FORM AND MEANING OF THE NEOLITHIC ROUND STRUCTURES IN THE
NEAR EAST AND EUROPE

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ABSTRACT

FORM AND MEANING OF THE NEOLITHIC ROUND STRUCTURES IN THE
NEAR EAST AND EUROPE

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Working on similar evidence, architectural history and archaeology are two fields that have much in common. This thesis analyses Near Eastern and European Neolithic round structures to explore further this commonality. Avoiding the diffusionist and narrativist approaches, the study does not pursue establishing continuity or connection between the Neolithic round structures in the Near East and Europe. Instead, it focuses on the form, structure, spatial arrangements, and symbolism relationships of the buildings and monuments through a reading based on the architectural semiotic theory of Umberto Eco. To examine whether there was a symbolic manifestation behind the Neolithic round form, Pre-Pottery Neolithic settlements where subterranean circular and above-ground rectangular structures coexisted together like Jerf el-Ahmar are studied. Furthermore, considering that circular subterranean structures were built before rectangular above-ground buildings in Neolithic settlements such as Göbekli Tepe and Aşıklı Höyük, it has been discussed whether the shift to rectangular form necessitated a process that included the development of Neolithic societies' construction skills. To advance the argument and to provide an extensive publication concerning circular Neolithic structures for future research, the thesis also examines the circular European Neolithic monuments: tomb-shrines and enclosures. Taken

together, the study asserts that the choice of round form in the Near East can be considered as an agency-based preference where two forms coexisted together, whereas it was an outcome of ecological parameters and natural laws, i.e. structure, when they evolved in succession within different periods. Regarding European monuments, the round form was usually a symbolic choice.

Keywords: Neolithic Architecture, Round Structures, Archaeological Semiotics, Architectural Semiotics, Umberto Eco

ÖZ

YAKIN DOĞU VE AVRUPA'DAKİ NEOLİTİK YUVARLAK YAPILARIN BİÇİMİ VE ANLAMI

ÇELİK, Sümeyye

Yüksek Lisans, Mimarlık Tarihi Bölümü

Tez Yöneticisi: Prof. Dr. Ali Uzay PEKER

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Benzer kanıtlar üzerinde çalışan mimarlık tarihi ve arkeoloji, pek çok ortak yönü olan iki alandır. Bu tez, Yakın Doğu ve Avrupa Neolitik yuvarlak yapılarının analizi ile bu ortak noktayı daha derin bir şekilde araştırmaktadır. Yayılmacı ve öyküleyici yaklaşımlardan kaçınılarak, Yakın Doğu ve Avrupa'daki Neolitik yuvarlak yapılar arasında süreklilik veya bağlantı kurma amacı güdülmemiştir. Bunun yerine, Umberto Eco'nun mimari semiyotik kuramına dayalı bir okumayla, binaların ve anıtların biçim, strüktür, mekânsal düzenlemeler ve sembolizm ilişkilerine odaklanır. Neolitik yuvarlak formun arkasında sembolik bir anlam olup olmadığını incelemek için, Jerf el-Ahmar gibi, yeraltı dairesel ve yer üstü dikdörtgen yapılarının bir arada bulunduğu Çanak Çömleksiz Neolitik yerleşimler incelenmiştir. Ayrıca, Göbekli Tepe ve Aşıklı Höyük gibi Neolitik yerleşim yerlerinde dairesel yapıların dikdörtgen yapılardan daha önce inşa edildiği düşünüldüğünde, dikdörtgen forma geçişin, Neolitik toplumların inşa etme becerilerinin geliştirilmesini içeren bir süreci mi zorunlu kılıp kılmadığı tartışılmıştır. Tartışmayı bir ileri seviyeye taşımak ve gelecekteki araştırmalar için dairesel Neolitik yapılarla ilgili kapsamlı bir yayın oluşturmak adına, aynı zamanda dairesel Avrupa Neolitik anıtlarını da incelenmiştir: mezar-türbeler ve çevirmeler.

Birlikte ele alındığında, çalışma, Yakın Doğu'da iki yapı türünün bir arada var olduğu durumlarda yuvarlak form seçiminin faillik temelli bir tercih olarak kabul edilebileceğini, öte yandan bu formların art arda geliştiği yerlerde ekolojik parametreler ve doğa yasalarının, yani yapının, bir sonucu olduğu savunmaktadır. Avrupa anıtları incelendiğinde ise, yuvarlak formun genellikle sembolik bir tercih olduğu görülmektedir.

Anahtar Kelimeler: Neolitik Mimari, Yuvarlak Yapılar, Arkeolojik Semiyotik, Mimari Semiyotik, Umberto Eco

To people
who feel like leaving bed in the mornings
is a battle that starts anew every day.

ACKNOWLEDGMENTS

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LIST OF ABBREVIATIONS

BC   Before Christ

BP   Before Present

m   meter

m^2 square meter

m^3 cubic meter

PPN   Pre-Pottery Neolithic

PPNA   Pre-Pottery Neolithic A

PPNB   Pre-Pottery Neolithic B

CHAPTER 1

INTRODUCTION

1.1.   Sources on Neolithic Structures

Neolithic architecture has rarely been studied in the framework of architectural history. However, there are numerous materials to think about. Significantly, the ubiquitous circularly-planned structures in south-eastern Turkey, the Levant and Europe are outstanding. The sources that cover the scope of this topic can be divided into two main groups: works that examine socio-economic and political aspects of multi-layered Neolithic cultures by means of material culture; and works on Neolithic architecture spread over an identified geography. When examining these publications, it can be observed that the vast majority were created by compiling the works of archaeologists and reinterpretations of archaeological data. However, several graduate theses and articles from various Turkish universities also contributed towards Neolithic architecture studies concerning Anatolian and Levantine sites. For example, Ergün Şimşek's master thesis "Prehistoric Architecture in the Context of Anatolian Geography and Place of Ritual in Architecture" discusses the reflections of symbolic thinking and ritual in prehistoric architectural practice with examples of domestic and non-domestic buildings in and out of Anatolia.

Sources produced by archaeologists on the Neolithic periods of different regions are copious. Numerous archaeologists specialize in prehistory, particularly exploring indigenous cultures of the Neolithic. Through examining the appearance of durable masonry constructions in the Neolithic, archaeologists study not only material objects but also buildings. Apart from the documents published by the archaeologists who conduct the site excavations, other archaeologists also read and interpret these first-hand reports to create their interpretive studies as secondary sources. On the one hand, the scope of some of these sources is excessively broad to obtain an in-depth

understanding of the Neolithic architecture. Although they involve architectural inquiries and investigations, they do not focus on a specific type or tradition of architecture as the backbone of the texts. These sources include "Oxford Handbook of Neolithic Europe" edited by C. Fowler, J. Harding, D. Hoffman, "Pagan Britain" by Ronald Hutton, and Alan H. Simmons' "The Neolithic Revolution in the Near East: Transforming the Human Landscape,".[1] One of the concerns of Hutton is to argue whether retrieving the history of prehistoric British religion is attainable in the face of constricted evidence. To do so, he analyses numerous types of Neolithic monuments, such as dolmens, passage graves and henges, through case studies. It can be stated that Simmons' book is the most relevant and comprehensive source for the Near Eastern section of my thesis since it provides informative data on material culture, subsistence strategies, ritual practices and social organizations of Natufian and Neolithic people as well as conveying different perspectives and interpretations of scholars. Although the book is beneficial for gaining overall knowledge regarding Near Eastern Neolithic and ongoing debates, it lacks pictorial evidence (e.g., plans, sections, and photographs) desired for architectural studies. Therefore, this lack of visual elements will be overcome in this thesis by including the documents published in other sources (usually articles).

On the other hand, there are compilations of archaeological-architectural case studies that either focus on a chosen architectural typology in a continental or regional scope or on the Neolithic architecture and monuments of a region regardless of a fixed form. The book "Round Mounds and Monumentality in the British Neolithic and Beyond" edited by Timothy Darvill et al., and the articles such as "Notes on the Cult Buildings of Northern Mesopotamia in the Aceramic Neolithic Period" by Tatiana V. Kornienko and "Multi-Sensual Analysis of Near Eastern Pre-Pottery Neolithic Non-Domestic Architecture" by Alexis McBride come under the former group.[2] Moreover, the

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[1] Chris Fowler, Jan Harding, and Daniela Hofmann, *The Oxford Handbook of Neolithic Europe* (Oxford, United Kingdom: Oxford University Press, 2015); Ronald Hutton, *Pagan Britain*, Reprint (Yale University Press, 2015); Alan Simmons and Ofer Bar-Yosef, *The Neolithic Revolution in the Near East: Transforming the Human Landscape*, 1st ed. (University of Arizona Press, 2011).

[2] Jim Leary, Timothy Darvill, and David Field, *Round Mounds and Monumentality in the British Neolithic and Beyond (Neolithic Studies Group Seminar Papers Book 10)* (Oxbow Books, 2010); Tatiana V. Kornienko, "Notes on the Cult Buildings of Northern Mesopotamia in the Aceramic

individual study of Avi Gopher and Gil Haklay, "Geometry and Architectural Planning at Göbekli Tepe, Turkey" and "Geometry, a measurement unit and rectangular architecture at Early Neolithic Jerf el-Ahmar, Syria" are exceptional since they utilize computational analysis systems to reveal the reason underlying Göbekli Tepe's layout plan design.[3] Regarding the latter category of sources, many European scholars are working on monuments, and the cornerstone of the sources they produced is architecture involving all kinds of components. "The Megalithic Architectures of Europe" edited by Luc Laporte and Chris Scarre, is an outstanding collected work comprising the case studies of Neolithic and Bronze Age megalithic and masonry architecture from different countries with an emphasis on architectural which makes it a valuable resource.[4] The section of the book written by Jørgen Westphal, "In the eye of the beholder: key architectural elements in 25 years of visual analysis of Danish megalithic tombs", is valuable as it deals with spatial features and arrangements, alongside building elements.[5] Similarly, Christopher Tilley's *The Dolmens and Passage Graves of Sweden*" is another study that follows this pattern.[6] Furthermore, Richard Bradley's book "The Significance of Monuments"; Vicki Cummings' "The Neolithic of Britain and Ireland"; and Mark Patton's "Statements in Stone" are useful as regional architectural studies covering various types of monuments.[7]

Neolithic Period," *Journal of Near Eastern Studies* 68, no. 2 (April 2009): 81–102, https://doi.org/10.1086/604671; Alexis MC Bride, "Performance and Participation: Multi-Sensual Analysis of Near Eastern Pre-Pottery Neolithic Non-Domestic Architecture," *Paléorient* 39, no. 2 (2013): 47–67, https://doi.org/10.3406/paleo.2013.5520.

[3] Gil Haklay and Avi Gopher, "Geometry and Architectural Planning at Göbekli Tepe, Turkey," *Cambridge Archaeological Journal* 30, no. 2 (January 14, 2020): 343–57, https://doi.org/10.1017/s0959774319000660, Gil Haklay and Avi Gopher, "Geometry, a Measurement Unit and Rectangular Architecture at Early Neolithic Jerf El-Ahmar, Syria," *Paléorient*, no. 46 1-2 (December 3, 2020): 31–42, https://doi.org/10.4000/paleorient.297.

[4] Luc Laporte and Chris Scarre, *The Megalithic Architectures of Europe* (Oxbow Books, 2022).

[5] Ibid.

[6] Christopher Tilley, *The Dolmens and Passage Graves of Sweden*, 1st ed. Reprint, (Taylor and Francis, 2016), Fig. 1.12. https://www.perlego.com/book/1570353/the-dolmens-and-passage-graves-of-sweden-pdf.

[7] Richard Bradley, *The Significance of Monuments: On the Shaping of Human Experience in Neolithic and Bronze Age Europe* (Routledge, 1998); Vicki Cummings, *The Neolithic of Britain and Ireland*

1.2.   Aim of the Thesis, Scope and Case Study Choice

In the course of the last decades, Göbekli Tepe became the most glamorous archaeological discovery, the focus of survey by numerous archaeologists, due to its sophisticated and well-preserved architecture, which gives the impression of being the product of an architectural design process carried out prior to its construction. Indeed, Göbekli Tepe is indispensable to archaeologists, given that it is both a geographical and chronological transition zone between the Natufian culture of the Levant and the Pottery Neolithic settlements of Anatolia, serving as a knot that awaits to be untied for a better understanding of Neolithic communities and humankind. However, if there is an architectural product to be considered, where do architectural historians stand in this context as archaeologists make efforts to explain the past through architecture?

Prehistory is mainly regarded as a field of archaeology. From the sixties on, with the development of archaeological theory, archaeologists have been contributing to diverse explanations of the past by means of various approaches and methods in addition to excavating the sites and examining the artefacts to classify them. Additionally, the lack of written sources to retrieve the worldviews of these prehistoric societies and the absence of first-hand accounts complicates the task for architectural historians to decipher why architecture, especially of non-domestic nature, were designed the way they were. Perhaps this emergent ambiguity is one of the reasons why many architectural historians do not consider working on prehistoric architecture. However, this should not stop architectural historians from studying prehistory, considering that it is also a part of the past and the fact that buildings and monuments are the primary archives of architecture.[8] Given these extant material evidence and published studies on the Neolithic architecture of both Near East and Europe, competencies and challenges of understanding the past without recorded history can be explored.

(Routledge Archaeology of Northern Europe), 1st ed. (Routledge, 2017); Mark Patton, *Statements in Stone: Monuments and Society in Neolithic Brittany*, 1st ed. (Routledge, 2015).

[8] Dana Arnold, preface to, *Rethinking Architectural Historiography*, 1st ed., ed. Dana Arnold, Elvan Altan Ergut, and Belgin Turan Ozkaya (Routledge, 2006), xvi.

Speaking of Göbekli Tepe and Neolithic architecture, it is important that there was an architectural tradition in south-eastern Turkey and the Levant, that generated plenty of subterranean or semi-subterranean circular buildings that seemed to lack traces of daily domestic activities.[9] On the one hand, it is intriguing that at some sites, like Jerf el-Ahmar, these non-domestic structures were subterranean and built in round shapes, whereas contemporary houses were rectangular and constructed above ground.[10] Was there a symbolic manifestation behind the Neolithic round form preference, like how today's contemporary mosques still comprise domes while they can be covered without a dome in the ways steel construction systems enable? Or was it simply a pragmatic choice favouring construction stability and use of the structure, which also was perhaps a less laborious building method? If we put it in a broader framework, what were the conditions and constraints that motivated people to create circular spaces while they could build rectangular ones instead? On the other hand, in Neolithic settlements such as Göbekli Tepe and Aşıklı Höyük, the construction of circular structures preceded rectangular ones. In this sense, did the transition to the round and rectangular plan necessitate a process involving improvement in the building skills of Neolithic communities?

To advance the argument and to provide an extensive publication concerning circular Neolithic structures for future research, the thesis also scrutinizes the circular European Neolithic monuments: tomb-shrines and enclosures.[11] However, European specimens comprise not only structures that define a fully confined inner space (i.e. tomb-shrines) but also open spaces delimited by the disposition of standing stones at intervals forming a circle (i.e. stone circles and henges) or a circular ditch system that enclosed a certain area of the land (i.e. earthwork enclosures). This makes it a process

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[9] Kornienko, "Notes on the Cult Buildings of Northern Mesopotamia in the Aceramic Neolithic Period.", 96.

[10] MC Bride, "Performance and Participation: Multi-Sensual Analysis of Near Eastern Pre-Pottery Neolithic Non-Domestic Architecture.", 52.

[11] Tomb-shrine is the term coined by Ronald Hutton in his book "Pagan Britain" to describe dolmens, passage graves, and chambered cairns better by encompassing both the possibility of the presence or lack of burials inside the monuments. See Chapter 4.1 for extended discussion. Enclosures are European monuments restricting areas for different purposes through various construction techniques and structural elements. See Chapter 4.2 for extended discussion.

that explores spaces that offer distinct experiences with the same type of constraint created by different structural elements and methods. Besides the functional and symbolic investigation for the choice of the form, to what extent can these enquiries addressing structural and pragmatic issues be applied to the European specimens of circular Neolithic architecture, given the fact that some of them are not buildings consisting of vertical and horizontal structural elements constructed together, but instead are monuments consisted of loosely placed discontinuous elements spread across a vast landscape?

Taken together, these are the questions that this thesis raises. Regardless of the answers, this study aims to provide the archaeologist-dominated field with a different perspective, more specifically one from an architectural history standpoint, regarding the circular architectural typologies in the Near East and Europe at some point. Avoiding the expansionist and narrativist approaches, the thesis does not pursue establishing continuity or connection between works in the Near East and Europe, which are thousands of years apart in time and kilometres. Instead, this thesis focuses on the form, structure, spatial arrangements and symbolism relationships of the buildings and monuments.

The first chapter following the introduction, "Before the Near Eastern Neolithic: An Overview of Natufian Architecture," briefly analyses the high spots of the Natufian period, which preceded the Near Eastern Neolithic, to identify the common construction techniques, architectural forms, possible use of the structures, and ritual behaviours that existed before the Neolithic.

In reviewing the Neolithic building types, the thesis attempted to follow chronologically the dates of building construction, and it mostly does. All the Near Eastern structures studied date back several thousand years from the oldest European structures. Therefore, the Near Eastern part is considered earlier than the European section. However, sometimes the order of consideration of building types in these two main sections does not conform to the chronological order since structures based on similar construction concepts and use are evaluated under the same heading for a holistic and well-structured order. For example, although causewayed enclosures and circular ditch systems precede the passage graves, they are discussed after passage

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graves, under the same subsection "Enclosures," along with the stone circles and henges belonging to a much later date because both of these groups create open spaces by enclosing a part of the land in a round shape.

Chapter 3, "The Round Pre-Pottery Neolithic Structures of the Near East," illustrates the typologically diversified circular buildings at the beginning of the Neolithic period through case studies, whose detailed publications have been visualized with architectural representation techniques (e.g., plans, sections, elevations, and perspective drawings). Granaries from the site of Dhara', residential buildings in Aşıklı Höyük and Körtik Tepe, and non-domestic structures of Hallan Çemi, Mureybet, Jerf el-Ahmar, Boncuklu Tarla, Gusir Höyük, Karahan Tepe andGöbekli Tepe are utilized to generate the argument of the chapter. However, not all the round structures of the Pre-Pottery Neolithic are involved in the thesis. Instead, the study discusses the extensively excavated and published (with pictorial evidence) examples of each typologically differentiated building group, which indicate different forms of usage involving different construction techniques and materials. This approach concerning the selection of case studies is also followed for the European section as well.

Chapter 4 encompasses "Round monuments of Neolithic Europe" belonging to the era between the $5^{th} – 3^{rd}$ millennium BC: dolmens, passage graves, chambered cairns, earthwork enclosures and timber, and stone circles. This chapter surveys these building types in two groups: tombs-shrines (i.e., dolmens, passage graves and chambered cairns) and enclosures (i.e., earthwork enclosures, and timber and stone circles). While the first one creates enclosed indoor spaces and individual solid monuments, the second creates open spaces, some of which are often found as complexes in relation to other monuments. Unlike the chapter on the Near East, case studies are not specified as subheadings in this section. Instead, since the Neolithic communities in Europe built many repetitive building types (e.g., over 40.000 tomb-shrines), the general features of the regionally differentiated building variations are suitable to be explained verbally

and supported with visuals of case examples.[12] On the other hand, exceptional specimens having unique features in design are also included.

In the final chapter (5), titled "Overall Assessment", I evaluate the common and different features of the various typologies of round-planned structures from different regions in terms of structural elements, design, function, and meaning. Then, I reflect on the role and nature of monumental architecture in the Neolithic period as an external symbol system and discuss the challenges and competencies of contextualization of prehistoric architecture in an architectural history framework. In this context, by focusing on a specific typology regardless of continental borders, this study is the first to examine the architectural features of a phenomenon that became widespread during the Neolithic period, a time when revolutionary socio-economic changes appeared in Europe and the Near East. Therefore, the thesis creates a compilation of dispersed data that explores the diverse architectural characteristics, possible functions, and meanings of the circular Neolithic structures in the light of archaeological records that have been published so far. Through this, the thesis illustrates how the same form and plan has been diversified to create indoor and outdoor space designs for different purposes by the communities living in different geographies over a large time period. Last but not least, the thesis also aims to demonstrate that a more inclusive historiography of architecture and an all-embracing curriculum of architectural history programs that does not neglect prehistory is possible.

1.3.   Ruminating the Past, Forming a Methodology: Archaeological Theory, Architectural Historiography and Semiotics

1.3.1. Archaeological Theory: Culture-Historical, Processual and Postprocessual Approaches

Given that the studies of the past are separated as history and "prehistory", do the nature, scope, and competence of the discipline of architectural history empower us to pen a "history" of prehistoric architecture? Of course, studies of textual evidence-based history and a past without its own discourse must differ. However, whether

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[12] Hutton, *Pagan Britain*, 40.

belongs to a literate society or not, a piece of architecture is architecture. Regardless of relative recorded information, it can lead us to develop a discourse via the concrete presence of architecture as long as it endures.

Archaeological fieldwork is usually required to uncover prehistoric structures; thus the ones who regularly engage with it tend to be archaeologists. The utilisation of archaeological data in favour of the discipline of history came about in the late 19th century with the development of culture-historical archaeology, which saw archaeology as a tool to find out what had happened to prehistoric people.[13] The notions such as non-Europeans were inferior, and human beings were resistant to change because their behaviours were dictated by genes brought about a research mainly focused on diffusion and immigration as the explanation of the cultural change.[14] The aim was to trace the origins of particular ethnic groups, which eventually served in the emergence of nation-states in Europe and their sanctification.[15] Diffusionism, which laid the foundation for culture-historical communion, rejected the innate equal creativity of human beings regardless of their race and repeatable the appearance of the same technological inventions around different areas of the world, whereas evolutionary archaeologists did not exclude expansionist explanations for neighbouring cultures alongside proposing that the similar solutions to the same problem across the world were the analogical adaptations stemming from innate nature of human species.[16] Despite racist phantasm of European researchers, there were people before their time, such as German ethnologist Franz Boas (1858-1942), who contended "cultural relativism" and "historical particularism", which means there cannot be worldwide canons to evaluate or judge the development degree of each culture because every one of them is the distinctive outcome of a combination of

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[13] Bruce Trigger, *A History of Archaeological Thought*, 2nd ed. (Cambridge University Press, 2006), 311.

[14] Ibid, 211-311.

[15] Ibid.

[16] Ibid, 218-9, 308.

specific conditions and events.[17] Nevertheless, the culture-historical or diffusionist presupposition contending that "only studying cultures with historical and geographical ties to each other would make archaeological interpretation plausible" superseded the evolutionist approach asserting that "the cultures of societies at the same level of progression would be similar" and dominated the intellectual arena (e.g. *ex oriente lux*).[18]

In the 20th century, British archaeologist and philosopher Robin Collingwood (1889-1943) asserted that facts and theories consist of what archaeologists are disposed to discern and interpretations of archaeologists are "the ideas … about the ideas that people once had."[19] In contrast, others advocated for the separation of archaeological data, constituting invariable objective resources of the discipline, and interpretations, being subject to alterations and change by new findings and intellectual schools.[20] Moreover, recognizing the inadequacies of the culture-historical approach gave wing to the studies of sociological and anthropological aspects of human behaviour, which aimed to discover interrelations of social and cultural systems and how they operate, rather than looking for external explanations.[21] To do so, two supportive approaches are prominent: early functionalism and processualism. The first tries to reveal how interconnected parts of the system process and maintain the system's equilibrium, whereas the latter researches what causes irreversible changes to the system.[22] Therefore, there was an increasing concern about deducing social, economic, and

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[17] Ibid, 218-19.

[18] Ibid, 222-23.

[19] Robin G. Collingwood, *An Autobiography*, (Oxford University Press, 1939), **quoted in** Bruce Trigger, *A History of Archaeological Thought*, 2nd ed. (Cambridge University Press, 2006), Trigger, 304-05.

[20] Trigger, *A History of Archaeological Thought*, 306.

[21] Ibid, 314.

[22] Ibid.

political behaviour giving rise to alterations in the system from the archaeological data.[23]

In the 1960s, a group of American archaeologists turned to evolutionist, behaviourist, ecological, and positivist studies to distinguish archaeology from traditional historical approaches and to build a "scientific" discipline of archaeology.[24] They aimed to provide explanations through the subsumption of specific events under relevant and confirmed general (or covering) laws, which can be called deductive, causal or deterministic reasoning.[25] These covering laws archaeologists utilize are usually adopted from sociology, anthropology or psychology to explain events and material culture.[26]

The definition of culture as "extrasomatic means of adaptation" by Lewis Binford contended that "changes in all aspects of cultural systems were adaptive responses to alterations in the natural environment, changes in population pressure, and competition with adjacent cultural systems".[27] Mainly based on theory of cultural evolution, this New or Processual Archaeology of the 1960s aimed to discover long-term reasons for processual changes beneath the surface rather than common-sense or superficial explanations.[28] However, its behaviourist and evolutionist tenets considered human beings and culture as predictable and generalizable phenomena in distinct contexts, which can be criticized in accordance with cultural relativism and historical particularism. Furthermore, empirical testability of scientific hypotheses by deductive methodologies was questioned due to possible presence of alternative hypotheses explaining the situation by various appropriate processes.[29] Thus, the degree of

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[23] Ibid, 384-85.

[24] Ibid, 386.

[25] P. J. Watson and Steven A. LeBlanc, *Explanation in Archeology: An Explicitly Scientific Approach*, Second Printing (Columbia University Press, 1971), 6.

[26] Ibid, 161.

[27] Trigger, *A History of Archaeological Thought*, 394.

[28] Matthew Johnson, *Archaeological Theory: An Introduction*, 3rd ed. (Wiley-Blackwell, 2019), 79-80.

[29] Ibid, 109.

objectivity and reliability of explanations may be divergent, like the existence of different accounts for the same problem. However, for the processual approach, what people had believed and their distinct traditions had no significance because its advocators were interested in generalizable adaptive reactions to ecological changes as impetus of cultural evolution. All these questions and inadequacies led to the development of counter approaches by scholars who formerly practised processual methodologies, such as Ian Hodder.

Subsequent intellectual fashion of archaeological theory, Postprocessual archaeology, rejected the notion of a positivist objective science and data-theory separation; its architects contended that science is socially constructed and explanations were inevitably hermeneutic because no matter how objective and scientific they tried to be, all researchers had to guess and assume something about how prehistoric people had perceived the world.[30] For them, material culture was a multivalent text that could be interpreted differently by each reader, referring to contexts at different scales and associations, where there would be no such thing as an "ultimate conclusive reading of a text accounting for everything at once".[31] In addition, Hodder revived Collingwood's historical idealism and empathetic thinking to take into account the values and thoughts of past societies, that is the socio-cultural context, to construct explanations.[32] The active decision-making ability of individuals (i.e. agency), that is outside of an abstract sphere of systems defined by social norms and rules (i.e. structure), to manipulate, to deconstruct and to transform them was a law discovered in sociology that must be considered in the empathetic rethinking process of archaeologists.[33]

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[30] Ibid, 111-12.

[31] Ibid, 115-16.

[32] Ibid, 113.

[33] Ibid, 114.

1.3.2. Architectural Historiography

Architectural history was born as a subdiscipline of art history in German-speaking universities in the 19th century, mainly influenced by culture-history and using the methodologies of archaeology, architecture, philology, and art history, and regarded architecture as a historical document and evidence of culture.[34] 19th-century art and culture historian Jacob Burckhardt postulated that the past now could be understood more objectively by utilising the ability to travel, to learn a foreign language and the availability of records to a majority through a more scientific approach.[35] Heinrich Wölfflin, the pupil of Burckhardt, asserted that "reading artefacts at the level of culture" and "any architectural style reflects the attitude and the movement of people in the period concerned" (i.e. *Zeitgeist*).[36] The notion of architecture as a form of mere art and architect as an artist prevailed over a century, including the 20th-century version of architectural history.[37]

In the 1960s, historians began to question what they were doing and started engaging with the issues regarding the philosophical foundations of historiography.[38] Dana Arnold starts her essay, Reading the Past: What is architectural History?, with mentioning the recognition of subjectivity and elusiveness of objectivity in writing history.[39] She criticizes "the myth of truthful reality" of empiricists and contends that "facts" of history are unable to test or observe. She refers to material culture as evidence which enables the historian to form a quasi-historical-truth or an imitation of the past. In this sense, architectural historians agree with the postprocessual

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[34] Andrew Leach, *What Is Architectural History?*, 1st ed. (Polity, 2010), 9-10.

[35] Ibid, 34.

[36] Leach, *What Is Architectural History?*, 35; Heinrich Wölfflin, "Prolegomena to a Psychology of Architecture", in *Empathy, Form and Space: Problems in German Aesthetics, 1873–1893*, trans. & ed. Harry Francis Mallgrave & Eleftherios Ikonomou (Santa Monica: Getty Center for the History of Arts and Humanities, 1994), 182.

[37] Leach, *What Is Architectural History?,* 24.

[38] Dana Arnold, "Reading the Past: What is architectural History?," in *Reading Architectural History*, ed. Dana Arnold, 1st ed. (Routledge, 2002), 1.

[39] Arnold, "Reading the Past: What is architectural History?,".

archaeologists on the modificatory nature of science. Collingwood's concept of history, "a past living in the present, not a dead one", consists of fragments of the truthful past.[40] Although these debris of the past exists in the present, they are not alive or active without the intervention of a professional, i.e. historian.[41] Despite the fact that evidence is based on empirical knowledge, the process of explaining or narrating events itself is not empirical; it is subject to be subjective because it is constituted in the unique minds of different people.[42]

The narrative is a common methodology used by historians and its "coherence or linearity is a selective process that requires the exclusion of material and the imposition of a unity on a disparate set of historical events or circumstances".[43] According to Morton White, "logic of narration" could be applied to only continuing major phenomena (e.g. history of the Near East, history of Turks etc.).[44] Moreover, for a narrative to be explanatory, there had to be causal associations between incidents, such as "The mother of little girl had rebuked her, then she started crying".[45] However, this "causal chain" does not go further than being implicit, descriptive and sequential because it does not explain in which way the girl was sad. Was she scared of her mother's tough line or regretful of her naughty behaviour? W. B. Gallie highlighted the significance of "transitions" in narratives that are unintentional and not completely determined opportunities paving the way for the occurrence of cases.[46] Thus, a mere narrativist approach to history stressing sequences of events to history overlooks

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[40] Robin G. Collingwood, *An Autobiography*, (Oxford University Press, 1939), 97-9, **quoted in** Bruce Trigger, *A History of Archaeological Thought*, 2nd ed. (Cambridge University Press, 2006), Trigger, 304.

[41] E. H. Carr, "What is History?," in *Reading Architectural History*, ed. Dana Arnold, 1st ed. (Routledge, 2002), 19.

[42] Ibid, 22.

[43] Arnold, "Reading the Past: What is architectural History?," 2.

[44] W. H. Dray, "On the Nature and Role of Narrative in Historiography," *History and Theory* 10, no. 2 (1971): 153-171, https://doi.org/10.2307/2504290, 156.

[45] Ibid, 162.

[46] William Dray, "Philosophy and Historiography," in *Companion to Historiography*, ed. Michael Bentley, *(Routledge World Reference)*, 1st ed. (Routledge, 2002), 758.

sociological, political, cultural and economic long-term conditions and psychological stimuli, which prevents a satisfactory and multidimensional deep comprehension of incidents.

Narrative style concerning temporal relations to architecture can be beneficial when the uniting framework for buildings is a period or nation because these concepts encompass many political, sociological, and ideological events in an extended time interval. Hence, along with the narration of events, the rise and fall of architectural styles in association with these successive changes in ideology and policy yields a comprehensive theoretical structure for historiography of historical architecture. On the other hand, for prehistory, we do not have a written list of happenings; in which case, narration does not seem to be the most efficient option for the explanation of architecture of illiterate societies'. Moreover, how appropriate is it to write a "history" of architecture based on the same principles of history, a discipline regarding occurrences we acknowledge most of the time cognitively, whereas the other's interest is material objects present tangibly in the physical world? Although both fields aim to provide us with explanations, the different nature of the things they deal with necessitates the differentiation of their methodologies. That being said, Arnold's pondering is engrossing:

> Are the differences between the skills needed for reading documents, on the one hand, and those needed for analysing the material evidence, on the other, a sufficient justification for dividing the proper subject, the past, into two disciplines called history and archaeology? With the archaeologist, the architectural historian must place buildings in their physical and topographical contexts and within their own craft and design tradition. But with the historian, the architectural historian must place buildings both in their wider political and social context, and in the more particular social and economic context...[47]

First of all, it has been stated that archaeologists have moved far beyond solely doing the field work and categorizing items according to their styles and periods, which is an art history approach. They attempt to make meanings of things belonging to the past by seeing them as more than material objects. Therefore, dealing with the same kind of evidence, it appears to me that architectural history and archaeology must have

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[47] Dana Arnold, preface to Dana Arnold, Elvan Altan Ergut, and Belgin Turan Ozkaya, *Rethinking Architectural Historiography*, xvii.

more common grounds than they have with history. Secondly, three orientations in studying the past of architecture centring the aims of different disciplines can be named: (i) architecture through architectural history, (ii) history through architecture, and (iii) anthropology through architecture. The first one can be defined as studying the old buildings to gain insights into today's architectural design practice. The second one serves as the justification of culture history, being the material evidence usually confirms the recorded information. And the last one is what archaeologists are keen to persevere to understand cultures and societies. It can be asserted that architectural history can be an enquiry encompassing all of the above-mentioned cognate branches as well as serving them.[48]

The approaches of archaeologists to architecture are summarized according to intellectual fashions in the article "*Archaeotecture*: seeking a new archaeological vision of Architecture": culture-historical (traditional) archaeology, whose standpoint is art historical; functionalist (processual or new) archaeology, whose theory is based on the norms of social anthropology; and postprocessual archaeology, which falls into cultural anthropology (Table 1, 2, 3).[49]

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[48] Compare with Leach, *What Is Architectural History?*, 9-10.

[49] Xurxo M. Ayán Vila et al, "Archaeotecture: seeking a new archaeological vision of Architecture" in *Archaeotecture: Archaeology of Architecture (BAR International)*, ed. Xurxo Ayan Vila, (British Archaeological Reports, 2003).

Table 1. A summary of culture-historical or "traditional" approach to architecture.

Source: Xurxo Ayan Vila, Archaeotecture: Archaeology of Architecture (BAR International) (British Archaeological Reports, 2003), Table 1.

TRADITIONAL ARCHAEOLOGY	ARCHITECTURE AS THE OBJECT OF STUDY	
Denomination	Archaeography / Pretheoretical Archaeology	Secondary role of the architectonic record in the investigation. Conception of the building as an object in itself.
Theory	Art History	Formalist and typological focus of Art History.
Ontology	Objects/forms	The study of architectonic remains is limited to formal description and the analysis of building techniques.
Method	Chronotypological series / Stratigraphic reading	Lack of interpretative models: investigation focuses on architectonic form, without exploring its possible function or meaning.
Technique	Excavation (Wheeler method)	
Objective	Periodisation	Geographic determinism: an architecture is fundamentally determined by environmental factors.
Interpretative framework	Evolutionism / Diffusionism / Historicism-cultural / Historic Particularism	Social or geographical diffusionism: constructive changes do not correspond with an endogenous evolution, but are instead the consequence of the arrival of new, foreign architectonic concepts.
Epistemology	Pretheoretical Positivism	Built space is not conceived as a social space = methodologies of spatial analysis are not proposed, only descriptions of artefacts.

Table 2. A summary of functionalist or processual approach to architecture.

Source: Xurxo Ayan Vila, Archaeotecture: Archaeology of Architecture (BAR International) (British Archaeological Reports, 2003), Table 2.

