay figurines have ever been noted.

pogeum but their iconography, with an exaggerated contrast between the overinflated lower torso and the small and flat upper torso, and with their attention focussed on the front view in contrast to their flat backside, as well as their archeological context, makes them belong to a different category, and subject to a different interpretation altogether.

Criterion B: size. The size of this anthropomorphic statuary group is the only one that ranges from the miniature to the colossal. The smallest examples are the ones listed in the previous paragraph, in alabaster or unbaked clay. The largest is the colossal statue found standing on the right side immediately beyond the entrance of the westernmost temple unit in the Tarxien temple complex. The most common size is around 30–40 cm in height. Being in stone, these statuettes are the most challenging for identifying their meaning and function. They are big enough and heavy enough to suggest a stationary, but at the same time eye-catching, position; surely not intended to be moved about whimsically, at the drop of a hat. As such, it is this very group that deserves the greatest attention because it is the most numerous, the most eye-catching and the most enigmatic.

Criterion F: find context. The seven medium-sized corpulent statuettes discovered in 1839 at Hagar Qim were found partly on the left side of the first open space beyond the main entrance of the main building, a place where they would have caught the eye of anyone entering here. Whatever the purpose of this space was, they stood out prominently for the attention of the visitor and we need to keep this in mind in our assessment of this group, especially since their prominent, high visibility status corresponds to one very important criterion listed by Renfrew and Whitehouse for establishing a religious role for their context (Renfrew 1985, 390-91; Whitehouse 1996).⁶ An unspeci-

6 Several other fragmented statuettes of the standard size (as well as in smaller dimensions) were found at Tarxien, one outside the building, but they contribute little to their contextual value. The same applies to the statue in high relief against a tall flat stone slab found in a later archeological context at the Tas-Silg sanctuary. Similarly, the carving of two such figures in relief on a stone block now visible on the back side of the main building of Hagar Qim is deprived of its original context since the block ap-

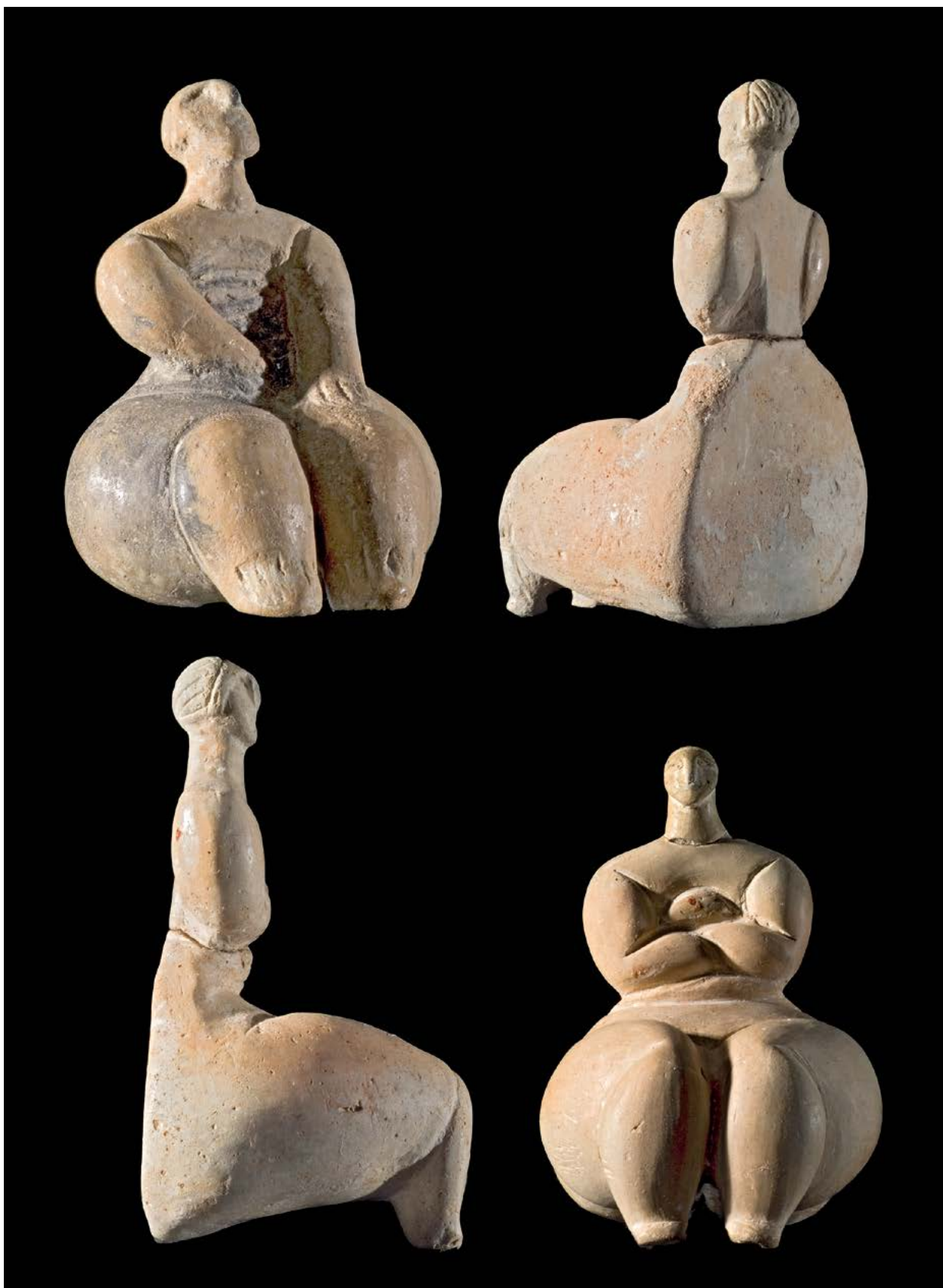


Fig. 4. One of a score of small terracotta figurines with extremely inflated lower torsos, from near the central hall of the Xaghra Circle hypogeum in Gozo.

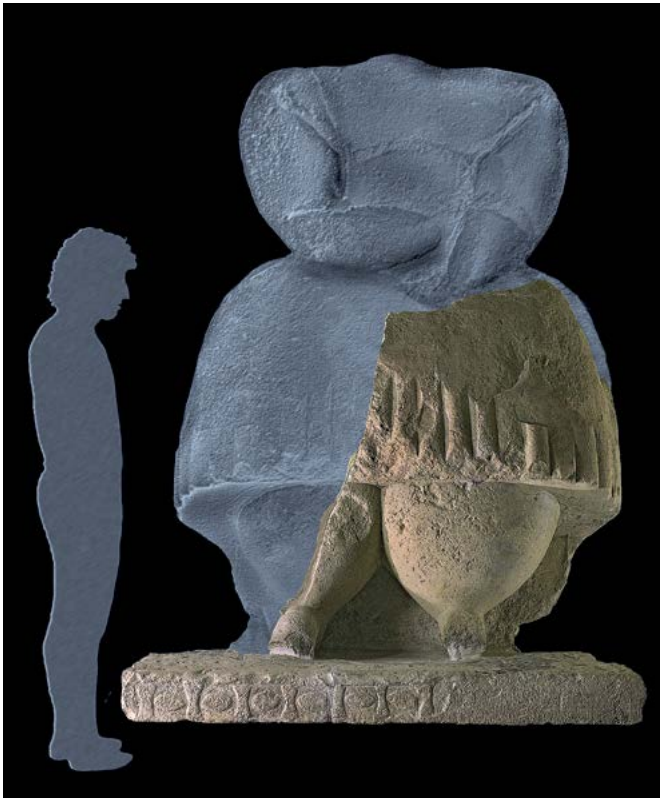


Fig. 5. The surviving lower torso of a draped colossal stone statue found *in situ* on the right hand of the first courtyard beyond the main entrance of the westernmost temple unit of the Tarxien megalithic complex.

fied number of the same group were found within the secluded left room beyond the same open space; so they could have had a different purpose, even if only a slightly different one, such as for temporary storage intended to periodically replace the outside ones.

The same spatial position, facing the open courtyard, was occupied by the already mentioned colossal statue at Tarxien, this time on the right side beyond the main entrance.

This same space at Tarxien was much more striking than in any other temple complex, decorated, as it was, all around with low benches with their visible vertical faces carved with a rich variety of spiral designs in low relief. The colossal statue, originally more than 2 m in height, and weighing around a ton, was certainly intended to remain fixed in its place, dominating the most richly decorated area of any of these temples. This same space gains an added ritual signifi-

pears to have been relocated at some point in time to its present unrelated location.

cance from the presence of two sacrificial stone blocks flanking the entrance to the next set of rooms. One of them, the one on the right, was hollowed out and found to contain plenty of bones of domestic animals and chert blades, thus confirming the practice of this sacrificial ritual within the confines of these structures.⁷ If there is one statue whose large size qualifies it as a representation of a deity, whether male, female or androgenous, this is certainly it. The presence of the just mentioned sacrificial altars in its immediate context adds credibility to the hypothesis.

Back to Haġar Qim, we know that five more statuettes, of slightly larger size than the previous seven, had been buried (or stored) under the threshold of a reduced temple unit consisting of two apses flanking a spacious corridor enclosed within the same main megalithic complex. They came to light accidentally during a conservation exercise in 1949 (Evans 1971, 85, 91-92). Whereas two of the group are squatting and share the same rounded volumes as the other statuettes from Haġar Qim,⁸ two others are shown standing and are characterized by a different style of carving: they are extended and flattened horizontally.

These two differences introduce two further criteria listed above: the figurative element (Criterion C, standing or squatting) and the style of carving (Criterion D).

The standing posture, as opposed to the squatting or seated one, must have sent a significant message to the viewer, one that needs to be investigated. Did the first one impart a sense of greater authority, and the second a more relaxed one? A different message must have been expressed by the position of the hands which are generally depicted, one on the corresponding thigh, and one on the stomach. The latter position is often recalled as a pointer to the womb and, therefore, fecundity through potential pregnancy.

As for the style, we need not underestimate the role of the personality of the sculptor or sculptors concerned, a matter I have tried to discuss in an essay published in 1996 (Bonanno 1996). In various cultures, includ-

⁷ This sacrificial role is further suggested by the presence of two friezes, showing processions of quadrupeds in low relief, found in the left apse beyond the same courtyard.

⁸ A third one is too fragmented, but seems to belong to the same format as these two statuettes.



Fig. 6. The surviving lower section of a large upright megalith originally carrying two corpulent figures carved in high relief. The megalith was reutilized as part of the inner wall of an elliptical room forming part of the main megalithic building at Haġar Qim.

ing ancient ones, like the Greek and Roman, the artist played a very different role. In the first one, he was a master, known by name for his famous works which were produced for a price; in the second one he was a servant, anonymously at the service of wealthy patrons or of the state. Admittedly, the role of the prehistoric creator of figurative art is more difficult to make out in a prehistoric context for lack of textual evidence; but we should not underestimate the impression he could have exercised on the other members of his community, resulting from his uncommon ability to reify his own conceptions or the collective ones, the spirit of the time and place, irrespective of the level of cultural sophistication of the community.

The odd archaeological context of the second group of Haġar Qim sculptures, concealed behind stone steps leading up to a threshold of a temple unit, begs the question of what need there was to bury and hide these statues. Does it reflect hoarding in view of some imminent danger? Or was it simply a matter of respectful disposal of sacred imagery which had become overabundant in terms of bulk and numbers to be manageable, be they images of prominent ancestors or mythological heroes, or 'holy' personalities? The answer is likely to remain suspended until a similar find is made and recorded elsewhere.

The figurative criterion is also a crucial one and we have already, but hardly, scratched the surface for two



Fig. 7. The second set of five largish stone statues to be discovered at Haġar Qim, this time under the threshold of another elliptical room forming part of the main megalithic building.



Fig. 8. The small terracotta figurine representing a semi-draped female asleep on her right side on an elaborately structured couch. Found in a rock-cut pit inside the painted room in the middle level of the Hal Saflieni hypogeum.



Fig. 9. Front and back views of a statuette representing two semi-draped figures seated on a very elaborately structured couch. From inside the main central hall of the Xaghra Circle hypogeum in Gozo.