FUNCTIONALIST ARCHAEOLOGY		ARCHITECTURE AS THE OBJECT OF STUDY
Denomination	New Archaeology	Architecture is a basic technology and instrument for social reproduction.
Theory	Social anthropology	The architectonic units found within the settlements (micro level) are the key to understanding the pattern of subsistence and the social structure.
Ontology	Archaeological record	Identification of areas of activity, which make it possible to define different spaces, suggest the functionality and approximate a global interpretation of settlements.
Method	Hypothetical-Deductive	
Technique	Excavation in area (Harris' method)	The analysis of the distribution and associations of artefacts within architectonic structures gives data for a social interpretation of the record.
Objective	Social Process	
Interpretative framework	Neoevolutionism / Cultural Materialism / Systemic theory / Ecological anthropology	Artefacts (buildings and objects), activities and functions of spaces are the basis for a sociological interpretation of architectonic space.
Epistemology	Neopositivism	

Table 3. A summary of postprocessual or interpretive approach to architecture.

Source: Xurxo Ayan Vila, Archaeotecture: Archaeology of Architecture (BAR International) (British Archaeological Reports, 2003), Table 3.

POST PROCESSUAL ARCHAEOLOGY SYMBOLIC ARCHAEOLOGY		ARCHITECTURE AS THE OBJECT OF STUDY
Denomination	Post Procesual Archaeology	Built space does not only respond to social conventions, but also to cultural and symbolic demands.
Theory	Cultural anthropology	Architecture is both a catalyst and product of social action, a technology for constructing the social landscape. It participates in the construction of the symbolic apparatus, the collective imaginarium, and ritual practices.
Ontology	Material Culture	
Method	Hermeneutic	Architecture reproduces the pattern of rationality of a society, creating a spatial structure, spatial relationships which reflect a particular social logic.
	Semiotic	A building is not reduced to a merely architectonic object; it is a material entity which plays an active role in the social constitution of the archaeological reality.
	Social theory	
	Marxism	
Techniques	Ethnoarchaeological	Investigation opts for interdisciplinary techniques, using elements from Anthropology, Sociology and Ethnoarchaeology.
	Historic Archaeology	
Objective	Interpretation of the past	A notable methodological development; the design of new techniques of spatial analysis.
Interpretative framework	Structuralism	
	Post-structuralism	
Epistemology	Neo-rationalism	

Spiro Kostof, as a historian, proposes that the architectural historian has to go further than the revealing original building design "to understand what they are, how they came to be, and why they are the way they are".[50] In this direction, every stage of archaeological theory progress bears particular importance. Periodization, formal and typological analyses of culture-history enable researchers to manage the abundance of artefacts and the vastness of time; and restrict the scope of their studies. Geographical determinism helps to place artefacts in their economic contexts. On the other hand, hypothetical-deductive model of new archaeology must function well when laws governing engineering principles of architecture are considered whereas postprocessual emphasis on cultural and symbolic dimensions of architecture explores its potential as an agent of communication and manipulation of canons, traditions, ideologies and organizations.

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[50] Spiro Kostof, Gregory Castillo, and Richard Tobias, *A History of Architecture: Settings and Rituals*, 2nd ed. (Oxford University Press, 1995), 3.

Although Arnold refers to architectural design education as "whose primary concern is properly with aesthetics", architectural historians who once were undergraduate students of architecture must be aware that architects, at least modern ones, are more likely to give weight to produce the most efficient solution in terms of fulfilling function, endurance, and aesthetics to a specific socio-cultural problem concerning its unique context rather than prioritizing appearance. Nevertheless, form studies remain crucial for the history of architecture because it is what architecture is about outside the designer's mind, creating lasting forms to accommodate things. Therefore, all of the assets of the archaeological theory mentioned above not only help us to realize the task Arnold designated to the historian to locate the structures in their socio-political and economic context but also Kostof's concerns about how they came to be and why they are the way they are, with regard to their anatomy. At this point, Umberto Eco succour us by providing researches with a theory of architectural semiotics concerning formal, ecological, economic, sociological and cultural analyses of architecture. Before unfolding Eco's fruitful theory, semiotics and its application to material culture by archaeologists will be reviewed.

1.3.3. Semiotics

Semiotics is the study of signs and meaning making preceded by two coevals, American philosopher Charles Sanders Peirce (1839-1914) and linguist Ferdinand de Saussure (1857-1913). The former's approach emphasized the signification of signs, while the latter's thought gave priority to the functioning (semiosis) and effect of signs.[51] According to Winifred Nöth, who is the writer of the Handbook of Semiotics, Saussure's theory consists of the sign and its constituents that are signifier and signified based on language.[52] In Saussure's sign model, signifiers, i.e. words, are arbitrary, which means they do not have a logical association based on resemblance or connotation. Moreover, Saussure's bilateral sign theory excludes material reality

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[51] Andre Loeckx and Hilde Heynen, "Meaning and Effect: Revisiting Semiotics in Architecture," in *The Figure of Knowledge: Conditioning Architectural Theory, 1960s–1990s*, ed. Sebastiaan Loosen, Rajesh Heynickx, and Hilde Heynen, (Leuven University Press, 2020), 31.

[52] Winfried Noth, *Handbook of Semiotics (Advances in Semiotics)*, First Paperback Ed. (Indiana University Press, 1995), 56.

which words might refer to and it focuses on the relationship between signified, that is the concept emerging in the mind and signifier (Fig. 1).[53] The structuralist approach to linguistics does not defend the idea that words are meaningful because they refer to a concept or material but because they consist of different sounds which enables us to distinguish between words and meanings.[54]
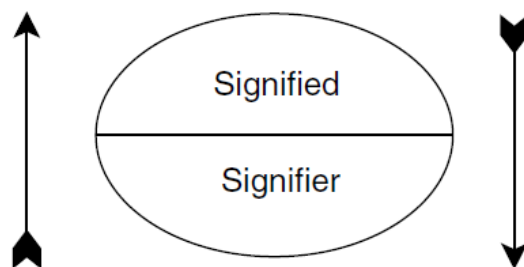
Figure 1. Saussure's bilateral sign model

Source: Robert Preucel, *Archaeological Semiotics*, 1st ed. (Wiley-Blackwell, 2010), Fig. 2.3, after Ferdinand de Saussure,Course in *General Linguistics*, ed. and trans. W. Baskin, (New York: McGraw-Hill, 1966[1959]), 114.

On the other hand, Peirce describes his own model as "a triple connection of the sign, the thing signified, and the cognition produced in the mind".[55] Peirce's sign definition includes three elements: (i) representamen, (ii) the object, and (iii) the interpretant (Fig. 2). A representamen is the perceptible object like an image representing a foot. An object is the thing that the image refers to, e.g. real existing foot of a human being. An interpretant is the concept or thought that emerges in the receiver's mind.

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[53] Richard Coyne, *Peirce for Architects (Thinkers for Architects)*, 1st ed. (Routledge, 2019), 15.

[54] Ferdinand de Saussure, *Course in General Linguistics*, trans. R. Harris, (London: Duckworth, 1983), 116, **quoted in** Richard Coyne, *Peirce for Architects (Thinkers for Architects)*, 1st ed. (Routledge, 2019), 15.

[55] Charles Sanders Peirce, *Peirce on Signs: Writings on Semiotic by Charles Sanders Peirce*, ed. James Hoopes, (University of North Carolina Press, 1991), 183.
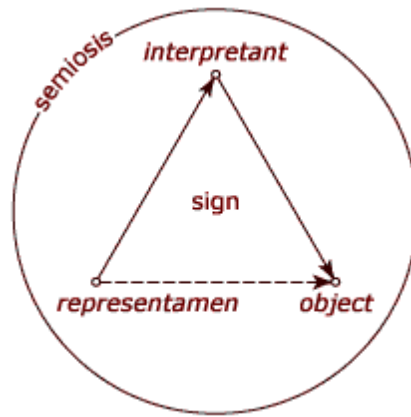
Figure 2. Peircian Sign Model

Source: https://cseweb.ucsd.edu/~ddahlstr/cse271/peirce.php Accessed December 15, 2022.

Peirce defines different types of signs according to their functioning and nature:

> Peirce's major conjecture that a sign can either be an icon, an index, or a symbol ... An icon is a sign that resembles its object (referent or signified in Saussure's terminology) in some way. An obvious example would be a drawing of the Taj Mahal. The drawing is an iconic sign of the object it refers to. There is a physical resemblance. It 'looks like' the building. On the other hand, an indexical sign is one that has some inevitable link with the object to which it refers. It emanates from the object: a crack in the wall of the Taj Mahal is a sign indicating a disturbance in the foundations under the building ... The third sign class is the symbol. According to some experts, the Taj Mahal is a symbol of Shah Jahan's love for his (favourite) wife. The building's form bears no iconic resemblance to that love, or the wife. Nor does the building emerge inevitably as if an index, or an inevitable consequence of that love. In fact, the symbolic relationship between the sign and the object to which it refers is only established through a complex understanding borne of social circumstances and social convention, and even dispute. That is the nature of the symbolic sign according to Peirce. It is decided by social convention.[56]

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[56] Charles Sanders Peirce, "Sundry Logical Conceptions" in *Peirce Edition Project, The Essential Peirce, Volume 2: Selected Philosophical Writings, 1893-1913* (Indiana University Press, 1998), 267-88, **quoted in** Coyne, *Peirce for Architects (Thinkers for Architects)*, 21.

This categorization resonates with Hodder's definition of five sign types encompassing Peircian ones.[57] However, Hodder's definition of symbol suggests an arbitrary relation between signifier and signified, therefore symbols are rarely found in material culture. Although, a visible relationship does not exist between the Taj Mahal and emperor Shah Jahan's love, this association can be established through the acknowledgement of social conventions. In this sense, architecture can act as a Peircian symbol acquiring meaning in a socio-cultural context. On the other hand, Umberto Eco's semiotics theory of architecture introduces technical and syntactic codes alongside social ones deriving additional meanings. This will be discussed extensively in the upcoming chapter on architectural semiotics.

1.3.3.1. Archaeological Semiotics

In his book, Archaeological Semiotics, Robert W. Preucel, starts narrating the associations of semiotics via structuralism that is a school of thought perceiving the systems, e.g. culture, society, etc., consisting of interrelated elements whose relations build structures governed by specific laws.[58] Structuralist archaeology sees material culture as an expression of society that needs to be explained in terms of the rules, laws and relations operating it.[59] However, like a grammar of a language these rules are not consciously thought about when people speak but they are coded and functioning in the subconscious so that successful communication occurs between them.[60]

Some of the processual archaeologists studied material culture through tenets of structuralist linguistics such as generative grammars, deep structure and cognitive universals guiding social acts (These linguistic terms will be explained in the

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[57] Ian Hodder, "The contextual analysis of symbolic meanings," in *The Archaeology of Contextual Meanings (New Directions in Archaeology)*, ed. Ian Hodder, 1st ed. (Cambridge University Press, 2009), 1-10.

[58] Robert Preucel, *Archaeological Semiotics*, 1st ed. (Wiley-Blackwell, 2010), 93.

[59] Johnson, *Archaeological Theory: An Introduction*, 100.

[60] Ibid.

footnotes).[61] In the 1960s, James Deetz claimed that artefacts were produced similarly to words, both being the outcomes of a shared mental process and bodily actions, therefore artefacts also could have structural units resembling phonemes and morphemes of linguistics when different units substitute them, function or meaning changes occur.[62] Furthermore, in 1977, Martin Wobst published a paper emphasizing material culture's communicative potential or function based on the observation carried out in Yugoslavia, where people utilised various dressing styles as declarations of their social associations.[63] Likewise, J. M. Fritz asserted that architecture was an agent to establish ideational systems which could be reflected in the construction process or various experiences and spatial atmospheres offered by the designers through buildings.[64] However, structuralist approaches had overlooked the fact that "individuals and social structures constituted and reconstituted themselves in a social dialectic" and the human agency capable of changing socio-cultural structures, which later postprocessual approaches brought attention to in an era called "post-structuralism".[65]

Michael Shanks and Christopher Tilley, who were the pupils of Hodder, remarked on the differences between language and material culture sign systems as the latter is simpler to observe syntactic arrangements, yet more complex in terms of semantics due to its polysemic aspect.[66] On the other hand, Hodder stressed non-discursive and subconscious operation of artefacts and drew attention to the fact that signifiers or forms of the material culture are not arbitrary contrary to the Sassurian linguistic

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[61] Preucel, *Archaeological Semiotics,* 120.

[62] James Deetz, *Invitation to Archaeology*, No Edition Stated (the Natural History Press, 1967), 87, **quoted in** Preucel, *Archaeological Semiotics*,102.

[63] Preucel, *Archaeological Semiotics,* 113.

[64] J. M. Fritz, "Paleopsychology today: Ideational systems and human adaptation in prehistory" in *Social Archaeology: Beyond Subsistence and Dating*, ed. C. L. Redman et al. (New York: Academic Press, 1978), 37–60, Preucel, *Archaeological Semiotics,* 113.

[65] Preucel, *Archaeological Semiotics,*121.

[66] M. Shanks and C. Tilley, Re-Constructing Archaeology (Cambridge: Cambridge University Press, 1987), **quoted in** Preucel, *Archaeological Semiotics*,255-6.

model; they usually bear similar qualities referring to signified.[67] Hodder also criticizes Sassurian approach because it ignores the material reality of the signified.[68] Therefore, the Sassurian semiotic language model does not correspond to all the characteristics of material culture as a sign system.

Peirce's triadic sign model is not derived from language; therefore, it does not suffer from incompetence when applying it to material culture. Peircian model of sign, whose three elements can change position in semiosis, encompasses words, materials and animate beings, enabling them to act as either representamen, object or interpretant depending on the context.[69]

Some postprocessualist archaeologists use text analogy instead of language, which corresponds to material culture. Rather than only scrutinizing the language's grammar, they try to see the bigger picture as a whole, in relative contexts, to grasp the meaning. Hodder stresses the interrelated aspect of material culture: when artefacts move outside of their contexts, they lose most of their discourse about the past.[70] According to him, for contextual archaeology, three kinds of meaning can be defined: functional meaning expressing the object's aim of use; structural meaning referring to the place of an artefact in a cultural code; and historical meaning bearing the historical content.[71]

Hodder claims that material signs are usually simpler than linguistic signs and defines five variations: indices, signals, and icons; symbols and metaphors.[72] An index is a sign that actually belongs to an object (Peircian) or signifier (Sassurian), e.g. "a pot

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[67] Ian Hodder, "The contextual analysis of symbolic meanings," in *The Archaeology of Contextual Meanings*, ed. I. Hodder, (Cambridge: Cambridge University Press, 1987), **quoted in** Preucel, *Archaeological Semiotics*, 256.

[68] Hodder, "The contextual analysis of symbolic meanings," 2.

[69] Preucel, *Archaeological Semiotics*, 257.

[70] Ian Hodder, *Reading the Past*, 2nd ed. (Cambridge University Press, 1986), 122.

[71] Hodder, "The contextual analysis of symbolic meanings," 1, **quoted in** Preucel, *Archaeological Semiotics*, 126.

[72] Hodder, "The contextual analysis of symbolic meanings," 2-3, **quoted in** Preucel, *Archaeological Semiotics*, 137.

and a group of pots may be indexes of the clay from which they are made". A signal is a sign that sets the receiver in motion, e.g. traffic signs. Icons resemble signified through shared characteristics, e.g. animals depicted in rock art compositions, whereas symbols are arbitrary signs referring to signifiers. Metaphors are signs holding an inconsistency between signified and sign's inherent traits. Material culture mainly consists of more straightforward signs, while complex signs are usually derived through language. This articulation is consistent with Peirce's variation of signs based on representamen-object (signifier-signified) relationships involving indexes, icons and symbols similarly defined.[73]

Preucel quotes Chippindale and Taçon referring to omnipresent chain of signs metaphor that is generated through causal or deductive reasoning in archaeological theory: "we work by chains of logic: from observation x of the evidence we develop proposition y, and from that there follows deduction z. Each is a link in a chain of reasoned deduction."[74]

According to this reasoning, the longer the chain gets, the more fragile it becomes due to the fact that neither archaeological observations provide the objective truth all the time nor deductions are completely reliable.[75] Therefore, some advocates that one should not elongate the chain more than needed to keep the knowledge as solid as possible.[76] Preucel explains the metaphor's misconception by the existence of parallel rings interlocked to a linear chain of signs which represents a logic similar to W. B. Gallie's transitions indicating opportunities paving the way for the occurrence of cases instead of the causal narrative chain of incidents explaining each other (See Section 1.3.2).[77] Thus, he replaces it with Peirce's cable metaphor for scientific reasoning. A

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[73] Preucel, *Archaeological Semiotics*, 57.

[74] Christopher Chippindale and Paul Taçon, *The Archaeology of Rock-Art (New Directions in Archaeology)*, Illustrated (Cambridge University Press, 1999), 92, **quoted in** Preucel, *Archaeological Semiotics*, 251.

[75] Ibid.

[76] Preucel, *Archaeological Semiotics*, 251.

[77] Ibid, 252.

cable, however slender its strands are, still provides a solid tie because of the sheer number of wires, whereas the firmness of a linear chain is limited to the most delicate link of the rings. If the weakest point is broken, it affects the whole narrative; on the other hand, even the thinnest wire strengthens the cable's endurance in the context of parallel lines of evidence.[78]

Consequently, "the present past" is an interpretive statement made of numerous corroborating strands of evidence carrying the potential of providing us with intellectual connections to the past besides material ones that is one reason to proceed as if some interpretations are true, although we are unable to definitively prove them.[79]

1.3.3.2. Architectural Semiotics: Umberto Eco's Semiotics Theory of Architecture

According to Alex Mesoudi, professor of Cultural Evolution, culture can be defined as "information" that refers to the knowledge, beliefs, skills, attitudes, dispositions and conventions that can be received and given among the individuals of a community through social communication mechanisms such as imitation, teaching or language, as distinct from information learned by individuals themselves without any influence from other members of society.[80] It is useful to consider the social system - or culture - as an information system, hence social interaction as information processing.[81] According to this point of view, since architecture is a by-product of human culture that is achieved through the act of designing and building, so to say in the simplest way, it is true that it is also information. Through its interaction with the mind, the

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[78] Richard Bernstein, *Beyond Objectivism and Relativism: Science, Hermeneutics, and Praxis*, First Edition (University of Pennsylvania Press, 1983), 69, **quoted in** Preucel, *Archaeological Semiotics*, 253.

[79] Alison Wylie, "Archaeological Cables and Tacking: The Implications of Practice for Bernstein's 'Options Beyond Objectivism and Relativism,'" *Philosophy of the Social Sciences* 19, no. 1 (March 1989): 1–18, https://doi.org/10.1177/004839318901900101, **quoted in** Preucel, *Archaeological Semiotics*, 254.

[80] Alex Mesoudi, *Cultural Evolution: How Darwinian Theory Can Explain Human Culture and Synthesize the Social Sciences*, Illustrated (University of Chicago Press, 2011), 3-4.

[81] Sydney M. Lamb, Adam Makkai, "Semiotics of Culture and Language," *Current Anthropology* 17, no. 2 (June 1976): 352.

process of information begins. Moreover, architecture is a non-verbal language constituting concrete forms that can be perceived as visual signs. Therefore one needs to consult semiotics which is an interdisciplinary field studying signs and their communication.[82]

Italian philosopher and semiotician Umberto Eco (1932-2016) defines a bilateral semiosis between representamen and interpretant.[83] He takes out the third element because representamen (signifier) and object (signified) are the same due to self-reference.[84] In other words, an actual existing building in its original place refers to its own presence at that moment, at the same place. He uses the term "sign-vehicle" instead of Peirce's representamen. In his semiotic theory, he looks for the presence of a "sign-vehicle whose denoted meaning is the function it makes possible" and its relation with the interpretant that is the cognition of a sign in the mind of the observer.[85] Heynen Hilde and Andre Loeckx describe Eco's model of the sign as a double-faced medal manifesting communication and signification.[86] According to Eco, representamen and object are the same things in architecture, thus he focuses on the coded relationship between the interpretant and sign-vehicle. He states that architectural sign-vehicles can be catalogued and the interpretant may correspond to the primary denotative functions and the secondary connotative functions which might undergo alterations, deformations, replacement or loss through the enrichment or disappearance of cultures and societies through time.[87] Although both round and

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[82] Loeckx and Heynen, "Meaning and Effect: Revisiting Semiotics in Architecture", 32.

[83] Umberto Eco, "Function and Sign: The Semiotics of Architecture," 11-69, in *Signs, Symbols and Architecture*, ed. Geoffrey Broadbent, Richard Bunt, and Charles Jencks, First Edition (John Wiley & Sons Inc, 1980).

[84] Ibid, 16.

[85] Ibid, 19.

[86] Loeckx and Heynen, "Meaning and Effect: Revisiting Semiotics in Architecture", 37-9.

[87] Umberto Eco, "Function and Sign: The Semiotics of Architecture," in *Signs, Symbols and Architecture*, First Edition, ed. Geoffrey Broadbent, Richard Bunt, and Charles Jencks, (John Wiley & Sons Inc, 1980), 28-9.

pointed arches act as the load bearers, as Eco indicates, they also bear symbolic functions of their geographic, cultural and temporal contexts.

According to Eco, we communicate with architectural entities even when we identify their functions.[88] He explains this deduction by means of the hypothesis of the Stone Age man who initiated the history of architecture. The perception of the limit of exterior space where the entrance vault of a cave appears is the sign-vehicle in which prehistoric man takes refuge from exterior dangers, beginning of the idea of interior space. Once this spatial experience is acquired, the reconsideration of the cave entrance from the outside will remind him of the image of the interior, so that a "cave idea" emerges which allows him to concede similar topographies as caves and to relate them to the concept of shelter whether he uses them or not. Owing to the next encounter with another cave, the idea of that cave comes to be substituted by the idea of an abstract cave model. It is an individual realization of coding that is executed in man's own brain, not a social one. From now on, an image of a distant cave in the landscape will communicate to the man its possible function even if there is no fulfilment of it. This notion of utilitarian use indicates the first meaning of the architectural object, its function. Equally, it can be said that the structural model of use denotes the function and this denotation is the primary meaning of the building that one recalls when communicating with it. However, there are other given meanings of structures under certain conventions. Eco states that architectural form denotes its function only in the course of ingrained or learned habits and expectations, and defines these norms as "codes". In accordance with different kinds of codes, architectural entities can connote secondary meanings or functions such as concepts and ideologies. However, secondary symbolic functions should not be regarded as less important than the primary one, since they symbolize the social utility of the structure, Eco asserts. In the hypothetical Stone Age man case, the cave may start to connote "fire", "family", "security", "relief" and other concepts in addition to shelter.[89]

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[88] Ibid, 12-3.

[89] Ibid, 24.

Although Eco states that architectural sign-vehicles can be categorized, he does not talk about any specific groups. Instead, he defines three types of architectural codes to read architecture: technical, syntactic, and semantic codes.[90] First of all, technical codes are the architectural engineering principles. Depending on the construction materials, technology and era to which structures belong, technical codes change throughout the history of architecture, and new construction systems have made it possible to build new forms. Secondly, syntactic codes can be defined as the elaboration of spatial arrangements in accordance with architectural design principles and contextual programs that need to be fulfilled. Lastly, it can be told that semantic codes refer to socio-cultural traditions and rules, ideologies, and syntactical rules of design which enable the definition of primary denotative functions specifying the fulfilment of the purpose that structure offers and secondary connotative functions forming the concepts or relations between sign-vehicles and their meanings originated in people's cognitions. Examples of this include instances such as, "a staircase is an architectural unit to reach upper floor" and "the vertical emphasis in Gothic architecture is equivalent to the elevation of the soul towards God".

Although Eco relates denotative and connotative functions to the structural or syntactic units of architectural entities in relations with semantic codes, they can be applied to buildings in a larger scale and with a simpler logic as in the case of Eco's instance of cave being shelter first, and home of a family second.[91] Therefore, in the thesis, what Eco names "connotative ideologies of inhabitation" is employed to define "denotative functions" or "primary meanings" of the structures in accordance with their typologies. Due to the lack of recorded evidence, it is not possible to denote the primary functions of every spatial unit in the most cases. Hence, denotative function concept is applied to the specimens at a broader scale, encompassing the whole building or monument

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[90] Ibid, 35-41.

[91] Ibid, 39: Compare to Eco's use of semantic codes to describe and classify denotative-connotative functions: "These concern the significant units of architecture, or the relations established between individual architectural sign vehicles (even some architectural syntagms) and their denotative and connotative meanings. They might be subdivided as to whether, through them, the units (a) denote primary functions (roof, stairway, window), (b) have connotative secondary functions (tympanum, triumphal arch, neo-Gothic arch), (c) connote ideologies of inhabitation (common room, dining room, parlour) or (d) at a larger scale have typological meaning under certain functional and sociological types (hospital, villa, school, place, railway station)".

whereas connotative functions are associated with possible socio-cultural, ideological and cosmological codes. Thus, "Connotative Functions" headings assess the ongoing interpretations of Neolithic round structures contended by multiple scholars. On the other hand, structural elements, construction techniques and spatial typologies of round structures can be collected, in line with the available published archaeological data, under the same title of "Architectural Characteristics" for each group due to the fact that both of the technical and syntactic codes regard tangible materialistic features of the structures. Last but not least, the sections of "Locality" consider the positioning of the structures and monuments in landscape context which also can account for their various functions.

Eco's semiotic theory is significant because it integrates beneficial learning outcomes of archaeological theory's each stage: it encourages a developed version of formal and typological art history and culture-history analyses in accordance with technical and syntactic codes, and embraces meaning studies concerning practical and socio-cultural use in the light of semantic codes which processual and postprocessual approaches subsume. However, this thesis is not intended to be one of the much deeper and more sophisticated studies of meaning-seeking archaeological theories, neither it tries to draw general conclusions about sociocultural evolution which is far from a master's students expertise. Instead, it is a compilation of published information about Neolithic structures restricted to a certain form which is evaluated through a methodology derived from Eco's architectural semiotics theory.

CHAPTER 2

A SHORT REVIEW OF NATUFIAN ARCHITECTURE PRECEDING THE PRE-POTTERY NEOLITHIC

During the Neolithic period of the Near East, which began roughly 12,000 years ago, people gradually began to live in sedentary communities and cultivate crops for the first time in the world. However, people did not become completely sedentary or farming communities all of a sudden. As they were simultaneously cultivating wild plants and managing wild animals more, they also generated more complicated settlements and found new ways that enabled staying together in larger groups. Nevertheless, these peculiar characteristics which we attribute to the Neolithic did not happen until the very late Neolithic. Their roots extended deeper in time, to the late Pleistocene.[92]

The sedentism that is usually individualized with Neolithic was already practised during the final Epipaleolithic culture of the Levant, Natufian, dating to 15,000-11,500 BP. The Mount Carmel-Galilee region in Israel is regarded as the homeland of the Natufian culture, although it is much more widespread.[93]

Natufian people established the first permanent settlements, which can be called hamlets or villages in the sites of Palestine (Ain' Mallaha) and Syria (Mureybet and Abu Hureyra) before the occurrence of any plant or animal domestication.[94]

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[92] Bill Finlayson, "Introduction to the Levant During the Neolithic Period," in, *The Oxford Handbook of the Archaeology of the Levant: C. 8000-332 BCE (Oxford Handbooks)*, ed. Margreet Steiner and Ann Killebrew, Illustrated (Oxford University Press, 2018), 228-29.

[93] Ibid.

[94] Barbara Ann Kipfer, *Encyclopedic Dictionary of Archaeology*, 2nd ed. 2021 (Springer, 2021), 918.

These villages consisted of clustered units of architecture. The semi-subterranean structures or pithouses were the main features of the Natufian architecture. The dry-stone foundation walls, which are sometimes preserved up to one metre generated semi-circular or circular layout plans. The floors of most structures were not specifically wrought, but the earth was packed. Some of the structures had holes on the floor for posts that probably supported a framework for a roof that is thought to be made of brush and wood with the lack of abundant evidence of wattle and dub or mud-brick system for upper portions.[95]

In 'Ain Mallaha, structures were dug into the slope, and the circumferential earthen walls of the pits were reinforced with rows of stone (Fig. 3). These early Natufian round buildings ranging between 3-6 meters in diameter with round or square fireplaces are usually interpreted as domestic structures. However, 9 metres in diameter, House 131, with a floor dressed up with intentionally chosen colourful pebbles covering an underlying cemetery, is thought to be used as a kind of funerary or ritual building, unlike others. [96]

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[95] Alan Simmons and Ofer Bar-Yosef, *The Neolithic Revolution in the Near East: Transforming the Human Landscape*, 1st ed. (University of Arizona Press, 2011), 58.

[96] Ibid.
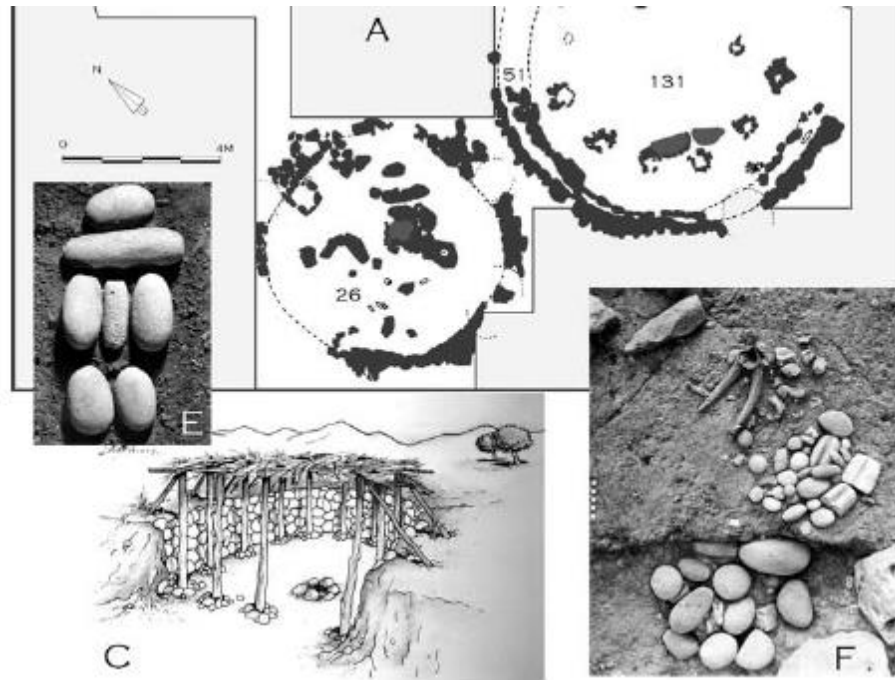
Figure 3. 'Ain Mallaha structures

Description: A: Plan of the structures, C: Reconstruction, E, F: Pebble arrangements.

Source: A.N. Goring-Morris, A. Belfer-Cohen, "A Roof Over One's Head: Developments in Near Eastern Residential Architecture Across the Epipalaeolithic–Neolithic Transition," 246, in *The Neolithic Demographic Transition and Its Consequences*, ed. Jean-Pierre Bocquet-Appel and Ofer Bar-Yosef (New York, United States: Springer Publishing, 2008) 246, Fig. 5.

The late Natufian dwellings of Ain Mallaha, still preserving their form, yielded a sequence of renovations involving reconstructions of walls and floors which could have been a solution to the problems the inhabitants faced.[97]

The organized and regular use of stones in the constructions of dwellings, the carpentry bearing the roofs of the houses covering round surfaces over 20 m^2, the presence of pit

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[97] Juan Jose Ibanez, Jesus Emilio Gonzalez Urquijo, and Xavier Terradas, "Natufian Huts and Hamlets: Experimenting for a Sedentary Life," *Cuadernos Mesopotámicos*, no. 4 (December 2014): 76-78, https://www.researchgate.net/publication/282574218.

fireplaces enclosed by stone rows on the central axis, and the organization of houses within the hamlets can be seen as the Natufian architectural characteristics.[98]

In Northern Syria, the site of Qarassa 3 includes 12 round structures, 4 to 5 meters in diameter, that were placed on a basaltic bedrock (Fig. 4). Eleven of them were aligned to form an arc encompassing the view of an ancient lake (Fig. 5). This arrangement of the settlement can be regarded as an outcome of collective coordination, decision-making, and labour derived from the increase in the complexity of the social organization. The assertion of the disposition towards a more sedentary way of life among Natufian communities is mainly based on a few factors. These include the investment of time and effort on immobile structures and goods, such as the size of the site, the elaboration of architecture, the renovation of the buildings, the density of finds in the sites, the presence of burials, and the presence of heavy-duty tools which can weigh more than 100 kilograms. [99]

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[98] Ibid, 79-80.

[99] Ibid, 78, 81, 83.

Figure 4. Structure 10, built on basaltic bedrock, Qarassa

Source: Juan Jose Ibanez et al, and Xavier Terradas, "Natufian Huts and Hamlets: Experimenting for a Sedentary Life," *Cuadernos Mesopotámicos*, no. 4 (December 2014): 95,Fig. 11. https://www.researchgate.net/publication/282574218
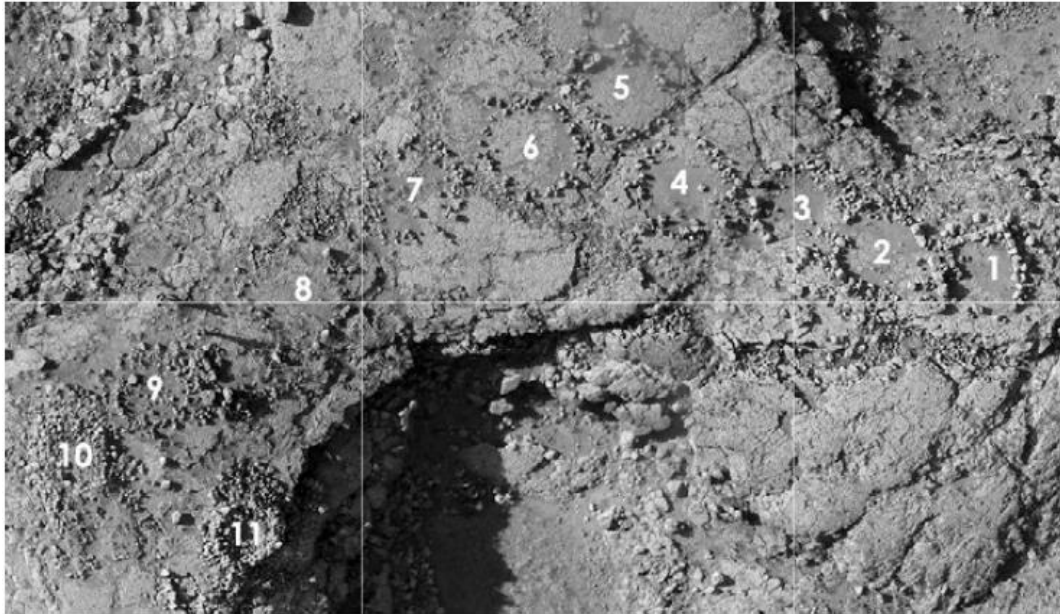
Figure 5. Layout of Qarassa structures

Source: Juan Jose Ibanez et al, and Xavier Terradas, "Natufian Huts and Hamlets: Experimenting for a Sedentary Life," *Cuadernos Mesopotámicos*, no. 4 (December 2014): 91, Fig. 5. https://www.researchgate.net/publication/282574218

Hilazon Tachtit Cave which is a Natufian gravesite bares reconstructed evidence of the stages of a Natufian community member's burial ceremony. Inferences from the archaeological examinations show that ordinary objects often acquire new meanings through ritual practice. Daily artefacts, some of which were at the end of their useful life, were deemed worthy of burial in human graves. These otherwise mundane items have become extraordinary through their curation, positioning, and contextual connotations within the tomb. The funerary action required the application of elaborate ritual expertise in this activity. The sequence of ritual steps is suggestive of an important pre-planning that involved a defined task list and a blueprint of the ritual deeds and their sequencing. Thus, the event must be based on a shared social memory.