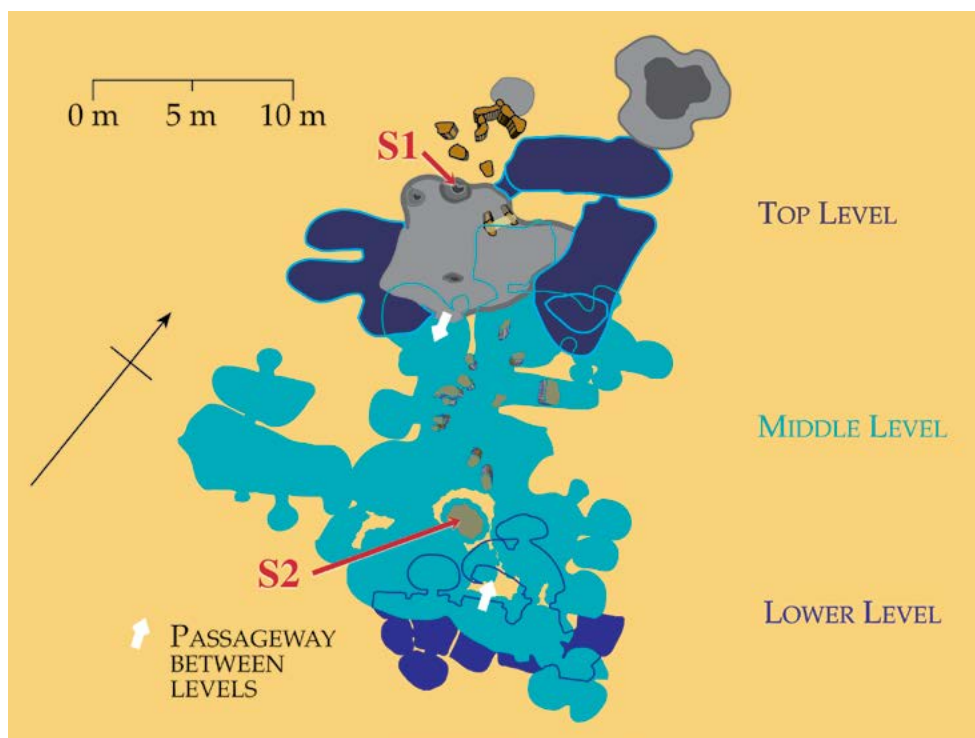
examples: the posture and the position of the hands. The most controversial aspect, however, is the gender of these adipose figures: were they intended to be binary (male or female), or ambivalent, or neutral? The prevailing view among scholars and outreach writers in the past, surviving even in the present, is to see in them images of a mother goddess or several mother goddesses. The major obstacle for accepting this view is the total absence of female sexual attributes. All these obese figures, of whatever size, lack any reference to female genitals and breasts. The sole exception remains the “Sleeping lady” from the Ħal Saflieni hypogeum who shows the same volumetric bodily proportions and wears the characteristic skirt that covers her lower torso, but has manifestly female breasts.

The only other anatomical feature that, according to some, links this class of figures closely to the female gender is the type of adiposity which seems to be more typical among women than men. There are no other external gender attributes like clothing, hairstyle or facial hair. Even child-bearing, so frequently represented in contemporary prehistoric cultures all around the Mediterranean, is missing, with one exception, the dual statuette from within the collective cemetery inside the Xagħra Circle hypogeum in Gozo, which merits a separate discussion.

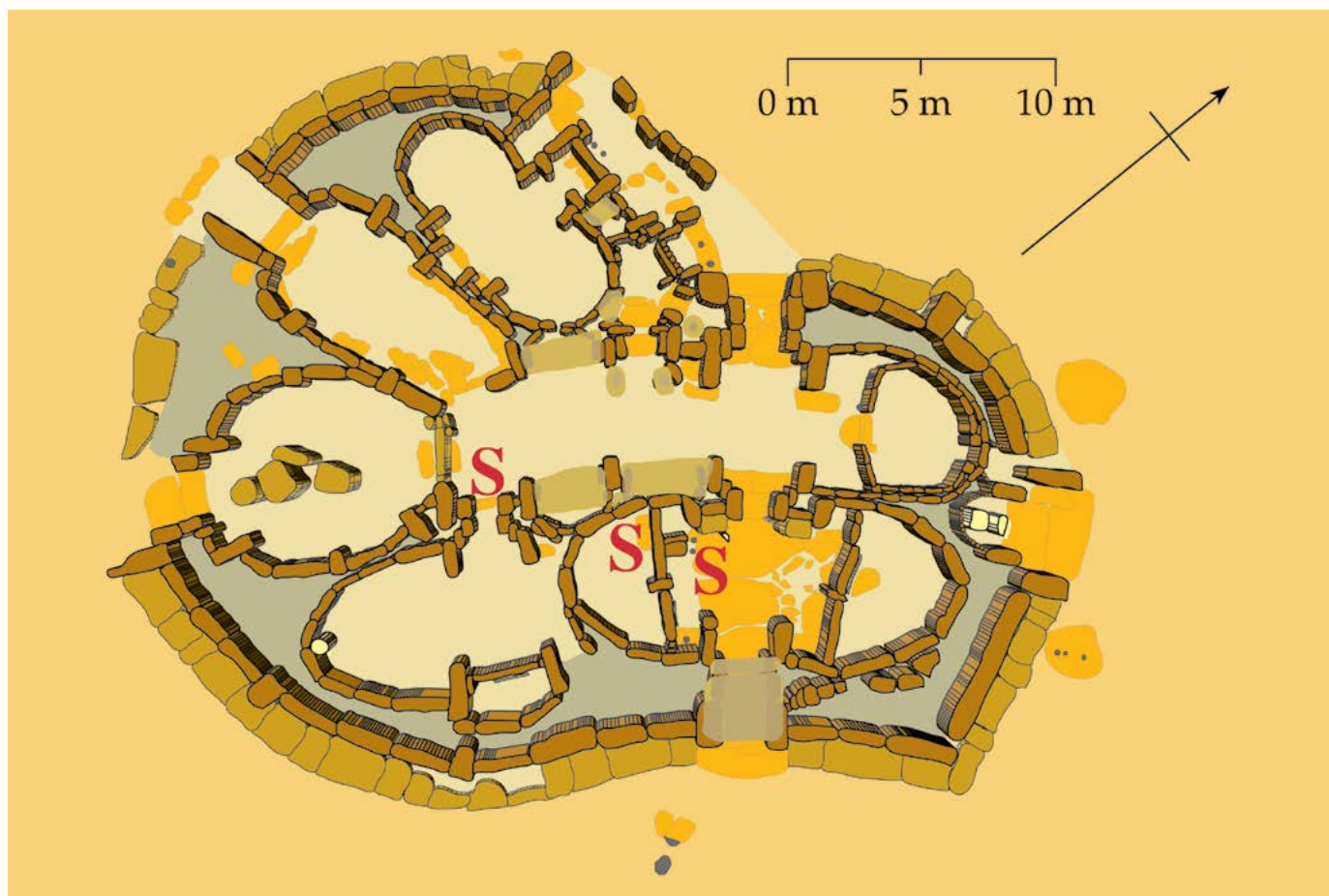
It is a small statuette, only c. 15 cm high, and carved in stone. It shows two adipose figures of the standard type and seated side by side on a canapé-type couch of complex manufacture, with their bodies fused together. The right-hand figure holds a cup on its lap; the left figure, which is the only one that has its head preserved, carries a miniature replica of itself. If we are to see a representation of a child in the latter, it is easy to hypothesize an exceptional, unprecedented personification of a human family: fatherhood, motherhood and childhood, in a single artifact. The funerary context of the find, in the so-called chapel of this communal cemetery, suggests an association with death; but it could equally suggest a celebration of the opposite, namely of the survival of family ties beyond death. Whatever its real meaning, together with the singular achievement of the temple architecture above ground, and their negative replica in the Ħal Saflieni hypogeum, this statuette represents the apogee of the prehistoric culture that created it. With respect to the identity of the entity or entities

represented by the group of adipose figures, it is high time we searched for new views, new ideas, new perspectives. One such avenue is that of the collective memory which among illiterate prehistoric cultures could only be transmitted from one generation to the next by word of mouth, or through a coded system of ritual performance which might have left traces in the archaeological record. Within this hypothetical scenario it is possible to envisage these figures as belonging to a corpus of mythological ancestral personalities of undefined gender, preserved only in the collective memory and physically materialized in three-dimensional figurative objects within a defined period of time (the apogee mentioned above, namely, around 3000-2300 BCE) and within a geographically confined space (that of two small islands only occasionally visible on the southern horizon from the closest land mass). Representations in human form in which the most significant symbolic feature is the exaggerated corpulence, an opulence of flesh (and fat) suggesting an abundant supply of food, the ideologically inspired feel-good effect remotely resonating with the “promised land of milk and honey” of biblical lore.

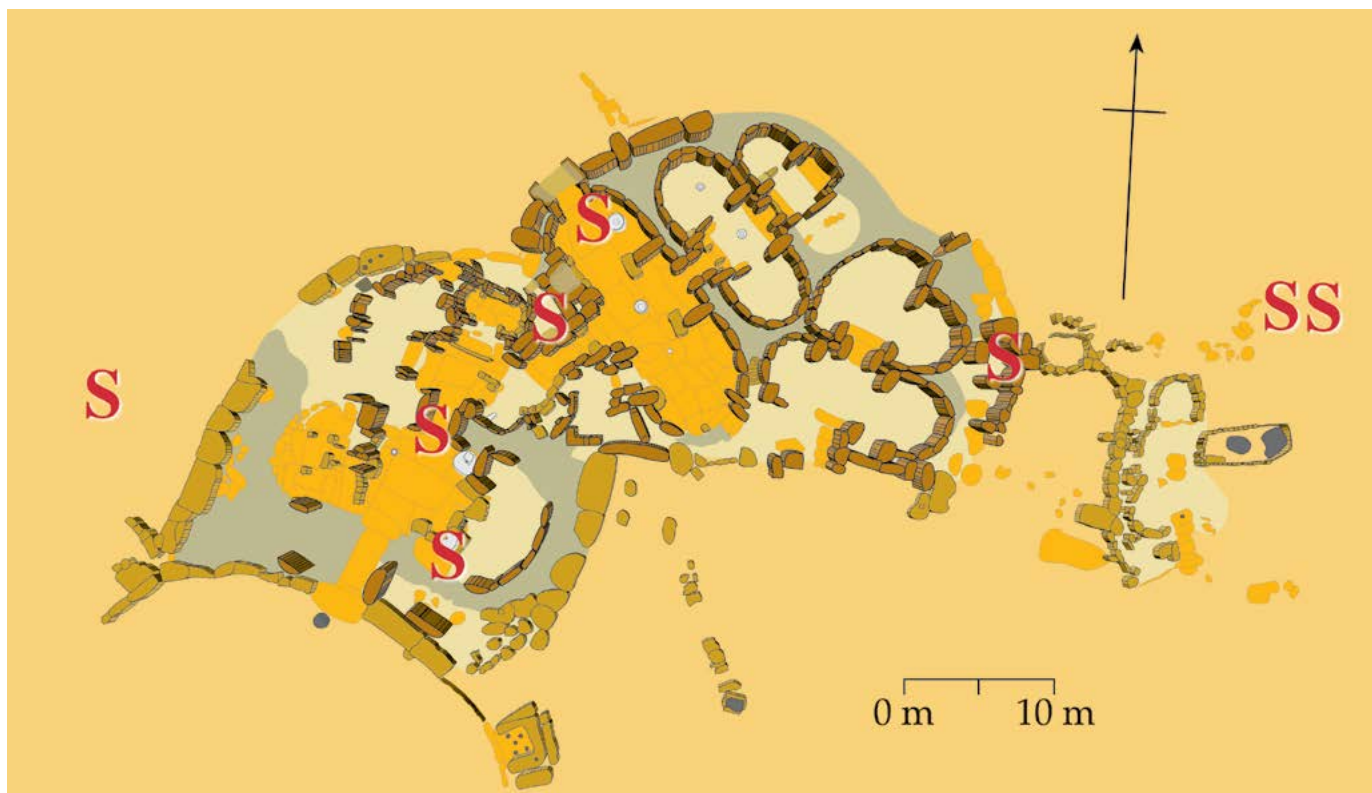
Acknowledgments: With this short article I welcome Professor Anati’s invitation to rekindle the debate over the significance of this unique Maltese prehistoric imagery. I also thank the editorial team for their assistance. Thanks are also due to Daniel Cilia for his permission to reproduce the illustrations in this article.



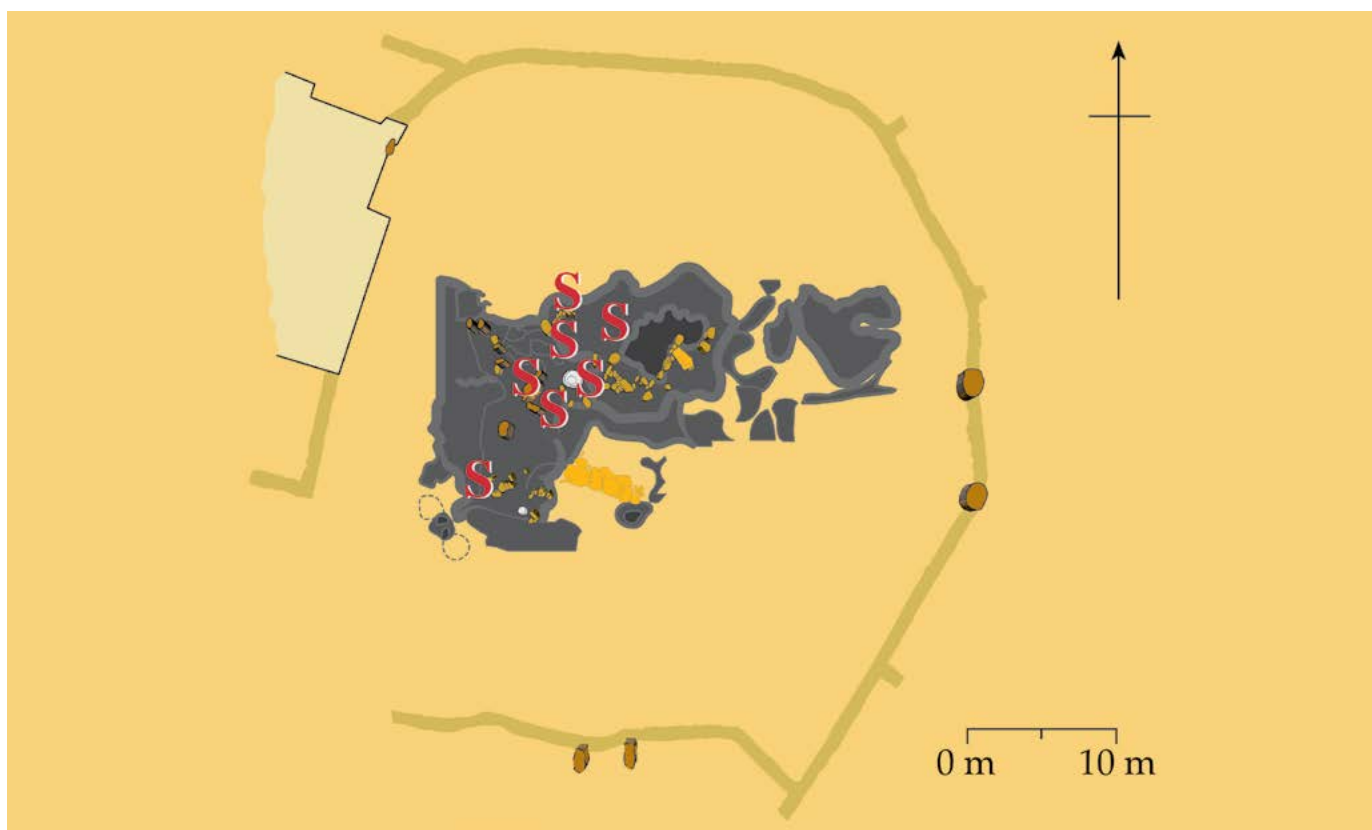
Plan 1. Plan of the upper and middle levels of the Hal Saflieni hypogeum, Malta, with the find spots of two figures marked by S. Standing statuette S1 (not illustrated here) was found in a rock-cut pit in Level 1. Terracotta figurine S2 of the “Sleeping lady” was retrieved from a rock-cut pit in the middle level (source: Evans 1971).