Some ritual performances were repeated at other Natufian burial sites, showing that group members shared the ritual knowledge among themselves.[100]

The significant trajectories of socio-economic transformation that occurred in the Natufian involved increased foraging strategies, elaborated symbolic communication and ritual practice and intensified human burial remains within the hamlets. The Natufian culture is regarded as the harbinger of food producing cultures in the Southern Levant and it set the stage for the agriculturally based societies.[101]

The Natufian period indicates a stepwise rise in the incidence and density of human burials. During its late phase, the growing evidence of burials shows that ceremonial and ritual events were becoming more and more publicized, and for the first time some settlements in this area functioned primarily as gravesites. These significant changes and certain ritual features must have heralded new ritual practices that emerged in the following early Neolithic. During the Pre-Pottery Neolithic, the ritual practice was intrinsic to managing human interactions demanded by the challenges of living in the growing permanent settlements and the emergence of new economies based on delayed rather than immediate return systems.[102]

Although the subsistence economy was being modified, domestic structures built during the first phase of the Neolithic following the Epipalaeolithic, PPNA, featured similar Natufian architectural traditions except for the introduction of mudbrick. They were dwellings or special purpose-buildings in round form, either laid above ground or subterranean contrary to the mainly linearly constructed structures of PPNB, which will be discussed in the next chapter.

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[100] Leore Gosman and Natalie D. Munro, "The Natufian Culture: The Harbinger of Food-Producing Societies" in the *Quaternary of the Levant: Environments, Climate Change and Humans*, ed. Yehouda Enzel and Ofer-Bar Yosef (Cambridge: Cambridge University Press, 2017), 322-23.

[101] Ibid.

[102] Leore Grosman and Natalie D. Munro, "A Natufian Ritual Event," *Current Anthropology* 57, no. 3 (June 2, 2016): 311, https://doi.org/10.1086/686563.

CHAPTER 3

THE ROUND PRE-POTTERY NEOLITHIC STRUCTURES OF THE NEAR EAST

3.1. Locality

Throughout the Levant, Pre-Pottery Neolithic sites are found in abundance. Geographic features are distinctive for the identification of the Neolithic regions, such as the Jordan Valley, hilly flanks of the Fertile Crescent, or Upper Euphrates, extending into modern Turkey and the east and south of Syria. Levant acted as a land bridge where people from Europe, Asia and Africa were entangled and specific cultural interactions, hybridity, and confrontations occurred, which caused the fragmentation of population into regional subcultures and multi-layered identities.[103]

The Levant's climate and landscape are tremendously miscellaneous. Its geography can be divided as the Mediterranean Woodland zone that encloses the shoreline and higher lands that receive adequate rain to nourish similar woodland; the semi-arid steppes that cover east of the highlands; and the arid desert areas. There are also strikingly peculiar environmental zones such as the Euphrates River Valley and Jordan Valley, the high Anti-Lebanon Mountains, the coastal strip and major spring locations and the Eastern oases. The interval between the end of the Pleistocene and the beginning of the Holocene caused dramatic climatic diversifications and temperature

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[103] Margreet L. Steiner, Ann E. Killebrew, introduction to *The Handbook of the Archaeology of the Levant*, ed. Margreet L. Steiner, Ann E. Killebrew (Oxford: Oxford University Press, 2014), 32-33; Bill Finlayson, "Introduction to the Levant During the Neolithic Period," in *The Handbook of the Archaeology of the Levant*, ed. Margreet L. Steiner, Ann E. Killebrew (Oxford: Oxford University Press, 2014), 123-33.

fluctuations providing suitable environments for farming.[104] These various environments and conditions generated different circumstances for various subsistence policies throughout the Levant for hunter-gatherers, cultivators, and early farmers.[105]

The Pre-Pottery Neolithic is divided into two stages: Pre-Pottery Neolithic A (PPNA) and Pre-Pottery Neolithic B (PPNB). The PPNA villages have been found on both sides of the Jordan Valley, in the Damascus Basin and along the Euphrates River. In some arid zones of the Levant, such as deserts, PPNA occupation was rarely present yet not all sites of the arid Levantine PPNA sites were small mobile campsites. Çayönü, Göbekli Tepe and Hallan Çemi from south-eastern Turkey, and Nemrik 9 and Qermez Dere from northern Iraq are possibly the most striking examples of the settled PPNA sites. However, it is possible to find settlements of varying scales ranging from camps to villages in the southern Levant.[106]

Even though there is an increasing number of known sites within and beyond the central and southern Levant, most of the PPNA settlements are spotted in or adjacent to Jordan Valley, within the Mediterranean zone, and they were rarely located in the ecotones where the Natufians dwelled. The more substantial PPNA sites are found in the rich habitats, near the steppe margins and swamps, along the lake margins and riverbanks, on alluvial fans, where a considerable amount of land could be made available for cultivation and deep soils would have favoured growth whereas smaller sites outside the Mediterranean vegetation belt probably represented the mobile hunters and gatherers. The site size observation shows that the most substantial sites were placed in more propitious ecological environments.[107]

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[104] Simmons and Bar-Yosef, *The Neolithic Revolution in the Near East: Transforming the Human Landscape*, 2011), 42.

[105] Finlayson, "Introduction to the Levant During the Neolithic Period," 123-33.

[106] Simmons and Bar-Yosef, *The Neolithic Revolution in the Near East: Transforming the Human Landscape*, 2011), 89-91, 95.

[107] Ibid. 106.

The most renowned specimens of PPNB sites are in the Levant. According to Jacques Cauvin's model, the Middle Euphrates is the cradle of PPNB culture and it is disseminated to the north and south by the community movements.[108]

At the excavated PPNB site near Damascus, Tell Aswad, there was a special area that was divided for burial and funeral rituals.[109] Often concentrated in specific areas, besides separate ones, burials have been found in PPNB villages. The sites for burial outside the villages were probably consequences of the inadequacy of space.[110] However, since the architecture of PPNB period is characterized by rectangular structures, its consideration does not appear as a separate section, rather it is referred to in relation to round structures.

3.2. Architectural Characteristics

3.2.1. Levantian Specimens

3.2.1.1. Dwellings of PPNA

The most conspicuous difference between the Natufian and PPNA architecture is the use of plano-convex (with one surface plane and the opposite one convex) mud-bricks for constructing superstructures by PPNA communities whereas Natufian people usually used twigs and pelts. The substantial use of mud-bricks and other organic materials caused the formation of mounds that are also known as "tels". While the foundations are often stone, there is not much known about the roofing. The floors are usually clay-applied, rarely covered with cobblestones. The entrances to the buildings are enabled through either gaps in the walls or steps. The shape of the structures is consistently round but they vary in size and inner organisation (Fig. 6). At the sites

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[108] Ibid, 124.

[109] Peter M. M. G. Akkermans, "The Northern Levant During the Neolithic Period: Damascus and Beyond," in *The Handbook of the Archaeology of the Levant*, ed. Margreet L. Steiner, Ann E. Killebrew (Oxford: Oxford University Press, 2014), 255.

[110] A. Nigel Goring-Morris and Anna Belfer-Cohen, "The Southern Levant (CisJordan) During the Neolithic Period," in *The Handbook of the Archaeology of the Levant*, ed. Margreet L. Steiner, Ann E. Killebrew (Oxford: Oxford University Press, 2014), 285.

such as Netiv Hagdud, Jericho and Hatoula free-standing domestic buildings range from 5 to 8 metres in diameter, whereas the ones at Nahal Oren are smaller. These structures can be semi-subterranean, free-standing, or with one side of the structure cut into the terrace as at Dhra', Gilgal, and Nahal Oren. Some of the buildings were divided into two rooms with small installations adjacent to them, while others consisted of a single large room. [111]
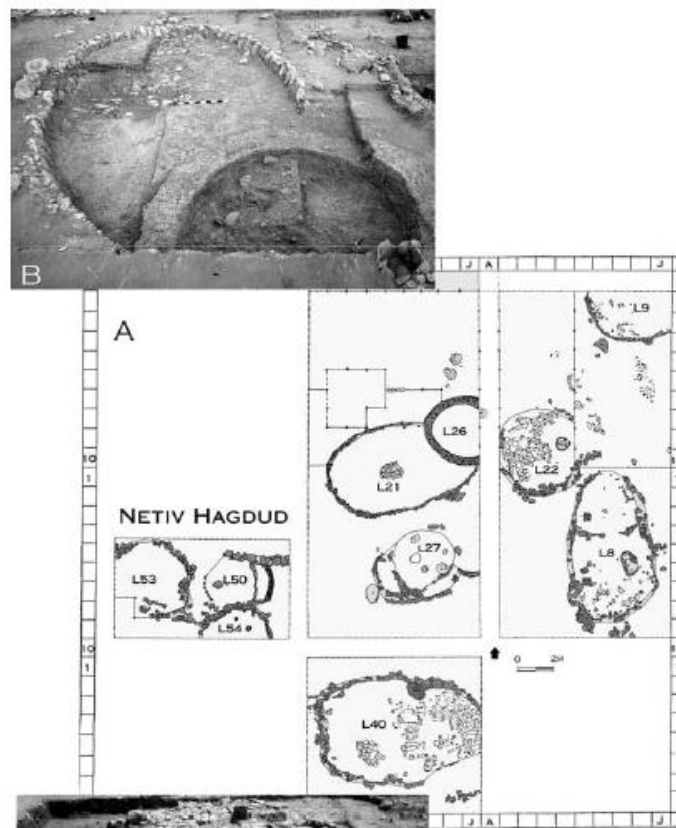
Figure 6. A: The plan of the PPNA village Netiv Hagdud**.** B: Photo from Netiv Hagdud

Source: A. Nigel Goring-Morris and Anna Belfer-Cohen, "The Southern Levant (CisJordan) During the Neolithic Period," in *The Handbook of the Archaeology of the Levant*, ed. Margreet L. Steiner, Ann E. Killebrew (Oxford: Oxford University Press, 2014), 258, Fig. 15.

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[111] Simmons and Bar-Yosef, *The Neolithic Revolution in the Near East: Transforming the Human Landscape,* 95.

The first phase of the occupation in Çayönü, which coincides with the PPNA in Turkey, consists of semi-subterranean round or oval huts placed around oval open spaces as well (Fig. 7). They are made of bundles of reeds and later from wattle and dub. They became more oval over time with stone foundations, with one even having a red plastered floor.[112]
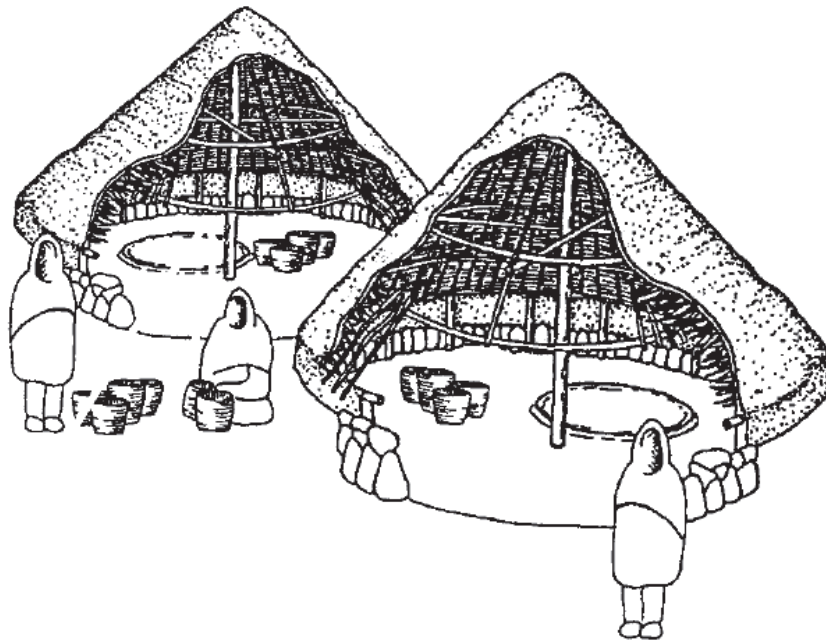
Figure 7. PPNA dwelling reconstruction after Ian Kuijt

Source: Alan Simmons and Ofer Bar-Yosef, *The Neolithic Revolution in the Near East: Transforming the Human Landscape*, 1st ed. (University of Arizona Press, 2011), 96, Fig. 5.2.

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[112] Simmons and Bar-Yosef, *The Neolithic Revolution in the Near East: Transforming the Human Landscape*, 98.

3.2.1.2. Dhra'

At the PPNA Dhra site, adjacent to the Dead Sea in Jordan, the remains of 4 above-ground granaries are inserted between the oval and circular residential buildings. All the granaries were circular in shape reaching 3 meters in diameter at the outmost ends. Their floors were suspended on the notched upright stones arrayed linearly with intervals of 1.0 and 1.2 m possibly bearing the wooden beams on which the ground floor rests for air circulation and to prevent rodents and insects (Fig. 8).[113]
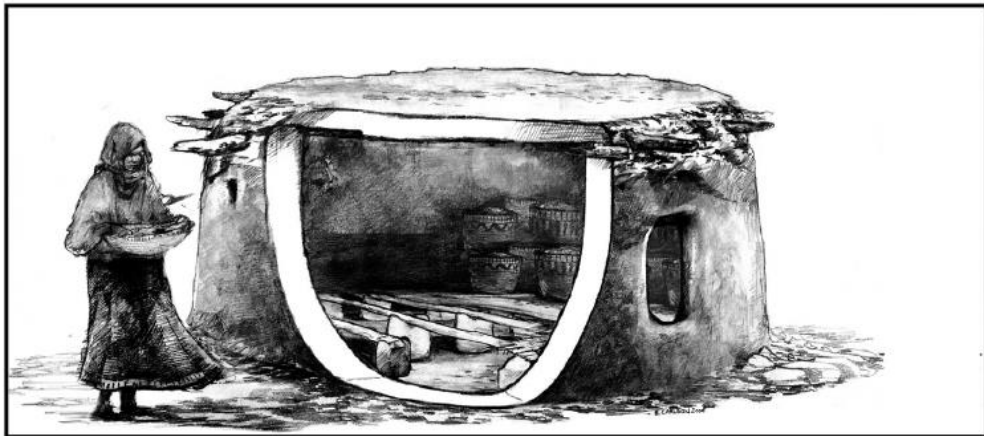
Figure 8. Reconstruction of a granary from Dhra'

Description: *"*Interpretive reconstruction of Structure 4, phase 1, Dhra', Jordan. The exposed area illustrates the upright stones supporting larger beams, with smaller wood and reeds above, and finally covered by a thick coating of mud.*"*

Source: Ian Kuijt and Bill Finlayson, "Evidence for Food Storage and Predomestication Granaries 11,000 Years Ago in the Jordan Valley," *Proceedings of the National Academy of Sciences* 106, no. 27 (July 7, 2009): 10968, Fig. 4. https://doi.org/10.1073/pnas.0812764106

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[113] Ian Kuijt and Bill Finlayson, "Evidence for Food Storage and Predomestication Granaries 11,000 Years Ago in the Jordan Valley," *Proceedings of the National Academy of Sciences* 106, no. 27 (July 7, 2009): 10966–70, https://doi.org/10.1073/pnas.0812764106.

3.2.1.3. Jerf el-Ahmar

Jerf el-Ahmar was a PPNA settlement (12th – 11th millennium BP) in Syria that consisted of two-hill top villages established on a gulley's eastern and western terrains. The oldest settlement layer of the eastern hill contained only round structures, whereas rectilinear above-ground buildings were uncovered in the later phases on the western and eastern hills (Table 4).[114] From level II/E of middle PPNA onwards, communal round buildings became fixed characteristics of the settlements. The five round structures different from the domestic buildings of Jerf el-Ahmar are the Aurochs house, EA7, EA30, EA57 and EA100.[115] After the demolition of level III and Auroch house, semi-subterranean, round and multi-celled non-domestic structures were built: EA7 in the east and EA30 in the west.[116] The entry to these communal buildings would have been enabled through a gap in the centre of the roof via a ladder, although the only evidence hinting at this inference is a depression on the centre of the floor.[117] Although linear walls had been used only to divide the interior of the round structures of level III on the east side, in the later phases of occupation, residential structures were preferred to be built rectangular and above ground whereas communal structures were round and subterranean. [118]

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[114] Haklay and Gopher, "Geometry, a Measurement Unit and Rectangular Architecture at Early Neolithic Jerf El-Ahmar, Syria,": 32.

[115] Danielle Stordeur et al., "Les Bâtiments Communautaires de Jerf El Ahmar et Mureybet Horizon PPNA (Syrie)." *Paléorient* 26, no. 1 (2000): 29–44, https://doi.org/10.3406/paleo.2000.4696 **quoted in** MC Bride, "Performance and Participation: Multi-Sensual Analysis of Near Eastern Pre-Pottery Neolithic Non-Domestic Architecture,".

[116] Ibid.
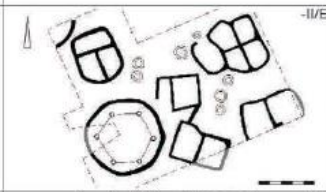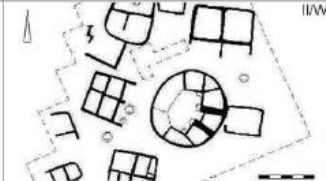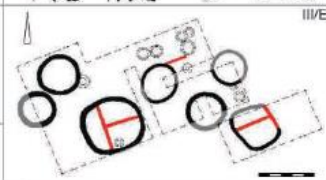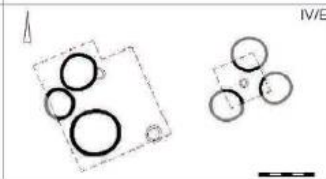
[117] Ibid, 52.

[118] Stordeur et al., "Les Bâtiments Communautaires de Jerf El Ahmar et Mureybet Horizon PPNA (Syrie)." 31-2; Danielle Stordeur and Frédéric Abbès, "Du PPNA Au PPNB: Mise En Lumière d'une Phase de Transition à Jerf El Ahmar (Syrie)." *Bulletin de La Société Préhistorique Française* 99, no. 3 (2002): 568. http://www.jstor.org/stable/27924260.

Table 4. Jerf el-Ahmar village plan and emergence of different building types through periods

Source: Gil Haklay and Avi Gopher, "Geometry, a Measurement Unit and Rectangular Architecture at Early Neolithic Jerf El-Ahmar, Syria," *Paléorient*, no. 46 1-2 (December 3, 2020): 32, Table 1. https://doi.org/10.4000/paleorient.297.

Phase	Level/Village		Structures	Village plan
	East	West		
Transition	-II/E	0/W	Communal Structure EA53/-IIE	
	-I/E	I/W		
Late	0/E	II/W	Communal Structure EA30/IIW Appearance of rectangular structures	
		III/W		
Middle	I/E		Communal Structure EA7	
	II/E			
	III/E		Appearance of straight walls and right angles	
Early	IV/E		Curvilinear structures	
	V/E			
	VI/E			
	VII/E			

The radius of the building EA30 is 7.50 m from the outside and 6.80 m from the inside.[119] These dimensions correspond to an area of approximately 40 m^2. The walls are preserved at a height of approximately 2-2.50 m on the interior and 0.40-0.50 m on the exterior. Considering its architectural dimensions, Ergül Kodaş suggests that 110 m^3 of soil (approximately 1.5 to 1.8 tons per m^3) should be excavated and dumped

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[119] Stordeur et al., "Les Bâtiments Communautaires de Jerf El Ahmar et Mureybet Horizon PPNA (Syrie).," 33-4.

for the construction of the building with a radius of 7.50 m.[120] These dimensions correspond to the cultivation of 150-200 tons of soil, which requires a substantial labour force. According to Kodaş, this must be an outcome of a collective work carried out jointly. The building is divided into six separate cells which have asymmetrical plans. The two parallel walls opposite the bench, forming the cell 5, also serve as the main load bearers carrying the roof. The cells 2, 3 and 7 are smaller in size compared to other cells and the walls delimiting these cells are lower.

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[120] Ergül KODAŞ, "JERF EL-AHMAR EA 30 BİNASI VE YAKINDOĞU'DA PPNA-PPNB'YE GEÇİŞ DÖNEMİNE AİT KAMU BİNALARI," *Türkiye Bilimler Akademisi Arkeoloji Dergisi*, no. 16 (June 15, 2013): 12, https://doi.org/10.22520/tubaar.2013.0001.
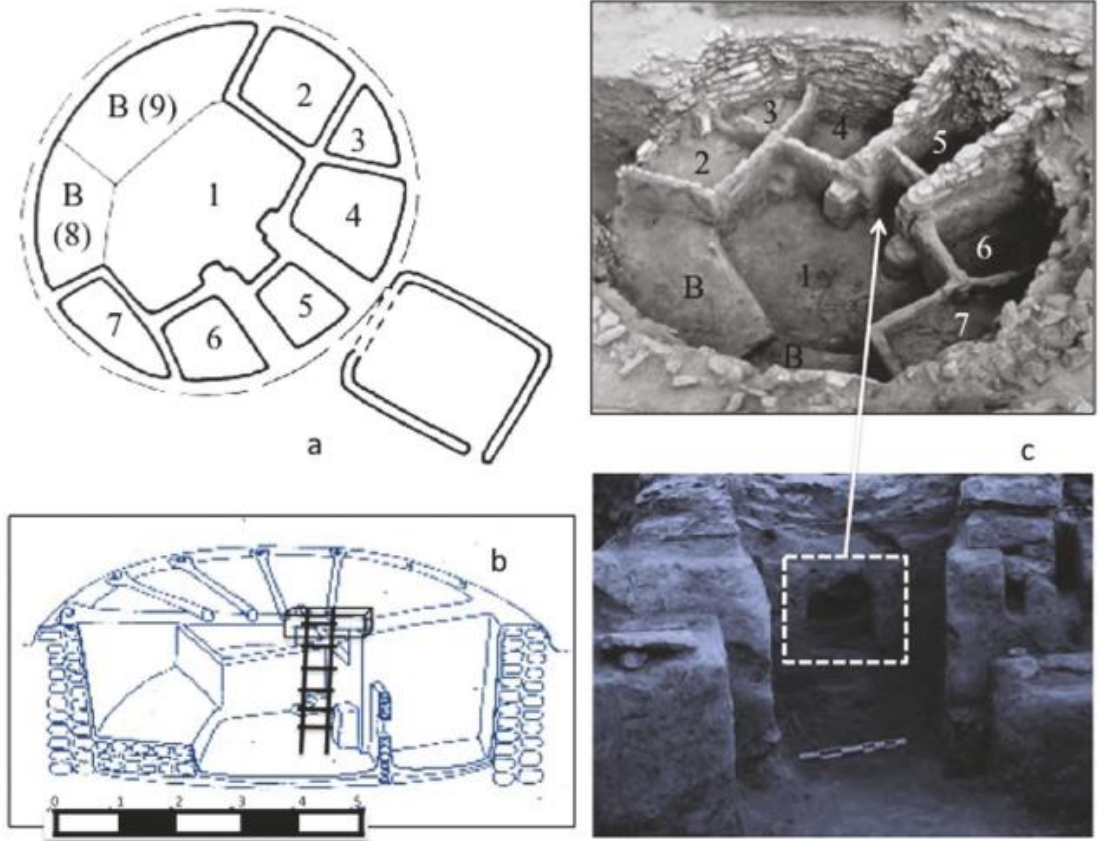
Figure 9. Plan, reconstruction and photos of EA30 building, Jerf el-Ahmar

Source: Ergül KODAŞ, "JERF EL-AHMAR EA 30 BİNASI VE YAKINDOĞU'DA PPNA-PPNB'YE GEÇİŞ DÖNEMİNE AİT KAMU BİNALARI," *Türkiye Bilimler Akademisi Arkeoloji Dergisi*, no. 16 (June 15, 2013): 12, Fig. 3. https://doi.org/10.22520/tubaar.2013.0001.

Haklay and Gopher's geometric studies concerning EA30 building fascinating for an architect.[121] Their analysis suggest use of a measurement unit and former design process before the construction (Fig. 10, 11, 12). What is more, they argue that the acquisition of this complex design capability made it possible to construct linear above-ground forms. However, it is much more complicated to fix up stability for the

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[121] Haklay and Gopher, "Geometry, a Measurement Unit and Rectangular Architecture at Early Neolithic Jerf El-Ahmar, Syria." 31-42.

a subterrenaen circular wall, which faces the threat of disintegration due to surrounding soil, than to construct rectangular structures above ground that can be built without measurements and proportions, simply by trial and error practice although linearity might not be executed flawlessly. Beyond "advances in architectural planning methods", what is thought-provoking here seems to be the decrease in the amount of collected wild plant remains from the lower layers of the settlements to the upper layers, which hints at increased cultivation and whether it is related to the change of form and level of houses.[122]

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[122] Haklay and Gopher, "Geometry, a Measurement Unit and Rectangular Architecture at Early Neolithic Jerf El-Ahmar, Syria." 40; George Willcox, "The Beginnings of Cereal Cultivation and Domestication in Southwest Asia," in *A Companion to the Archaeology of the Ancient Near East*, ed. D. T. Potts (Blackwell, 2021), 170-1, https://doi.org/10.1002/9781444360790.ch9.
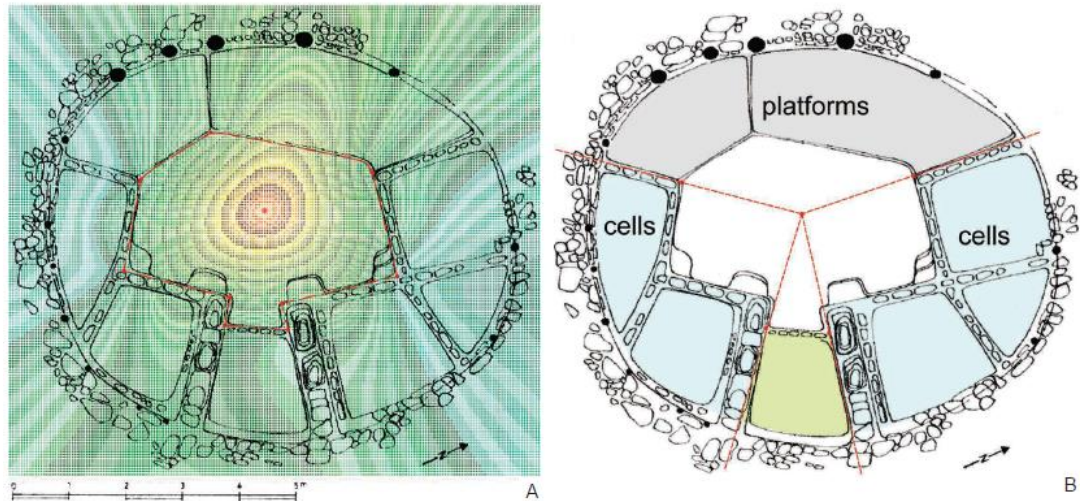
Figure 10. Spatial analysis of EA30 by Haklay and Gopher

Description: "A. Visualisation of the centre calculation. B. Lines projecting from the identified centre point correspond to the faces of the interior walls separating the different area types: the platforms, the cell clusters, and the space between the two structural walls."

Source: Gil Haklay and Avi Gopher, "Geometry, a Measurement Unit and Rectangular Architecture at Early Neolithic Jerf El-Ahmar, Syria," *Paléorient*, no. 46 1-2 (December 3, 2020): 38, Fig. 8, https://doi.org/10.4000/paleorient.297.
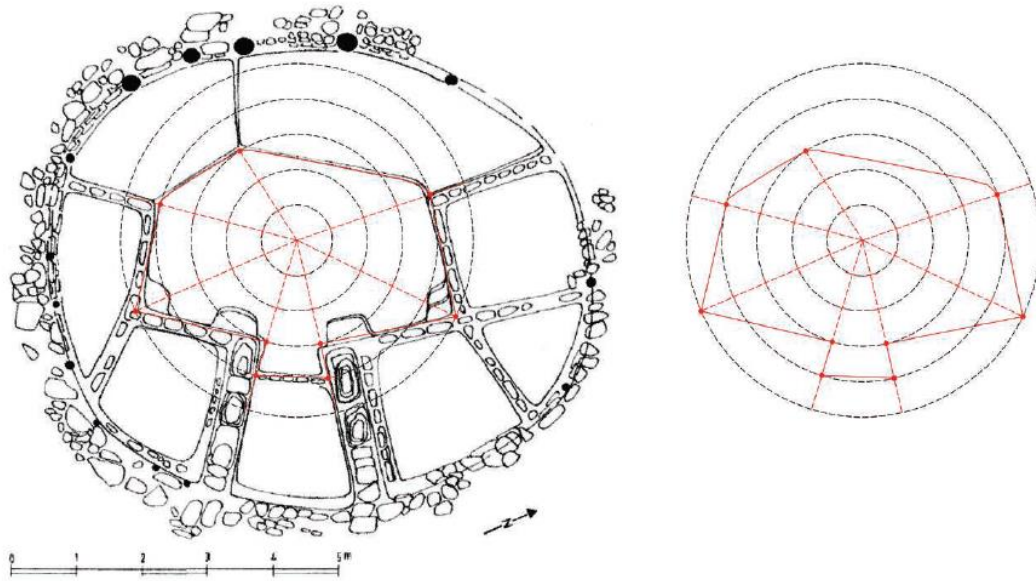
Figure 11. Spatial analysis of EA30 by Haklay and Gopher

Description: "Relative to the centre point, the polygonal form accurately maps onto a system of concentric circles of constant interval, suggesting that a unit of measure was used in the design and construction of the structure."

Source: Gil Haklay and Avi Gopher, "Geometry, a Measurement Unit and Rectangular Architecture at Early Neolithic Jerf El-Ahmar, Syria," *Paléorient*, no. 46 1-2 (December 3, 2020): 39, Fig. 9, https://doi.org/10.4000/paleorient.297.
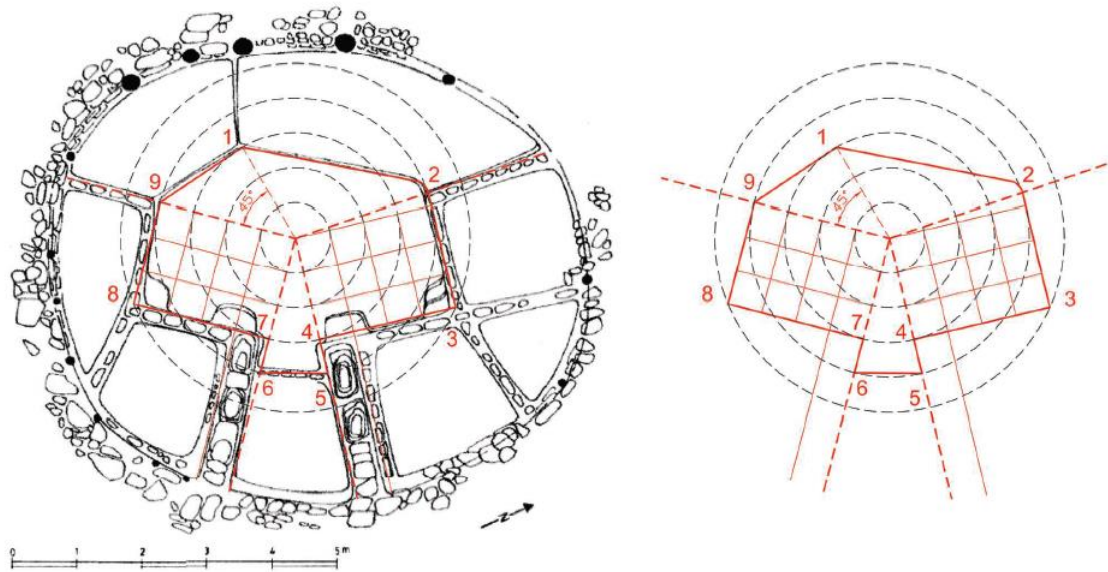
Figure 12. Spatial analysis of EA30 by Haklay and Gopher

Description: "Geometric regularities in Structure EA30 An idealised form of defined proportions describing the shape of the polygonal floor, superimposed over the original drawing. The 95º angle and the rounded platform edge in Node 2 may represent a slight deviation from the plan, possibly to enlarge the floor area."

Source: Drawing G. Haklay; modified from Stordeur et al., "Les Bâtiments Communautaires de Jerf El Ahmar et Mureybet Horizon PPNA (Syrie).": fig. 5; Gil Haklay and Avi Gopher, "Geometry, a Measurement Unit and Rectangular Architecture at Early Neolithic Jerf El-Ahmar, Syria," *Paléorient*, no. 46 1-2 (December 3, 2020): 39, Fig. 10, https://doi.org/10.4000/paleorient.297.

Some of the uncovered houses of the layer belonging to the EA30 building have a rectangular plan with rounded or sharp corners. These houses are built on single or double-row stone foundations raising in the shallow trenches. The sizes of the houses are between 15-25 square meters, most of which are arranged in a circular pattern around the EA30 building (Fig. 13). The empty space involving open-air hearths among the structures seem to have functioned as "common use areas" whereas the

EA30 building was located in the center of the settlement which provided easier access to the building.[123]

Figure 13. "Village II/W at Jerf el-Ahmar with the curvilinear Structure EA30 at the centre."

Source: Gil Haklay and Avi Gopher, "Geometry, a Measurement Unit and Rectangular Architecture at Early Neolithic Jerf El-Ahmar, Syria," *Paléorient*, no. 46 1-2 (December 3, 2020): 33, Fig. 1, https://doi.org/10.4000/paleorient.297.

The EA7 structure is not as well conserved as EA30, so it has remained less significant, but a set of shared elements was discovered. There are at least three small cells on the south wall and a bench along the perimeter of the north wall. It is uncertain how high the partition walls of the small cells were. Comparison with EA30 indicates that the perimeter cell walls were low, although it is unknown whether two of the walls would

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[123] KODAŞ, "JERF EL-AHMAR EA 30 BİNASI VE YAKINDOĞU'DA PPNA-PPNB'YE GEÇİŞ DÖNEMİNE AİT KAMU BİNALARI." 12-14.

have been of full height to support the roof, however, no evidence of other roof supports have been found, thus it is likely that there were full-height walls. No sculptural objects or pottery are found at EA7, but two skulls were placed at the bottom of a post hole.[124]

Following the abandonment of EA7 and EA30, the non-domestic single-cell structures, EA53 and EA100, were built. EA53 is the best conserved and consists of a single subterranean circular structure that is 7 meters in diameter. The space is enclosed via one meter wide stone bench that forms an inner hexagon along the circumference of the building. [125] At each corner of the hexagon, there is a plaster-lined wooden post to support the roof, in contrast to the building EA30 in which walls were utilized to support the roof. The stone slob of the front surface of the bench was also found to be decorated with a motif of triangles.[126]

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[124] Mc Bride, "Multi-Sensual Analysis of Near Eastern Pre-Pottery Neolithic Non-Domestic Architecture," 52.

[125] Stordeur et al., "Les Bâtiments Communautaires de Jerf El Ahmar et Mureybet Horizon PPNA (Syrie)." 38.

[126] Stordeur and Abbès, "Du PPNA Au PPNB : Mise En Lumière d'une Phase de Transition à Jerf El Ahmar (Syrie)." 572-73.
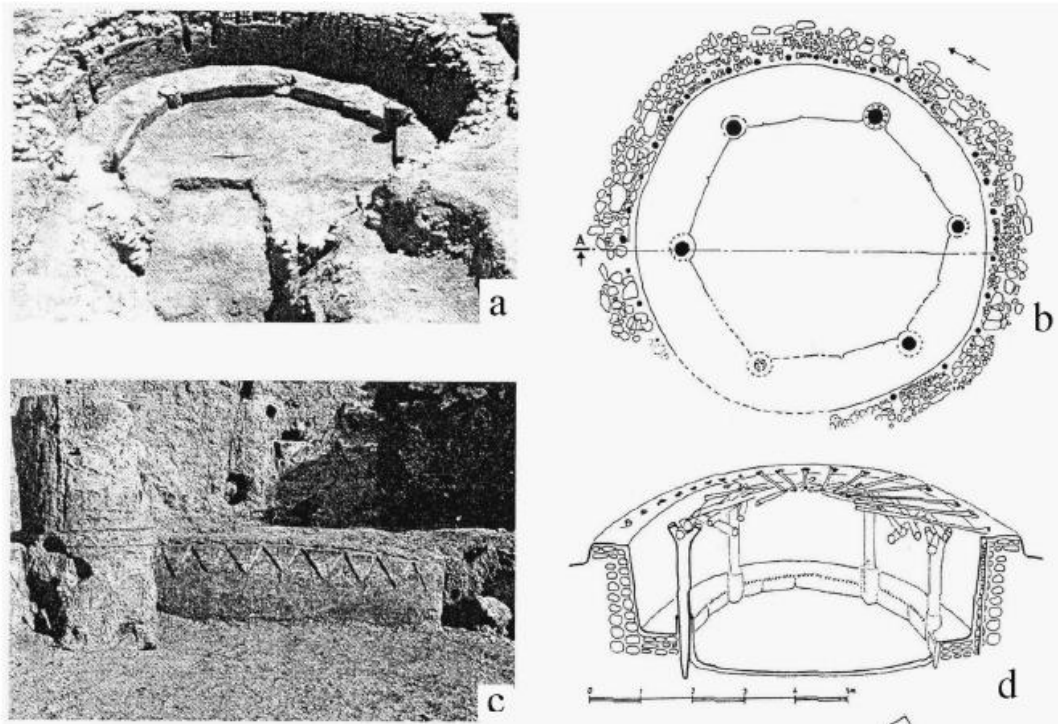
Figure 14. Building EA53, Jerf el-Ahmar

Description: "Jerf el-Ahmar, Special Purpose "Communal Building" EA 53: a. general view of the building, photo (after Stordeur et al. [2000], fig. 8.1); b. plan of the building (ibid., fig. 9.1); c. close view of relief-decorated bench adjoining the wall. A pillar is embedded in the bench, photo (ibid., fig. 8.2); d. isometric reconstruction of the building with suppositional reconstruction of the roof, cross sectional view (ibid., fig. 9.2)."

Source: Tatiana V. Kornienko, "Notes on the Cult Buildings of Northern Mesopotamia in the Aceramic Neolithic Period," *Journal of Near Eastern Studies* 68, no. 2 (April 2009): 86, fig. 3, https://doi.org/10.1086/604671.Danielle Stordeur et al., "Les Bâtiments Communautaires de Jerf El Ahmar et Mureybet Horizon PPNA (Syrie).," *Paléorient* 26, no. 1 (2000): 29–44, https://doi.org/10.3406/paleo.2000.4696.

3.2.1.4. Mureybet

The PPNA architectural characteristics vary according to the region, however, in Mureybet, Syria, the practice of architecture followed the tradition of round pithouses, but in Phase IIIA, structures are more substantial, reaching nearly 6 metres in diameter, and semi-subterranean. Moreover, the Mureybetian architectural space is strongly

subdivided. For example, in House 47, opposite the entrance, there is a heightened spot that converges along the entire wall which can be interpreted as a bench. In addition to that, the low internal walls intersected the space into diverse rectangular cells, one of which contained a hearth whereas others might have been used for storage by the community. The potential storage facility of the building is also indicated by a number of unused stone and bone tools. A flat mud roof most likely sheltered the whole space. This roof was supported by hinged joints, which in turn were supported by the beams radiating sideways from a substantial lintel at the end of the corridor area. This type of structure was fairly elaborate and could be made partially adjoining one another. Furthermore, one of the smaller round houses at Mureybet includes the remains of a fresco decoration with black and likely red geometric chevrons on a white background which is one of the earliest representations of art combined with architecture. Among the Mureybet houses, there were also common open spaces with large fireplaces.[127]

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[127] Jacques Cauvin and Trevor Watkins, *The Birth of the Gods and the Origins of Agriculture (New Studies in Archaeology)*, 1st edition in English (Cambridge University Press, 2000), 39-41, **quoted in** Simmons and Bar-Yosef, *The Neolithic Revolution in the Near East: Transforming the Human Landscape,* 97.
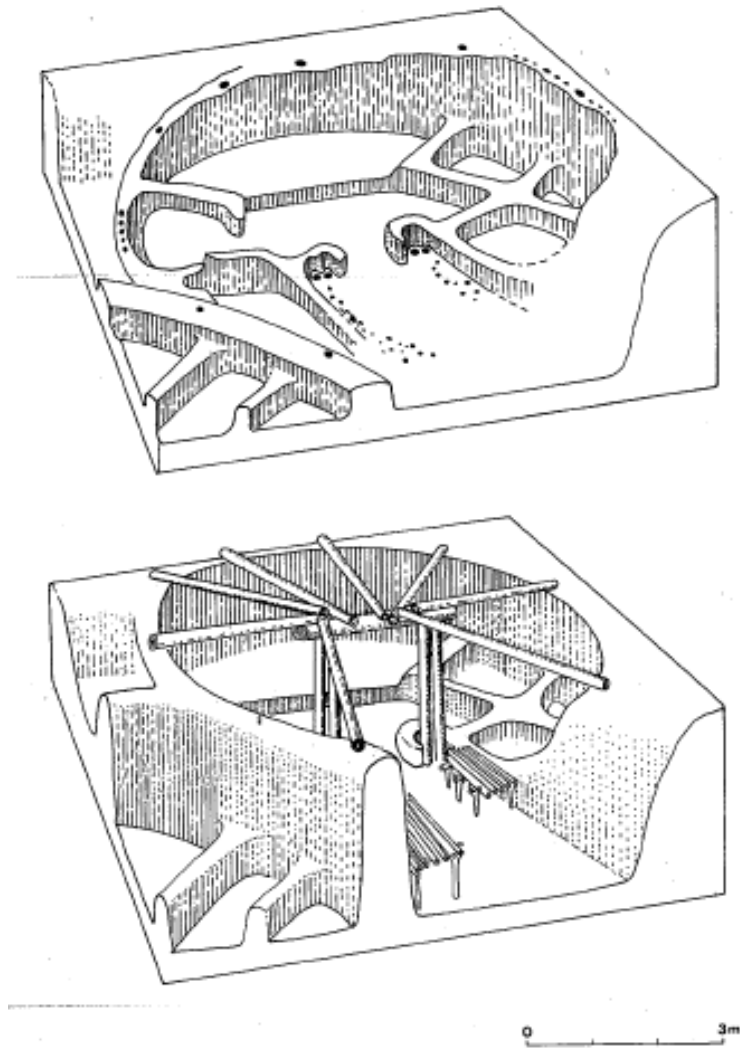
Figure 15. Reconstruction of Mureybetian House 57, Phase III

Source: Jacques Cauvin and Trevor Watkins, *The Birth of the Gods and the Origins of Agriculture (New Studies in Archaeology)*, 1st edition in English (Cambridge University Press, 2000), 42, Fig. 15.

3.2.2. Anatolian Specimens

3.2.2.1. Körtik Tepe

The publication "The First Traces of Civilization in Diyarbakır" gives a concise summary of the Körtik Tepe settlement from which the following review of its

architecture is extracted.[128] Körtik Tepe is an Epi-Palaeolithic/Pre-Pottery Neolithic site located in Diyarbakır which was inhabited constantly between 10.400- 9.250 BC. The characteristic round pit structures, whose diameters vary between 2.30 and 3.80 metres, are built on compacted soil and supported by a wall made of crude stones, which were laid on the settlement plot (Fig. 16). The upper cover of the structure was a light cone-shaped structure built with a kind of reed weave and posts that were plastered with mud containing plant fragments (Fig. 17). Due to the structures' cramp inner space, it is thought that they were built to inhabit a few people as well as burials. Moreover, a number of more spacious structures, fewer than the common small-scale ones, are unearthed and findings ornamented with symbolic carvings were retrieved. Therefore, they are thought to have been used as a venue for special events.

Figure 16. Körtik Tepe excavation site

Source: Vehici Özkaya et al., *KÖRTİK TEPE: Uygarlığın Diyarbakır'daki İlk Adımları / The First Traces of Civilization in Diyarbakır / Die Ersten Stufen der ZivilisationDiyarbakır*, (T.C. Diyarbakır Valiliği: Diyarbakır Valiliği Kültür Sanat Yayınları: 9, 2013), 34.

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[128] Vehici Özkaya et al., *KÖRTİK TEPE: Uygarlığın Diyarbakır'daki İlk Adımları / The First Traces of Civilization in Diyarbakır / Die Ersten Stufen der ZivilisationDiyarbakır*, (T.C. Diyarbakır Valiliği: Diyarbakır Valiliği Kültür Sanat Yayınları: 9, 2013), 24-25.

Figure 17. Reconstruction of a dwelling in Körtik Tepe

Source: Vehici Özkaya et al., *KÖRTİK TEPE: Uygarlığın Diyarbakır'daki İlk Adımları / The First Traces of Civilization in Diyarbakır / Die Ersten Stufen der ZivilisationDiyarbakır*, (T.C. Diyarbakır Valiliği: Diyarbakır Valiliği Kültür Sanat Yayınları: 9, 2013), 13, Fig. 1.

3.2.2.2. Aşıklı Höyük

The architecture of Aşıklı Höyük, Cappadocia, Central Anatolia, is well-discussed in the article "Space making and home making in the world's first villages: Reconsidering the circular to rectangular architectural transition in the Central Anatolian Neolithic".[129] According to source, the oldest settlers in 9th millennium BC constructed semi-subterranean circular dwellings reaching 4 to 5.5 diameter that kept them warm in the winter and cool in the summer (Fig. 18). Two methods can be mentioned for the construction systems in Aşıklı: mud-plastered vertical wooden posts woven laterally with branches and reeds; and mudbrick. Some of these structures consist of round pit volumes extending one meter below the ground level. The walls of the buildings are 160-195 centimetres long, of which 40-60 centimetres are above the ground. Domestic buildings of Aşıklı feature fireplaces, post holes as the indicators of roofing, and burials beneath the floors. There is a differentiated building with benches being slightly larger than others and which did not contain burials but instead bore the traces of indoors plant processing, and food preparation around the hearth. Therefore, this building is thought to be used for special purposes rather than common domestic activities. In the later phases of occupation, above-ground flat-roofed rectangular buildings and semi-subterranean round structures started appearing simultaneously (Fig. 19). Ultimately rectangular form was fully adopted and persisted. This transition of form has been associated with the reorganization of indoor activities and domestic materials, such as the relocation of hearths and storage features. Through time and the emergence of rectangular structures, buildings were constructed more densely; thus, roasting pits that had been located outdoors before were transferred into the buildings or rooftops. It can be said that the transition to above-ground rectangular buildings in the Near East has freed people from the extra labour of digging extensive holes for round structures. Moreover, the statement that the linear loadbearing walls allowed buildings to abut each other and be supported by other buildings, which creates a more fixed static equilibrium, is plausible. However, regarding the question "did rectangular buildings facilitate putting people into spaces in more efficient ways?"

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[129] Güneş Duru et al., "Space Making and Home Making in the World's First Villages: Reconsidering the Circular to Rectangular Architectural Transition in the Central Anatolian Neolithic," *Journal of Anthropological Archaeology* 64 (December 2021): 101357, https://doi.org/10.1016/j.jaa.2021.101357.

that the article puts forward, we can say that the rectangular exterior form could have increased the potential housing density in the settlement rather than favouring the efficiency of the use of interior space. This can be associated with the "urbanization" principles, which aim to plan suitable land for residential settlements as efficiently as possible so that more houses can be articulated closely (Fig. 20). This may also imply a need for more dwelling space due to population increase. However, as indicated in the article there is no available data to support the growth of the population yet.

Figure 18. Aşıklı Höyük stratigraphy: circular structures below (Level 5-3) and rectangular ones (Lev. 2) on the top

Source: Güneş Duru et al., "Space Making and Home Making in the World's First Villages: Reconsidering the Circular to Rectangular Architectural Transition in the Central Anatolian Neolithic," *Journal of Anthropological Archaeology* 64 (December 2021): Fig. 5, https://doi.org/10.1016/j.jaa.2021.101357.

Figure 19. Reconstruction of above-ground rectangular structures belonging to Level 2, Aşıklı Höyük

Source: Güneş Duru et al., "Space Making and Home Making in the World's First Villages: Reconsidering the Circular to Rectangular Architectural Transition in the Central Anatolian Neolithic," *Journal of Anthropological Archaeology* 64 (December 2021): Fig. 8, https://doi.org/10.1016/j.jaa.2021.101357.

Figure 20. Layout plan of level 2, Aşıklı Höyük

Source: Modified by author after Güneş Duru et al., "Space Making and Home Making in the World's First Villages: Reconsidering the Circular to Rectangular Architectural Transition in the Central Anatolian Neolithic," *Journal of Anthropological Archaeology* 64 (December 2021): Fig. 10, https://doi.org/10.1016/j.jaa.2021.101357.

A fact that seems to have been not sufficiently inspected by archaeologists is that the circular structures were built subterranean, whereas rectangular ones were erected above-ground. The form preference for round structures may actually have stemmed from the requirements to provide the durability of the building. If a pit is to be used as a living space, its inner perimeter must be surrounded by retaining walls so that the

space obtained will not be filled with slipping soil due to earth thrust. More importantly, for building foundations below the ground level, earth thrust and earthquakes generate lateral pressures on the retaining walls. Therefore, after a hole is dug in the soil, the retaining wall that will surround the interior must at least be constructed in such a way as to balance opponent horizontal earth thrust forces that will constantly press the wall from all directions (Fig. 21). Without engaging in static calculations, we can explain this situation through a comparison with a stone arch in equilibrium under vertical forces. To do so, the horizontal earth thrust corresponds to the vertical load on the arch. Developed to balance the vertical forces that create the tensile force that causes the bending and breaking in the case of a single piece of a stone beam, the stone arches are in balance thanks to the compress forces among the individual structural elements that transmit the vertical pressure forces to each other. Thus, in a situation where vertical forces that normally cannot be borne by a single stone beam are effective, the same space can be covered with the construction of a stone arch or vault. Due to the convex shape of the arch, it can be said that tensile force does not occur, or it is too small to consider. Likewise, the retaining wall that will surround a subterranean space must be built in the form of a horizontal arch featuring compress forces which will balance the horizontal earth thrust and potential earthquake forces. Consequently, if subterranean structures were built in the form of rectangles consisting of linear walls, these buildings would have been faced with the danger of inward collapse due to the pulling forces created by the soil thrust especially on the corner of the walls. If it was decided to build the structures subterranean for reasons such as protection from heat and cold, the round form was more convenient to obtain and sustain the firmness and durability of the structures.
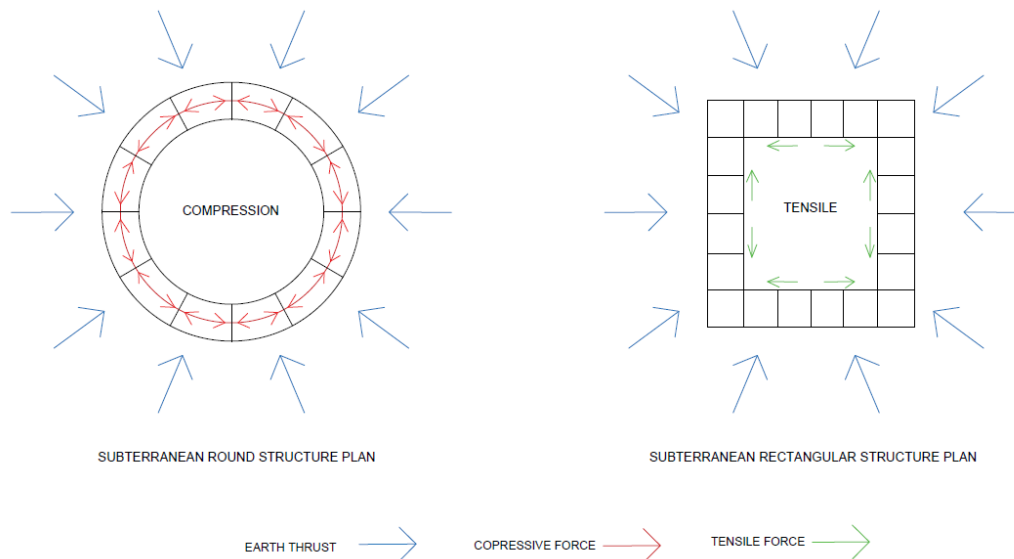
Figure 21. Compressive and tensile force emergence due to earth thrust on different forms of structures

Source: Drawing by author.

3.2.2.3. Hallan Çemi

Hallan Çemi in Turkey, which was a sedentary village dating to early PPNA, contains two round structures that are differently planned than others. There exists no evidence of domestic activity within the buildings except hearths. They are larger and semi-subterranean, whereas others are not. The internal structural elements bear the traces of decoration, and there is a semi-circular bench surrounding the inner space circumference. Moreover, it is revealed that one of the structures contains the skull of an auroch that once was hung on the wall opposite the entrance. In a similar way, the partially preserved ship skulls and deer antlers are found in the other building.[130]

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[130] Kornienko, "Notes on the Cult Buildings of Northern Mesopotamia in the Aceramic Neolithic Period." 82-3.

3.2.2.4. Boncuklu Tarla

Boncuklu Tarla is a settlement that was inhabited continuously between the 11th and 8th millennium BC and where both domestic and public buildings were built.[131] The site features both rounded structures, particularly identified with PPNA, that are thought to be built for public use; and rectangular buildings articulated with additional cells belong to the PPNB period that often are associated with domestic use.[132]

Two structures with a rounded plan that lack domestic activity implications can be mentioned: GD1 and GD2. G1 building has a diameter of approximately 5.50 meters, and there are two masonry stelae with dimensions of 0.85 x 1.45 - 0.80 x 1.40 meters, placed symmetrically in its centre (Fig. 22). Both stelae have been preserved up to a height of 20 centimetres.[133] No finds were found on the floor of the building, apart from many chipped stone tools; a few broken grinding stones and pestles; and animal bones that are thought to be mostly garbage.[134]

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[131] Ergül Kodaş, "Un nouveau site du Néolithique précéramique dans la vallée du Haut Tigre: résultats préliminaires de Boncuklu Tarla," *Neo-Lithics 19*: 3-15.

[132] Yunus Çiftçi, Kazım Özkan, and Ergül Kodaş, "Boncuklu Tarla Güneydoğu Alanı Çanak-Çömleksiz Neolitik A Evresi Mimarisi ve 'Nemrik Kültürü' Sorunsalı," *Turkish Journal of Ancient Near Eastern Studies*, no. 3 (2021): 54–70, https://dergipark.org.tr/tr/pub/tujanes/issue/66841/1000059.

[133] Ibid, 58.

[134] Ibid.
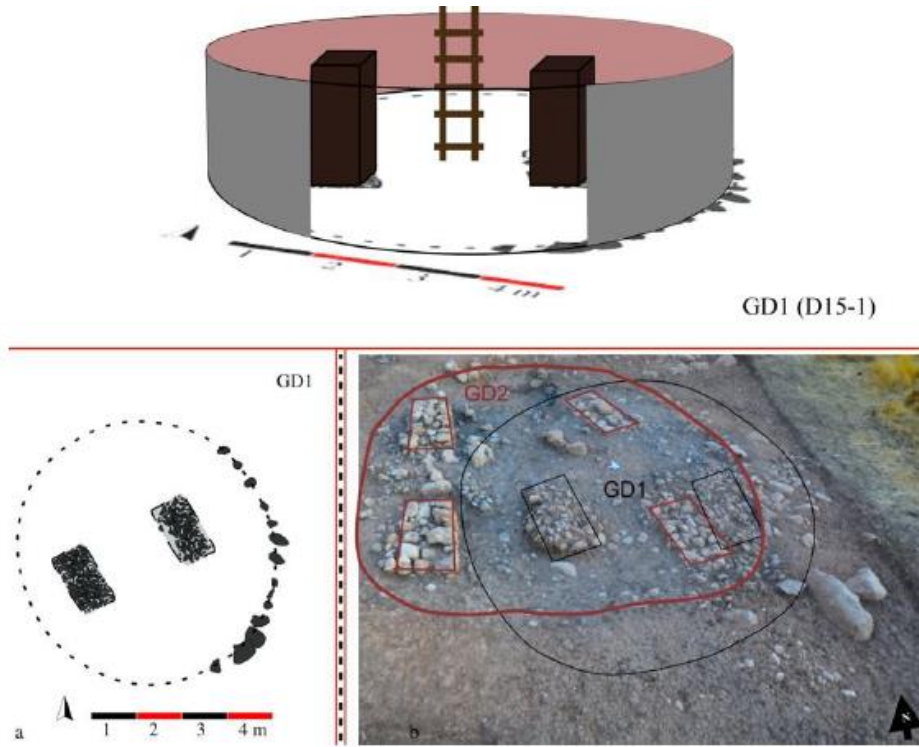
Figure 22. Reconstruction and general view of the GD-1 structure, its position on the GD-2 structure

Source: Yunus Çiftçi, Kazım Özkan, and Ergül Kodaş, "Boncuklu Tarla Güneydoğu Alanı Çanak-Çömleksiz Neolitik A Evresi Mimarisi ve 'Nemrik Kültürü' Sorunsalı," *Turkish Journal of Ancient Near Eastern Studies*, no. 3 (2021): 67, Fig. 2. https://dergipark.org.tr/tr/pub/tujanes/issue/66841/1000059.

GD-2 is an oval structure with a width of 7.00 m in the east-west direction and 7.50 m in the north-south direction with four stone masonry stelae in the middle whose heights are preserved approximately to 1.50 m (Fig. 23).[135] No wall was built around the earthen perimeter of the terrazzo-based building pit; it was only plastered with small pebbles mixed in gypsum plaster.[136] All of the stelae were constructed with natural flat

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[135] Ibid, 59.

[136] Ibid.

limestones and mud mortar.[137] Renovated in at least two phases, the stelae were plastered with clay in the first phase and covered with a clay-soil mixture involving small pebbles in the second phase.[138] It was understood that there was a bench in the north of the building at the first stage, a bench on the western side, and a cell with an undetermined function of 100 x 130 centimetres in the north-eastern corner of the building built in the later phase (Fig. 24).[139] Bone needle fragments, numerous animal bones (particularly red deer and cattle bones), and chipped stone tool waste were found in the soil used to fill GD-2 to construct GD-1.[140] By the end of the 10th millennium BC, people abandoned the masonry technique and used simple stone-cut stelae like other Anatolian specimens.[141]

Figure 23. Structure GD-2, banquette, cell, masonry stelae and terrazzo wall bases

Source: Yunus Çiftçi, Kazım Özkan, and Ergül Kodaş, "Boncuklu Tarla Güneydoğu Alanı Çanak-Çömleksiz Neolitik A Evresi Mimarisi ve 'Nemrik Kültürü' Sorunsalı," *Turkish Journal of Ancient Near Eastern Studies*, no. 3 (2021): 68, Fig. 3. https://dergipark.org.tr/tr/pub/tujanes/issue/66841/1000059.

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[137] Ibid.

[138] Ibid.

[139] Ibid.

[140] Ibid.

[141] Ibid, 61.
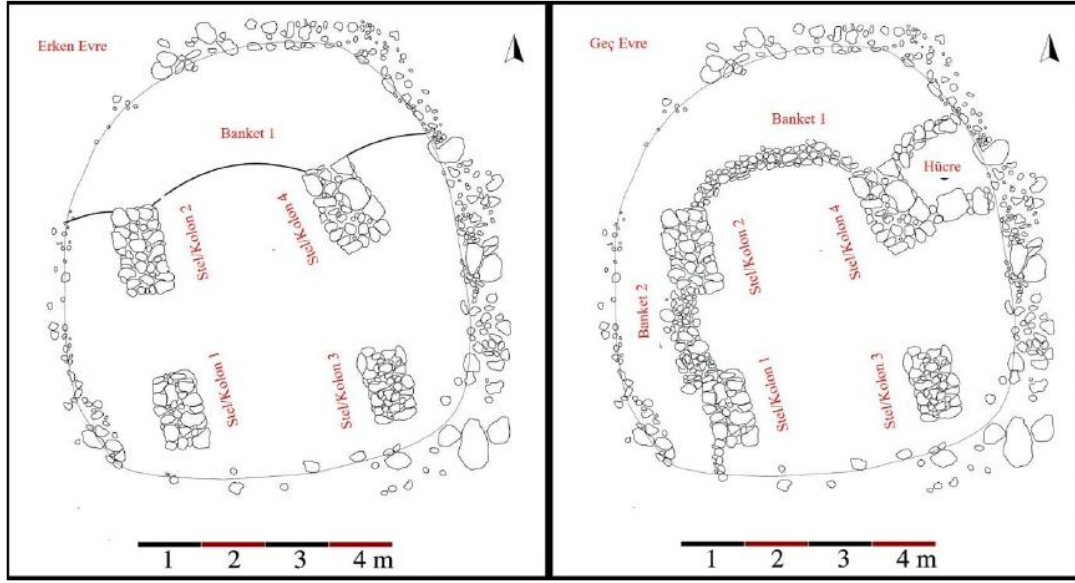
Figure 24. Renovation of structure GD-2, extended bench and cell

Source: Yunus Çiftçi, Kazım Özkan, and Ergül Kodaş, "Boncuklu Tarla Güneydoğu Alanı Çanak-Çömleksiz Neolitik A Evresi Mimarisi ve 'Nemrik Kültürü' Sorunsalı," *Turkish Journal of Ancient Near Eastern Studies*, no. 3 (2021): 69, Fig. 5. https://dergipark.org.tr/tr/pub/tujanes/issue/66841/1000059.

3.2.2.5. Gusir Höyük

Gusir Höyük is another significant settlement where subterranean round and rectangular structures at the ground level were built successively between the 11th - 9th millennia BC (Fig. 25).[142] The two structures overlooking the Gusir Lake view are probably the oldest in the settlement.

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[142] Necmi Karul, "Gusir Höyük: Yukarı Dicle'de İlk Yerleşik Avcılar" in *Batman Müzesi Ilısu Barajı Kurtarma Kazıları / Batman Museum Ilısu Dam Excavations* (Batman Müze Müdürlüğü, 2018), 3-4.

Figure 25. Gusir Höyük excavation site, circularly planned structures photographed from above

Source: Necmi Karul, "Gusir Höyük: Yukarı Dicle'de İlk Yerleşik Avcılar" in *Batman Müzesi Ilısu Barajı Kurtarma Kazıları / Batman Museum Ilısu Dam Excavations* (Batman Müze Müdürlüğü, 2018), Fig. 2.

The first one of the structures consists of a round pit with a 9-meter-diameter and is supported by a wall constructed with small stones whose inner side is plastered smoothly with mud (Fig. 26). [143] The building was renovated twice, and in each phase, burials were revealed along the walls, beneath the ground of the building (Fig. 27). [144] The latter building, unlike the first, has concentric walls constructed with larger stones where vertical stones were often inserted.[145]

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[143] Ibid, 4.

[144] Ibid.

[145] Ibid.

Figure 26. The round structure with a 9-meter diameter

Source: Necmi Karul, "Gusir Höyük: Yukarı Dicle'de İlk Yerleşik Avcılar" in *Batman Müzesi Ilısu Barajı Kurtarma Kazıları / Batman Museum Ilısu Dam Excavations* (Batman Müze Müdürlüğü, 2018), Fig. 3.

Figure 27. A burial placed alongside the wall

Source: Necmi Karul, "Gusir Höyük: Yukarı Dicle'de İlk Yerleşik Avcılar" in *Batman Müzesi Ilısu Barajı Kurtarma Kazıları / Batman Museum Ilısu Dam Excavations* (Batman Müze Müdürlüğü, 2018), Fig. 4.

The buildings had been built in shallower pits through time; hence the earth thrust acting on the building walls decreased. Therefore, the realization of rectangular buildings with rounded corners became possible. The corner roundings of a compartmentalize subterranean rectangular building (7 x 6 meters, 1-meter depth),

shaped by piled stones, balanced the earth thrust creating destruction potential for the joints of the walls.[146]

Figure 28. One of the oldest quadrilateral buildings in Gusir Höyük

Description: "It is observed that the first example of the quadrilateral structures is pit-based, the corner connection not yet solved, and that the inside is divided into rectangular spaces." wrote Karul. Developing a construction technique for corner joints is easier with processed stone blocks or mudbricks rather than rough rubbles used for Gusir Höyük structures. Here, the stability of corner edges is provided with the support of piled stones. However, even in the presence of regularly-shaped and processed building material enabling the construction of sharp edges, these corners would have needed extra support to balance earth thrust.

Source: Necmi Karul, "Gusir Höyük: Yukarı Dicle'de İlk Yerleşik Avcılar" in *Batman Müzesi Ilısu Barajı Kurtarma Kazıları / Batman Museum Ilısu Dam Excavations* (Batman Müze Müdürlüğü, 2018), Fig. 6.

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[146] Ibid.

Another significant and differentiated building type that should be mentioned here is a complex with a spatial syntax that incorporates subterranean and ground-level structures. In this complex, the structure with a square plan with rounded corners, built at a depth of 1 meter in dimensions of 9 x 9 meters, is the main structure to which other buildings are articulated on its east side (Fig. 29).[147] It features an interior bench lays along the walls and four stelae. The peripheral chambers display corridors possibly reaching the main subterranean building and possibly had light, wooden upper-structures.

Figure 29. Subterranean square building with rounded corners (or roughly round structure?) with stelae and other elements inside

Source: Necmi Karul, "Gusir Höyük: Yukarı Dicle'de İlk Yerleşik Avcılar" in *Batman Müzesi Ilısu Barajı Kurtarma Kazıları / Batman Museum Ilısu Dam Excavations* (Batman Müze Müdürlüğü, 2018), Fig. 5.

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[147] Ibid.

3.2.2.6. Karahan Tepe

Although Karahan Tepe features T-shaped limestone pillars like Göbekli Tepe, it is a distinct instance of PPN architecture because it was directly carved into the limestone bedrock, which can be easily processed.[148] According to the excavations carried out so far, three structures can be mentioned, AB, AC, and AD, out of which the largest is AD, a roughly round structure with a similar design to Göbekli Tepe located at the centre with a 23-meters radius, two steps carved into bedrock on the western side and two collapsed central pillars (Fig. 30).[149] Other structures are smaller and have trapezoidal forms at various scales and they are connected to each other by entries, stairs and entry holes.[150] Structure AB is reached by passing through Structure AD; and there is also a connection from Structure AB to Structure AA which implies a circulation for various events taking place in succession.[151]

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[148] Necmi Karul, "Buried Buildings at Pre-Pottery Neolithic Karahantepe," *Istanbul University - DergiPark*, August 31, 2021: 22. https://dergipark.org.tr/tr/download/article-file/1683122.

[149] Ibid, 23.

[150] Ibid.

[151] Ibid, 25

Figure 30. Excavation site at Karahan Tepe

Source: Necmi Karul, "Buried Buildings at Pre-Pottery Neolithic Karahantepe," *Istanbul University - DergiPark*, August 31, 2021: Fig. 2., https://dergipark.org.tr/tr/download/article-file/1683122.

Structure AB is a space involving ten pillars carved into the bedrock in the shape of phalli whose heights range between 1-1.7 meters and one stele carved outside of the space and installed later (Fig. 31).[152] The building was buried with layers of different materials in a sequential process.[153]

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[152] Ibid, 24.

[153] Ibid.

Figure 31. Structure AB carved into limestone bedrock

Source: Necmi Karul, "Buried Buildings at Pre-Pottery Neolithic Karahantepe," *Istanbul University - DergiPark*, August 31, 2021: Fig. 6, https://dergipark.org.tr/tr/download/article-file/1683122.

3.2.2.7. Göbekli Tepe

The site of Göbekli Tepe, as narrated by Klaus Schmidt in "Göbekli Tepe – the Stone Age Sanctuaries. New Results of Ongoing Excavations with a Special Focus on Sculptures and High Reliefs", is a landmark that stands at the highest point of an array of mountains which can be seen from a distance.[154] During the PPNA and early PPNB, several large circular enclosures that range from 10 to 30 m in diameter were constructed (Fig. 32). Usually, ten megalithic pillars three-metres-high are arrayed along the circumferential wall of the structure and two superior T-shaped pillars, 5.5 metres high, are placed in the centre (Fig. 33). The wall between the peripheral pillars consists of ashlar stones and spoliae gathered from the earlier structures at the site. There is a two-centimetre clay mortar between the stones. Enclosures are named according to their date of discovery from building A to G. E, F, and G buildings are

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[154] Klaus Schmidt, "Göbekli Tepe – the Stone Age Sanctuaries. New Results of Ongoing Excavations with a Special Focus on Sculptures and High Reliefs," *Documenta Praehistorica* 37 (December 31, 2010): 239–56, https://doi.org/10.4312/dp.37.21.

smaller than the former four buildings. Moreover, Göbekli Tepe enclosures have characteristic benches of the aforementioned PPN structures. A terrazzo floor was revealed after the excavation carried out in enclosure B. In contrast, the floorings of C and D buildings consist of meticulously smoothed natural bedrock. Regarding roofing, Schmidt noted that despite enduring till today, the mortar used to stick the stones were fragile and could be quickly washed away by rainwater. However, there is no available evidence from the site for the roofing system or material yet.

Figure 32. The layout plan of Göbekli Tepe excavation site

Figure 33. Structure C, Göbekli Tepe

Source: Klaus Schmidt, Deutsche Archäologische Institut (DAI).

Göbekli Tepe enclosures are the oldest well-preserved remains of human construction, and pieces of architecture as fine art. We can use a comparative methodology to understand the architectural qualities of these structures in reference to our use of similar specimens of architecture today.

In the Encyclopaedic Dictionary of Archaeology, Barbara Ann Kipfer defines monumental architecture as "large buildings such as temples, palaces, and pyramids, readily identifiable in the archaeological record and assume to have been built through the collective labour of many people".[155] Bruce G. Trigger adds another feature to monumentality: the elaboration of construction and decoration is beyond the demands of any practical function that a building is expected to fulfil, so monumental buildings

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[155] Kipfer, *Encyclopedic Dictionary of Archaeology*, 888.

are built to impress spectators and participants.[156] Then, Göbekli Tepe structures are the oldest specimens of monumental architecture since they are large enough to exceed human proportions. It is estimated that dragging one of the central T-shaped 5.5 meters pillars from the quarry and erecting it on the enclosures would have required the working of 600 people in a day which means it is a product of collective cooperation.[157] In addition to that, the T-shapes of the megaliths and the reliefs on them would have required significant time and skill to produce and therefore do not serve the static equilibrium of the structures. It is clear that these intricate ornaments and stylized monoliths functioned to convey certain messages to the participants.

Monumental architecture produces building types based on certain design principles and maintains them for centuries. It also tends to evolve in the framework of certain artistic styles. Colonnades of Greek temples, double-towered west façade of Gothic cathedrals or predominant central domes of Ottoman mosques characterize the idiosyncratic presence of the monuments. These structural elements become indispensable building blocks of the edifices and variations of them define the genre of the building types.

Göbekli Tepe enclosures have been constructed between PPNA and early/middle PPNB, a period which spans a few millennia. There are nine round enclosures belonging to PPNA that consist of circumferential T-shaped megaliths that are interconnected by subterranean continuous limestone walls and benches. Furthermore, two taller pillars are placed in the centre. In the cluster consisting of four PPNA buildings, the central columns of all the buildings are placed parallel to the northwest axis. On the other hand, edifices of the later PPNB period are rectangular in shape, smaller in scale and involve shorter T-shaped monoliths than the former ones in some

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[156] Bruce G. Trigger, "Monumental Architecture: A Thermodynamic Explanation of Symbolic Behaviour," *World Archaeology* 22, no. 2 (October 1990): 119, 122, https://doi.org/10.1080/00438243.1990.9980135.

[157] Lee Clare et al., "Establishing Identities in the Proto-Neolithic: "History Making" at Göbekli Tepe from the Late Tenth Millennium cal BCE" in *Religion, History, and Place in the Origin of Settled Life*, ed. Ian Hodder (University Press of Colorado, 2018), 121.

cases.[158] What is striking here is the emergence and continuation of uniform architectural elements and design customs for centuries as an architectural tradition.

The main novelty in the transition from PPNA to PPNB is the conversion of circular form into rectangular ones. Although rectangular structures were significant for PPNB communities, some of them continued building circular architecture which is more valid for southern arid sites such as Shaqarat Mayzad, 'Ain Abu Nukhayla, and early PPNB Beidha. However, the idiosyncrasy of PPNB architecture is the multi-roomed rectangular structures.[159] Nevertheless, Nevalı Çori which is a PPNB site in Turkey maintains the construction of the same architectural tradition as Göbekli Tepe enclosures with iconic T-shaped columns although the buildings enclose a rectangular area.