Plan 2. Plan of the main building of the Hagar Qim megalithic complex with the find spots of two groups of figures marked by S. The first group was encountered on the left side beyond the main entrance during the 1839 clearance work; the second group in 1949 under the threshold of the oval room next to it (source: Fradkin Anati and Anati 1988).



Plan 3. Plan of the Tarxien megalithic complex with the find spots of individual statues marked by S (source: Stoddart *et al.* 1993).



Plan 4. Plan of the excavated part of the underground collective cemetery of the Xaghra Circle hypogeum, Gozo, with the find spots of one twin statuette (mentioned and illustrated in the text) and several scattered fragments of a larger statue, all marked with solid squares (source: Stoddart *et al.* 1993).

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PODOMORPHIC ROCK ENGRAVINGS IN KYRGYZSTAN AND SOUTHEASTERN KAZAKHSTAN

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Introduction

Podomorphic motifs are well known in the rock art of different regions all over the world: in Morocco, the Canary Islands (Pichler 2005), Saudi Arabia, Tanum in Sweden, Portugal (Moreira and Bettencourt 2019) and Valcamonica in Italy. Although Central Asia has a large number of petroglyphs, this motif is scarcely present. Furthermore, the few podomorphic engravings in this area have mostly not been published. The aim of this paper is to provide a first inventory of podomorphic engravings in Kyrgyzstan and in the Dzhambyl and Almaty provinces in southeastern Kazakhstan.

Podomorphic motifs: footprints or shoeprints?

Podomorphic motifs are mainly of two types: with or without depicted toes. For this reason, a podomorph

with depicted toes may be called a footprint, whereas a podomorph without toes may be a shoeprint. Some shoeprints are depicted with lines inside them similar to straps.

21 shoeprints and one footprint have been found at six sites in Kyrgyzstan and at one site in Kazakhstan. In nine cases, straps were depicted. All other shoeprints were fully pecked inside the contours.

Location of the podomorphic engravings (Fig. 1)

1. Southeastern Kazakhstan

Among the 12 documented sites in the Dzhambyl and Almaty provinces, only three podomorphic motifs were found in Tamgaly.

Tamgaly, recognized in 2004 as a World Heritage site by UNESCO, is located 125 km northwest of Almaty



Fig. 1: 1. Akterek; 2. Kulzhabasy; 3. Akkainar; 4. Karakyr; 5. Tamgaly; 6. Degeres; 7. Eshkiolmes; 8. Bayan Zhurek; 9. Usek Region; 10. Saimaluu-Tash 1&2; 11. North Issyk-Kul (Baet, Ornok...); 12. Barskoon; 13. Karakol Region (Talas); 14. Kenkol Region (Obo, Tchatchikei...); 15. Ur-Maral Region (Zhaltyrak-Tash, Chiim-Tash...); 16. Kara-Too; 17. Suuk-Döbö; 18. Karakol Region (Bishkek).



Fig. 2: Tamgaly, group II, panel 62.

in the Kazakh steppe (Hermann 2012). Three shoeprints were documented there: two on the same panel in group II (Figs. 2, 4E) and one in group IVa which is associated with a chariot and a wheel (Figs. 3, 4F and 5B) (Rogozhinskii 2011: 49). Unfortunately, the bottom part of the latter is missing because the part of the rock with the chariot was taken away (stolen?) between 2005 and 2012. In group II, the shoeprints are above a hunting scene with a deer. They also are above each other and not parallel and belong to the biggest shoeprints documented in Kazakhstan and

Kyrgyzstan: 9 x 25 cm and 9 x 27 cm. The difference of size means that they were not symbolically from the same foot or person, which could also explain why they were not joined but above each other. Due to the proximity of other petroglyphs on the same panels, these three shoeprints are dated from the Bronze Age.

2. Kyrgyzstan

Among the 24 documented sites, only 19 podomorphs were inventoried at six sites: ten in Saimaluu-Tash 1 and one in Saimaluu-Tash 2; four in the Karakol Region but on the same rock; two in Chiim-Tash and, in the Kenkol valley, one in Tchon Tchatchikei, as well as in Obo.

Chiim-Tash is located in the Ur-Maral region in the province of Talas at an altitude of 3100 m, at the foot of a pass at 3,600 m asl. The site has been known to scientists since the 19th century but was not fully documented until 2016 (Hermann 2018b). 1,098 petroglyphs were inventoried, mainly from the Iron Age (378 engravings) and the Old Turkic period (442 rock carvings). 81 petroglyphs can be dated back to the Bronze Age. A podomorph is depicted with straps and of unusual size (12 x 23 cm), even if the heel is not recognizable (Fig. 4A). The second shoeprint is drawn over an early drawing of a goat from the Late Iron Age (Fig. 4B). Furthermore, the heel is not recognizable, and the petroglyph is very small (6 x 11 cm). Whether the latter actually depicts a shoeprint remains debatable.

The Karakol Region is located 30–50 km south of Bishkek, 1,800–4,800 m asl in the Tien Shan Mountains. As several Kyrgyz valleys and towns are named Karakol, this region should not be confused with the town southeast of Lake Issyk-Kul nor with the valley in the Talas province in which rock art has also been documented. Among the 3,851 documented rock engravings, one panel shows two pairs of shoeprints associated with a caprid (Fig. 5A). This site was discovered and documented by biologists, who unfortunately did not take measurements of these petroglyphs (Hermann and DeKastle 2022).

The Kenkol Valley is located in the province of Talas, 15 km northeast of the city of Talas and only 65 km northeast of Chiim-Tash, at an altitude of c.



Fig. 3. Tamgaly, group IVa, panel 9 (picture communicated by A.E. Rogozhinskiy from 2004).

1,600 m asl (Hermann 2018a). There are eight tributary streams to the Kenkol River, each of them in a north-south oriented valley in which rock art has been found. In two of these valleys, two depictions of shoeprints were inventoried:

- In Tchon Tchatchikei, only the contour of the sole was pecked, as well as a strap by the heel (Fig. 6). It measures 9 x 22 cm.
- In Obo, the engraving has dimensions of 15 x 6 cm (Fig. 5C). This podomorph was covered by a goat depiction and parts of its horn reused the shoeprint features. A more recent caprid carving also covered partially the podomorphic engraving and the former goat, but without erasing the shoeprint features with straps.

Saimaluu-Tash 1 and 2 are located 3,100–3,300 m asl on the eastern slope of the Fergana range, about 40 km south of Kazarman in Central Kyrgyzstan. There is no complete documentation of either site and publications are rare (Tashbaeva *et al.* 2001: 20-52). During our prospections between 2013 and 2017, ten podomorphs were found in Saimaluu-Tash 1 and one in Saimaluu-Tash 2. All were fully pecked. Furthermore, in Saimaluu-Tash 2, a peculiar picture of a bull looking like a shoeprint was also documented (see chapter 8, Fig. 16).

In Saimaluu-Tash 1, on rock 1800, two shoeprints were joined on the same panel and associated with lines, cupmarks, solar symbols, and a goat (Fig. 7). Among the solar symbols are the so-called glasses, which is a line with a ring at each extremity. The rock

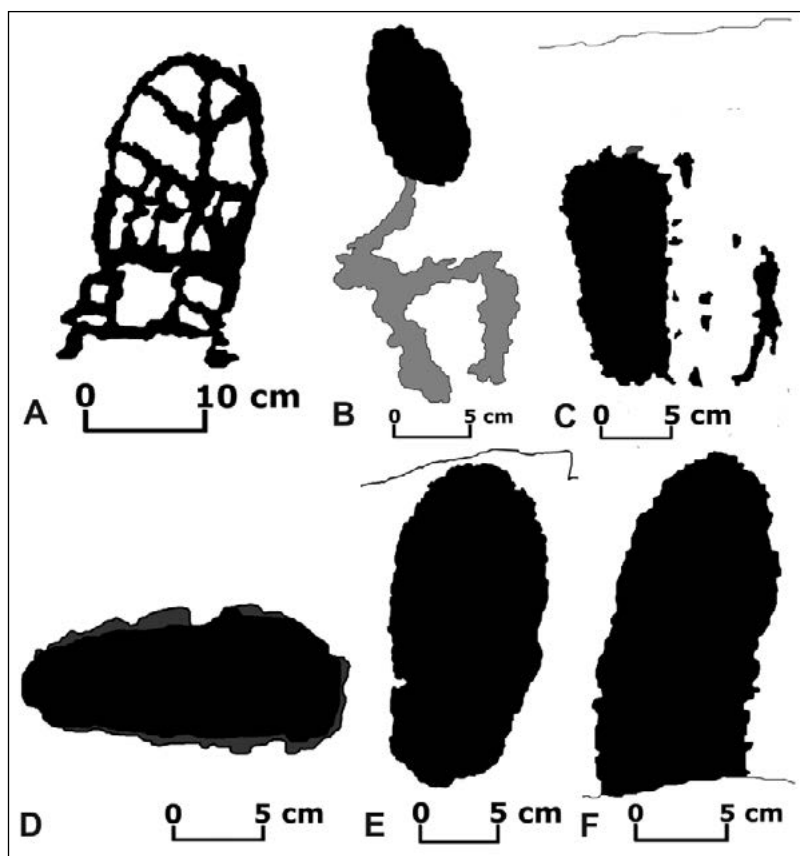


Fig. 4: A-B. Chiim-Tash; C. Saimaluu-Tash 2 (rock 470); D. Saimaluu-Tash 1 (rock 1659); E-F. Tamgaly.

is horizontal, and the shoeprints have an exact north-south orientation. There is no doubt about the interpretation as shoeprints due to the fact that the heels are well recognizable. Their sizes are 10 x 2 cm.

On rocks 43 and 540, two other shoeprints are also associated with glasses and with lines (Figs. 8, 9). Rock 43 is oriented to the south, but the podomorphic sign is in the eastern direction and measures 8 x 19 cm (Fig. 8). Rock 540 is horizontal, but the shoeprint is north-facing and measures 6.5 x 15 cm (Fig. 9).

On rock 1282, a shoeprint with a strap in the middle and measuring 6 x 11 cm is associated with lines and geometric symbols (Fig. 10).

Another shoeprint measuring 5 x 12 cm is on rock 1361 with some geometric symbols and glasses (Fig. 11). This shoeprint seems to have a strap in the middle, with only one half fully pecked. Furthermore, on this rock, two other depictions seem to be unfinished shoeprints, but are not counted as such in this paper.

On rock 1623, another shoeprint (5 x 14 cm) is associated with a goat and with a canid and with a line with a ring (Fig. 12).

An isolated shoeprint was depicted on rock 1659 (Fig. 4D). It measures 17 x 7 cm and is on a rock which is no longer *in situ*, probably moved by the snow.

A fully-pecked-shoeprint associated with glasses was depicted on rock 1667 (Fig. 13). Unfortunately, we do not have its dimensions and its bottom part is partially damaged by another engraving.

On rock 875, a podomorph with dimensions of 11 x 6 cm is associated with lines and circles (Fig. 14). It is actually a footprint: at one extremity, toes are recognizable.

Only one shoeprint was found in Saimaluu-Tash 2, on rock 470, on which three rings, a deer, and one ithyphallic anthropomorph were also engraved (Figs. 4C, 15). Right of the podomorphic depiction, there is another drawing resembling an unfinished anthropomorph, because it has no arm and only one leg.