3.3. Denotative Functions

3.3.1. Residential, Storage and Special Buildings

The earliest traces of circular architectural form endured are the round huts of Natufian and successive circular dwellings of PPNA in the Levant and Anatolia. Anatolian settlements, e.g. Körtik Tepe, Aşıklı Höyük Hallan Çemi, Boncuklu Tarla, Gusir Höyük and Çayönü feature round dwellings as well as slightly differentiated buildings in terms of size; and incorporation of additional elements such as stelae, benches, animal bones or burials. Some of these structures bear artefacts or ornaments thought to have symbolic significance, such as Körtik Tepe and Hallan Çemi. Monolithic and masonry pillars are the characteristic of the differentiated building designs of Boncuklu Tarla and Gusir Höyük. Therefore, these monuments can be associated with rituals or special events. Moreover, special buildings of Aşıklı Höyük and Dhra' were used for activities related to food processing and grain storage.

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[158] Ibid, 116-17.

[159] Simmons and Bar-Yosef, *The Neolithic Revolution in the Near East: Transforming the Human Landscape,* 133-34.

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3.3.2. Multi-Functional Buildings

The segmented and round structures of Mureybet and Jerf el-Ahmar have been interpreted as communal buildings for storing artefacts and grains in accordance with the evidence of lithic tools and obsidian found on the site. Still, some also include burials underneath the floors and a larger room with a bench. Therefore, these structures are regarded as multi-functional buildings which are related to domestic activities and possible ritual use.[160]

3.3.3. Cult Buildings

There are larger elaborate one-roomed round buildings that do not involve any evidence of domestic activities, except fireplaces or hearths, only in particular cases.[161] The lack of any evidence related to domestic activities and more substantial and elaborated design of the structures than regular domestic houses lead researchers to conclude that these buildings were not built for domestic use.[162] Moreover, the presence of specific animal skeletons and sculptural objects inside the buildings implies the cults of hunter-gatherer communities.[163]

Alexis Mc Bride asserts that enclosures have some features that indicate the activities have taken place inside the buildings. The undivided enclosures of Jerf el-Ahmar, Çayönü, Nevalı Çori, and Göbekli Tepe, all of these non-domestic buildings include benches or bench segments that are likely used for sitting in accordance with evidence from Jerf el-Ahmar.[164] The array of participants who sit on the benches along the circumferential walls suggests that there was a central focus in the execution of the

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[160] Stordeur et al., "Les Bâtiments Communautaires de Jerf El Ahmar et Mureybet Horizon PPNA (Syrie)." 36.

[161] Kornienko, "Notes on the Cult Buildings of Northern Mesopotamia in the Aceramic Neolithic Period." 82, 83.

[162] Ibid.

[163] Danielle Stordeur, "New Discoveries in Architecture and Symbolism at Jerf El Ahmar (1997-1999 Syria)," *Neolithics*, January 1, 1999: 1–4.

[164] Stordeur et al., "Les Bâtiments Communautaires de Jerf El Ahmar et Mureybet Horizon PPNA (Syrie)." 40.

activity that took place. However, this does not rescind the possibility of the participants sitting or standing somewhere else in the building. Nevertheless, the endeavour that has been made for the construction of the benches must be stemming from any kind of use and desired attention to be paid to the central monumental pillars in the case of Göbekli Tepe. [165]

One of the erection reasons for the wooden pillars of Jerf el-Ahmar structures and megalithic pillars of Göbekli Tepe and Nevalı Çori enclosures could be providing support for the possible roofs. Some of the wooden posts and T-shaped monoliths in Göbekli Tepe are decorated, therefore connotative functions of the pillars can be mentioned alongside static, structural needs. Especially, T shape seems like it was chosen deliberately to stylize the human body rather than providing a specific favour for static equilibrium.

The integration of certain animal skulls and horns into architecture through incorporation of it into clay benches can be identified in several cases from 10,000 BC onwards.[166] In Mureybet, the horns of bulls have been buried inside the walls throughout the years which indicates a symbolic quality.[167] According to Jacques Cauvin, Mureybet communities hunted herbivores including mostly gazelle, and equid species as a practice of ordinary daily life which did not include wild cattle. Instead, wild cattle was a part of unusual or ritualistic events since the occasions in which aurochs appear on the edges of Euphrates were rare and suitable techniques to hunt them were absent.[168]

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[165] Kornienko, "Notes on the Cult Buildings of Northern Mesopotamia in the Aceramic Neolithic Period." 53.

[166] Cauvin and Watkins, *The Birth of the Gods and the Origins of Agriculture (New Studies in Archaeology)*, 28.

[167] Jacques Cauvin, "Les fouilles de Mureybet (1971-1974) et leur signification pour les origins de la sedenterarisation au Proche-Orient", *Annual of the American Schools of Oriental Research*, no. 44 (1977): 19-48.

[168] Cauvin and Watkins, *The Birth of the Gods and the Origins of Agriculture (New Studies in Archaeology)*, 28.

As Kodaş wrote, skull cult was a common tradition of retrieving skulls of buried human bodies after the decay of soft tissues during the Near Eastern Neolithic, where in some cases it ended up with plastering and reburial of the skulls either individually or collectively. [169] The important features of EA30 building of Jerf El-Ahmar are the presence of a headless skeleton unearthed in cell 1 and an isolated buried skull belonging to another individual next to it. A similar situation was detected in the Jerf al-Ahmar EA7 building, where three isolated skulls were buried during the building's construction in the pit where the wooden pole was erected. Therefore, it is stated that skull retrievals and burials held in the buildings had a significant role for the construction and usage processes of these structures.

According to Mc Bride, the context of the images that are engraved or the carved high reliefs on the T-Shaped Göbekli Tepe monoliths is not taken into account in the case of participating. Since these images and reliefs are too small and scattered, it is not possible to observe all of them together at once in one single location that means either observation of all images was not the purpose of participating or the participants had to move through the enclosures to see them. In some cases, visibility of some of the engravings of the pillars are hindered by the construction of the walls in between the monoliths. Therefore, it is possible to claim that the creation and existence of the images were more important than their effects on the participants.[170] The process of creating such "external symbols systems" and building act of anthropomorphic T-shaped pillars intensified the collective identity of the community, or at least of apprentices and artisans whose job was engraving, carving and constructing.[171]

The attempt to evaluate the spatial capacity of Göbekli Tepe enclosures has been made by Alexis McBride.[172] In order to estimate the number of participants, McBride places

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[169] KODAŞ, "JERF EL-AHMAR EA 30 BİNASI VE YAKINDOĞU'DA PPNA-PPNB'YE GEÇİŞ DÖNEMİNE AİT KAMU BİNALARI." 15-17.

[170] MC Bride, "Performance and Participation: Multi-Sensual Analysis of Near Eastern Pre-Pottery Neolithic Non-Domestic Architecture." 54.

[171] Trevor Watkins, "Household, community and social landscape: maintaining social memory in the early Neolithic of Southwest Asia," in *'As Time Goes By': monuments, landscapes and the temporal perspective*, ed. M. Furholt, M. Hinz and D. Mischka (Bonn: Rudolf Habelt, 2012), 32.

[172] MC Bride, "Performance and Participation: Multi-Sensual Analysis of Near Eastern Pre-Pottery Neolithic Non-Domestic Architecture."

the polygons representing humans on the ground plans of the four enclosures named A, B, C and D by using AutoCAD software. First, the maximum number of people occupying the space is calculated without taking into account the possibility of movement or personal space which is unrealistic to occur, so McBride suggests the possible capacity rate as 50% to be more realistic. Assuming that the participants take their place according to their intended activity, it is possible to portray one of the possible contextual scenarios. McBride states that this contextual capacity that is estimated based on possible movements provides a more nuanced capacity scenario than the one based on the anthropological constant of 10.2 m^2 per person, which gives a relatively low capacity figure (Table 5). In addition to that, the contextual capacity number and the 50%-full capacity number interestingly coincide, leading McBride to believe that it is a realistic estimate. Bench capacities demonstrate that a half-full capacity is an option that enables a significant amount of participants to sit and this makes the proposition more reliable (the numbers of 50%-full capacity/bench capacity for the enclosures A-D would be 34.5/17, 43.5/26, 68/31, 104/40).[173]

Table 5. Capacity potentials of Göbekli Tepe structures

Source: Alexis MC Bride, "Performance and Participation: Multi-Sensual Analysis of Near Eastern Pre-Pottery Neolithic Non-Domestic Architecture," *Paléorient* 39, no. 2 (2013): Table 4, https://doi.org/10.3406/paleo.2013.5520.

Site	Building	10.2m²/person	Max.	50%	Contextual	Bench
Göbekli Tepe	A	1.96	69	34.5	34	17
Göbekli Tepe	B	5.63	87	43.5	40	26
Göbekli Tepe	C	8.62	136	68	72	31
Göbekli Tepe	D	11.54	208	104	127	40

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[173] Ibid, 61-62.

Ethnographic studies estimate that 600 people would have been required to drag the 5.5-meter long megalith to the building site from the quarry.[174] In addition to that, available calibrated carbon dating conducted on samples taken from three PPNA enclosures, A, C and D, coincide with different time intervals for each building and backfilling action at the end of the use of the buildings may indicate a sequence for their use.[175] Therefore these structures might not have been built and used at the same time.[176] Then, this would have meant that not all the people working at the site could have been able to simultaneously attend the events held in the building once construction was completed due to the fact that the capacity of the in-use building would not be enough. In this sense, either Göbekli Tepe monuments were accessible only to certain groups of people or used in turns by the community members. However, this claim does not require the presence of elites or hierarchical society. Instead, it can be thought that these buildings could have been used for special occasions, ceremonies and rituals (e.g. initiation, baptism etc.) that people could attend only at a particular stage of their lives. The specific structures dedicated to male depictions at Karahan Tepe, whose excavations are relatively less advanced, may have been built to celebrate and ritualize these special occasions related to culture encompassing T-shaped pillar symbolism.

3.4. Connotative Functions

Many authorities interpreted this burial tradition as an ancestral cult and rituals that were executed in order to revere ancestors, perhaps as a sort of reincarnation.[177] Simmons states that Kuijt absorbed these earlier studies and discussed that skull

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[174] Clare et al., "Establishing Identities in the Proto-Neolithic: "History Making" at Göbekli Tepe from the Late Tenth Millennium cal BCE" 121.

[175] Oliver Dietrich et al., "Establishing a Radiocarbon Sequence for Göbekli Tepe. State of Research and New Data." *Neo-Lithics 2013*, no. 1 (October 2013): 36-47 fig. 2.

[176] Ibid, 40-41.

[177] Nigel Goring-Morris, "The Quick and the Dead: The Social Context of Aceramic Neolithic Mortuary Practices as Seen from Kfar Hahoresh," in *Life in Neolithic Farming Communities: Social Organization, Identity, and Differentiation*, ed. Ian Kuijt (New York: Kluwer Academic/Plenum, 2000), 103–136.

removal was part of a ritual belief system that served to increase community cohesion and to reinforce household and community beliefs.[178] He thinks that both Late Natufian and PPNA mortuary customs integrated communities and diminished differentiations among individuals and kin groups during a period when socio-economic change appeared. These processes are regarded as a system of "social codes" that constrained the growth and concentration of power and authority.[179] On the one hand, there is only scant mortuary evidence for individual social differentiation, such as burial techniques, grave goods, and distinguishing access to favoured resources, which has led some researchers to suggest egalitarian PPNA societies devoid of formalized social, ritual, or political hierarchies. On the other hand, Byrd argues that, while admitting that reliable archaeological evidence is sparse and that the presence of leaders is largely inferential, the intricacies of extensive communities likely encompassed enforced roles for community leaders and possibly even elites.[180] Additionally, Kuijt maintains that there is a stratification in certain PPNA communities. Drawing on a cautious review of existing evidence, particularly burial ground data, he thinks that although many PPNA communities are devoid of individual or familial social differentiation, there is in fact proof that ritual and community leaders organized activities among multiple villages. Kuijt's model has four main elements. To begin with, it demands the sustainment of extensively communalized funerary and ritual traditions that reduce potentially differentiating social factors, such as wealth inequality, to a minimum. Second, these processes were initiated and upheld by elite ritual and community leaders, whose status was presumably seniority-based. Third, the mandate of this leadership would encompass various community decision determinants, such as massive construction projects and agricultural labour

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[178] Simmons and Bar-Yosef, *The Neolithic Revolution in the Near East: Transforming the Human Landscape,* 108-115.

[179] Ibid.

[180] Brian Byrd, "Early Village Life at Beidha, Jordan: Neolithic Spatial Organization and Vernacular Architecture," *British Academy Monographs in Archaeology* No. 14, (Oxford: Oxford University Press, 2005): 266.

management, but would not allow for individual or family profit making beyond certain thresholds.[181]

A study conducted by Gil Haklay and Avi Gopher on the architectural design process corroborates the idea that the three PPNA enclosures, B-D, were initially conceived and considered together as a complex design project.[182] Formal architectural analysis shows that the midpoints of the distances between the twin pillars of the enclosures define the centres of the buildings, and form an equilateral triangle (Fig. 34). The main axis, perpendicular to the southern edge of the triangle, passes through the centre of enclosure D and the U stones are believed to be the entrance portals of buildings A and C placed symmetrically along this axis. So enclosure D tends to have a superior position over the other two buildings, as it is placed on the vertex of the triangle and while simultaneously being the most elaborately decorated and the largest building among them. Moreover, hierarchy can also be observed in all enclosures' interiors because shorter peripheral pillars are arranged around the taller central megaliths. The personification of the central pillars through rigging them out in symbolic pendants, belts to which various pictograms are attached, and fox-skin loincloths is exclusive to building D (Fig. 35). This deliberate portrayal might have been done to declare the reputation of the figures from the past or the transcendental world. Its singularity may strengthen its superior position among other enclosures. Consequently, according to Haklay and Gopher, the architectural hierarchy displayed by the enclosures and the T-shaped pillars can account for the inhabitants of Göbekli Tepe who were well aware of the concept of hierarchy and did not hesitate to portray it.[183]

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[181] Ian Kuijt, "Pre-Pottery Neolithic A Period Settlement Systems of the Southern Levant: New Data, Archaeological Visibility, and Regional Site Hierarchies," *Journal of Mediterranean Archaeology* 7, 165–192; Ian Kuijt, "Negotiating Equality Through Ritual: A Consideration of Late Natufian and Prepottery Neolithic A Period Mortuary Practices," *Journal of Anthropological Archaeology* 15, 313–336, **quoted in** Alan Simmons and Ofer Bar-Yosef, *The Neolithic Revolution in the Near East: Transforming the Human Landscape*, 1st ed. (University of Arizona Press, 2011), 113.

[182] Haklay and Gopher, "Geometry and Architectural Planning at Göbekli Tepe, Turkey."

[183] Ibid, 10.

Figure 34. Positioning of Göbekli Tepe enclosures A, B, C, and D

Description: "Architectural formal analysis: (In red) The nearly equilateral triangle that passes through the middle points between the southern face of the central pillars of Enclosures B–D. (In yellow) The alignment of the central pillars of Enclosures B and C along the southern triangle side. (In blue) The main axis, perpendicular to the southern triangle side, passes through the centre of Enclosure D. (In green) The U-stones symmetrically positioned on both sides of the main axis."

Source: Gil Haklay and Avi Gopher, "Geometry and Architectural Planning at Göbekli Tepe, Turkey," *Cambridge Archaeological Journal* 30, no. 2 (January 14, 2020): figure 7, https://doi.org/10.1017/s0959774319000660.
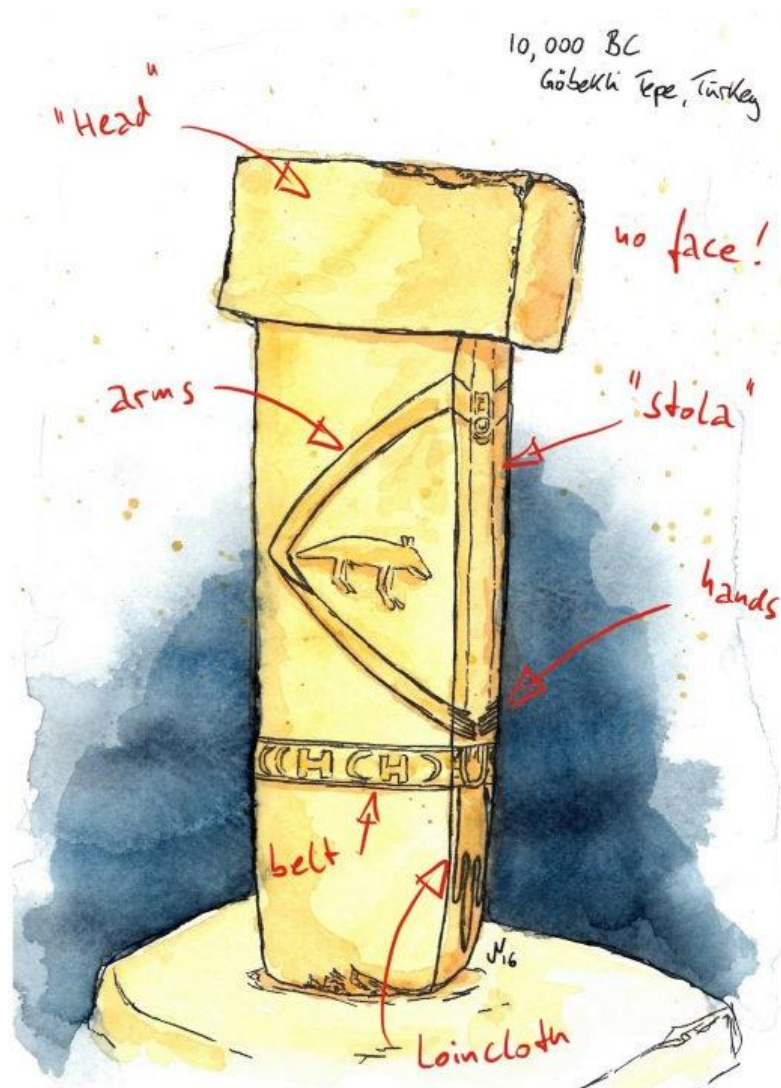
Figure 35. Ornamented T-shaped pillar of Structure D, Göbekli Tepe

Description: "The characteristic T-pillars can be recognized as larger-than-life human(-like) sculptures due to a number of specific elements.".

Source: Illustration by J. Notroff. https://www.dainst.blog/the-tepe-telegrams/tag/t-pillars/

Although Göbekli Tepe shares similar architectural elements and design to the former PPNA buildings discussed above, its grandeur, scale, symbolism and endeavour managed for the construction of the site are unique. The arrangement of peripheral and central pillars that remained unchanged for thousands of years can be seen as a representation of the publicly accepted, steady and recurring socio-political or

transcendental order in architectural design. Growth in inequality and decline in sharing due to increased sedentarism have been regarded as the premises of PPNA culture by Benz and Bauer so that by taking the advantage of differentiation in conditions, individual agents got in charge of socio-political power and the ritual world.[184] Peter Wilson thinks that the solidity and endurance of buildings serve to remind witnesses of the power of those who enabled their creation.[185] In this sense, the emergence of monumental architecture twelve thousand years ago and its use for special ceremonies by certain members of the community through the leadership of distinguished individuals, in a society where socio-economic differentiation was present, might not be surprising. However, the possibility of projection of our own modern perception of monumentality stemming from living in a class-based society onto the Neolithic monuments should not be excluded. In this case, hierarchic symbolism could belong to transcendental beliefs and could be cosmology-related, which had nothing to do with socio-political differentiation.

There are many engravings on the circumferential and central pillars of the Göbekli Tepe enclosures. The depicted scenes on the megaliths with plenty of animals sometimes accompanied by pictograms must have been important to record, convey and recall social events, and mythical narratives. It can be said that Göbekli Tepe's monumental architecture and its iconography functioned as external symbol systems serving the creation of collective consciousness and cultural memory.[186] One of the most fascinating narratives belongs to pillar 43 from building D (Fig. 36). The pillar portrays a scene with different kinds of birds, a headless male body, a scorpion and a quadruped. The presence of a headless body and vulture together can be associated

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[184]M. Benz and J. Bauer, "Symbols of power – symbols of crisis? A psycho-social approach to Early Neolithic symbol systems," *Neo-Lithics: The Newsletter of Southwest Asian Neolithic Research 2/13*, No. 2 (2013), **quoted in** Avi Gopher and Gil Haklay, "Geometry and Architectural Planning at Göbekli Tepe, Turkey," *Cambridge Archaeological Journal* 30, issue 2 (January 2020): 12.

[185] Trigger, "Monumental Architecture: A Thermodynamic Explanation of Symbolic Behaviour." 12.

[186] Trevor Watkins, "Household, community and social landscape: maintaining social memory in the early Neolithic of Southwest Asia," in *'As Time Goes By': monuments, landscapes and the temporal perspective*, ed. M. Furholt, M. Hinz, & D. Mischka, (Bonn: Rudolf Habelt, 2012), 32.

with death, as we know from Çatalhöyük friezes (Fig. 37) and the PPN skull cult. Hodder, states that in small-scale societies like Çatalhöyük, the transcendental phenomenon does not generate a separate institutional sphere; it penetrated into social and material life.[187] However, it seems like at Göbekli Tepe, either socio-political life or transcendental beliefs let people to create a private and separate physical institutional sphere through architecture in accordance with enclosures' limited capacity, hierarchical symbolism and monumentality.

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[187] Ian Hodder, "The Role of Religion in the Neolithic of the Middle East and Anatolia with Particular Reference to Çatalhöyük," *Paléorient* 37, no. 1 (2011): 11, https://doi.org/10.3406/paleo.2011.5442.

Figure 36. Peripheral pillar 43 from building D, Göbekli Tepe

Source: DAI, Göbekli Tepe Project.

Figure 37. Mural depictions of vultures associated with headless bodies, Çatalhöyük

Source: Paul E Williams. https://funkystock.photoshelter.com/gallery-image/Pictures-Images-of-Catalhoyuk-Neolithic-Archaeology-Site/G0000QfkN_t3SpQw/I0000zb4ALpIQEgs/C0000tfxw63zrUT4

CHAPTER 4

ROUND MONUMENTS OF NEOLITHIC EUROPE

The traditionally defined concept of Neolithic, the adoption of which changed the lifestyles of prehistoric human beings, is regarded as a package of cultivation and harvesting of crops, livestock raising and breeding, generation of pottery and polished stone tools, deep mining, and building of substantial constructions of earth, wood and stone. [188] While all of these activities and inventions first appeared in Near East and outspread to Europe gradually, these developments were also the proof that human beings no longer simply existed on earth, but rather began to shape and process it. [189] It resulted in a shift from a hunter-gatherer lifestyle to a farmer one that was eventually accompanied by differentiation regarding ritual behaviour.[190]

English historian Ronald Hutton provides us with the following information sequence about the Neolithic:[191] The spread of the Neolithic way of life to the European continent took the form of relatively short and rapid expansions, followed by long periods of isolation. The Neolithic way of life originated in the Near East around 9000 BC, but it took more than three thousand years to reach central Europe. It had spread from the Balkans to the region now known as eastern France between 5500 and 5100 BC and remained there for almost a thousand years. By 4000 BC, it spread through western France, into the British Isles and, within a few centuries, into the Baltic region. Moreover, it has recently become clear that experts agree that there is no single homogeneous Neolithic "package" that humans completely embraced. Rather,

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[188] Hutton, *Pagan Britain*, 32.

[189] Ibid.

[190] Ibid.

[191] Ibid, 33.

different communities picked and adopted the aspects of the new lifestyle that was most attractive to them, leading to a range of different cultural backgrounds. Across the continent, this created extraordinary differences. For example, small family villages were common among the peoples of Hungary and France, while towns with up to 10,000 inhabitants and regular streets emerged in the far east of Europe, between the Carpathian Mountains and the Dnieper River. However, there were no such settlements found in north-western Europe, including England.

Hutton states that what also emerges from the archaeological record of Neolithic societies is that the world of nature has continued to play a crucial role in spiritual life. [192] Sometimes, burials were still made in caves, as had been the case since humans had appeared in this part of Europe. Caves were used for this purpose more frequently in the Neolithic than before and continued to be used for this purpose during the latter part of British prehistory. In the chalk lands of southern England and on the Breckland heaths of Norfolk, Neolithic communities encountered flint reservoirs fairly well for the manufacture of tools on the surface of the land, but nevertheless followed the difficult and dangerous path of digging shafts to extract the shining stone at depth. This stone, whose beauty is an undoubted attraction, may have been considered to carry a strange power since it was quarried at great depths. The fact that the miners left behind pottery, tools and remains of human and animal bones suggest the possibility that they made offerings to the subterranean powers through which they accessed their kingdom. Furthermore, axe production in the Neolithic was an industry that operated on a system of bargaining where people provided gifts to particular environments and received troves in return. Exceptional stone axe heads, which were important objects during the Neolithic period, were widely traded over great distances and appreciated for their aesthetic appeal, and often considered sacred or artistic rather than functional items. These axes were not made from a certain type of stone readily available in the British Isles, but from materials found in magnificent and striking natural mise-en-scénes, such as hard-to-reach islands and mountaintops, where the grandeur and dignity of the stone might have been hidden most. It is claimed that all

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[192] Ibid, 37-9.

these impractical oddities provide a framework for considering how these people could have designed the monuments they built with such a mindset.

The European Neolithic period in the 5th and 4th millennia BC was marked by the extensive production of monumental structures in the form of megalithic structures, mounds and earthwork enclosures, some of them segmented by pathways.[193] At some sites, there existed only one type of such structures, whereas at other places both were in simultaneous employment.[194] The subsequent two millennia were the time of stone and timber circle and henge constructions in the British Isles.

4.1. Tomb-Shrines: Dolmens, Passage Graves and Chambered Cairns

According to what Ronald Hutton has written in his book "Pagan Britain", early Western European Neolithic architecture can be identified by a kind of megalithic structure, encased in a mound or cairn in some cases, consisting of one or more substantial capstones crowning a chamber delimited by vertical megaliths.[195] We can see this prototype of the fourth millennium BC construction from south-eastern Spain to southern Sweden and along the west coast of the continent, extending over most of the British Isles. Despite decades of destruction, some 40,000 examples of open-air megalithic architectural heritage still exist, although they have not fully preserved their ancient forms. The name "chambered tomb" was gradually adopted for these structures in the early 20th century. However, Hutton emphasizes that while this choice of name was based on the fact that many of the structures tended to contain large numbers of human remains in chambers, this was not always the case. To resolve this inconsistency, he proposes the term "tomb-shrine", which embraces the possibility that the burial activity may have not been carried out within the monument. It is stated that there is still no agreement on where the tradition of tomb-shrine building began, except that it did not start in England. It is known that all megalithic tomb-shrines in Spain, Portugal and western France (Brittany) date back to the mid-fifth millennium BC and

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[193] Laporte and Scarre, *The Megalithic Architectures of Europe*, 297.

[194] Ibid.

[195] Hutton, *Pagan Britain,* 40-1.

possibly earlier. It seems that these monuments had become widespread rapidly in Britain in the first half of the fourth millennium or shortly before, soon after the adoption of agriculture, whereas they began to appear later in northern Europe. Therefore, Hutton suggests that the construction of this type of monument has expanded from south to north along the Atlantic coast, which was relatively rapid if prehistory is considered, in parallel to the likewise quick introduction of the Neolithic way of life in one region to another.

Dolmens, passage and graves, and chambered cairns are the subtypes of Neolithic tomb-shrines.[196] Their covering mounds, if there are any, can vary in shape, from being rectangular, trapezoidal or round as well as their chambers can be rectangular, polygonal, oval or round. In this chapter, in line with the aim and scope of the thesis, round freestanding dolmens, dolmens surrounded by a stone circle (kerb) or encased within a round mound, burial chambers covered with round mounds, i.e. passage graves and chambered cairns, are included as case studies. Passage graves and chambered cairns consist of the same architectural elements, chamber and mound. If the mound is made of stone, then it is called a cairn. The chambers covered with earthen mounds are referred to as passage graves even if they bear no traces of burials. In Ireland and Britain, chambers are usually encased within cairns therefore they are called chambered cairns.

4.1.1. Locality

Vicki Cummings and Colin Richards highlight the post-glacial stony lands of northern Europe, including northern Germany, Denmark, Sweden, Britain and Ireland, on which glacial erratics (split boulders transported via glacier movement) were scattered in forests as the environment where the first megalithic architecture, dolmens, emerged.[197] Contrary to what is expected of monumental structures, dolmens are not always located on conspicuous and prominent higher points of the land (e.g. The

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[196] Kipfer, *Encyclopedic Dictionary of Archaeology*, 257.

[197] Vicki Cummings and Colin Richards, *Monuments in the Making: Raising the Great Dolmens in Early Neolithic Northern Europe* (Windgather Press, 2021), 7.

Devil's Den dolmen in Wiltshire, England).[198] In Britain, dolmens occur solely on the western coast (except for a group of specimens in Kent) whereas dolmens and passage graves can be found throughout Ireland in clusters except the south-western part of it (Fig. 38, 39).[199] In Scotland, passage graves are clustered on the northern and western islands (Fig. 39). Furthermore, in the case of the British Isles, passage graves are situated on hilltops, which makes them visible from further locations and provides an overlooking view.[200] On the other hand, dolmens and passage graves in Denmark are usually located on lower grounds of the land or terraces, and sometimes on hilltops.[201] In Sweden, dolmens and passage graves are scattered along the west coast, starting from the southernmost tip of the country, the Skåne region, and heading north to Bohuslän and inner Västergötland (Fig. 40).[202] Dispersal of Armorican passage graves of Brittany is also coastal, concentrating in the south of the region (Fig. 41).[203]

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[198] Ibid, 14.

[199] Vicki Cummings, *The Neolithic of Britain and Ireland (Routledge Archaeology of Northern Europe)*, 1st ed. (Routledge, 2017), 145.

[200] Cummings and Richards, *Monuments in the Making: Raising the Great Dolmens in Early Neolithic Northern Europe*, 151.

[201] Palle Eriksen and Niels H. Andersen, "Dolmens without mounds in Denmark," in *The Megalithic Architectures of Europe*, ed. Luc Laporte and Chris Scarre, (Oxbow Books, 2022): 79-88.

[202] Christopher Tilley, *The Dolmens and Passage Graves of Sweden*, 1st ed. Reprint, (Taylor and Francis, 2016). https://www.perlego.com/book/1570353/the-dolmens-and-passage-graves-of-sweden-pdf.

[203] Mark Patton, *Statements in Stone: Monuments and Society in Neolithic Brittany*, 1st ed. (Routledge, 2015), 71.

Figure 38. "The distribution of dolmen monuments in Britain and Ireland"

Source: Vicki Cummings and Colin Richards, *Monuments in the Making: Raising the Great Dolmens in Early Neolithic Northern Europe* (Windgather Press, 2021), Fig. 5.1.

Figure 39. "The distribution of passage tombs in Britain and Ireland, with sites named in the text"

Source: Vicki Cummings, *The Neolithic of Britain and Ireland (Routledge Archaeology of Northern Europe)*, 1st ed. (Routledge, 2017), Fig. 6.4.

Figure 40. "The distribution of dolmens and passage graves in Sweden"

Source: Christopher Tilley, *The Dolmens and Passage Graves of Sweden*, 1st ed. Reprint, (Taylor and Francis, 2016), Fig. 1.1. https://www.perlego.com/book/1570353/the-dolmens-and-passage-graves-of-sweden-pdf.
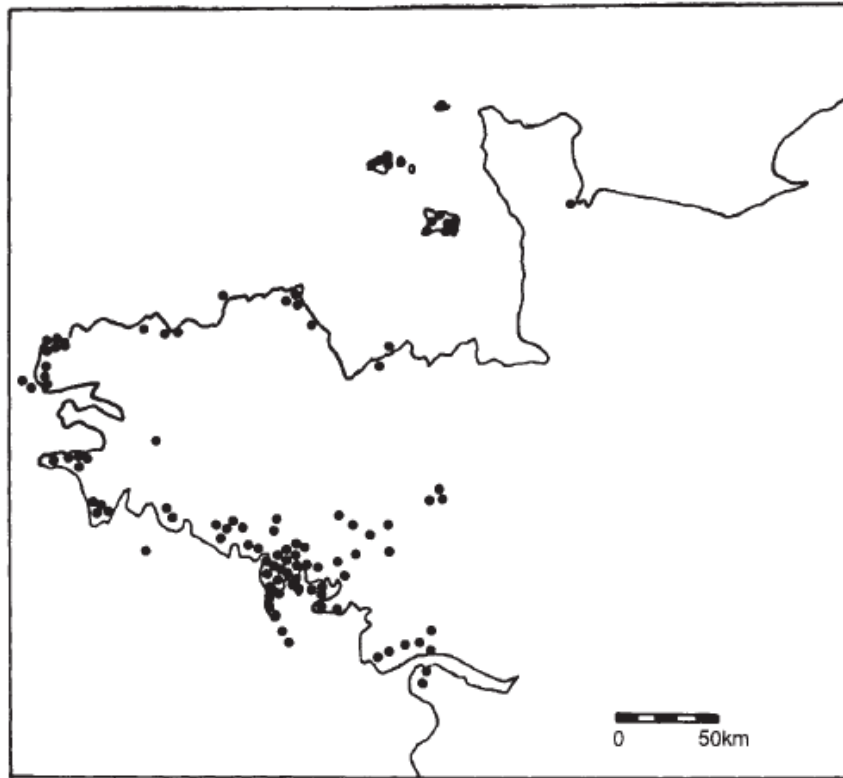
Figure 41. "Distribution of Armorican Passage graves"

Source: Mark Patton, *Statements in Stone: Monuments and Society in Neolithic Brittany*, 1st ed. (Routledge, 2015), Fig. 4.1.

4.1.2. Architectural Characteristics

4.1.2.1. Dolmens

According to Hutton, it is not possible to define a single style of tomb-shrine acting as an antecedent because as soon as the tradition of tomb-shrine moved to any new area, it seemed to have metamorphosed in various ways.[204] However, Cummings and Richards contend that the dolmens and menhirs were the first built specimens of megalithic architecture tradition.[205]

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[204] Hutton, *Pagan Britain,* 41-2.

[205] Cummings and Richards, *Monuments in the Making: Raising the Great Dolmens in Early Neolithic Northern Europe*, 7.

Given the challenge of classifying dolmens in terms of tomb-shrine typology, which cause confusion and contradiction among archaeologists, Cumming and Richards consider two structural characteristics to define dolmens: the size and form of capstones and the constitutive effect of the shape of the capstone on the arrangement of the vertical megaliths (orthostats) that serve as the supporting pillars.[206] In this sense, dolmens can be divided into two groups: the ones raising a usually flatter capstone on a set of slender orthostats located separately and those whose relatively thick and stumpy vertical boulders are aligned side by side, generating a more precisely defined space that is covered with a chubbier capstone (Fig. 42).[207] While they highlight the efficacy of tripod-like sculptural dolmens, they also settle on the container-like chambered-tomb appearance of enclosed dolmens with openings that are found in abundance in northern Europe, e.g. Denmark (Fig. 43). [208]

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[206] Ibid, 5-6.

[207] Ibid, 16.

[208] Ibid, 48, 156.

Figure 42. "Pentre Ifan, Pembrokeshire, south-west Wales, how deftly the large capstone is balanced on the pointed tops of the supporting orthostats."

Source: Vicki Cummings and Colin Richards, *Monuments in the Making: Raising the Great Dolmens in Early Neolithic Northern Europe* (Windgather Press, 2021), Fig. 1.9.
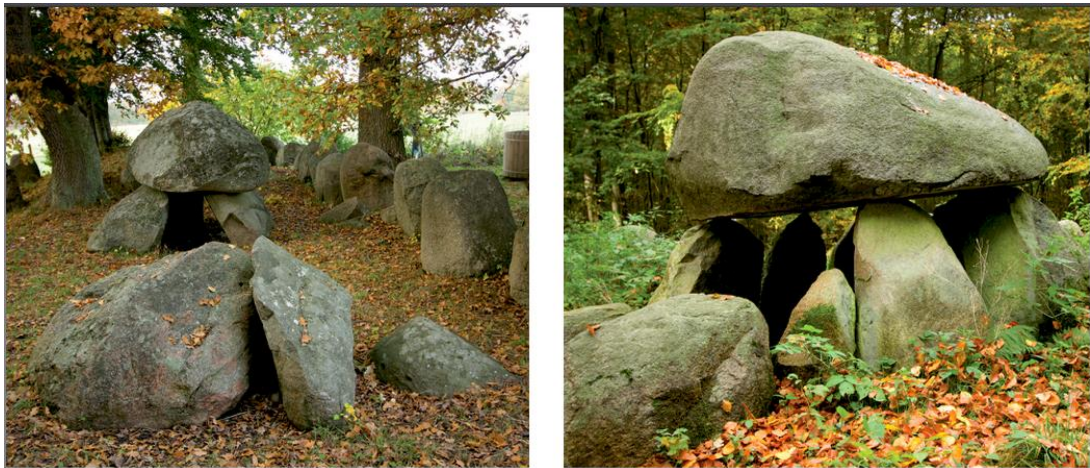
Figure 43. "Birkede and Frejlev Skov enclosed dolmens with hemispherical split boulder capstones, Denmark."

Source: Vicki Cummings and Colin Richards, Monuments in the Making: Raising the Great Dolmens in Early Neolithic Northern Europe (Windgather Press, 2021), Fig. 2.16.

To generate enclosed dolmen chambers, post-glacial naturally split and flat-based boulders present in the landscape were used whereas some massive capstones in other locations were exposed to pecking and pounding to obtain a smoother base.[209] Regardless of the use of quarried rocks or split-boulders to build dolmens, the stones were placed in such a way that their divided flat surfaces form the volume of the polygonal inner space and concave sides generate circular outer form (Fig. 44).[210] Due to the diminutive scales of this type of dolmens, it is not possible to conduct human activity on the inside or through passages.[211] Furthermore, in some cases, dolmens were encircled by a low platform of stones which created a low-lying pedestal consisting of bright-coloured angular stones.[212]

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[209] Ibid, 41-2.

[210] Ibid, 164.

[211] Robert Hensey, *First Light: The Origins of Newgrange (Oxbow Insights in Archaeology)* (Oxbow Books, 2015), 34.

[212] Cummings and Richards, *Monuments in the Making: Raising the Great Dolmens in Early Neolithic Northern Europe*, 26-8.
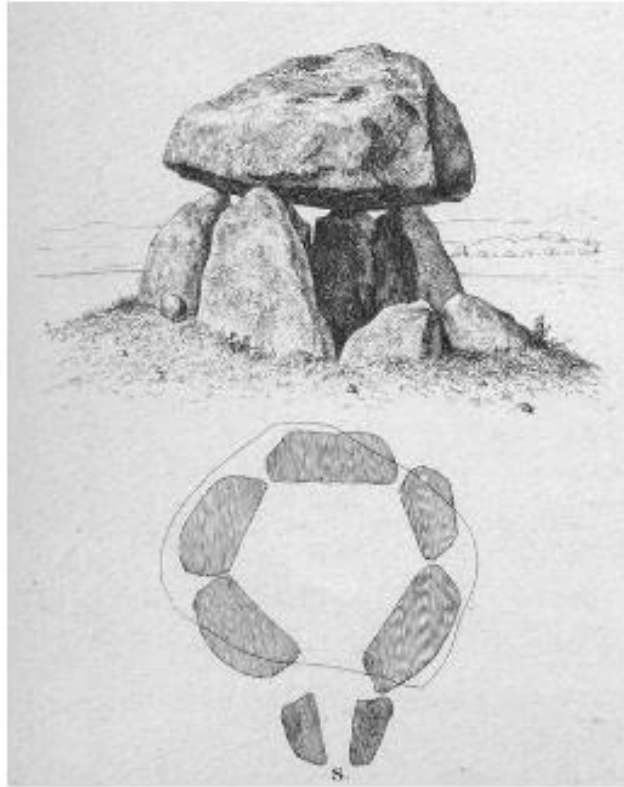
Figure 44. "The passage orthostats are small, and effectively present only a symbolic passage."

Source: Palle Eriksen and Niels H. Andersen, "Dolmens without mounds" in *The Megalithic Architectures of Europe*, ed. Luc Laporte and Chris Scarre, (Oxbow Books, 2022), Fig. 8.13 after A. P. Madsen, Afbildninger af danske Oldsager og Mindesmærker, (Thieles Bogtrykkeri: Copenhagen, 1868).

Free-standing dolmens without mounds as well as the ones covered with mounds occur ubiquitously regardless of location peculiarity. S. Thorsen, T. Dehn and S. Hansen claim that all dolmens once had been buried within mounds that disappeared due to erosion and robbing through time.[213] Cummings and Richards, as well as Eriksen and Andersen, who reason that the lack of mounds covering dolmens stems from the splendour and monumentality of the Danish capstones, which must have been raised to be seen and displayed, criticize this point of view for its perception of the dolmen

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[213] Ibid, 20.

and mound as the parts of a single architectural entity. Instead, they assert that dolmens had been free-standing structures at the outset which were later encased within a round or long mound (also called long barrow or long dolmen) as in the case of the long mound 13 (Lønt, south-east Jutland) encompassing the "individual dolmens" (entitled by Cummings and Richards) with passages totally looking like passage graves (Fig. 45).[214] The chamber floors of these "dolmens" rest on a level 0.2–0.5 m lower level than the exterior ground and the deposition of potsherds around the completely enclosed dolmen 1 suggests the activities held around it before its incorporation into the long barrow (Fig. 45).[215]
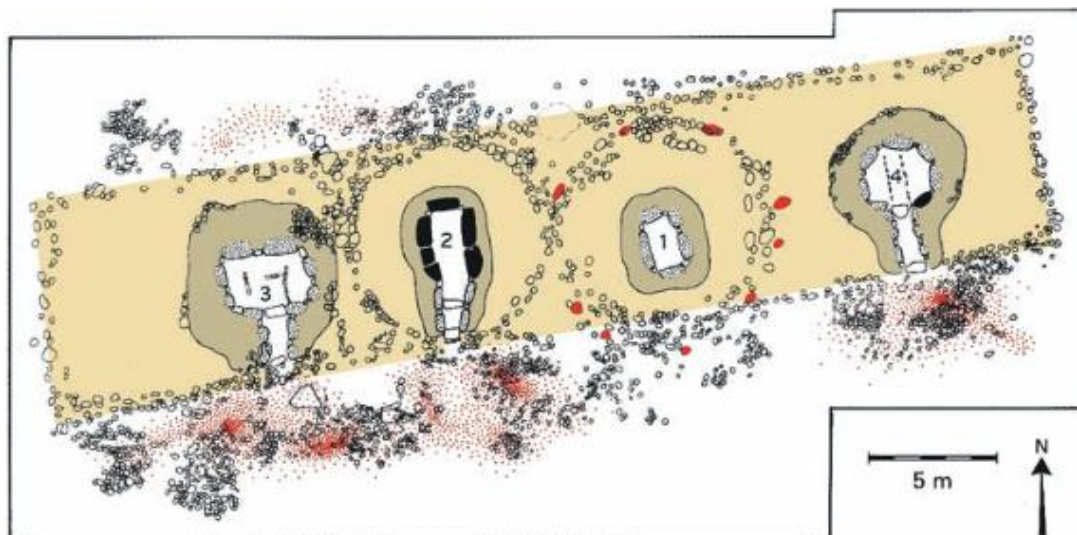
Figure 45. Dolmens incorporated in the long mound 13, Lønt, south-east Jutland

Source: Anne Birgitte Gebauer, "Two types of megaliths and an unusual dolmen at Lønt, Denmark" in *The Megalithic Architectures of Europe*, ed. Luc Laporte and Chris Scarre, (Oxbow Books, 2022), fig. 13.6 after Jørgen Kraglund.

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[214] Cummings and Richards, *Monuments in the Making: Raising the Great Dolmens in Early Neolithic Northern Europe*, 24, 136; Eriksen and Andersen, "Dolmens without mounds", 80-5.

[215] Eriksen and Andersen, "Dolmens without mounds" 138-39.

On the one hand, the Mas de Reinhardt II monument in southern France is a specimen referred to as "dolmen" having a rectangular chamber consisting of megalithic slabs and a passage within a round mound (Fig. 46).[216] On the other hand, Eriksen and Andersen state that dolmens never possess passages leading outdoors whereas passage graves always do.[217] However, some of the free-standing enclosed Danish dolmens feature one or two pairs of smaller orthostats that are arrayed facing each other at the opening of the dolmen chamber and are described as "rudimentary or symbolic passages" by the same scholars (Fig. 47).[218] Therefore, it seems that ambiguity and variation in accordance with the region in classifying these monuments occur among scholars. There are also specimens of enclosed dolmens that are encircled by one or more circles of kerbstones sometimes supported by dry-stone walling (Fig. 48). The Danish and Swedish specimens of this type of architecture are referred to as dolmens or round dolmens whereas Irish ones are regarded as passage graves by different scholars.[219] Since they do not comprise of actual passages that enable access and mounds which are characteristic for passage graves, they are considered as dolmens here.

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[216] Noisette Bec Drelon, "Megalithic building techniques in the Languedoc region of southern France: recent excavations at two dolmens in Hérault" in *The Megalithic Architectures of Europe*, ed. Luc Laporte and Chris Scarre, (Oxbow Books, 2022), 32.

[217] Eriksen and Andersen, "Dolmens without mounds", sec. Simple typology, definition and dating.

[218] Ibid, 85.

[219] Palle Eriksen and Niels H. Andersen, "Dolmens without mounds" in *The Megalithic Architectures of Europe*, ed. Luc Laporte and Chris Scarre, (Oxbow Books, 2022). Compare with, Vicki Cummings and Colin Richards, *Monuments in the Making: Raising the Great Dolmens in Early Neolithic Northern Europe* (Windgather Press, 2021); Robert Hensey, *First Light: The Origins of Newgrange (Oxbow Insights in Archaeology)* (Oxbow Books, 2015).
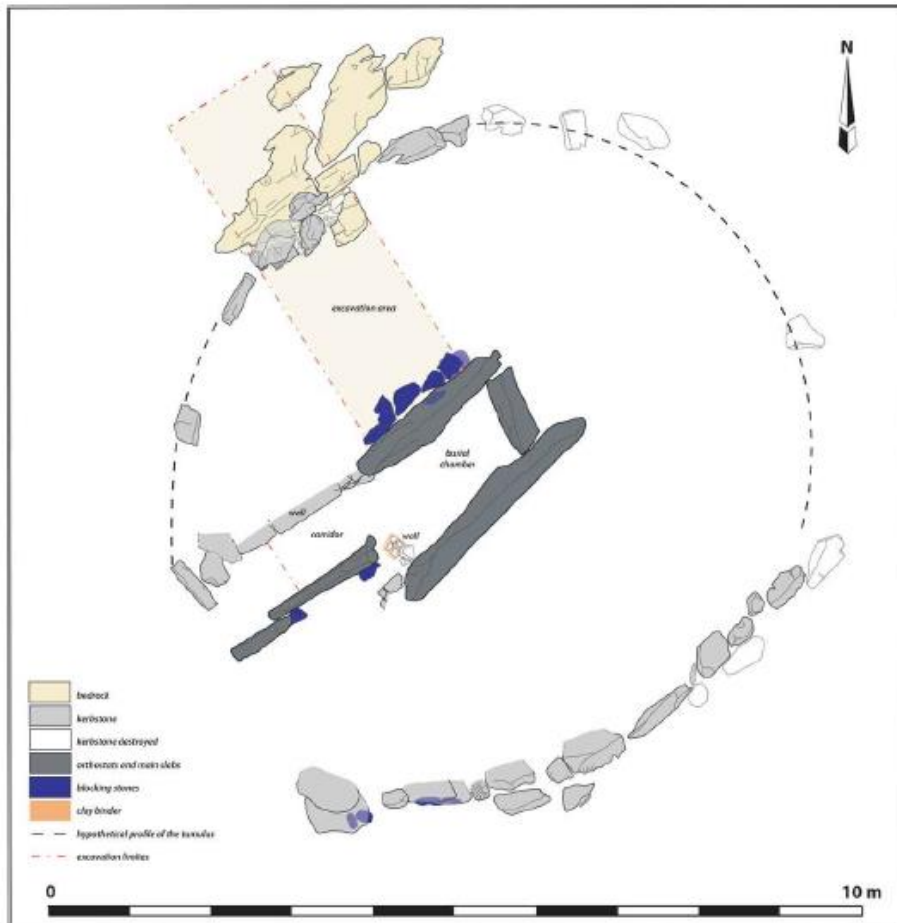
Figure 46. Plan of the Mas de Reinhardt II monument in southern France

Source: Noisette Bec Drelon, "Megalithic building techniques in the Languedoc region of southern France: recent excavations at two dolmens in Hérault" in *The Megalithic Architectures of Europe*, ed. Luc Laporte and Chris Scarre, (Oxbow Books, 2022), Fig. 3.1.
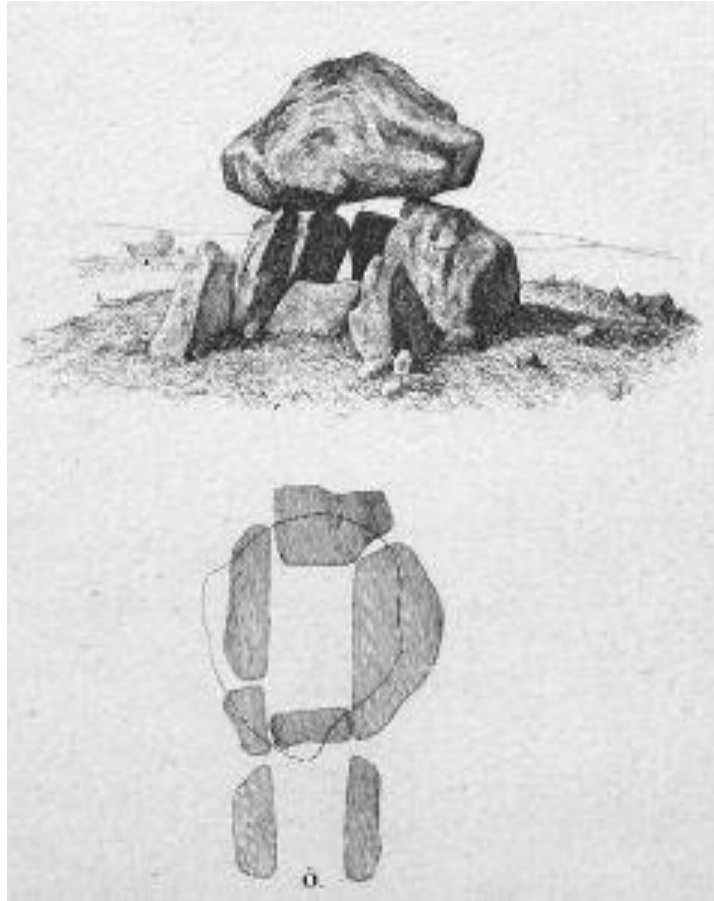
Figure 47. Dolmen with a symbolic or rudimentary passage

Source: Palle Eriksen and Niels H. Andersen, "Dolmens without mounds" in *The Megalithic Architectures of Europe*, ed. Luc Laporte and Chris Scarre, (Oxbow Books, 2022), Fig. 8.12. after A. P. Madsen, Afbildninger af danske Oldsager og Mindesmærker. (Thieles Bogtrykkeri: Copenhagen, 1868)

Figure 48. Dolmen with a kerbstone circle, Frejlev Skov Runddysse 4, Denmark

Source:
https://m.megalithic.co.uk/modules.php?op=modload&name=a312&file=index&do=showpic&pid=229145

4.1.2.2. Passage Graves and Chambered Cairns

According to Christopher Tilley, passage graves can be regarded as expanded forms of round dolmens.[220] They are the structures with single or more burial chambers accessed through a long narrow passage and are always buried in mounds, usually round ones delimited by kerbstones, comprising layers of various materials (Fig. 49).[221] Chambered cairns consist of the same main architectural elements as of the

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[220]Tilley, *The Dolmens and Passage Graves of Sweden*, The politics of monument form.

[221] Tilley, *The Dolmens and Passage Graves of Sweden*, Monument form and techniques of construction.; Penny Bickle, Daniela Hofmann, and Joshua Pollard, The Neolithic of Europe: Papers in Honour of Alasdair Whittle, 1st ed. (Oxbow Books, 2017), Passage Graves as material technologies of wrapping.

passage graves: a chamber supported by a concentric inner cairn and a mound consisting of a blend of materials including small rocks, boulders, crushed rocks, slabs, and cobblestones, sometimes combined with earth (Fig. 50).[222] Commonly, these tomb-shrines are called chambered cairns in Britain and Ireland, whereas passage graves in other European regions. Their chambers are larger than the enclosed dolmens and might be roofed via corbelled vault if the chamber is built in dry-stone construction technique (Fig. 51, 52), or single or multiple megalithic slabs covering the chamber consisting of massive upright stones which seem to be artificially shaped in some cases.[223] It is proposed that sometimes megalithic chambers might have been free-standing for a while, just like a dolmen, before the addition of a mound and perhaps passage.[224]

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[222] The location and micro-topography of the chambered cairns of northern Scotland, T. Phillips. PhD Thesis, 18

[223] Christopher Tilley, *The Dolmens and Passage Graves of Sweden*, (Taylor and Francis, 2016), Monument form and techniques of construction.; Kipfer, 1018; La Porte, Scarre, Megalithic Arch of Europe, 73

[224] La Porte, Scarre, Megalithic Arch of Europe, Accident or design? Chambers, cairns and funerary practices in Neolithic western Europe, Scarre 73
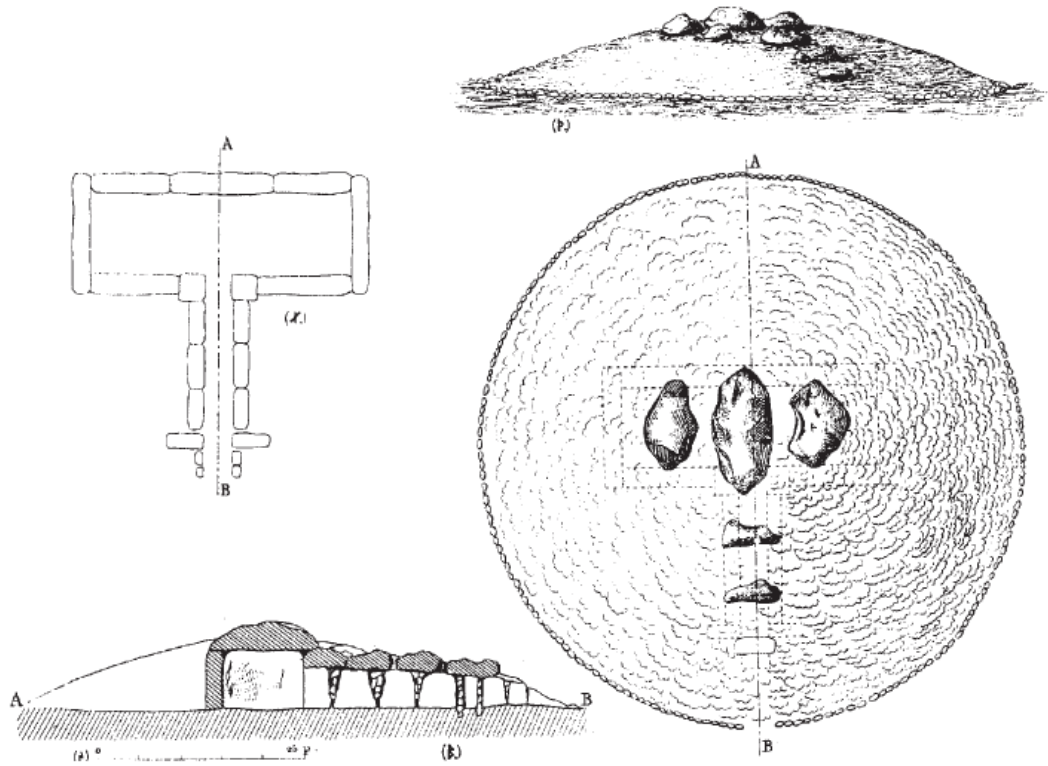
Figure 49. Passage grave plan, section and elevations, Falbygden, Sweden

Source: Karl-Göran Sjögren, **"**Megaliths, landscapes and identities: the case of Falbygden, Sweden" in *Megaliths and Identities: Early Monuments and Neolithic Societies from the Atlantic to the Baltic*, ed. Martin Furholt et al., (Habelt, 2011), Fig. 2 after Nils Månsson Mandelgren 1865.

Figure 50. The mound of Camster round chambered cairn

Source: https://her.highland.gov.uk/Monument/MHG1816

Figure 51. Ground plan and section of chambered cairn with a corbelled roof at Camster

Source: James Paton, F.L.S., Scottish History and Life, (Glasgow: James Maclehose and Sons Publishers to the University, 1902), Fig. 13 and 14.

Figure 52. The corbelled roof of Cairn T, Loughcrew, Ireland

Source: Robert Hensey, First Light: The Origins of Newgrange (Oxbow Insights in Archaeology) (Oxbow Books, 2015), Fig. 2.3. Photograph by Ken Williams.

The form of the chambers can be round, square, rectangular, D-shaped, polygonal, V-shaped, or cruciform with multiple side recesses (Fig. 53). Armorican, Swedish and Danish passage graves feature simpler chamber types whereas Irish and British specimens have complex forms of chambers providing a more sophisticated space design and experience (Fig. 54). The Danish "twin" passage graves comprise double chambers (Fig. 55) slightly differing in shape and sharing a wall consisting of one or two orthostats (Fig. 56).[225]

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[225] Westphal, "In the eye of the beholder: key architectural elements in 25 years of visual analysis of Danish megalithic tombs", 93.
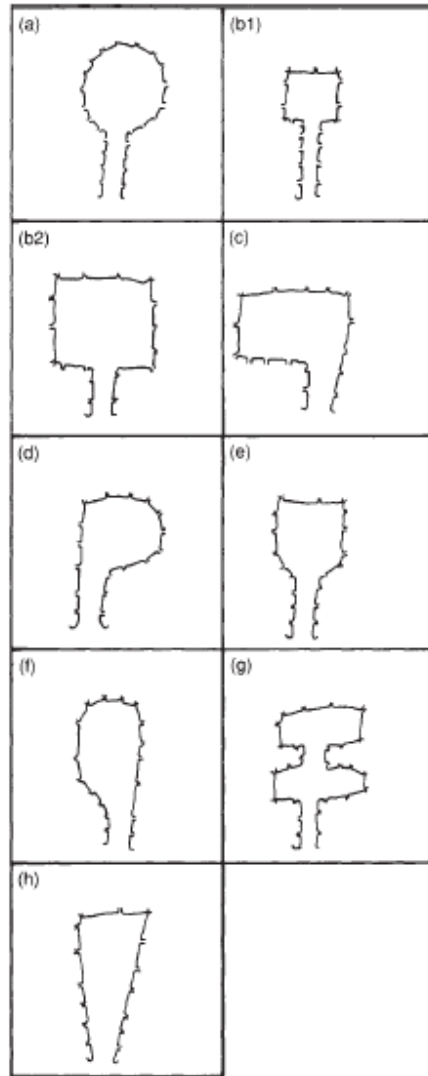
Figure 53. The chamber shapes of Armorican passage graves

Source: Mark Patton, *Statements in Stone: Monuments and Society in Neolithic Brittany*, 1st ed. (Routledge, 2015), Fig. 4.7.

Figure 54. "A selection of chamber plans from Irish passage tombs"

Source: Vicki Cummings, *The Neolithic of Britain and Ireland (Routledge Archaeology of Northern Europe)*, 1st ed. (Routledge, 2017), Fig. 6.6. after A. Powell, "Corporate identity and clan affiliation: an explanation of form in Irish megalithic tomb construction," in Fonctions, utilisations et représentatations de l'espace dans les sépultures monumentales du Néolithique européen, ed. G. Robin et al., (Aix: Presses Universitaires de Provence, 2016).
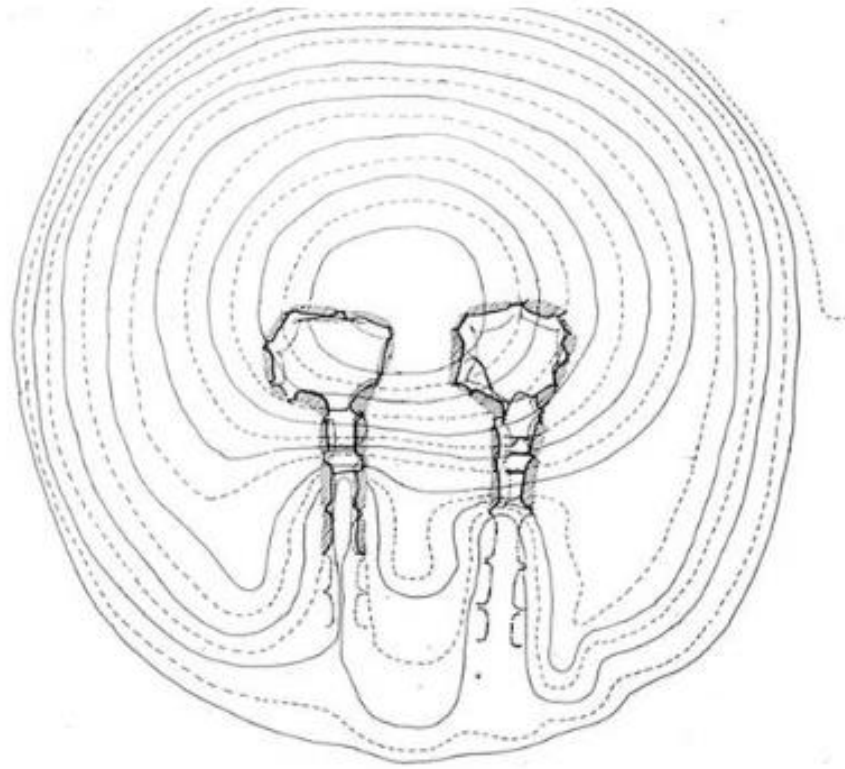
Figure 55. "Ground plan of a typical double passage grave"

Source: Jørgen Westphal, "In the eye of the beholder: key architectural elements in 25 years of visual analysis of Danish megalithic tombs" in, *The Megalithic Architectures of Europe*, ed. Luc Laporte and Chris Scarre (Oxbow Books, 2022), Fig. 9.10.
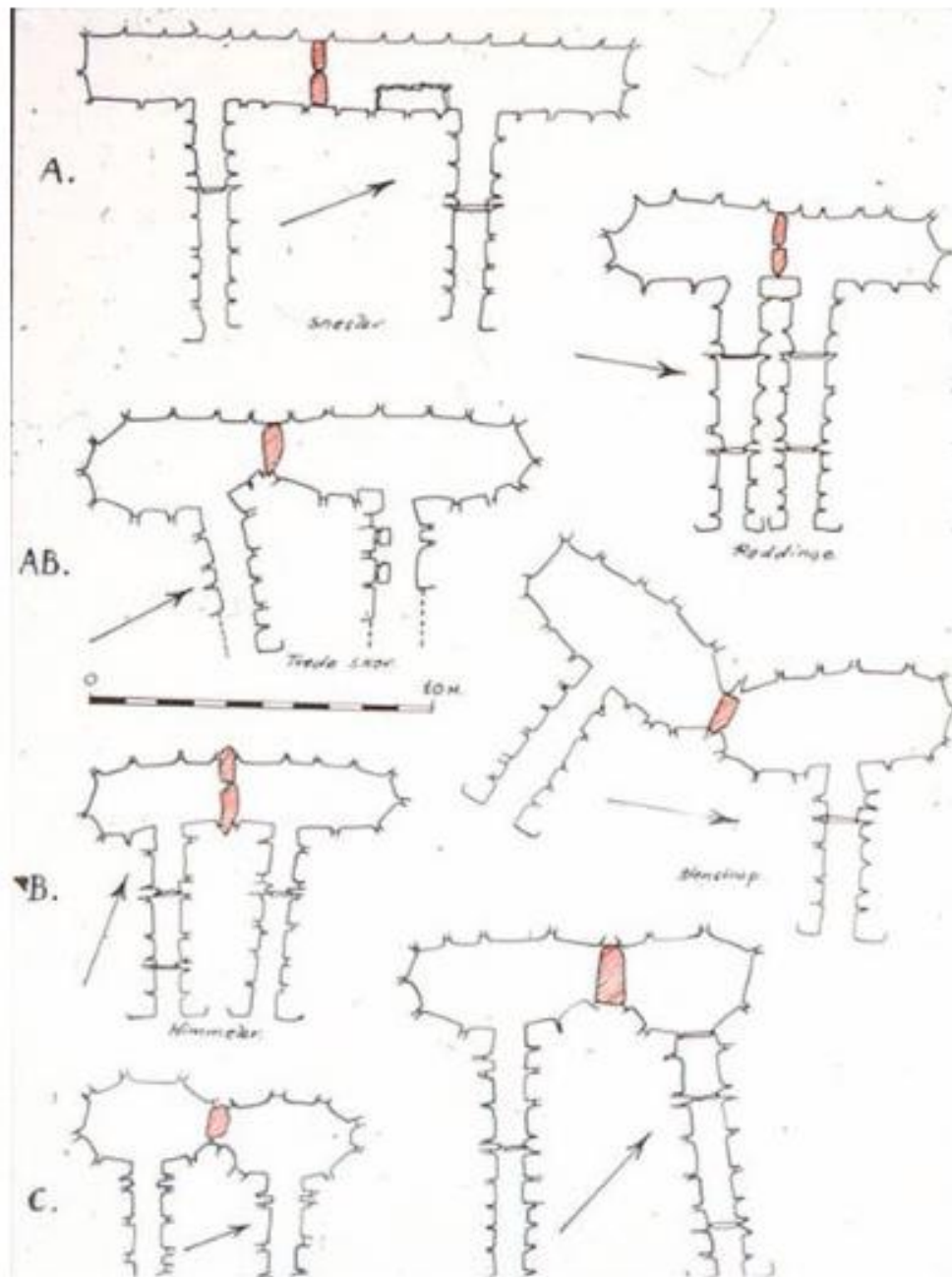
Figure 56. The Danish twin passage grave chambers with a dividing wall and shared orthostats

Source: Jørgen Westphal, "In the eye of the beholder: key architectural elements in 25 years of visual analysis of Danish megalithic tombs" in, *The Megalithic Architectures of Europe*, ed. Luc Laporte and Chris Scarre (Oxbow Books, 2022), Fig. 9.11.

Strikingly, besides more developed chamber plans branching out into multiple recesses, there is evidence which can be regarded as the implication for the definition and differentiation of interior space through the division of the chamber floor (Fig. 57, 58). This is visible through the distinct material used for different sections of Swedish tombs that usually have floors tiled with thin flat slabs of stone or clay-textured surface.[226] Moreover, in Danish passage graves, the deposition of brightly shining white burnt flint was either spread on the chamber ground, which might be a marking of space use, or packed and crushed in shallow ditches as narrow bands situated in the passages. This might have been used for indication of borders of differentiated spaces or for sealing in the presence of threshold stones in the passages that acted as doors creating different isolated inner volumes (Fig. 59).[227] The marking of the transition between spaces is also present on the lintels of the thresholds of the Irish Fourknocks tomb through abstract engraved patterns, as well as in the Swedish graves in which flat stones or different types of entrance stones than those used for the walls were located at the intersection of the passage and the chamber (Fig. 60, 61).[228] There is a clear selection of various types of rock for different structural elements of the Swedish tombs using sedimentary split stones in smooth forms for the orthostats to create an even inner space and igneous irregularly shaped boulders for the capstones. In these tombs, sedimentary rocks are sometimes used for roofing with the exception of the last capstone of the passage above the entrance to the chamber, or the so-called "keystone", which is always igneous.[229]

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[226] Christopher Tilley, *The Dolmens and Passage Graves of Sweden*, 1st ed. Reprint, (Taylor and Francis, 2016), Monument form and techniques of construction. https://www.perlego.com/book/1570353/the-dolmens-and-passage-graves-of-sweden-pdf; Märta Strömberg, Die Megalithgräber von Hagestad (Lund, 1971).

[227] Westphal, "In the eye of the beholder: key architectural elements in 25 years of visual analysis of Danish megalithic tombs", 96.

[228] Cummings, *The Neolithic of Britain and Ireland (Routledge Archaeology of Northern Europe)*, 155; Christopher Tilley, *The Dolmens and Passage Graves of Sweden*, (Taylor and Francis, 2016), Mortuary practices.

[229] Christopher Tilley, *The Dolmens and Passage Graves of Sweden*, (Taylor and Francis, 2016), Monument form and techniques of construction.
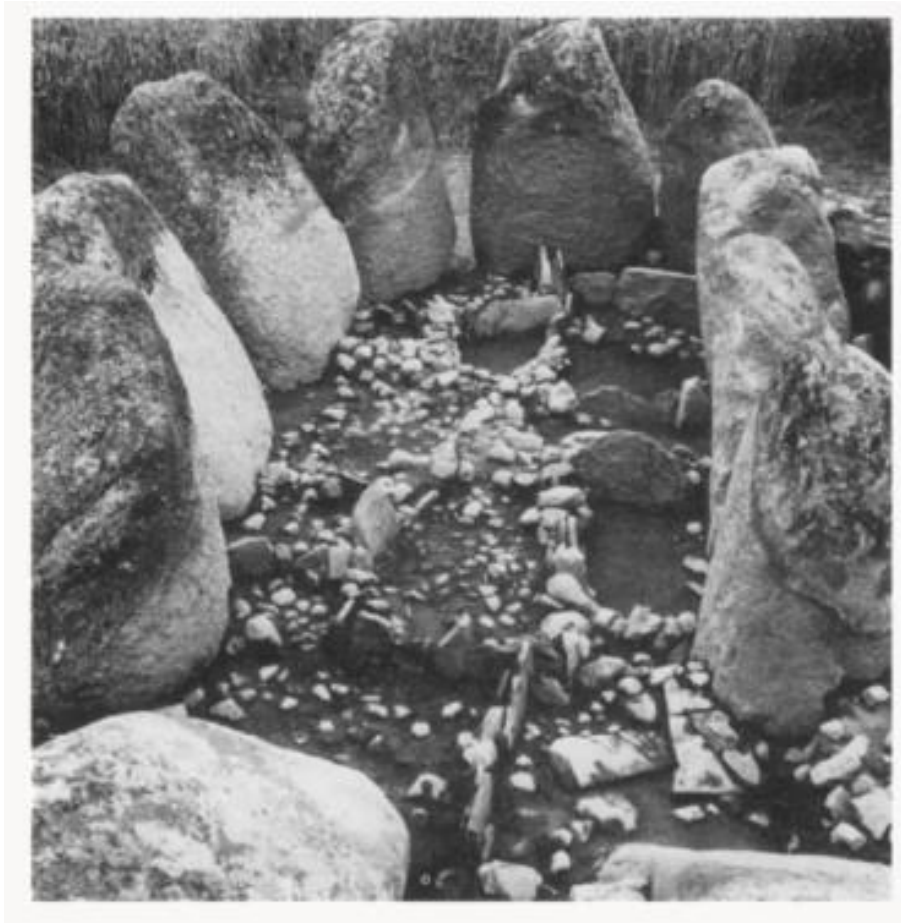
Figure 57. The divided interior space of a passage grave, Skåne, Sweden.

Source: Christopher Tilley, *The Dolmens and Passage Graves of Sweden*, 1st ed. Reprint, (Taylor and Francis, 2016), Fig. 1.12. https://www.perlego.com/book/1570353/the-dolmens-and-passage-graves-of-sweden-pdf., after Märta Strömberg, Om gånggriften i Tågarp, Ö. Tommarp och andra stenkammargravar på Österlen, (Sweden: Österlens Museum, Simrishamn, 1971).