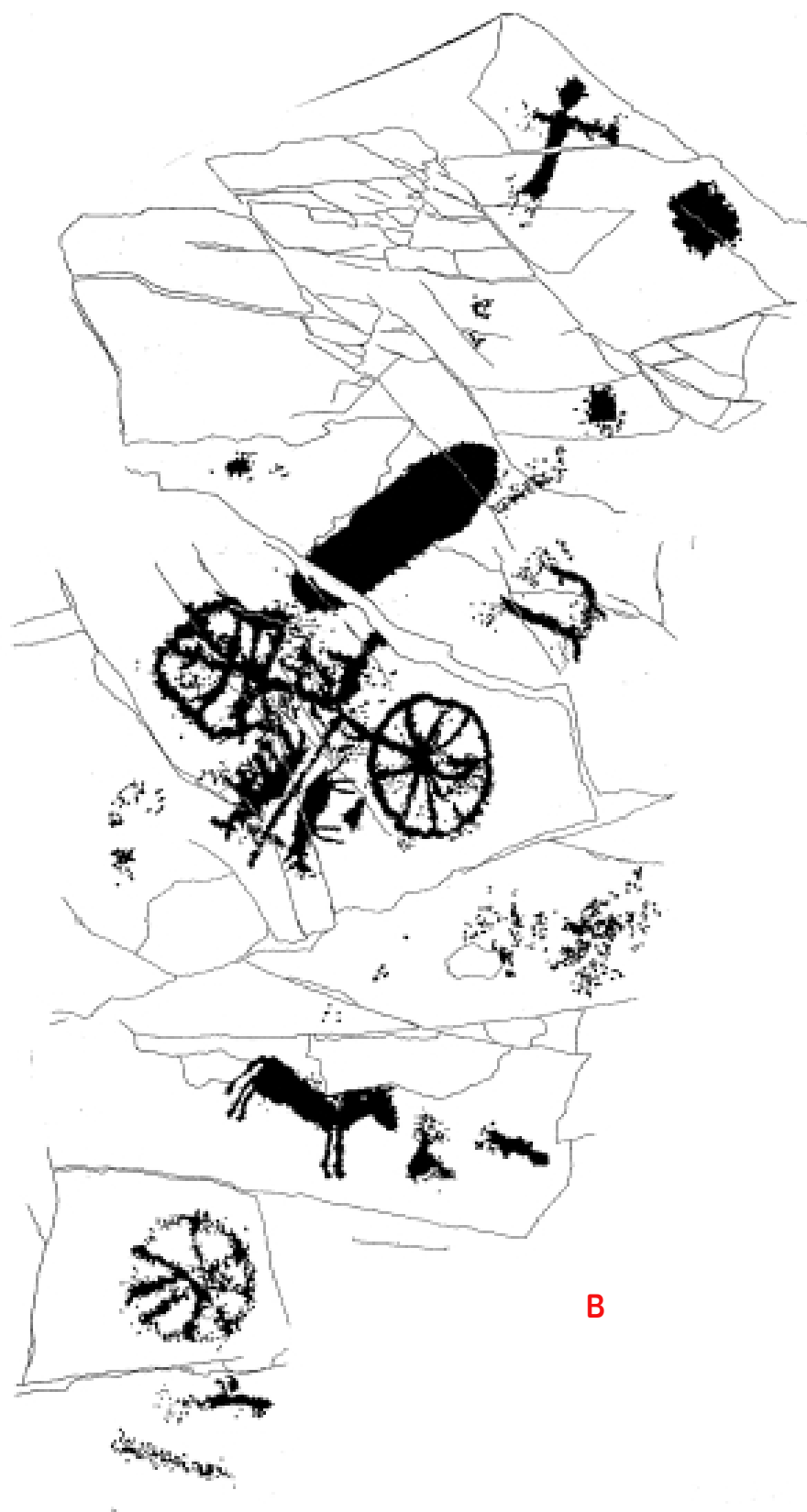


Fig. 5: A. Karakol (Amadeus DeKastle); B. Tamgaly, group IVa (Rogozhinskii 2011: 49); C. Obo.



Fig. 6: Tchon Tchat-chikei, rock 640.



Fig. 7: Saimaluu-Tash 1, rock 1800.



Fig. 8: Saimaluu-Tash 1, rock 43.

Chronology of the podomorphic engravings

The chronological attribution is based on a chronology established by many Russian and Kazakh archeologists (Baipakov *et al.* 2005; Beisenov and Maryashev 2014; Kasanov *et al.* 2017; Rogozhinskii *et al.* 2004; Rogozhinskii 2011; Samashev 2012; Sher 1980; Shvets 2012). Footprints and shoeprints can only be attributed indirectly by their associations with other petroglyphs on the same panel. Unfortunately, two panels depict a podomorph without any other motif in Saimaluu-Tash 1 and in Tchon Tchatchikei. In Tchatchikei, some goats from the Bronze Age are near this rock. The patina and the technique permit attribution to the Bronze Age, however. About the one in Saimaluu-Tash 1, nothing similar can be said and it is not possible to date it back.

All other podomorphs in Tamgaly and in Saimaluu-Tash can be attributed to the Bronze Age due to their association with other petroglyphs which are stylistically from the Bronze Age.

In Chiim-Tash, there is no clear relation between shoe-

prints and other petroglyphs. For the shoeprint on panel 55, we observe that the patina of the podomorph is older than the one of the caprids which are from the Old Turkic period. Furthermore, on the same panel, there are three goats and a deer from the Bronze Age in the same patina as the podomorph. For this reason, it could also be from the Bronze Age. The other shoeprint from this site on panel 65 is engraved over an early drawing of a goat from the late Iron Age and has the same patina as the caprids from the Old Turkic period. For this reason, it is also probably from this epoch.

In Obo, the shoeprint was covered by two more recent goat petroglyphs. However, it is not possible to determine exactly to which period the older goat belongs, Iron Age or Old Turkic period. Due to the technique of the podomorph, we think that it is from the Bronze Age, but there is no certainty about it, and an attribution to the Iron Age would also be possible.

In Karakol, the four depictions are on the same panel and associated with a goat in the style of the Old Turkic period. Furthermore, the patina of the shoe-



Fig. 9: Saimaluu-Tash 1, rock 540.



Fig. 10: Saimaluu-Tash 1, rock 1282.



Fig. 11: Saimaluu-Tash 1, rock 1361.

prints and of the goat seems to be identical. Other petroglyphs from this epoch are also near this rock. For these reasons, we attribute these four depictions to the Old Turkic period.

Associations of the podomorphs with other petroglyphs

Among the panels from the Bronze Age, podomorphs are associated in ten cases with solar symbols (wheel, rings and glasses) in Saimaluu-Tash and in Tamgaly, but also with goats in four cases (in Chiim-Tash and Saimaluu-Tash 1), as well as three times with deer in Tamgaly, Saimaluu-Tash 2 and Chiim-Tash, and in one case with a chariot in Tamgaly.

Sizes of the podomorphic engravings

The sizes of the shoeprints differ largely from one petroglyph to another, in length but also in width. For the length, the three smallest measure 11 cm in Chiim-Tash and in Saimaluu-Tash 1, but the one in Chiim-Tash should perhaps be excluded from the inventory, as already explained. The fourth smallest measures 12 cm in Saimaluu-Tash 1 and the longest, in Tamgaly, 27 cm. If we regroup the lengths in order to attribute them age brackets, eleven shoeprints could be attributed to children between two and five years, all of them in Saimaluu-Tash, but also one in Obo. The six other shoeprints measure 22 -27 cm. They can be attributed to eight-year-old-children,



Fig. 12: Saimaluu-Tash 1, rock 1623.



Fig. 13: Saimaluu-Tash 1, rock 1667.



Fig. 14: Saimaluu-Tash 1, rock 875.

up to adults. The three longest shoeprints are all in Tamgaly.

Orientations of the podomorphic engravings

Ten podomorphs were directly engraved at the edge of the rock (five in Saimaluu-Tash, three in Tamgaly, one in Tchon Tchatchikei and in Obo).

Ten panels with shoeprints are depicted on a horizontal rock. The eight other panels are on a vertical surface, mainly facing west or south. However, the direction of the feet is oriented three times to the

north in Saimaluu-Tash 1 and in Chiim-Tash, twice to the west in Tchon Tchatchikei and in Saimaluu-Tash 1, once to the south in Saimaluu-Tash, but eight times to the east in Tamgaly, Saimaluu-Tash and Chiim-Tash. Two other panels in Saimaluu-Tash are most probably no longer *in situ* since the rocks are in a moraine.

In Saimaluu-Tash 1 and in Chiim-Tash, the northern direction is also the direction down to the valley. In Tchon Tchatchikei, the foot and its western direction follow the path up to the summit of the hill on



Fig. 15: Saimaluu-Tash 2, rock 470.



Fig. 16: Saimaluu-Tash 2, rock 526.

Site	Inventory no.	Length	Width	Orientation	Foot	Type
Chiim-Tash	55	23	12	Flat (North)	Left	Shoe with strap
Chiim-Tash	65	11	6	Northwest (East)		Shoe
Karakol (Bichkek)	703			Flat		4 shoes with straps
Obo	309	15	6	Flat		Shoe with straps
Saimaluu-Tash 1	1-43	19	8	South (East)	Left	Shoe
Saimaluu-Tash 1	1-540	15	6,5	Flat (North)		Shoe
Saimaluu-Tash 1	1-1282	11	6	Flat (East)		shoe with strap
Saimaluu-Tash 1	1-1361	12	5	Flat (East)		shoe (with strap ?)
Saimaluu-Tash 1	1-1623	14	5	Flat (moved?)	Left	Shoe
Saimaluu-Tash 1	1-1659	17	7	West (moved)	Left	Shoe
Saimaluu-Tash 1	1-1667			Flat (West)		Shoe
Saimaluu-Tash 1	1-1800	22	10	Flat (North)		2 shoeprints
Saimaluu-Tash 1	1-875	11	6	west	Left	Foot
Saimaluu-Tash 2	2-470	17	7	West (East)		Shoe
Saimaluu-Tash 2	2-526	20	8	Flat (West)	Right	"Bull"
Tamgaly	II-57	27	9	West (East)	Left	Shoe
Tamgaly	II-62	25	9	Southwest (East)	Right	Shoe
Tamgaly	IVa-1	(19)	8	West (East)	Left	Shoe
Tchon Tchatchikei	640	22	9	Flat (West)	Left	Shoe with straps

which the rock is situated. A territorial explanation is not relevant for the eastern direction of the eight other shoeprints, however. In these cases, the shoeprint could be seen in a symbolic way, associated with the sunrise. This association with the sun's path is reinforced by the presence of solar symbols on ten of thirteen panels in Tamgaly and Saimaluu-Tash, as well as by the depiction of a chariot in Tamgaly. However, there is a direct correlation between podomorphs on a panel with solar symbols, chariot and east orientation in six cases.

Left or right?

Of the 16 podomorphs which were not in a pair, it was possible in nine cases to determine if the left or the right foot was depicted. For this determination, we used the concave curvature in the middle of the foot, which is on the right side by a left foot and on the left side by a right foot. In some cases, e.g. for the shoeprint in Tchatchikei, we also used the difference of length by the toes, which increase from left to right in a left foot, and the contrary in a right foot.

The depictions of left feet largely dominate, that is, in eight of nine determined podomorphs. However, we should be precautionous with this result because seven podomorphs could not be determined. Does it mean that the right feet were depicted without clear characteristics or that there was a clear intention to represent left feet?

The case of a podomorphic bull depiction in Saimaluu-Tash 2 (Fig. 16)

On rock 526 in Saimaluu-Tash 2, a bull depiction with four legs is stylistically from the Bronze Age. This zoomorph measures 32 x 20 cm and is on a horizontal stone. There are also depictions of goats on this rock, but they belong stylistically to the Iron Age.

The particularity of this zoomorph is its fully-pecked body which is similar to a podomorph, as if a tail, four legs, a phallus, and a head were added to a shoeprint. However, there is no difference of patina between the body and the other parts of the body. It looks like a shoeprint with its general features: a smaller part by the heel and a middle part with a concave curvature as

if it is a right foot.

If it is a shoeprint, it would measure 8,x,20 cm. The other shoeprint of Saimaluu-Tash 2 has dimensions of 7,x,17 cm. In Saimaluu-Tash 1, one shoeprint has similar dimensions (8,x,19 cm), and one is longer (10,x,22 cm).

There is no other example in Saimaluu-Tash of a zoomorph with a similar body.

Conclusions

Podomorphic engravings are very rare in Kyrgyzstan and in southeastern Kazakhstan. Their presence in some sites and regions already informs the diffusion of this motif. If they were mainly depicted in the Bronze Age, some of them were also engraved in the Old Turkic period and perhaps in the Iron Age.

Even if there are only 22 depictions of podomorphs, some general characteristics can be observed.

The shoeprints in Saimaluu-Tash are mostly of small children, if their sizes reflect real human beings and are not simply symbolic. However, in Tamgaly, they are of adults.

Shoeprints are mostly oriented to the sunrise or follow the direction of the main path.

They are mainly associated with solar symbols, sometimes also with deer and goats.

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THE RECUMBENT STONE CIRCLE AT LOANHEAD OF DAVIOT AND ITS CALENDAR LINKED TO SUNRISES

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Introduction

The Neolithic stone circle at Loanhead of Daviot near Inverurie in Aberdeenshire is one of the few Scottish recumbent stone circles that is nearly complete. A restoration following excavation in 1934–1935 by Kilbride-Jones (1935) and subsequent maintenance by the Scottish authorities has made it the national attraction it is today.

The circle comprises 11 stones (fig. 1). Most of the perimeter stones stand on a circle of diameter 20.7 m. At the south-southwest, a little inside the circle perimeter is the principal feature and focus of attention, a huge recumbent stone with upright flanking stones. The 12-tonne recumbent stone is 3.4 m long and almost 1.7 m high. Its functional importance as a focal stone is explained in this paper. The flanking stones abut it at east and west. On the western perimeter is a par-

ticular stone that the author explains was chosen by the Neolithic builders to serve as a necessary secondary focus. In modern times this stone was maliciously broken off short. A splendid perimeter stone in the southeast bears at least a dozen cup marks (Burl 1995, 102; Welfare 2011, 385). New photographs from the present research program, taken soon after midsummer sunrise, suggest the number of cup marks is 14 or 15.

Additionally, there is a flatbed ring cairn, diameter 16.5 m, inside the ring of standing stones. The fragmented rocks of the cairn are small; the biggest are no more than 0.25–0.3 m across. Alongside the stone circle is a circular enclosed cremation cemetery from which Early to Middle Bronze Age food-vessel urns and human cremations were recovered by Kilbride-Jones (1936). The stone circle details are: Site NJ72NW1; <https://canmore.org.uk/site/18789>



Fig. 1. Looking southeast across the stone circle at Loanhead of Daviot, showing its internal ring cairn, photographed three hours after sunrise, 19 June 2017. Author's photo.

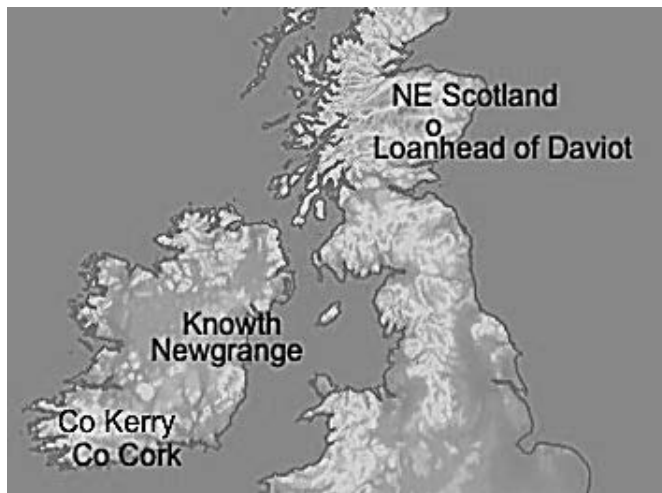


Fig. 2. The location of the recumbent stone circle at Loanhead of Daviot in northeast Scotland relative to the sites of the recumbent stone circles of Cork and Kerry in Ireland.

Ordnance grid reference NJ 7477 2885; latitude 57.350° N, longitude 2.421° W; altitude 155 m; post-code for satellite navigation AB51 0HF.

Figure 2 compares the location of this circle in Scotland with southwest Ireland where there are numerous axial recumbent stone circles of similar interest.

The landscape positioning of the stone circle

At Loanhead of Daviot the ground slopes gently towards the northeast. On the distant horizon between northeast and east from May to August, hills delay sunrises by several minutes. In the southeast hills are lower and hardly affect the winter-period sunrises from November to February. In all cases the observed sunrises align with pairs of perimeter stones intelligently positioned by the builders. A 19th-century plantation of trees adjacent to the site unfortunately hinders views of the rising sun in the week of the winter solstice. Despite this, the moving sun can be seen intermittently through the leafless trees of winter, which has allowed the solstice alignment with a specific pair of stones (Stones 9 and 4) to be confirmed by photography, as shown later in the paper. In the absence of trees, the shadow of the significant, multiple cup-marked, perimeter Stone 4 would be cast at the winter solstice upon its paired standing Stone 9 waiting in the west.

Listed in Table 1, which is for sea-level horizons in northeast Scotland, are present-day azimuths for sunrise on the four quarter dates and the four cross-quarter dates of the year when each date is reckoned to be 45 or 46 days from the next. Approximate timings for

Day number	Gregorian calendar date	Degrees east of north	Sunrise time GMT	British Summer Time	Ancient festivals
Day 1	21 December	135°	8.46	...	Winter solstice Q1, 1st quarter day.
Day 47	5 February	119°	8.00	...	Start of spring, WXQ. Winter cross-quarter day. Original Imbolc.
Day 92	22 March	88°	6.05	...	Spring festival, 2nd quarter day, Q2, mid-date between the solstices.
Day 137	6 May	57°	4.08	5.08	Summer cross-quarter day. SXQ Original Beltane or May Day.
Day 183	21 June	41°	3.12	4.12	Summer solstice Q3, 3rd quarter day.
Day 229	6 August	57°	4.16	5.16	Summer cross-quarter day. SXQ Original Lughnasa.
Day 274	20 September	89°	5.48	6.48	Autumn festival, 4th quarter day, Q4, mid-date between the solstices.
Day 320	5 November	118°	7.28	...	Start of winter. WXQ. Winter cross-quarter day. Original Samhain.
Day 365	20 December	135°	8.45	...	Eve of winter solstice.

Table 1. First-gleam sunrises for sea level at the latitude of Aberdeen in 2018 as tabulated at www.timeanddate.com/astronomy/about-sun-calculator.html by HMNautical Almanac Office. The indicated dates are each separated 45 or 46 days from the next. The fieldwork research days were in 2017, 2018, 2019 and 2020.

sunrises are included.

The table is the basis for explaining the operation of a restored Neolithic/Bronze Age calendar when regulated by day counting, while allowing that in this era of prehistory, because of the precession of the equinoxes, sunrise orientations were more extreme at the solstices than those of today by about 1 degree of arc along a level horizon. The first sunrise tests for the latitudes of Aberdeenshire were made in June and December 2017 at Loanhead of Daviot and Easter Aquhorthies, and in December 2017 at Sunhoney and Balquhain. In Neolithic times the sun rose at 136° on 21 December and at 40° on 21 June. The figures for 22 March and 20 September were practically unchanged.

As witnessed from Loanhead of Daviot, the heights of the ridge of hills in the east delay solar rising times and modify the azimuths listed in Table 1 for those occasions with dates from May to August. On 20 June 2017 the first gleams of the sun appeared between 3.21 and 3.22 GMT or 4.21 and 4.22 BST. Half-orb was reached at an azimuth of 43.5° east of north, by which time the brightness of the sun was strong enough to cast watchable shadows.

Aims and methodology

The project was to identify aspects of the prehistoric planning that would explain the reasons for the choice and positioning of the perimeter stones, and throw light on the purpose of the Loanhead of Daviot recumbent stone circle.



Fig. 3. Electronic clinometer (with 0.1-degree accuracy) in its 0.0° closed position.

The plans of the recumbent stone circles studied in Scotland were found to be dependent on a limited range of sunrise dates, in which perimeter stones of particular shape were aligned to function in pairs in the direction of the rising sun for the specific calendar dates of Table 1.

When counting days through the 365-day year with 21 December as Day 1, these particular dates for the rising sun, each separated by 45–46 days from the next, kept recurring despite sunrise directions being delayed differently at the various stone circles by hills of dissimilar height. The stone circle at Loanhead of Daviot follows the same concepts. The dates that mattered to the builders were secured permanently by this means because they are recorded in stone. At every locality this had been achieved by arranging appropriately orientated paired stones in alignment with the sunrise positions for those dates. The foresight stone is always in the western half of the circle and the back-sight in the eastern half.

The builders in northeast Scotland achieved this without instruments. Their success resulted from direct observation of the rising sun for the dates of the year that mattered to them. With that in mind, the present paper introduces this approach to the study of stone circles in Scotland. Besides Loanhead of Daviot, which was checked visually and photographed for the quarter and cross-quarter dates, as also at Easter Aquhorthies, other circles were tested but only for the winter solstice sunrise. These were Sunhoney, Balquhain and Tyrebagger (Dyce). Midmar Kirk was also inspected but a thick hedge blocks the winter solstice sunrise.

Stone positions at Loanhead of Daviot were planned using measuring tapes and a military compass accurate to 0.5 degree. Individual attention was paid to the directions of likely functional stone pairs with respect to the horizon. The compass, manufactured by F. Barker and Son, Dendridge, Enfield, Middlesex, has a floating dial, which pivots on a gemstone bearing, and has a clean undamaged crystal.

Height elevations of the corresponding points on horizons were determined with 0.1-degree accuracy using a new digital angle-measurer and leveller or electronic clinometer manufactured by Level Developments, Croydon (fig. 3).

The present paper shows that the people of the Scottish Neolithic at Loanhead of Daviot appear to have

selected stones of specific type and desired height for pairings of what can be termed dimorphic functional stones, i.e., each pair expresses a duality of lithic symbolism besides purposeful directionality.

The ancient people inferentially watched the sunrises, noting the day-to-day differences along the horizon, and then set up paired-stone alignments for the selected dates that are 45 or 46 days apart.

In addition, there were functioning shadows for the dates under consideration, although the author could only test for shadow casting on occasions when eastern skies were clear at the sunrise times as listed in Table 1. The presence of trees was a hindrance for most winter-period dates. Sunrises are what mattered, as proved by the truths of the alignment pairs linked by cast shadows.

At Loanhead of Daviot for the three specified dates in the summer (6 May, 21 June, 6 August), the top of the shadow, cast by each of three standing stones on the eastern perimeter, unites in turn with the centre base of the recumbent stone. For the winter period of the year another receptive stone in the west is the target stone, as explained below. In this way, a calendar with eight significant dates can be identified.

Previous work in northeast Scotland and comments

The stone circles of northeast Scotland have attracted the attention of serious archeologists and archaeoastronomers since at least the end of the 19th century, like A.L. Lewis from 1883 and Frederick R. Coles from 1890. The earliest notable publication about Loanhead of Daviot was by Coles in the *Proceedings of the Scottish Antiquaries Society* (1901-1902, 517-521).

Coles (1901-02, 520) drew a plan of the circle at Loanhead of Daviot. At that time the eastern flanking stone and four stones between west and north lay fallen and much of Stone 9 in the west had been broken off and was missing, but the stump remained in position. The other stones were reset in their original stone-holes. The apex of the toppled east flanker had been taken away, and the east flanker lay fallen. The rounded top of the western flanker lay on the ground. An excavation by Howard Kilbride-Jones was reported in the *Proceedings of the Society of Antiquaries of Scotland* (1935). He oversaw the raising of the fallen stones. The site produced sherds of Late Neolithic pot-

tery suggesting a foundation date around 3000 BC.

Considering generally the recumbent stone circles of northeast Scotland, Norman Lockyer (1909, 385) wrote, "I plead for the examination of these circles in the widest possible sense. As I have said, they may have served several purposes undreamt of, and in this connection, I protest against the logic of those who hold that because graves have been found in them, they were constructed wholly for purposes of burial, and that no other considerations were in the minds of those who set up the stones. It is the same thing as to say, as I have said before, that because graves are found in our churches, the churches themselves were not built for the worship of God."

A contemporary explorer of recumbent stone circles was Mr. Ritchie of Port Elphinstone, who wrote to Norman Lockyer (1909, 385):

Were all these circles nothing more than burial places? ... If the circles were solely burial places, why should the recumbent stone and [flanking] pillars be always placed so as to face some part of the sky where the sun can be seen? These circles have also from time immemorial been regarded with reverence ... the tradition is very widely diffused that the circles were places of worship, several of them being still known by the name of the "Auld Kirk" [i.e., "Old Church"] ... the cumulative effect of the whole is sufficient to establish a strong probability, amounting almost to a certainty, that our Aberdeenshire circles were used for more purposes than burial. There are very many stone circles in northeast Scotland, most of them damaged in some way. Only a few circles remain nearly complete. Even in 1909 Lockyer (1909, 387) could write, "there are 175 stone circles in Aberdeenshire alone, shown in the Ordnance maps." In 2023, Historic Scotland lists that only 90 survive in Aberdeenshire, and most are damaged. Adam Welfare (2011) lists only 71 for the northeastern counties (but recumbent stone circles at Hillhead and Nether Coullie were added latterly).

Lockyer (1909, 393) who was professor of astronomical physics at what is now Imperial College, London, visited 29 circles in 1906-1907. Among his suggestions he wrote, "An inspection of the available plans suggested that in the recumbent stone and its supporters we had a special form of 'cove', the direction required being indicated by a line across the circle perpendicular to the length of the recumbent stone."

Mistakenly, Lockyer concluded (1909, 393) that “of the 29 circles I have examined, 15 are clock-star circles, two are May-year and three solstitial”. Loanhead of Daviot was proposed as a clock-star circle, with reference to the first-magnitude clock-star Capella if the stone circle was built in 2250-1250 BC, or alpha-Centauri if the circle dates from 3600-2700 BC. The star Arcturus was alternatively mentioned for the period 2600-1350 (Lockyer 1909, 472). In summary, he found “a great preponderance in the number of circles used to take the time at night over those enabling the seasonal changes and the sun’s place throughout the year to be fixed.”

As for the May-year, which commences on 6 May as Lockyer explains, this division of the year is still used in Scotland to determine the quarter days. The present author gives his own reasons for choosing the same date, 6 May, because this date is Day 137 on a day-counting calendar, midway between the quarter dates of March (Day 92) and June (the summer solstice, Day 183).

Aubrey Burl (2000, 221), commenting generally on recumbent stone circles, wrote, “the recumbent stone was of the greatest importance. Despite the care apparently put into some features of recumbent stone circle construction the circle itself was regarded as no more than an enclosure demanding little care in its construction. Once the three major stones had been carefully set in place ... the circle was often added later in a more casual fashion.”