Figure 58. Deposit of white burtn flint in the chamber

Source: Jørgen Westphal, "In the eye of the beholder: key architectural elements in 25 years of visual analysis of Danish megalithic tombs" in, *The Megalithic Architectures of Europe*, ed. Luc Laporte and Chris Scarre (Oxbow Books, 2022), Fig. 9.21.
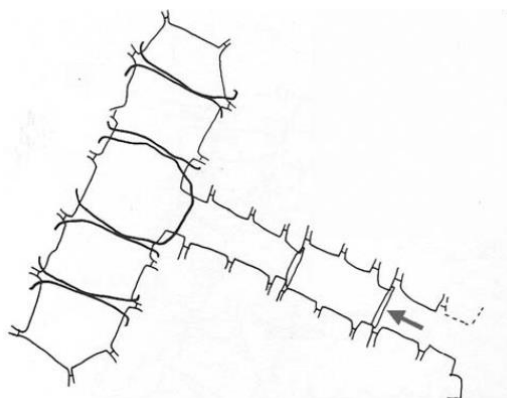
Figure 59. Spread and packed white burnt flint at the thresholds of chambers

Source: Jørgen Westphal, "In the eye of the beholder: key architectural elements in 25 years of visual analysis of Danish megalithic tombs" in, *The Megalithic Architectures of Europe*, ed. Luc Laporte and Chris Scarre (Oxbow Books, 2022), Fig. 9.22, 9.23.
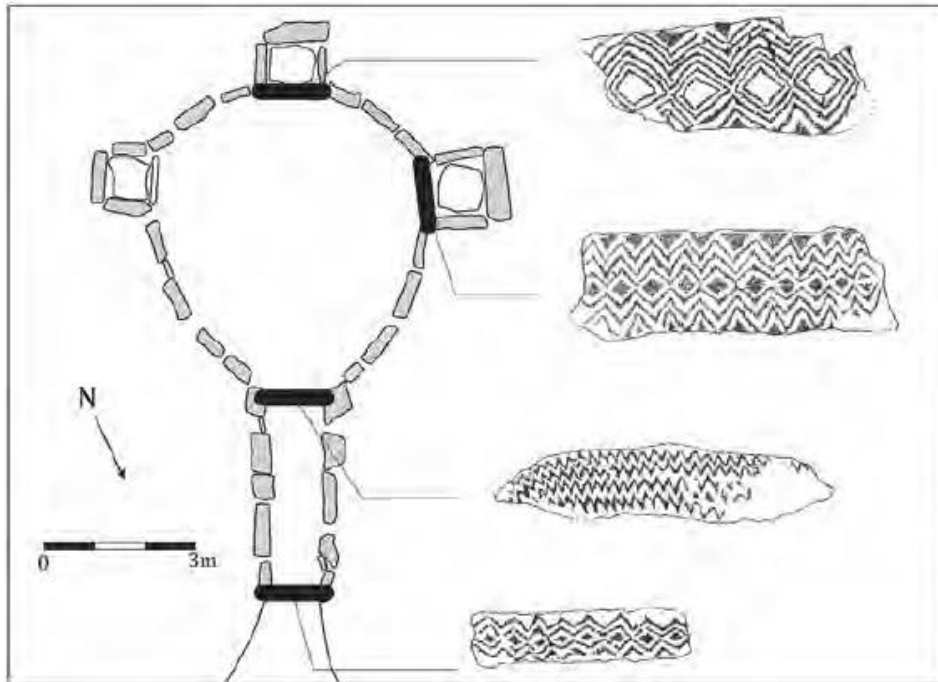
Figure 60. "The passage tomb of Fourknocks I, Co. Meath, showing the location of rock art panels at key threshold points within the monument"

Source: Vicki Cummings, *The Neolithic of Britain and Ireland (Routledge Archaeology of Northern Europe)*, 1st ed. (Routledge, 2017), Fig. 6.15.

Figure 61. Abstract rock art decoration above niche, Fourknocks I, Co. Meath, Ireland

Source: Photographed by Adam Stanford, **https://m.megalithic.co.uk/modules.php?op=modload&name=a312&file=index&do=showpic&pid=12698**

The length of the passage ranges accordingly to the size of the mound. In the Irish passage grave of Newgrange an excellent design of architectural elements in relation to each other, i.e. roof opening, passage length and chamber size, to conduct an envisioned plan is observable. The winter solstice sunlight entering through the roof opening casts over the stone basin at the back end of the chamber (Fig. 62). In addition to an orientation toward an astronomical body, many Irish passage graves are positioned in alignment with other monuments or outstanding landscape features (Fig. 63).[230]

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[230] Hensey, *First Light: The Origins of Newgrange (Oxbow Insights in Archaeology)*, 43.

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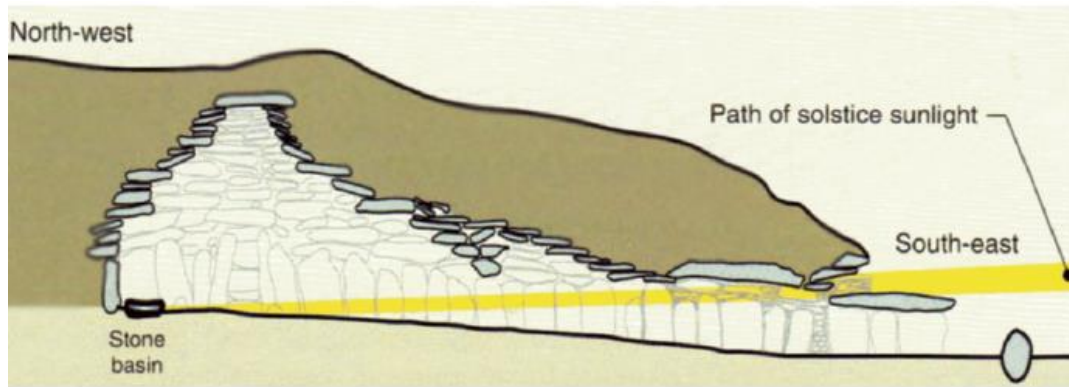
Figure 62. The winter solstice sunlight entering through the roof, Newgrange

Source: G. Stout, and M. Stout, *Newgrange* (Cork: Cork University Press, 2008), Fig. 29.
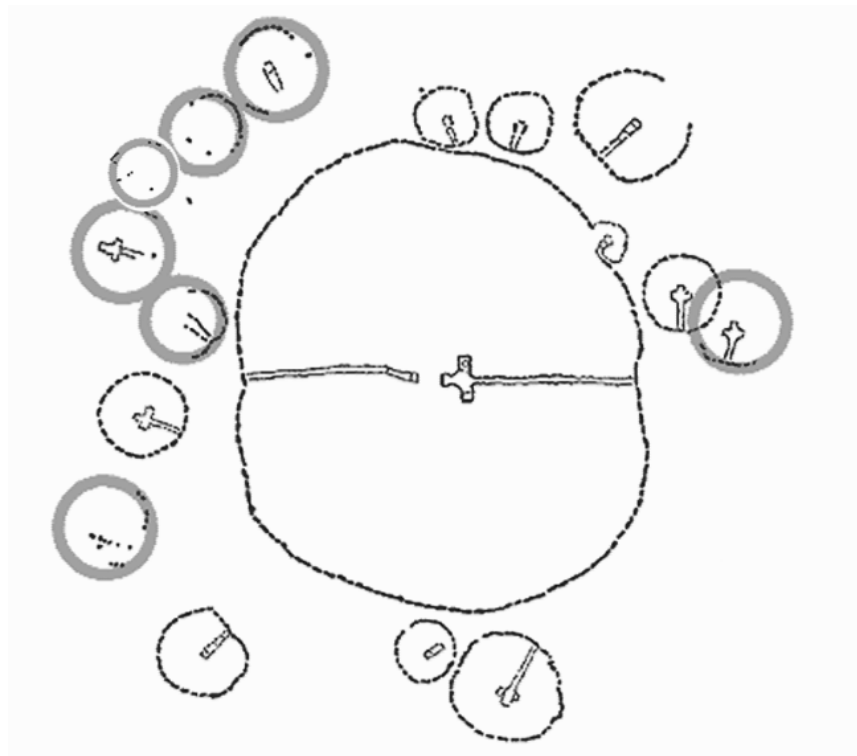
Figure 63. Plan of aligned Irish passage graves, Knowth

Source: http://www.carrowkeel.com/sites/boyne/knowth1.html

In the Danish tombs, the height of passage space rises gradually in the direction in which it meets the chamber, hence offering visitors a dynamic efficacy of space (Fig. 64).[231] The width-to-height ratio of the megalithic orthostats used to generate chambers usually ranged from 1:1 to 1:1.5, while the larger stones were used as capstones for the roof, so as to raise the ceiling of the chamber and achieve a more monumental space.[232] The Danish builders used an "intermediate layer" constructed with smaller stones between the capstone and the wall of the megalithic chamber, which resembles a pendentive (Fig. 65, 66).[233]
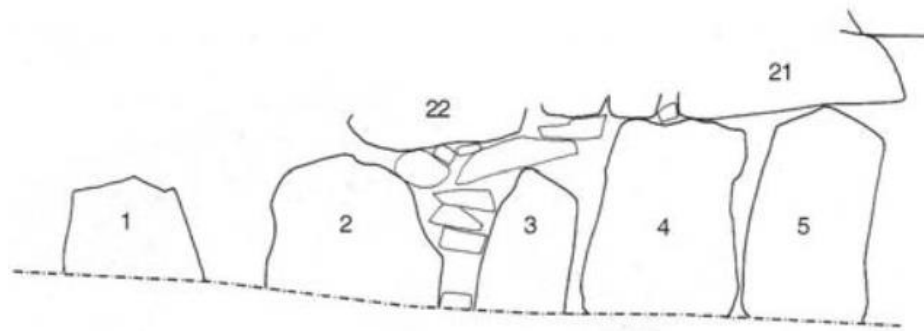
Figure 64. Elevation of a Danish passage grave's passage side wall

Description: "A uniform feature of most Danish passage graves is that the passage is lower and narrower at the entrance but becomes wider and higher towards the chamber".

Source: Jørgen Westphal, "In the eye of the beholder: key architectural elements in 25 years of visual analysis of Danish megalithic tombs" in, *The Megalithic Architectures of Europe*, ed. Luc Laporte and Chris Scarre (Oxbow Books, 2022), Fig. 9.2., after T. Dehn et al. F. Klekkendehøj og Jordehøj, Restaureringer og undersøgelser 1985-1990. (København: Stenaldergrave i Danmark 2. Nationalmuseet & Skov- og Naturstyrelsen, 2000), 224.

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[231]Westphal, "In the eye of the beholder: key architectural elements in 25 years of visual analysis of Danish megalithic tombs", 90.

[232] Ibid, 94.

[233] Ibid.
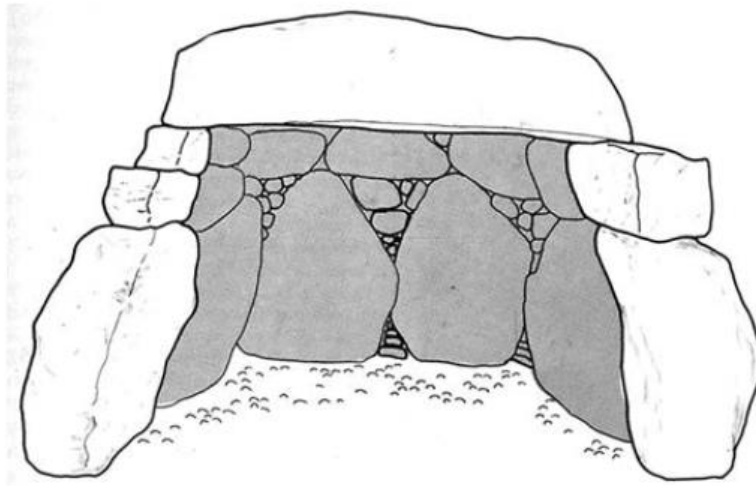
Figure 65. Intermediate layer between orthostats and capstone, similar to pendentive

Source: Jørgen Westphal, "In the eye of the beholder: key architectural elements in 25 years of visual analysis of Danish megalithic tombs" in, *The Megalithic Architectures of Europe*, ed. Luc Laporte and Chris Scarre (Oxbow Books, 2022), Fig. 9.16.
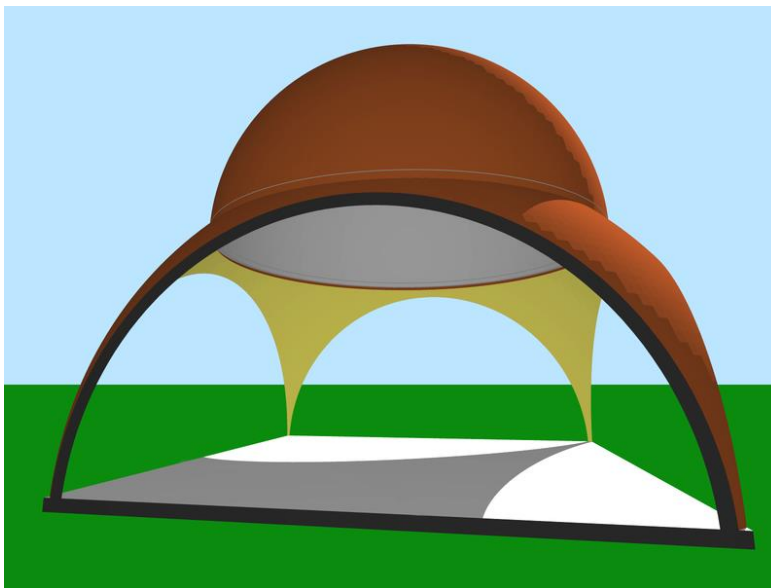
Figure 66. A pendentive is a construction technique to build a dome over a quadrilateral space, marked through yellow colouring above

Source: Image is created by Wikipedia user Totya. https://tr.wikipedia.org/wiki/Pandantif_%28mimarl%C4%B1k%29#/media/Dosya:Pendentive_and_Dome.png

The chambers of the Swedish passage graves were constructed watertight, hence the gaps between the orthostats were filled with variously built combinations of dry-stone walling, small packing stones, burnt flint and clay (Fig. 67, 68).[234]
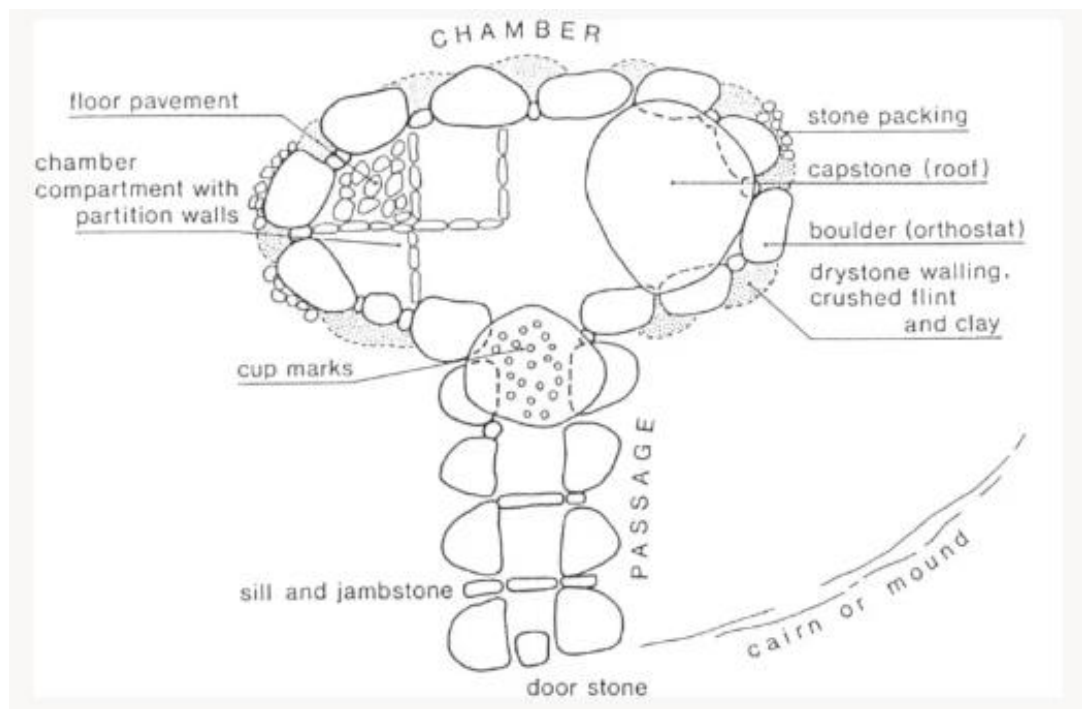
Figure 67. The construction elements of a Swedish passage grave

Source: Christopher Tilley, *The Dolmens and Passage Graves of Sweden*, 1st ed. Reprint, (Taylor and Francis, 2016), Fig. 1.7. https://www.perlego.com/book/1570353/the-dolmens-and-passage-graves-of-sweden-pdf , after Märta Strömberg, Om gånggriften i Tågarp, Ö. Tommarp och andra stenkammargravar på Österlen, (Sweden: Österlens Museum, Simrishamn, 1971).

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[234] Christopher Tilley, *The Dolmens and Passage Graves of Sweden*, (Taylor and Francis, 2016), Monument form and techniques of construction.
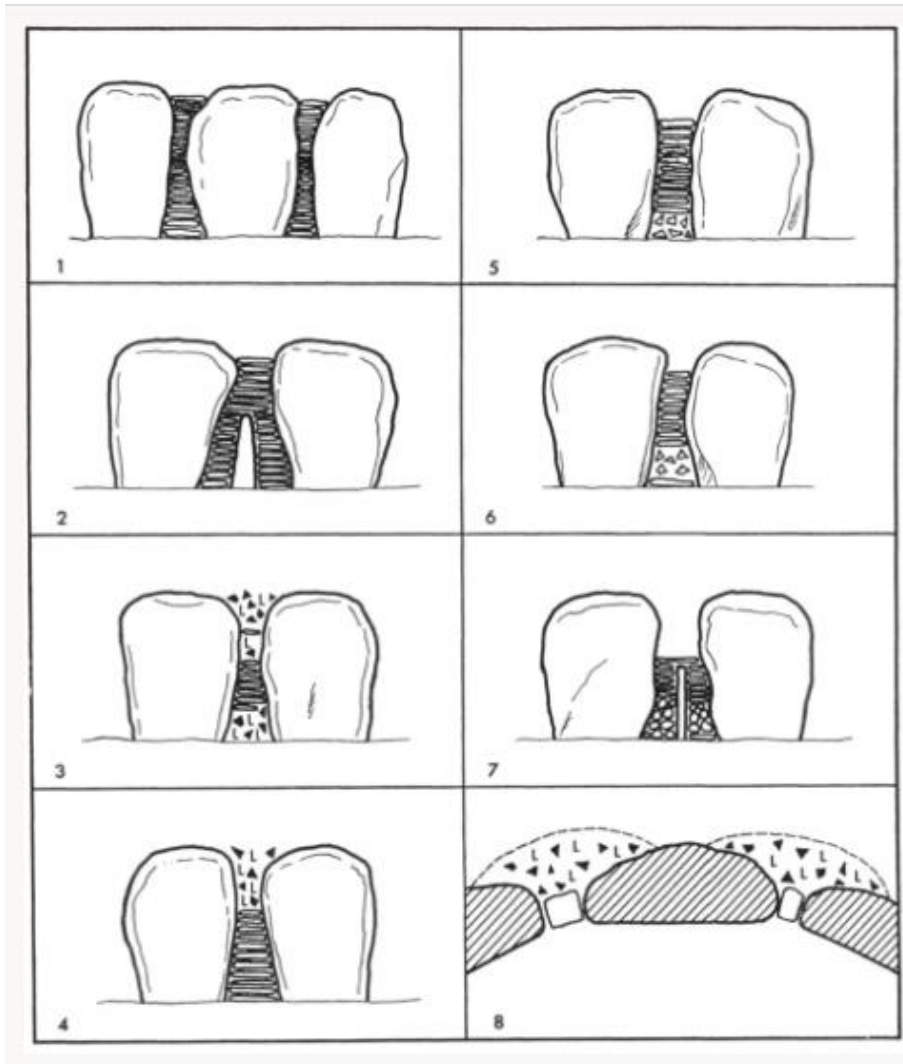
Figure 68. Various types of packing between orthostats

Description: "Key: 1: Flat horizontal stones; 2: Flat horizontal stones and small central pillar. 3 and 4; Packing of horizontal stones with clay and burnt flint; 5 and 6: Flat horizontal stones resting on stone packing and basal stone. 7: Central post with horizontal stone slabs and small packing stones. 8: Uprights with central stones in between surrounded by packing of clay and burnt flint".

Source: Christopher Tilley, *The Dolmens and Passage Graves of Sweden*, 1st ed. Reprint, (Taylor and Francis, 2016), Fig. 1.10, https://www.perlego.com/book/1570353/the-dolmens-and-passage-graves-of-sweden-pdf , after Märta Strömberg, Die Megalithgräber von Hagestad, (Lund, 1971).

As well as the outer wall of the chamber, the covering mounds of the tombs consist of layers of various materials such as stone, turf and burnt flint (Fig. 69).[235] Building a mound or cairn for passage graves in Ireland and Britain was carried out in the same way by utilising different kinds of materials: earth, stone, sand, clay, turf, animal bone and shell.[236]
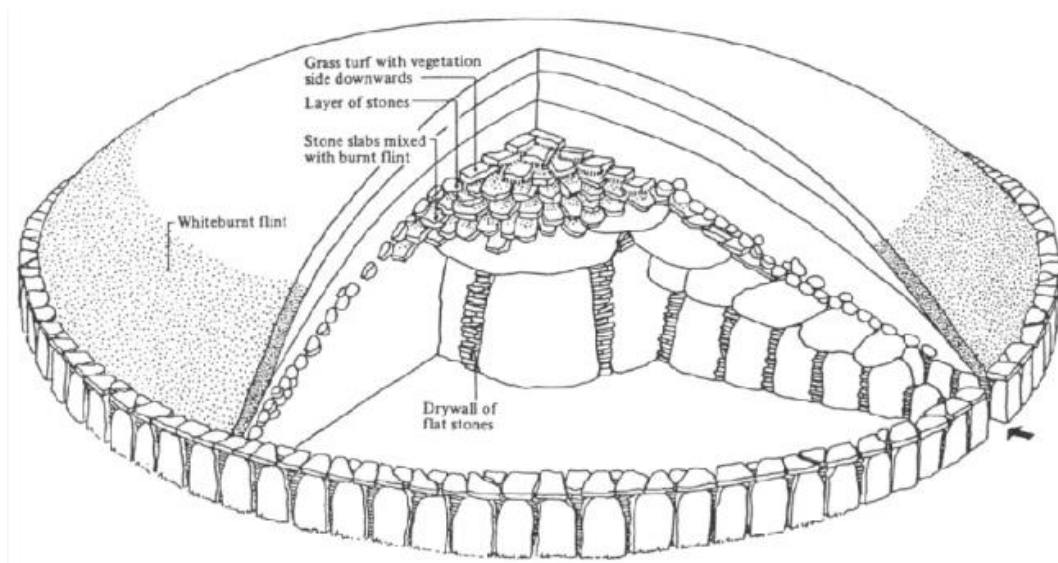
Figure 69. Structural elements and layers of a mound of a Swedish passage grave, Jutland

Source: Christopher Tilley, *The Dolmens and Passage Graves of Sweden*, 1st ed. Reprint, (Taylor and Francis, 2016), Fig. 1.11.

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[235] Ibid.

[236] Bickle, Hofmann, and Pollard, *The Neolithic of Europe: Papers in Honour of Alasdair Whittle*, 2017, Passage grave architecture and technologies of wrapping.

Further to delimiting the mounds by an outer edge of kerbstones, more concentric borders of banks, ditches or rings of stone or wood "wrap" the monuments and constitute open spaces such as Maeshowe and Newgrange (Fig. 70, 71).[237]

Figure 70. The mound and outer bank of passage grave Maeshowe

Source*:* https://www.thehistoryhub.com/wp-content/uploads/2014/10/Maeshowe-Aerial-View.jpg

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[237] Ibid.
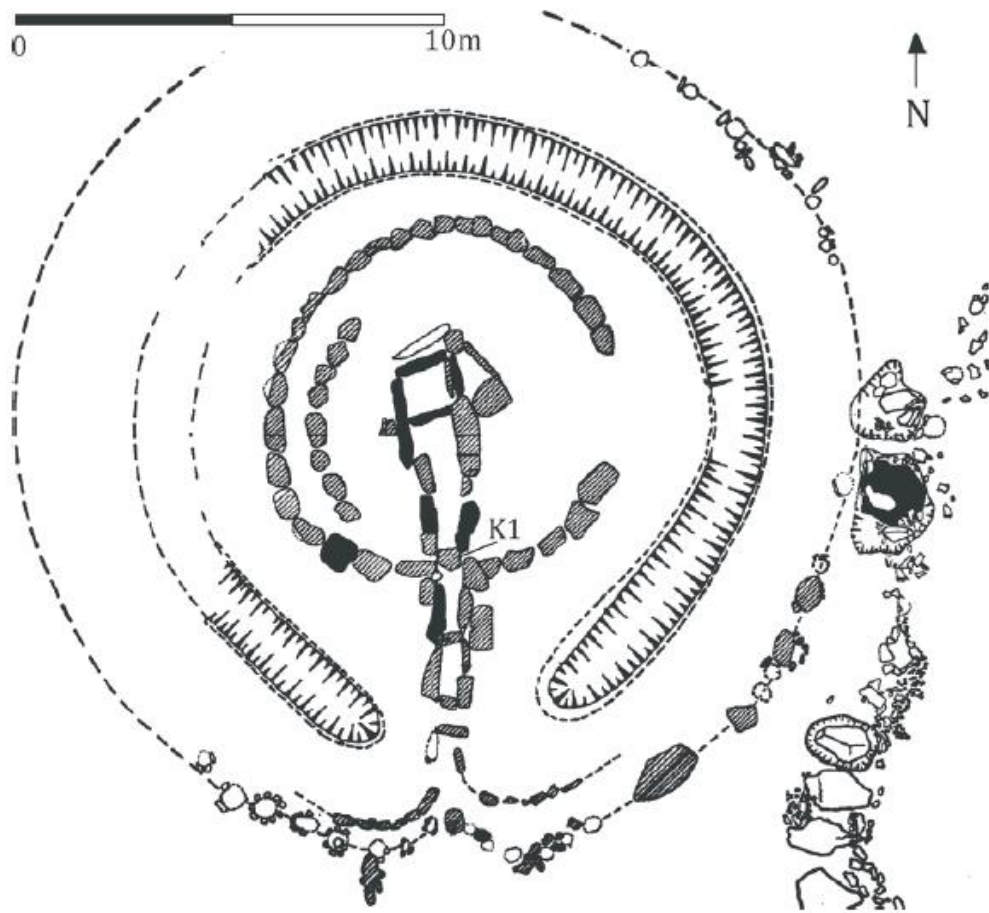
Figure 71. The passage grave at Newgrange site

Description: "An arc of boulders on the western side sitting on the lower turves of the mound. The mound itself was enveloped by a stone boulder kerb. This in turn was wrapped by a penannular ditch, and the excavated material used to cap the mound."

Source: Penny Bickle, Daniela Hofmann, and Joshua Pollard, *The Neolithic of Europe: Papers in Honour of Alasdair Whittle*, 1st ed. (Oxbow Books, 2017), Fig. 16.3, after M. O'Kelly et al., "Three passage graves at Newgrange, Co. Meath," *Proceedings of the Royal Irish Academy 78*, (1978): 249–352.

In the region of Armorica, Brittany, the mounds or cairns of the chambers vary in size, consist of rubble, usually built in the form of a stepped hill of stone (Fig. 72) and in some cases encompass two or more chambers or secondary separate structures in

addition to the central chamber (Fig. 73).[238] On the one hand, the mounds or cairns were sometimes expanded through different stages of construction in addition to the extension of the passages (Fig. 74). [239] On the other hand, there were mounds and cairns encompassing the entrances of the multiple existing tombs, therefore they served to the sealing of the monuments in certain cases (Fig. 75).[240]

Figure 72. Stepped cairn of a passage grave, Brittany

Source: https://www.brittanytourism.com/offers/cairn-de-gavrinis-larmor-baden-en-1994751/

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[238] Patton, *Statements in Stone*, 84-5.

[239] Ibid, 85.

[240] Ibid, 167-68.
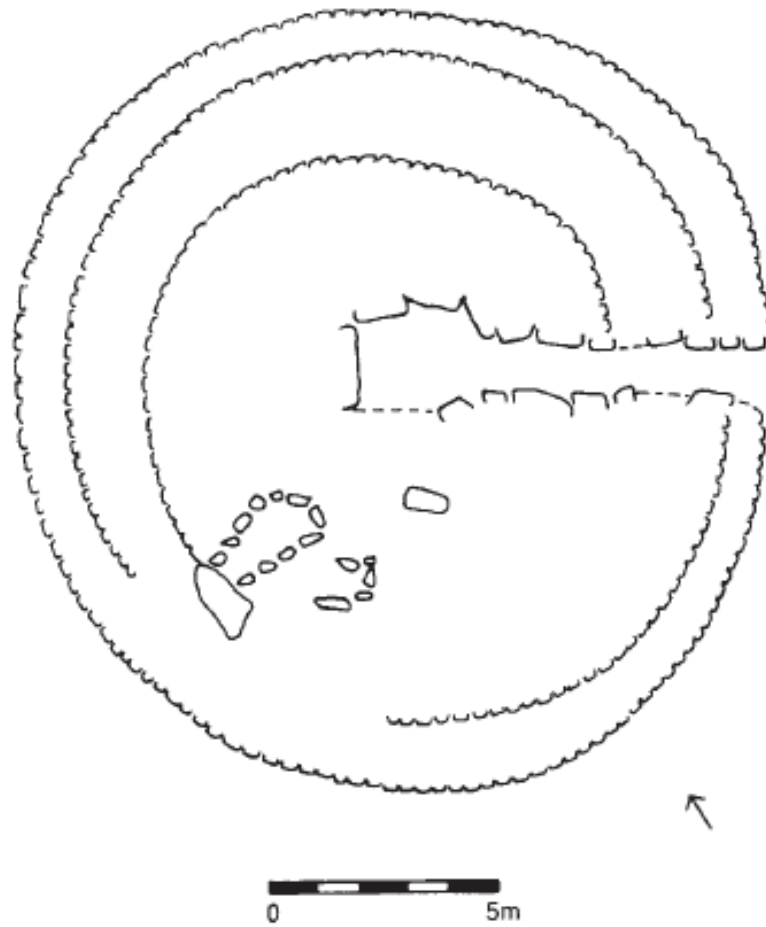
Figure 73. Some secondary elements added to main chamber of the cairn, Le Notério, Brittany

Source: Mark Patton, *Statements in Stone: Monuments and Society in Neolithic Brittany*, 1st ed. (Routledge, 2015), Fig. 4.11.
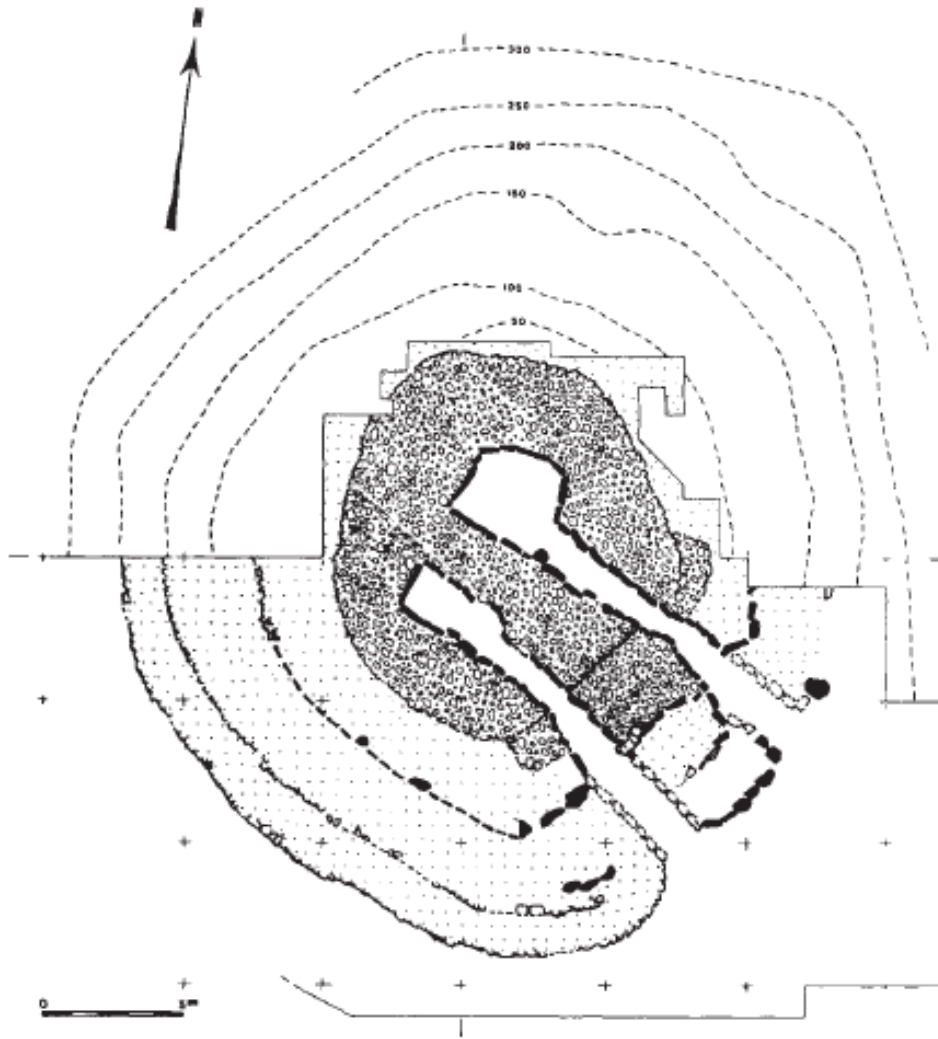
Figure 74. An expanded mound through different stages of construction in addition to the extension of the passages

Source: Mark Patton, *Statements in Stone: Monuments and Society in Neolithic Brittany*, 1st ed. (Routledge, 2015), Fig. 4.10, after J. L'Helgouach, "L'Apport des recherches récentes à la connaissance des monuments mégalithiques en Bretagne," in Probleme der Megalithgraberforschung: Vortrage zum 100 Geburtstag von Vera Leisner. (Madrid: Deutches Archaeologisches Institut Abteilung, 1990).
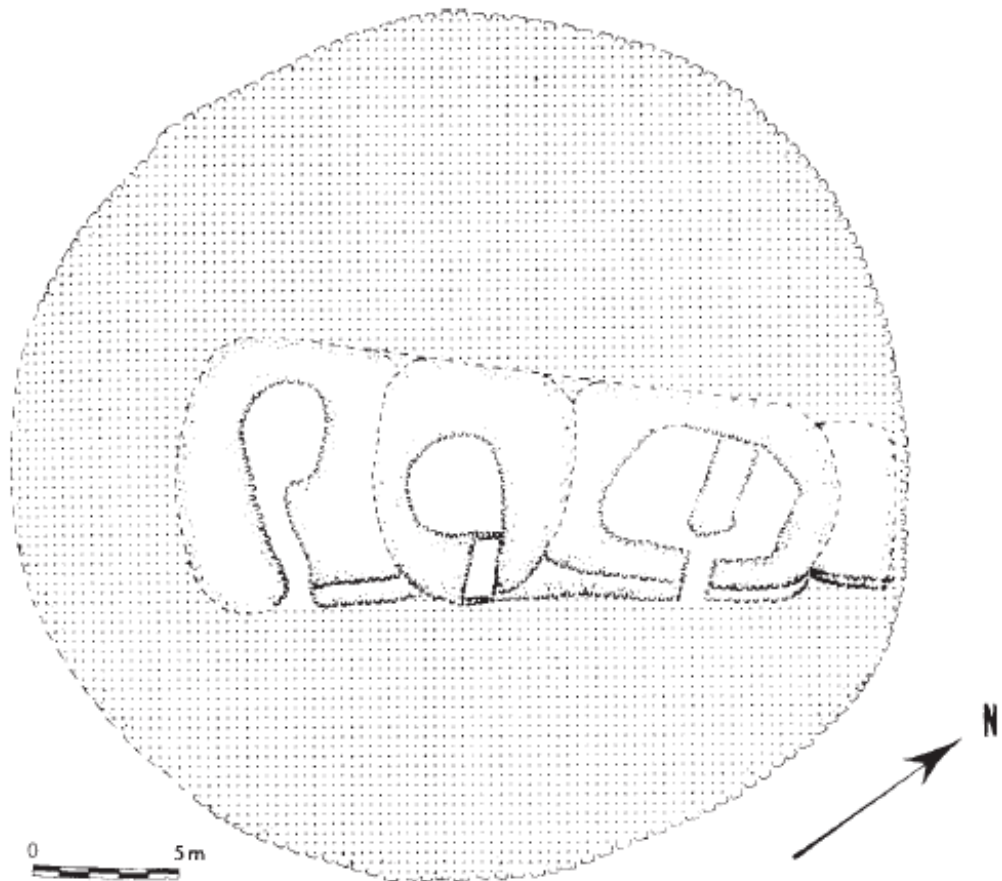
Figure 75. The cairn of Ile Carn covers a quadrilateral long barrow encompassing three chambers with blocked passages

Source: Mark Patton, *Statements in Stone: Monuments and Society in Neolithic Brittany*, 1st ed. (Routledge, 2015), Fig. 7.3, after P-R. Giot, "Barnenez, Guennoc, Carn," *Travaux du Laboratoire d'Anthropologie de l'Université de Rennes I*, (1987).