Burl (2000, 226) found that of 40 recumbent stone circles whose compass-bearings could be determined (i.e., by considering the directions perpendicular to the length of each recumbent stone and with the observer standing at the circle center), “the midpoints of the recumbent stones all lie between 157.5°, SSE, at Garrod Wood at the southeast of the recumbent-stone-circle territory [across Grampian] and 235.5°, southwest, at Tomnaverie at the far west [of this region].” “Over four in five azimuths of recumbent stone circles lie between 160° and 210° far south of where the mid-winter sun or southerly midsummer moon would rise or set. Three are above 230° well to the north of the midsummer sunset.”

Burl (2000, 226) dismisses Lockyer’s work that involves stellar risings (“no star or planet can be fitted to all the azimuths”), and continues, “This elimina-

tion of solar, lunar, stellar and planetary risings and settings implies either that no astronomical considerations dictated the location of a recumbent stone or that risings and settings of celestial bodies are irrelevant to the problem. The answer was very simple and discovered by the writer [viz. Burl himself] in 1980 when he recognized the significance of the southern moon’s cycle.” “The azimuths of the recumbent stone circles lie between 157.5° and 235.5° with a wide gap between 220° and 231°. This suggests that the recumbent blocks were often laid in line with the southern moon not at its rising or setting but when it was up in the sky.” Burl (2000, 227) concluded that the “majority of the recumbents lie in the arc between the moon’s major rising and setting but four face the area where the minor moon was descending.”

Burl (2000, 227) continues, “The sun was almost entirely disregarded by the builders of these rings. Mid-winter sunrise around 139° was well to the north of 157.5° and its setting near 222° occurred in the wide gap between the moon’s major and minor settings.”

Again, Burl (2000, 229), “The recumbent is far too long to provide a finely aligned sighting-point. The orientations are lunar, the ceremonies the times when fires were lit, perhaps more bodies incinerated. At Loanhead of Daviot 5 lbs (2.3 kg) of comminuted bone lay in the central space. They were not all adults. Over fifty fragments belong to the skulls of children between two and four years old.”

Alexander Thom (1967, 61, 64, 124) and Thom *et al.* (1980, 190-191), (1990, 176-177) considered Loanhead along with other megalithic monuments. Thom tried understanding the shapes of the stone-circle perimeters. He proposed a calendar, as summarized by Clive Ruggles (1999, 54-55), in which the year was divided into eight periods or sixteen. However, Ruggles concluded that no such pronouncement was justifiable on the evidence presented. Chapter 3 of the latter’s principal study (1999, 68-78) looked for any astronomical evidence using statistical methods on the nature and extent of astronomical influences on the planning and positioning of archaeological settings. Ruggles (1999, 75) decided, “the data give no support at all to Thom’s conclusions at Level 1, and we are forced to conclude that the idea of prehistoric orthostatic monuments in Britain incorporating astronomical alignments precise to anything much greater than

about a degree is completely unproven by the sort of approach taken by Thom.” Ruggles continues by discussing similar cases and warns about arriving at analogous conclusions.

Work in the present century has fared hardly better. Gail Higginbottom (2016) working in western Scotland tackled this kind of problem another way, much as Gonzalez-Garcia *et al.* (2005) had done in Sardinia, Spain and France. These approaches were statistical, testing whether any proof existed of a quantitative determination of astronomical connections with landscape. One conclusion was that 3-D landscape reconstructions of the earliest stone circles of the Late Neolithic in western Scotland indicated the same visual choices as Bronze Age sites. This was taken to mean that there is some continuity in standing stone use and meaning of a “cosmological system through time” (Higginbottom 2016).

Richard Bradley (2005) has excavated at Tomnaverie, Cothiemuir Wood and Aikey Brae. Liz Henty (2014) proposed that at Tomnaverie when viewing along an axial line-of-sight from outside the northeastern part of the perimeter between Stones 8 and 9 “the recumbent and flankers appear outlined against the sky and give the appearance of a window” i.e., as if framing a part of the sky.

Adam Welfare (2011) on behalf of the Royal Commission on the Ancient and Historical Monuments of Scotland described in factual detail what is known of the definite recumbent stone circles in a gazetteer-type volume called *Great Crowns of Stone*. No overall analysis of the purpose and meaning of these monuments was attempted.

Many investigators went inspecting the stones unaware of the special significance of certain dates and what the best time of day would be for observational fieldwork.

Sunrise is the right time for observational fieldwork because that is when the relevant directions of sunrise correspond with the directions of the positioned paired stones as per Table 1. The circle centre is not the proper place for productive watching and evaluation. The monitoring of solar alignments is done with respect to the directions of specific pre-arranged dimorphic stone pairs. Observations of the rising sun are held from the relevant backsight stone in the west towards the appropriate foresight stone in the east, depending

on date. Additionally, at sites typified by Loanhead of Daviot and Easter Aquhorthies, it has been found that observations include watching each cast shadow as it moves to the crucial location, that must have been pre-decided by the Neolithic planners, on a particular stone waiting at a favoured location.

By being on site, one is better aware of the influence of mountains and ridges near and far that delay sunrises and affect interpretation of the site plans for those paired-stone positions that relate to the pre-chosen significant sunrise azimuths.

Survey and predictions

The stones of Loanhead of Daviot were surveyed on 19 July 2017. The first sunrise observations were made next morning.

The research found that the directions of the rising sun for certain definite dates of the year disclosed the original prehistoric planning policy, and that it is ne-

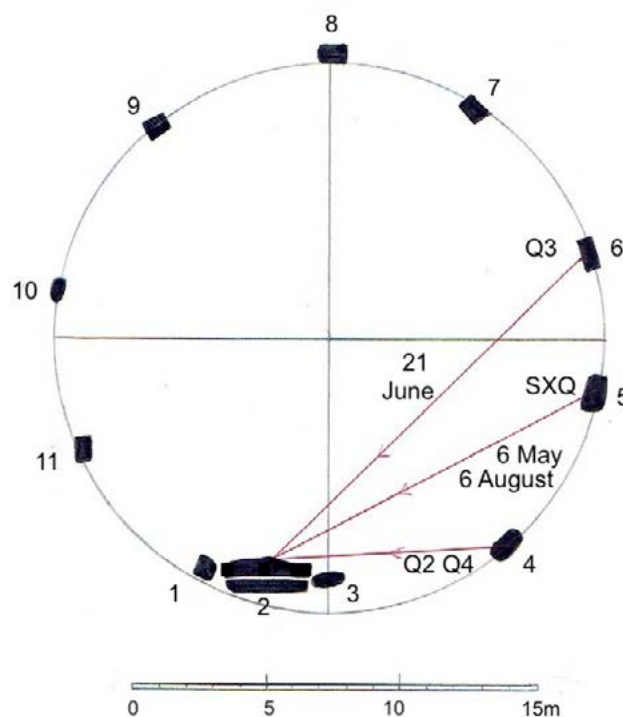


Fig. 4. The survey of the stones at Loanhead of Daviot on 19 June 2017. North is at the top. Marked are (a) the predicted union by shadow at the summer solstice Q3 between Stone 6 and the center base of recumbent Stone 2, (b) between Stone 5 and the recumbent at the cross-quarter dates in May and August, and (c) between Stone 4 and the recumbent on the March and September mid-spring and mid-autumn quarter dates Q2 and Q4.



Fig. 5. A simple view over the top of the broad recumbent Stone 2 just after 04.22 BST on 20 June 2017. Compare with fig. 6. Author's photo.

cessary to watch and interpret the moving shadows cast by particular sunlit positioned stones because of the lithic symbolism incorporated in them. These functional stones had been chosen for their natural shapes because the forms were meaningful to the planners, and where necessary, their outlines had been artificially enhanced by shaping.

Hence, when surveying had been completed, it proved possible to make tests and predictions in advance of sunrise as to the consequences of the planning scheme built into the settings over 4,500 years ago (see below). Karl Popper (1959, 112, 267) explained in *The Logic of Scientific Discovery*, "The more tests which can be made of the theory, the greater its empirical content." The author's numbering of stones in fig. 4 had originally been clockwise following the directional numbering for Loanhead of Daviot by Coles (1901-1902, 520) and Kilbride-Jones (1935, 190), Stonehenge (Flinders Petrie 1880), Avebury (Smith 1965, 193, 205) and many stone circles studied in England and Ireland by other authors. In the present paper the author's numbering of the stones for Loanhead of Daviot is instead changed to anticlockwise in order to accord with Wel-

fare (2011, 385-391) of the Royal Commission on the Ancient and Historical Monuments.

Note that, according to the plan of fig. 4, because the recumbent stone is in the south-southwest, it is easy to see that its geometrical position can only relate to stones and sunrises in the summer half of the year. Winter alignments relative to the recumbent stone are impossible and need instead to be treated with respect to a second focal stone in the northwest of the circle (explained below).

In practice it is found that the alignments to the directions of Stones 6, 5 and 4 in fig. 4 correspond to sunrises for respectively the summer solstice, the summer cross-quarter dates (of May and August) and the March and September quarter dates of Table 1, but in which the specific directions are modified on account of the hill heights of the horizon. Hence, from the point of view of the inquiring archeologist, these matters are testable, and were so tested, which included shadow watching on mornings of clear sunrises.

As forewarned, dates for the winter half of the year cannot be realized by stone-to-stone directional lines involving the recumbent stone. The ancients chose to

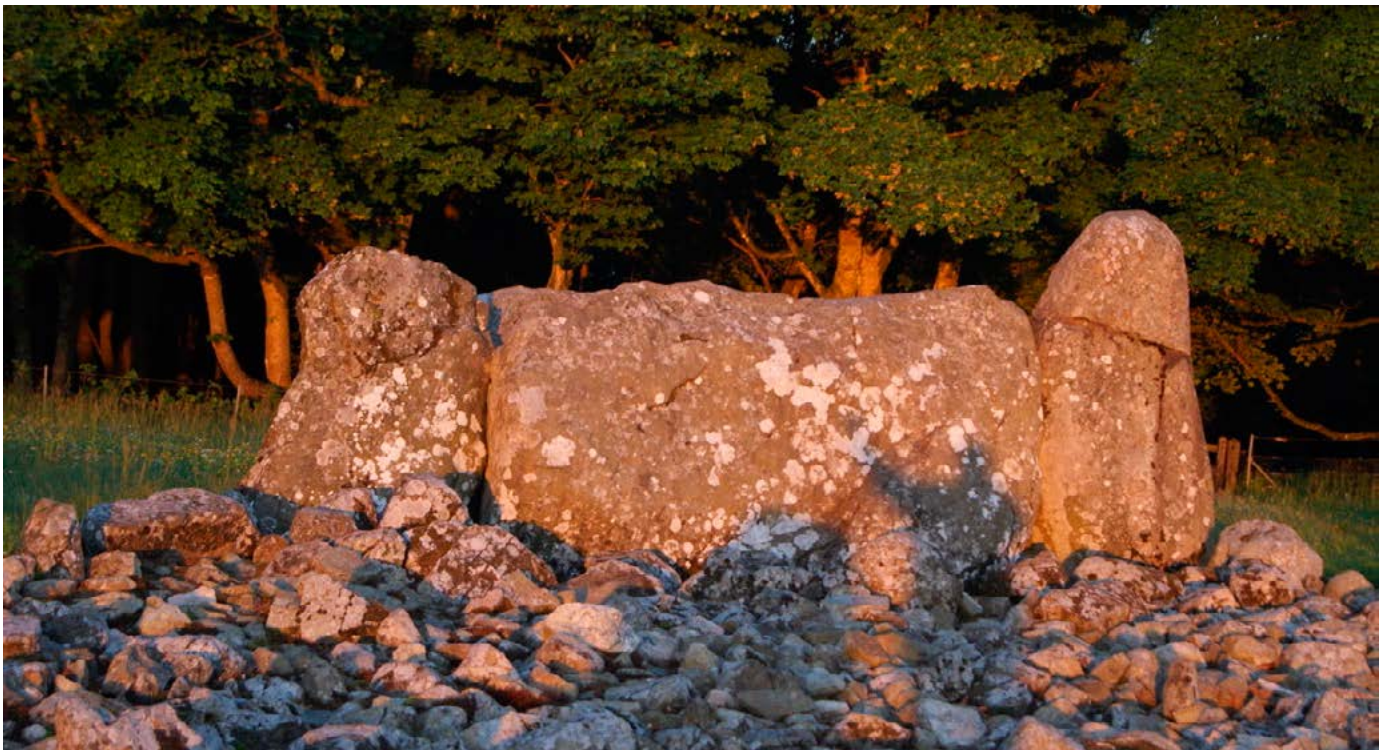


Fig. 6. At 04.26 the sun at half-orb casts the shadow of Stone 6 on the center base of the recumbent stone. The author's shadow is also present, with arm raised. Author's photo.



Fig. 7. This photograph at 04.28 BST shows the aligned Stone 6 as well as the top of the shadow upon the center base of the recumbent stone.



Fig. 8. Side view of the forward-leaning Stone 6, after sunrise on 20 June 2017. Stone 6 is 1.49 m high. Stone 5 is beyond. Author's photo.

solve this by positioning a second focal stone to receive shadows at sunrise to account for the dates of the winter half of the year. It is explained in a section below how the location of Stone 9 meets the necessary criteria relative to the potential shadow-casting Stones 4, 5 and 7, and these predictions were tested too and verified by photographs.

Additionally, it was confirmed by eye observations on site that from the low viewpoint at the center base of the recumbent stone, the tops of Stones 6, 5 and 4 stand clear of the horizon. This indicates that at or soon after sunrise on the appropriate dates, shadows from these stones reach that particular zone of the recumbent stone. Testing these predictions with the summer solstice sunrise would begin next day, on 20 June 2017, which was forecast to be sunny. It is relevant to know that Stones 4–6, which are crucial for the discussed alignments and potential shadow casting stones for the summer half-year, have never fallen down (Kilbride-Jones 1935, 189-190; Coles 1901, 521). They stand where the community raised them in Late Neolithic times.

Results for midsummer sunrise at Loanhead of Daviot: the first sunrise test and discussion

To the north and east of the stone circle at Loanhead of Daviot is a long ridge whose elevation is over 1° of arc, and this affects sunrise times and directions. In midsummer week on the morning of the first sunrise trial, 20 June 2017, the first gleams of sunshine appeared between 04.21 and 04.22 BST at an azimuth of 43.5° east of north.

Note that 5000/4500 years ago the sun rose about 1° north of its current position, i.e., about two solar diameters northwards along the horizon.

Figure 5 shows the sun a minute later, between 04.22 and 04.23, viewed from across the top of the recumbent stone.

As the sun rises and moves eastwards, the initially feeble shadow of Stone 6 strengthens and soon becomes clearly visible at the center base of the recumbent stone, as suggested by the survey plan and photographs in Figures 6 and 7.

Figures 8, 9 and 10 clarify further. Of course, in one extreme limit it can be said that no instrumentation is needed if patient investigators are able to visit the circles daily through the year as the ancients did, and know what to watch for as the sun rises. Investigators



Fig. 9. Stone 6 photographed from the center base of the recumbent stone. The rising sun is being eclipsed by Stone 6 as viewed from low down in front of the middle of the recumbent Stone 2. Author's photo.



Fig. 10. View of sunrise in midsummer week two years later on 19 June 2019. In the image the upper part of Stone 6 is visible below the number 6. Photo: Peter Cork of Inverurie.



Fig.11. The alignment of the mid-point of the recumbent stone with Stone 5 and the direction of sunrise on 6 May 2018 at 04.34 BST is attested here. Photo: Peter Cork.



Fig. 12. Photograph taken on 20 March 2018. The sun is rising behind cloud in the direction of the heavily cupmarked Stone 4. Notice the forward bulge at the inside lower middle of the recumbent Stone 2. Author's photo. There is no evidence that excavators ever moved the recumbent stone.

only have to allow for small shifts in sunrise directions caused by the earth's axial precession since the Late Neolithic. The maximum angular correction along the horizon since the Late Neolithic and Early Bronze Age caused by this is about 1° of arc (or two solar diameters in angular terms) at the solstices, while being effectively zero at the March and September quarter dates.

The other alignments in the summer half-year (as indicated in the plan in fig. 4) are between Stone 5 and the center of the recumbent Stone 2 for the summer cross-quarter dates of May and June, and between the heavily cupmarked Stone 4 and the middle of the recumbent for the March and September quarter dates.

Sunrises at the May and August cross-quarter dates relative to the recumbent stone

The relevant alignments predicted for the shadows at the Neolithic May Day (6 May, in Table 1) and

Lughnasa (6 August, in Table 1) are indicated in the plan of fig. 4.

The key direction is predicted to be from Stone 5 to the middle of the recumbent stone. On 6 May 2018 with clouds present, the best photograph of the resulting weak shadow was that taken by Peter Cork (fig. 11).

Sunrises at the March and September quarter dates (Q2 and Q4) relative to the recumbent stone, with discussion

In the Neolithic and Bronze Ages, the direction of sunrise for the second and fourth quarter days, Day 92 and Day 274, is what mattered (i.e., 22 March and 20 September). On these dates at Loanhead of Daviot the sun rose at $88\text{--}89^\circ$ east of north, for which refer to Table 1 for sea-level-horizon data relevant for Aberdeenshire for Days 92 and 274. These dates approximate to the 12-hour day/12-hour night equinoxes.



Fig. 13. As many as 14 or 15 cupmarks on Stone 4. This photograph was taken on 20 June 2017 at 04.38 BST, soon after sunrise. Author's photo.



Fig. 14. 25 March 2018. Just after sunrise interfering tree shadows prevent the shadow of Stone 4 (at extreme left) being seen separately from tree shadows. Photo: Peter Cork.

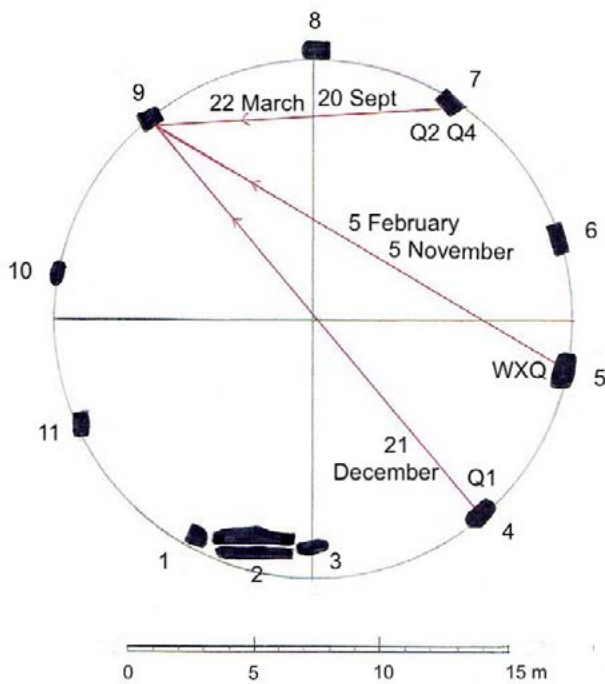


Fig. 15. The new survey plan of the stones at Loanhead of Daviot in which the directional indications for the winter half of the calendar year are indicated relative to the focal Stone 9. Contrast this with the plan for summer dates in fig. 4. North is at the top.

Note that the directions are not the 90° that many observers often expect. Directions of $88\text{--}89^\circ$ are commonly encountered in Early Neolithic long barrows as well and for the same reason (Meaden, to be published). This is a consequence of choosing the same dates, Days 92 and 274.

A prediction is that for the March-quarter sunrise Stone 4 aligns with the pregnant-like bump on the front of the recumbent stone (see fig. 12). Stone 4 is the potential shadow-casting stone. It has at least a dozen cupmarks carved upon it (fig. 13). On 20 March 2018 an attempt to witness and film the March-quarter sunrise was not possible because of cloud on the sky horizon (fig. 12).

These alignments show the importance of this cup-marked stone because of its crucial dual roles for both (a) the March and September sunrises with respect to the recumbent stone and (b) the winter solstice sunrise to a second focal stone (Stone 6, as explained in the next section).

Again, on 25 March 2018, a morning when the sunrise was clear, shadow casting by Stone 4 could again

not be recorded, but this time it was because of blocking shadows cast by trees in the east (fig. 14). Despite this, if one notes the direction and length of the shadow cast by adjacent Stone 5 across the circle to near Stone 11, one may judge by geometrical parallelism (cf. the plan in fig. 4) that a shadow from Stone 4 would doubtless reach the recumbent stone, and very likely at its middle.

Fortuitously, the March and September quarter days are also marked by a second stone pair, treated below, in the winter half of the year, for which good photographs were obtained on the same 25 March 2018 date without obstruction by trees.

Predictions and observations relating to sunrises for the months from September to March relative to Stone 9 with discussion

Stone 9 in the northwest is the winter-season, or win-



Fig. 16. Stone 10 in the west. Author's photo.



Fig. 17. Summer picture of the broken Stone 9 (foreground). At the winter solstice sunrise, the shadow of the cupmarked Stone 4 unites with the focal Stone 9. Author's photo.

ter half-year, focal stone.

The plan in the next figure includes the photographed directional alignment between Stone 9 and Stone 4 that takes place at the winter solstice sunrise. It further shows how Stones 9 and 5 align for the cross-quarter dates in February and November, and Stones 9 and 7 for the March and September mid-spring and mid-autumn quarter dates.

The perimeter Stone 9 is at the perfect location for this because its position was deliberately selected (fig. 15). Broken off short, the remaining stump is 0.78 m high and 1.15 m wide, making it look, unintentionally, like a small recumbent stone. However, a large part of unknown shape is missing. The excavator, H. F. Kilbride-Jones (1935, 189), knew something of its destruction. His paper reports that the stone “still possesses the remains of the triangular base, although the top half of the monolith has been broken off and carried away, and that apparently not very long ago.” Why was this stone picked out for destruction? Did it bear a symbolic quality, maybe overtly sexual, of which local Christians did not approve?

A subtle example of a female-symbolic stone is Stone 10, 1.84 m high, in the west. Figure 16 shows it illuminated at 04.40 BST soon after sunrise on 20 June 2017. The low central shadow, caused by a sunlit ridge, identifies Stone 10 as conveying the feminine principle, but it only shows at sunrise in midsummer week.

The damaged Stone 9 may have had a more prominent feminine mark, seeing that all focal stones at such stone circle sites, when not damaged, bear feminine symbolism (Meaden 2024). Whatever the truth, Stone 9 serves to operate as the focal stone for the winter half of the calendar year. It is the winter-season focus, just as the recumbent stone is the summer-season focus.

The winter solstice sunrise relative to Stone 9 in December 2017, with discussion

From the point of view of sunrise, it is unfortunate that at the stone circle of Loanhead of Daviot trees were planted more than a century ago close by at the east, south and west of the stone circle. Figures 17 and 18 compare the state of leaf coverage in summer and win-



Fig. 18. The same stones photographed on 16 December 2017 not long before the day of the winter solstice. The full orb of the sun is seen shortly after its rising. Author's photo.

ter for the crucial winter-solstice sunrise direction. In the winter months the sun can only be seen occasionally through the trees as it rises (fig. 18). For strong shadows to be cast by the cupmarked Stone 4, treeless corridors need to be prepared along the directions of sunrise for the winter, spring and autumn quarter dates of the year (21 December, 22 March, 20 September). Removal of a few trees for each date can achieve this, less than ten perhaps for the winter solstice. This should be done in honour of the Aberdonian ancestors who raised the stones nearly 5,000 years ago in the open environment that they would have created.

Fortunately, the photograph of fig. 18 is enough to establish that the predicted sight line from the sun across Stone 4 to the winter-season focal Stone 9 in the minutes after sunrise holds good. Calculation shows that on midwinter morning the shadow of the heavily cupmarked Stone 4 would fall at the center base of Stone 9.

From his compass reading of Stone 4 Burl (2000) wrote, "Loanhead of Daviot, twelve [cups] on the stone east of the east flanker, idiosyncratically on the midwinter sunrise." The latter happens because, when standing at the circle center as Burl always did, on this sole occasion the circle center chanced to be on the line between the paired stones in question, viz., Stone 9 and Stone 4 (refer to the plan of fig. 15).

Predictions about shadows relative to the focal Stone 9 on the cross-quarter days in February and November.

The relevant alignments predicted for the shadows on the cross-quarter dates of 5 February and 5 November are indicated in the plan of fig. 15. The key direction, in the absence of trees, is predicted to be from Stone 5 to Stone 9. Unfortunately, verification is not possible until the trees in that sunrise direction are removed.

The March and September quarter dates, Q2 and Q4, relative to the broken focal Stone 9 with discussion.

In the first minutes after a clear sunrise on and close to Day 92 (22 March) Neolithic and Bronze Age witnesses would have seen the shadow of the straight-sided Stone 7 move on to the base of the waiting focal Stone 9. The photograph in fig. 19 expresses the connection, although it was not taken on 22 March (Day 92) but three days later than the quarter date. Because of this the difference in azimuth is about 2° of arc, which is equivalent to four solar diameters. Allowing for the difference in day number (and therefore direction of sunrise) and the time-of-day difference, calculation shows that on 22 March (Q2) the sun would cast the shadow of Stone 7 at the center base of Stone 9 in the first minutes after sunrise.



Fig. 19. Loanhead of Daviot. 25 March 2018 at 06.14 GMT. The top of the shadow of male-symbolic Stone 7 is centered on the surviving stump of focal Stone 9 for a date near the March quarter date. Photo: Pete Cork.



Fig. 20. Easter Aquhorthies Stone Circle at sunrise close to the winter solstice. The lozenge-shaped focal stone is united by a shadow cast from the perimeter stone nearest to the eastern flanker. Photo: Austin Kinsley.

To appreciate better the importance of this union between contrasting dimorphic stones, compare it with the waiting female-symbolic stone at Easter Aquhorthies on 16 December 2017.

Austin Kinsley took the photograph in fig. 20 at snow-bound Easter Aquhorthies for the author, who was at snow-covered Loanhead of Daviot a few miles away (fig. 18). The photograph demonstrates how the target of the cast shadow at sunrise is the center base of the prepared female-symbolic lozenge-type stone.

The photograph in fig. 21, taken at Sunhoney Stone Circle on 18 December 2017 from the point of view of focal Stone 11, shows how, as the winter solstice sun rises from behind the slopes of Craigour Mountain, it gets eclipsed upon reaching the line between Stones 5 and 11. This is because Stone 5 is the winter solstice-sunrise shadow-casting stone, and Stone 11 is the winter-season focal stone awaiting union by the connecting shadow. The photograph was taken from the center base of Stone 11 just above the level of grass and peat.

For every calendrical stone-pair alignment photographed at Loanhead of Daviot the target is the center base of the shadow-reception stone, as with the summer solstice sunrise (Figures 6 and 7) when the sun

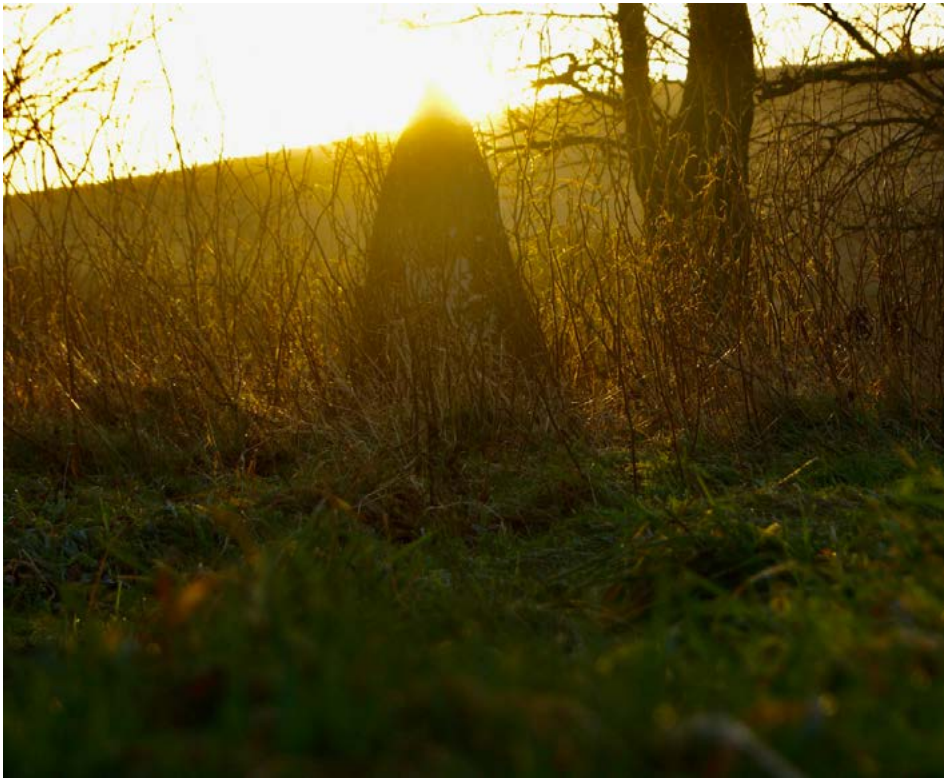


Fig. 21. The winter solstice sunrise Stone 5 at Sunhoney photographed on 18 December 2017 from just above grass level in front of the winter-season focal Stone 11.

risers in line with Stone 6. Of course, the planners could have selected a taller stone to achieve union higher up in the middle of the recumbent stone if they had desired. Instead, it seems that they particularly wanted the union to be at the center base of the waiting stone, which is indeed what they also did for several tested sunrise dates at the stone circles of Easter Aquhorthies and Sunhoney in Aberdeenshire (Figures 20 and 21). Ian Shepherd, who contrasted the purposes of the stone circle at Loanhead of Daviot with the cremation cemetery, wrote in the Canmore document *Exploring Scotland's Heritage*, "Whereas the great stone circle had required the cooperation of a whole community (and their neighbours) to build it, and while its use for the rituals of life, fertility and magic extended over many centuries, the cremation cemetery is an altogether slighter, more transient creation, concerned with the relationships in death within an individual family or two over a short time" (Shepherd 1986 and 1996; Burgess 2006).

Concluding remarks

The stone circle at Loanhead of Daviot is Late Neolithic. The finding by Clark (1970, 511) of indi-

genous Lyles Jill Neolithic ware and Early Beaker sherds including all-over-corded ware suggests that construction was likely not later than around 2500 BC and probably earlier. The makers of the cairn came later.

This paper has shown that the stone circle at Loanhead purposefully functioned as a kind of calendrical time piece for certain dates of the year. The basis is the concept of observing key azimuth positions of sunrises for dates when the sun rises in line with the prepared directions of paired stones having recognizable diagnostic symbolism of dimorphic character.

The other inbuilt concept relates to the idea of fertility as mentioned in the Canmore publications *Exploring Scottish Heritage* by Shepherd (1986, 1996, 2006). Indeed, the sunrise-aligned unions of paired stones are between distinguishable dimorphic pairs. The shadow-casting stones in the east, sunlit at sunrise, are straight-sided, their widths narrower than their heights. The cast shadows, depending on date of the year, fall in sequence upon a recumbent stone that is symbolically female (as proven for Irish stone circles with recumbent stones, Meaden 2016 and 2024) and lies horizontally between two pillar-like phallic stones as

if the latter are male guardians. Additionally, each stone circle has a second shadow-receiving stone bearing traditional female symbolism. At Easter Aquhorthies, Sunhoney and Balquhain this focal stone is at the winter solstice position and each time it is quasi-lozenge-shaped. At other stone circles in the region the second shadow-receiving stone is missing, as at Loanhead of Daviot where only a stump remains following malicious damage.

The facts of archeology and archaeoastronomy are beyond dispute, as also the observations of the contrasting dimorphism of paired stones. The reality of what this meant to the builders needs discussion, although partly speculative. Nevertheless, the range of interpretations is based on premises underlying cultural anthropology, which calls upon knowledge in the realms of psychology, philosophy, symbolism and religion.

A primary consideration is whether male and female gender signalling was intentional. A stone whose shape resembles a glans crowns the western pillar flanking stone (Stone 1) at Loanhead of Daviot. The eastern pillar stone at Loanhead (Stone 3) was deliberately thrown down and its upper part chipped away and removed (Kilbride-Jones 1935, 189), probably for intentional destruction.

Much of the bulk of the secondary focal stone (Stone 9) on the western perimeter was broken off and taken away, perhaps destroyed because of overtly portraying female sexuality.

Figurative male-female unions are typical of likely all fully functioning fertility religions in the megalithic period, as with the religion of the Hindus whose icons represent divinities. At the time of worship, the Hindus think that divineness infuses the icons. Feasible parallels like this in religious belief are not discussed in this paper. It is enough to indicate the following findings.

1. Sunrise and the minutes afterwards are the time of day that matters.
2. Alignments of paired stones to particular sunrises are a crucial element.
3. The directions of sunrises are often delayed by elevated ground in the eastern landscape, and yet, regardless of differing hill heights, the optimum dates of sunrise remain the same, being set

in stone via the directions of paired stones to the rising sun.

4. The essence of a workable calendar follows as a consequence.
5. The stone pairing is distinctively dimorphic, suggesting a meaningful purpose.
6. On occasions of clear sunrise there are particular dates for which in many cases the eastern stones are high enough to throw a shadow of unification with a stone waiting to receive it.

Generally, in this and any preliterate age, symbolism played a significant role in the culture of illiterate farming communities who were forever vulnerable to the consequences of unforeseen variable weather and the fluctuating fertility of the land. At Loanhead of Daviot in Scotland the distinctive dimorphism of paired stones appears gender-based.

It is stressed that in order to assess the sunrise situations, it is not enough to survey a stone circle and only try to analyse the stone positions when back in the office. Instead, it is essential to be on site on mornings of clear sunrise in order to witness what the builders had arranged by watching the sun as the ancients did. This unlocks the core symbolism, which depends on finding the inbuilt alignments that differentiate the dates that matter. At Loanhead of Daviot the sunrise dates indicated by paired perimeter stones provide a range of calendar dates at intervals of 45–46 days throughout the calendar year. These may be the occasions of the foundational Neolithic long-term agricultural festivals.

Lastly, we recommend that the authorities who are responsible for maintenance at the stone circle of Loanhead of Daviot should provide sunrise corridors by removing trees from the tree plantation in the easterly and southeasterly directions that correspond to the calendar dates of 21 December, 5 February and 5 November.

Acknowledgements

The late Peter Cork of Inverurie, Aberdeenshire, helped with photography on several occasions, obtaining the photographs used in Figures 10, 11, 14 and 18.

Austin Kinsley photographed for the author at Easter Aquhorthies on 16 December 2017 (fig. 20).

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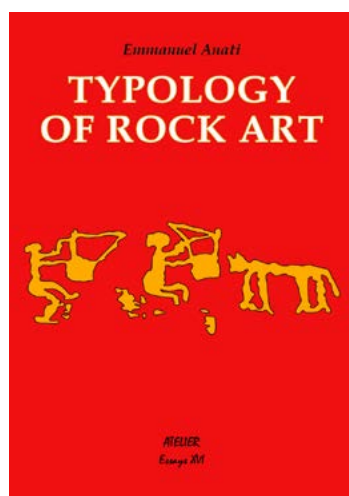
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Typology of Rock Art

Anati, E.

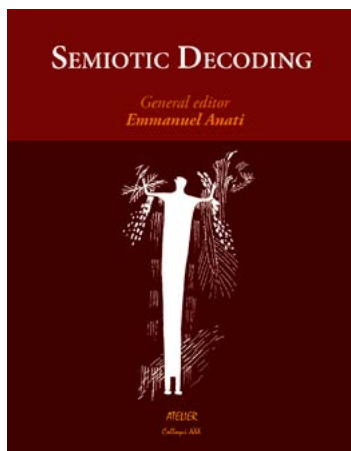
2023, *Typology of Rock Art*

Essays XVI

Capo di Ponte (Atelier), 106 pp., 37 figg. € 20

Rock art is a human expression, produced over the millennia, on five continents. In the frame of the UNESCO “World Report on Rock Art: the state of the art” (2008), the author presented a typological structure of rock art, which has since been updated and revised. This text presents an updated version considering the following topics: elementary concepts of typology; definition of rock art site; the grammar of rock art: typology of signs and figures; categories of rock art according to the way of life of their creators: archaic hunter-gatherers, hunters who use bow and arrows, shepherds and animal breeders, complex economy including agriculture, others; syntax: the systems of associations of graphemes, associations, compositions, sequences, scenes, etc.; archetypes and variants; purpose, results and purpose of the typology.

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Semiotic Decoding

Anati, E. (ed.)

2023, *Semiotic Decoding*

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Capo di Ponte (Atelier), 180 pp., 147 figg. € 40

Archeology brings back fragments of the past. Findings unveil parts of our buried memory. Description, dating and attribution to a cultural-ethnic or historic context, open the way to the next step, understanding their conceptual meaning and reveal the minds behind their outputs. In this book, typology and examples of different systems of decoding are presenting elementary tools of investigation into the meaning of signs and symbols.

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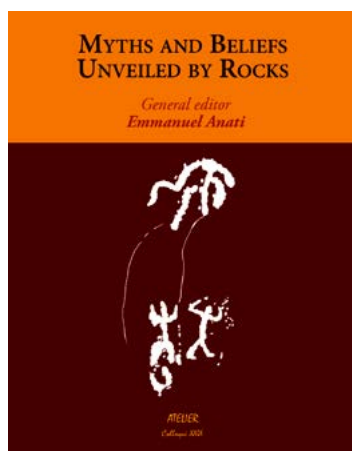
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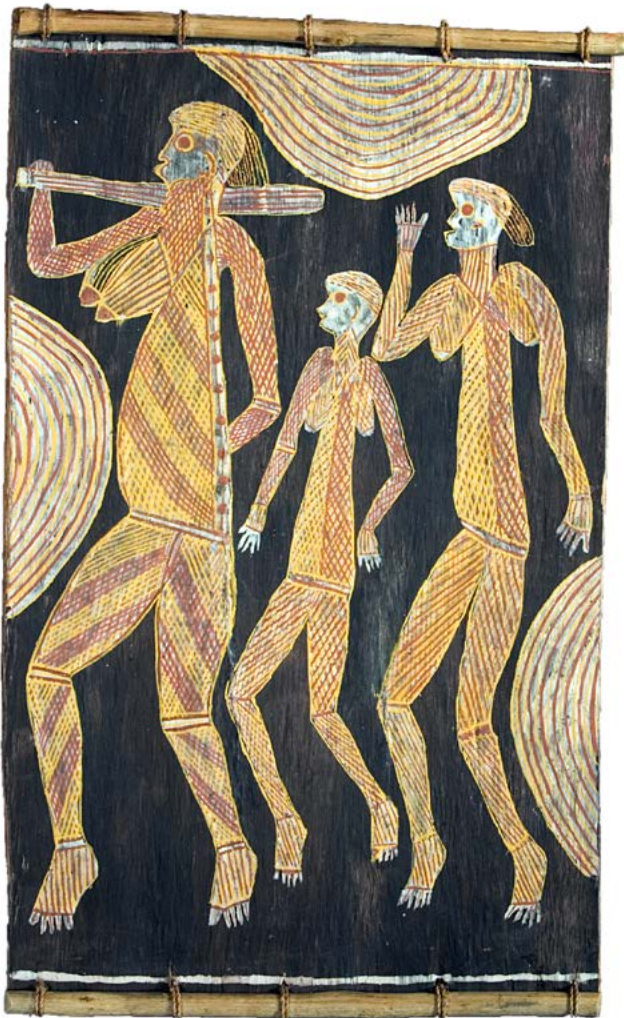


Fig. 1. Aboriginal bark painting from Oenpelli, Arnhem Land. The evocation of a myth: three females are walking between three mountains. From *Bark Paintings* (Anati, 2018).

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