4.1.3. Denotative Functions

4.1.3.1. Dolmens

According to Cummings and Richards, dolmens are "installation of display" built to exhibit a massive rock and the meaning of the word dolmen in the Breton language is "table-stone". This suggested that its primary function was not to shelter the dead, which could account for the sculptural dolmens whose orthostats were arranged

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loosely and had a capstone balanced on their spikes, like Pentre Ifan.[241] They assert that since the efficacy of dolmens had declined, they were designated as burial places, hence transforming them into enclosed chambered-tombs, buried and hidden in mounds.[242] However, it is worth noting that, in Denmark, dolmens with or without mounds, both feature human burials in addition to the dolmens incorporated into mounds without passages in which either one or a handful of bodies, disarticulated remains and funerary objects were deposited.[243] The stone rings and coloured rock pedestals that encircle some dolmens can also be regarded as a restriction of access to the monument that aims its perception from a distance where rituals related to burials were performed.[244]

Similar processes were performed for inhumations in dolmens and chambered tombs (i.e. passage graves and chambered cairns).[245] Evidence from British and Irish cases indicates that the bodies had been buried intact in dolmens initially which makes the access to burial last for a certain time likely, and later the bones were divided, arranged and redeposited after the decomposition of the flesh.[246] In addition to housing the dead, it seems that one of the primary denotative functions of some dolmens was to serve as shrines where potsherds and burnt human bones were deposited outside the chamber. These dolmens most likely served as a communal activity place before the construction of the long barrow, as in the case of the dolmens of long barrow 13, Lønt, south-east Jutland, where previous smashing and burning rituals which many spectators could

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[241] Cummings and Richards, *Monuments in the Making: Raising the Great Dolmens in Early Neolithic Northern Europe*, 1, 20.

[242] Ibid, 173, 252.

[243] Cummings and Richards, *Monuments in the Making: Raising the Great Dolmens in Early Neolithic Northern Europe*, 156; Christopher Tilley, *The Dolmens and Passage Graves of Sweden*, (Taylor and Francis, 2016), Mortuary practices.

[244] Cummings and Richards, *Monuments in the Making: Raising the Great Dolmens in Early Neolithic Northern Europe*, 29; Hensey, *First Light: The Origins of Newgrange (Oxbow Insights in Archaeology)*, 34.

[245] Cummings and Richards, *Monuments in the Making: Raising the Great Dolmens in Early Neolithic Northern Europe*, 176.

[246] Ibid, 167.

observe were carried out as well.[247] The use of open space as the ritual area concentrated on the circumference of the round mound of the dolmen 1 which has no passage, whereas the entrance façades were preferred for "dolmens" with passages (See previous fig. 45 in chapter 4.1.2.1).

4.1.3.2. Passage Graves and Chambered Cairns

According to Richard Bradley, the different architecture of tomb-shrines functioned different purposes since most of the monuments in which individual inhumations were carried out were sealed through a mound against any mundane access whereas passage graves and chambered cairns enabled access to the remnants of deceased members of the community, which sometimes held remains of up to 200 individuals.[248] In the first case, the act was a burial rite that kept the dead isolated from the outside world, while the second allowed people to visit, use, reorganize, export and circulate the relics, which means that these spaces were for the living to perform ancestral rites beyond being tombs that only contained corpses.[249] Indeed, the traces of cremation in the stone basins discovered in some Irish passage graves and chambered cairns corroborate this interpretation.[250] Besides mortuary and ancestral rituals and depositions of grave goods with human remains, chambers of Armorican graves held scattered material items such as jewellery, stone tools, and pottery vessels without direct associations with burials.[251] Moreover, the forecourts of mounds and the in-between zone around some passage graves delimited by the outer stone circle or the henge raises the possibility that it used to be open spaces for ritual events that could have been attended

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[247] Palle Eriksen and Niels H. Andersen, "Dolmens without mounds" in *The Megalithic Architectures of Europe*, 81, 86.

[248] Bradley, *The Significance of Monuments: On the Shaping of Human Experience in Neolithic and Bronze Age Europe*, 62; Tilley, *The Dolmens and Passage Graves of Sweden*, (Taylor and Francis, 2016), Mortuary practices.

[249] Bradley, *The Significance of Monuments: On the Shaping of Human Experience in Neolithic and Bronze Age Europe*, 62.

[250] Bickle, Hofmann, and Pollard, *The Neolithic of Europe: Papers in Honour of Alasdair Whittle*, 2017, Passage Graves as material technologies of wrapping.

[251] Patton, *Statements in Stone: Monuments and Society in Neolithic Brittany*, 95.

by more people than the ones visiting the small chambers. This view could be further substantiated due to the presence of pottery and potsherd accumulations (Fig. 76).[252]

Figure 76. Potsherds revealed in a cairn outside of the passage grave, Sweden

Source: Christopher Tilley, *The Dolmens and Passage Graves of Sweden*, 1st ed. Reprint, (Taylor and Francis, 2016), Fig. 1.33. Photograph taken in 1935 by J. Forssander, Lunds Universitets Historiska Museum Archive.

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[252] Tilley, *The Dolmens and Passage Graves of Sweden*, (Taylor and Francis, 2016), Mortuary practices; Patton, *Statements in Stone: Monuments and Society in Neolithic Brittany*, 96.

4.1.4. Connotative Functions

Cummings and Richards do not see dolmens as structures that were completed when their construction ended.[253] On the contrary, they assert that subsequent internment of the bodies within the borders of the dolmens contributes to and elaborates the process of becoming. The dolmen is a dynamic structure because it is under a continuous state of flow and transformation just like the bodies that are stored due to the exchange of substances between the monument and corpses.[254] Besides the containment of the dead, dolmens also functioned as a memorial recalling social relations to collective memory.

In addition to the transitional markings of different sections of interior space in the passage graves and chambered cairns via stone doors or engraving compositions, the encircling architectural elements of the mounds and chambers can be interpreted as the symbolic thresholds of various conceptual processes. This could be transformation or transition, relating to the conducted rituals inside and outside of the monuments.[255] Indeed, the anomalous and impractical placement of the Bryn Celli Ddu passage grave's ring of kerbstones in a ditch (Fig. 77) highlights its connotative function rather than denotative one. Therefore, Cummings states that its signification originates in its construction and presence as an enveloping representative border.[256] The same interpretation also applies for use of different materials to build mounds when one kind of material could have fulfilled the covering.

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[253] Cummings and Richards, *Monuments in the Making: Raising the Great Dolmens in Early Neolithic Northern Europe*, 171.

[254] Ibid, 172.

[255] Bickle, Hofmann, and Pollard, *The Neolithic of Europe: Papers in Honour of Alasdair Whittle*, 2017, Passage Graves as material technologies of wrapping.

[256] Ibid.
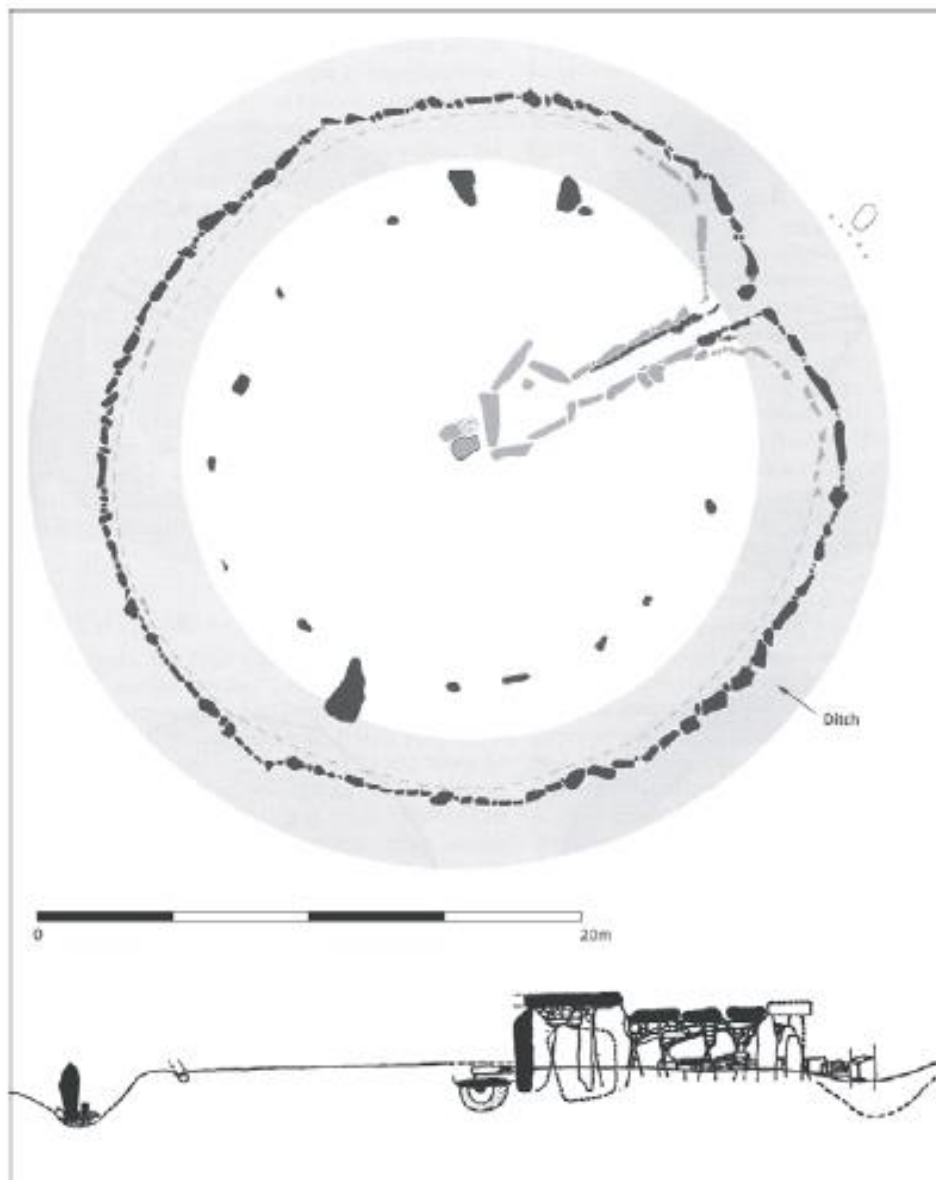
Figure 77. "Plan and section of Bryn Celli Ddu, in particular showing the unusual location of the kerb sitting within the ditch"

Source: Penny Bickle, Daniela Hofmann, and Joshua Pollard, *The Neolithic of Europe: Papers in Honour of Alasdair Whittle*, 1st ed. (Oxbow Books, 2017). Fig. 16.7.

The accessibility of the tomb-shrines through passages serves for the establishment of a communication between the mundane world and the spiritual one of ancestors, and a continuous bond between the past and the present.[257]

According to one theory, tomb-shrines were considered the hallowed places of a new religious denomination disseminated by the colonists or missionaries usually overpowering their surroundings. An analogy can be formed between various sizes and styles of tomb-shrines and chapels of different kinds of Christian churches. Eventually, the notion of tomb-shrine megalithic religion was substituted by the belief in the agricultural modification of the land which had given rise to a new perception of the environment in the eyes of Neolithic communities. This could have paved the way for the construction of such expressive monuments as landmarks which were the declaration of control, exploitation and habitation of the habited territory.[258]

Due to the dissemination of Neolithic innovations and transformation of the cognition of agricultural lands, the human bones tomb-shrines held are attributed to the first occupiers of territories who later were remembered and respected as ancestors or predecessors by subsequent members of the community, thereby reinforcing the sense of collective belonging and maintaining property rights among different groups. It is suggested that since the British Neolithic economy was based on ploughing and herding on a given farmland, the tomb-shrines became scattered focal ritual points on the household parcels. However, the idea that these were the structures to claim possession of a territory and to warn outsiders is insufficient to account for why these structures tend to gather in groups in particular zones since there is no evidence of attached farmsteads for most of these tomb-shrines in Britain.[259] It was concluded by Alasdair Whittle and his team that tomb-shrines were site markings associated with the conception of the universe and the unseen rather than one demarcating territories. On the other hand, Tilley contends that they symbolized the social identity of their

[257] Patton, *Statements in Stone: Monuments and Society in Neolithic Brittany*, 63.

[258] Hutton, *Pagan Britain,* 42.

[259] Ibid, 42-3.

builders and the size of the monuments could have been related to the prestige of the groups.[260] Indeed, the exaggerated scales of the mounds give the impression of being built to be noticed and to impress the onlookers.[261] However, returning to their primary functions, these structures, at their essence, were the centres of ritualistic events that took place sometimes indoors and sometimes outdoors, commonly by means of agency of the dead.[262]

4.2. European Neolithic Enclosures

4.2.1. Earthwork Enclosures: Circular Ditch Systems and Causewayed Enclosures

4.2.1.1. Locality

The Neolithic earthwork enclosures comprise of various elements such as earthen banks or ditches, and sometimes included additional fencing of wooden stakes or walls that enclosed a specific territory of land and segregated it from its surrounding environment.[263]

Although Neolithic earthwork enclosures can be found throughout the European continent, it is in Central Europe where they are found in greater quantity and variety. On the one hand, it is due to the countries' archaeological research background, which already offers protection of monuments through legislation and advanced, up-to-date prospecting technologies. On the other hand, it is due to the presence of loess, a fertile and abundant soil type that was present during the early and middle Neolithic in Central Europe, and the forests that yield the main construction material, wood, for

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[260] Tilley, *The Dolmens and Passage Graves of Sweden*, (Taylor and Francis, 2016), The politics of monument form.

[261] Andrew Fleming, "Tombs for the Living." *Man* 8, no. 2 (1973): 177–93. https://doi.org/10.2307/2800845 ; Tim Phillips, "Seascapes and Landscapes in Orkney and Northern Scotland." *World Archaeology* 35, no. 3 (2003): 371–84. http://www.jstor.org/stable/4128315 .

[262] Hutton, *Pagan Britain,* 43.

[263] Kipfer, *Encyclopedic Dictionary of Archaeology*, 419, 439.

some enclosures. These two natural characteristics enabled favourable settlements for the Neolithic communities in the Central European lands.[264]

Specimens of the Neolithic enclosures can be found in northern, central and southern Italy. In Tavoliere, southern Italy, the summits, edges, or feet of comparatively protruding and well-drained low hills were the pivotal spots of the landscape that allowed for various links with the outside world and with different resource sites on which Neolithic curvilinear enclosures were constructed.[265]

Causewayed enclosures are segmented types of enclosures that are divided by causeways, which are paths made of earth.[266] When one moves to northern and western Europe, causewayed enclosures are one of the most common Neolithic monuments, although they can also be found in other parts of Europe as well. Specimens of causewayed enclosures can be traced vertically from Sweden all the way to the south of France and horizontally from the river of Ulster to the river of Danube.[267] They also appear in southern Britain.[268]

These structures were prone to be established towards the margins of the Neolithic environments and some of them were applied on the lands that had an occupational background.[269] They were related to the settlements and house clusters, but their relationships were labile. While these structures could be features surrounding the houses, defining the limits of the region and perhaps providing protection for

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[264] Jörg Petrasch, "Central European Enclosures" in *The Oxford Handbook of Neolithic Europe*, ed. Chris Fowler, Jan Harding, and Daniela Hofmann (Oxford: Oxford University Press, 2015).

[265] Robin Skeates, "Italian Enclosures" in *The Oxford Handbook of Neolithic Europe*, ed. Chris Fowler, Jan Harding, and Daniela Hofmann (Oxford: Oxford University Press, 2015).

[266] Kipfer, *Encyclopedic Dictionary of Archaeology*, 242.

[267] Bradley, *The Significance of Monuments: On the Shaping of Human Experience in Neolithic and Bronze Age Europe*, 69.

[268] Cummings, *The Neolithic of Britain and Ireland (Routledge Archaeology of Northern Europe)*, 127.

[269] Bradley, *The Significance of Monuments: On the Shaping of Human Experience in Neolithic and Bronze Age Europe*, 73.

contemporary settlements, they were sometimes built after the settlement houses were no longer in use.[270]

In some cases, in Britain and Ireland, it seems like virgin lands without primary occupation or engagement were specially chosen to build enclosures which is a process starting with the clearance of the woodland.[271] Specimens of British causewayed enclosures can be found on hilltops such as Windmill Hill, Wiltshire, and Hambledon Hill, Dorset, as well as on the slopes of valleys and lowlands near the rivers.[272]

4.2.1.2. Architectural Characteristics

Earthwork enclosures are arrangements applied onto land. Although they usually consist of ditches and earthen banks, some of the enclosures feature earthen walls or palisades. Palisade is a continuous fence made by wooden stakes set closely.[273] Due to the palisade system, wood was the main construction material for the enclosures, contrary to Mediterranean sites where stone was used due to different subsoils.[274] The enclosures whose borders are interrupted through paths are called causewayed enclosures.

Numerous enclosures became progressively more stereotyped in their ground plan and were the centres of storage of certain artefacts and of human and animal bones. Their most evident feature is that they are highly enduring which accounts for why some of them are still important elements of the landscape today. The same architectural components of the enclosures were used in different arrangements from one particular

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[270] Ibid, 79.

[271] Cummings, *The Neolithic of Britain and Ireland (Routledge Archaeology of Northern Europe)*, 130.

[272] Ibid, 126.

[273] Kipfer, *Encyclopedic Dictionary of Archaeology*, 1006-007.

[274] Petrasch, "Central European Enclosures".

cultural environment to another, depending on local creativity and the necessities of specific population groups. [275]

The earliest known Central European enclosures belong to the era of Linearbandkeramik or Linear Pottery culture (LBK c. 5500-5300 BC). In the Rhenanian (Germany) lignite mining area, small and roughly round enclosures, Langweirler 8 and 9, encircle the parts of habited lands without buildings. In addition to that, there is a larger one, Köln-Lindenthal, which is thought to have include houses inside (Fig. 78).[276]

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[275] Bradley, *The Significance of Monuments: On the Shaping of Human Experience in Neolithic and Bronze Age Europe*, 68-73.

[276] Petrasch, "Central European Enclosures".
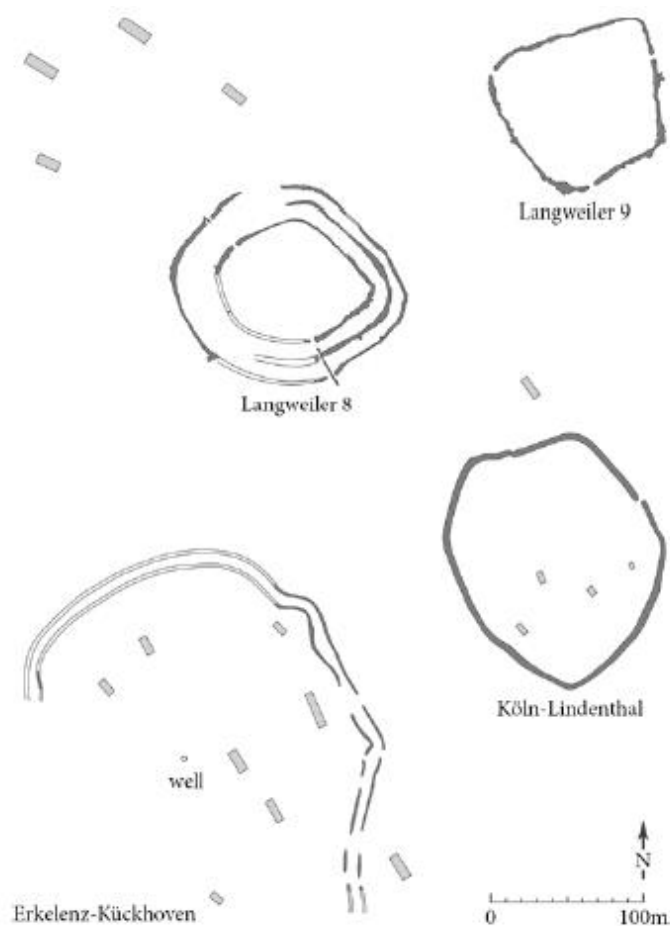
Figure 78. Linearbandkeramik or Linear Pottery culture enclosures

Source: Jörg Petrasch, "Central European Enclosures" in *The Oxford Handbook of Neolithic Europe*, ed. Chris Fowler, Jan Harding, and Daniela Hofmann (Oxford: Oxford University Press, 2015), Fig. 40.1.

The most conspicuous causewayed enclosures of the Middle Neolithic (4800-4600 BC) of Central Europe are called roundels or circular ditch systems whose diameters might range from 40 to 250 meters.[277] The number of ditches and causeways they have varies (Fig. 79). This can be illustrated in another example. After being used for a short time, a small single-ditched enclosure at Svodin in Slovakia was substituted by a larger

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[277] Petrasch, "Central European Enclosures"; J. Turek, "The Neolithic Enclosures in Transition," in: *Enclosing the Neolithic: Recent Studies in Britain and Europe (BAR International)*, ed. Alex Gibson, (British Archaeological Reports, 2012).

one including two ditches and three palisade circuits. While people had kept building plenty of roundels around Central Europe, roundels with palisade systems such as Künzing-Unternberg in Lower Bavaria were constructed in the later phases. Therefore, it can be thought that palisade enclosures were a direct substitute in the minds of roundel builders that was part of an envisioned progressive plan.[278]
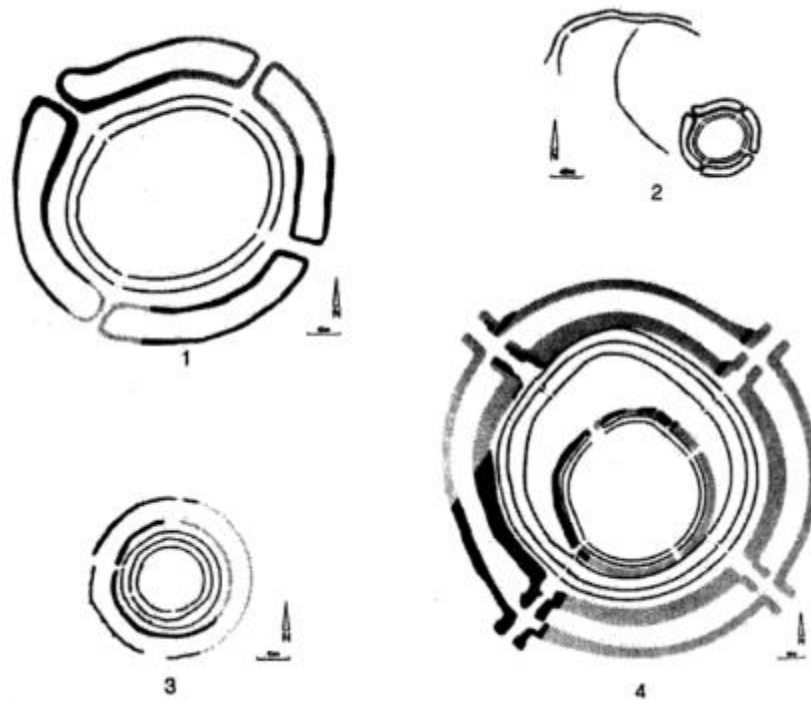
Figure 79. Various sizes of Central and Western European enclosures

Source: Alasdair Whittle, *Europe in the Neolithic: The Creation of New Worlds (Cambridge World Archaeology)*, 2nd ed. (Cambridge University Press, 1996), Fig. 6.18.

The cross sections of the Central European ditches were either in the shape of V or U. Less extreme specimens lesser than one-meter depth and half meter width are

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[278] Petrasch, "Central European Enclosures".

considered U-shaped profiles. The V-shaped ditches that were more common in the early and middle Neolithic and the very steep profiles of middle Neolithic were abandoned during the late era. The width of the Neolithic ditches ranges from less than 1 to more than 10 m and their estimated depth raises from 2.7 to 3.4 m from the Early to Middle Neolithic. The main element of early Neolithic enclosures was a ditch, although there were also parts of settlements surrounded via palisades. The first examples of the combination of palisades and ditches occur in this period as well. However, the concomitant use of palisades and ditches was the characteristic architectural style of enclosing in the middle and late Neolithic. Unfortunately, there is no such evidence for one to reconstruct the organisation and exact placements of the stakes of palisades whether they were placed without any interval to generate a barrier or supported and connected with a beam on the top. The entry to the enclosure was enabled through simple openings that were between 1.5 to 4.0 m wide for the ditches and 1.5 to 2.5 m wide in other areas. These narrow openings were typical throughout the Neolithic and they were sometimes constricted even more with pits dug parallel to the entrance axis. Furthermore, the presence of up-ground structures can be mentioned due to the postholes on the entrance ground.[279]

With an approximately 5-metre-deep inner ditch, an extremely V-shaped outer ditch 2.2-metre-wide and 1.7-metre-deep reaching a diameter of 106 metres, the largest Bavarian circular ditch system by far is Künzing-Unternberg. Its ditches merge at the four entrances (Fig. 80). The immensely pointed lowest parts of the ditches were filled with rain-washed erosional elements and the inner ditch yields three to five renewal episodes which means diggers wanted to keep the original shape of the ditches. However, these renewals were not continuous as they were only executed across segments that were a few metres long, perhaps suggesting the works of different groups working independently from each other. A similar working system might have been used during the construction of the enclosure because of the fact that in the north of the northwest entrance, the outer ditch was dug in a different curvilinear position than the original ground plan of the roundel. Given the great care with the way roundel was built, this structure appears to be a "construction error," which could easily be due

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[279] Ibid.

to two separate working crews. Furthermore, there are two palisade rings that are parallel to the ditches and a few elements in the interior that cannot be dated due to lack of further finds. The only striking features are four slit-shaped pits that are from the interior of the enclosure, where one of them was located between the two rings of the palisades.[280]

Figure 80. 3D model of Künzing-Unternberg roundelor causewayed enclosure

Source: https://www.landkreis-deggendorf.de/landkreis/kreisarchaeologie/archaeologie-in-den-gemeinden/kuenzing/fruehe-und-mittlere-jungsteinzeit/die-kreisgrabenanlage-der-mittleren-jungsteinzeit-von-unternberg/

The western entrance of the roundel suggests the presence of a structure that is unique so far. The discovery of three postholes dug into the sloping sides of each trench linking the inner and outer ditches account for the posts reaching 1.5 m below the Neolithic surface. Beyond the axis which is created by two rows of posts, post holes

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[280] Ibid.

were excavated to the right and left of the entrance. Given the possibility of a cap resting these posts, the presence of a gatehouse is suggested (Fig. 81). At most a century later, the roundel was not in use, instead a three concentric-ringed palisade system was built in its interior.[281]
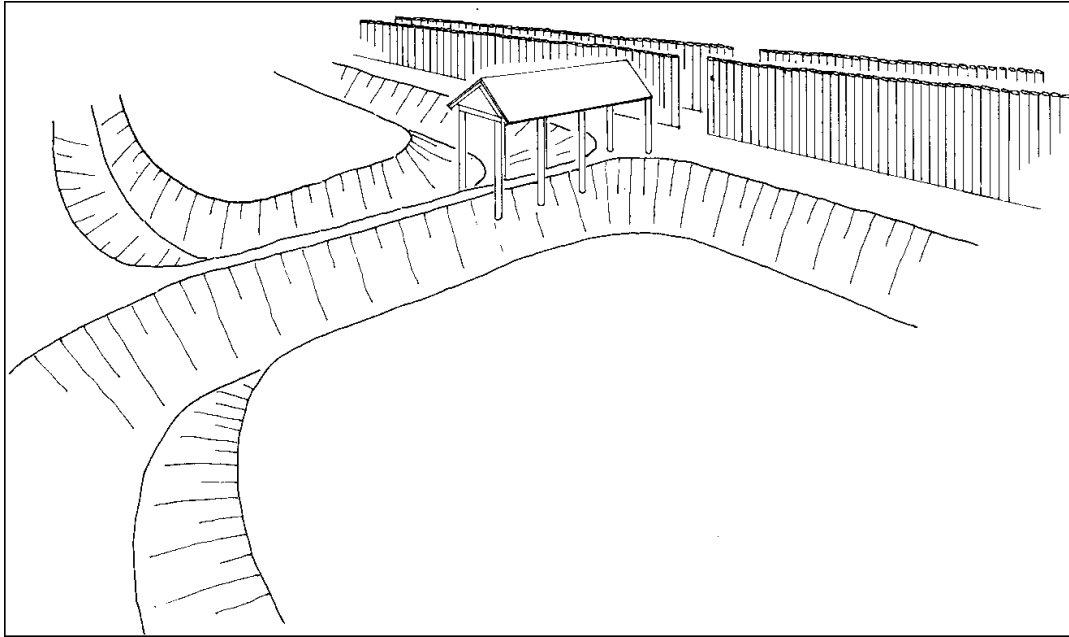
Figure 81. The western gatehouse of Künzing-Unternberg roundel or causewayed enclosure

Source: https://www.landkreis-deggendorf.de/landkreis/kreisarchaeologie/archaeologie-in-den-gemeinden/kuenzing/fruehe-und-mittlere-jungsteinzeit/die-kreisgrabenanlage-der-mittleren-jungsteinzeit-von-unternberg/

Consequently, it is possible to compile the features of circular ditch systems of Central Europe as having circular or roughly circular plans with one or several (sometimes

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[281] Ibid.

very large) V-shaped ditches, along with one or more inner palisades and one to four generally narrow entrances.[282]

Oval or circular enclosures with ditches having somewhat concave sides and flat bases sometimes reinforced with stone walls were characteristic to the Italian Neolithic societies as well. A series of domestic structures have been excavated inside the Tavoliere enclosures. Some wattle-and-daub houses which were rectangular or trapezoidal, which are 4-4.5-metre-long and 3-4-metre-wide, and sometimes built on dry-stone wall foundations, were discovered here. The architectural features of this site were occasionally raised plaster hearthhs, compressed earth flooring and multi-use widespread cobblestone pavements. These types of settlement areas, ranging in diameter from 12 to 46 meters, were often surrounded by small uninterrupted ditches that are usually C-shaped. These ditches measured between 0.6 and 2.8 meters deep, and between 1 and 3.5 meters wide, and their openings were usually oriented approximately in the same direction facing the north.[283] Sometimes, enclosures consisting of stone walls that appeared to not have any ditches were also built.[284]

In Northern Italy, Emilia-Romagna, people utilized the sections of natural channels to create ditches with some improvements. Early Neolithic communities of this region and successive generations constructed large wooden palisades that are accompanied by ditches or earthen walls. In Lugo di Romagna, builders used all three elements to define and restrain their domestic settlements. Here, an enclosure was discovered which featured a palisade 3 metres long and 0.6 metres wide, made of longitudinally cut oak timbers and placed in a foundation trench filled with clay, wall and ditch (Fig. 82).[285]

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[282] Ibid.

[283] Skeates, "Italian Enclosures".

[284] Ibid.

[285] Ibid.
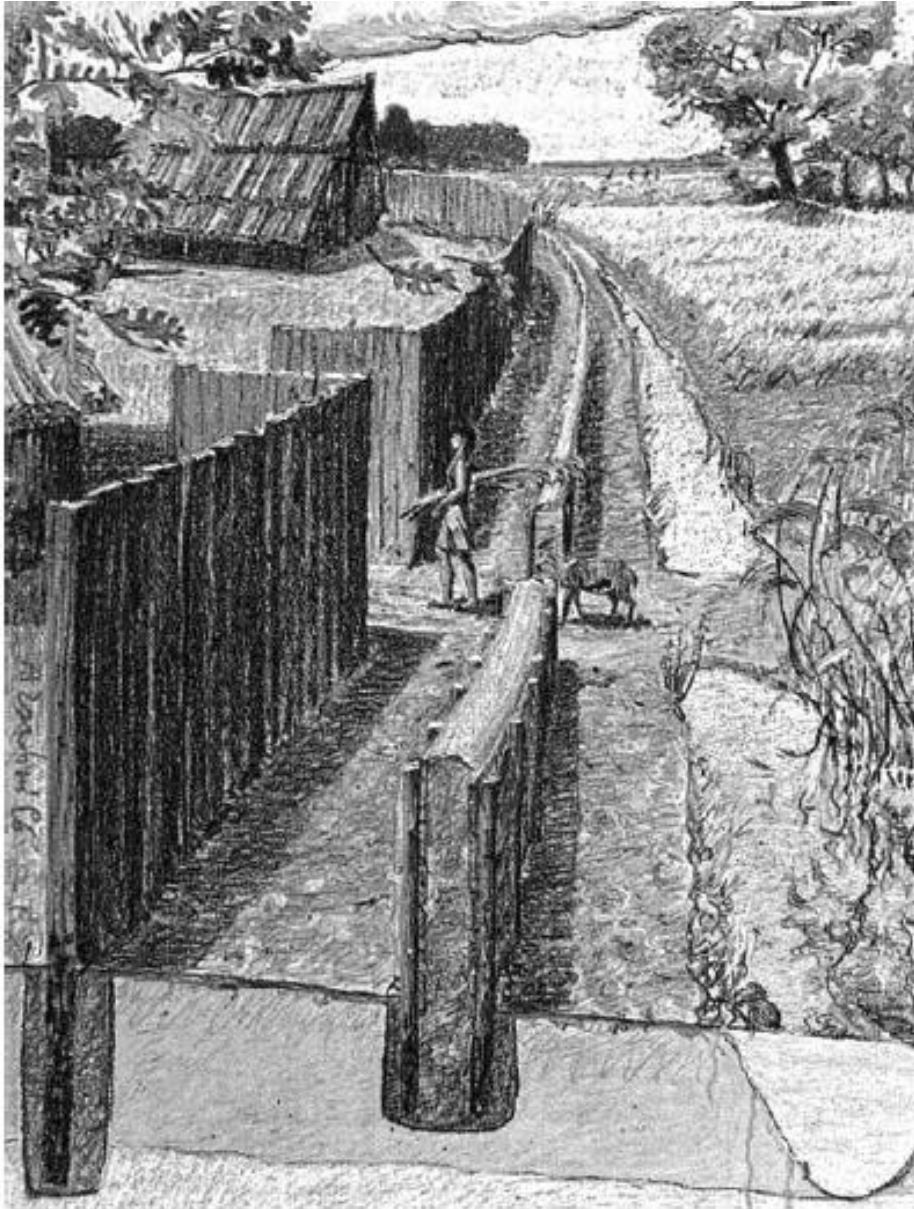
Figure 82. Reconstruction of an Italian enclosure with a palisade, wall and ditch

Source: Robin Skeates, "Italian Enclosures" in *The Oxford Handbook of Neolithic Europe*, ed. Chris Fowler, Jan Harding, and Daniela Hofmann (Oxford: Oxford University Press, 2015), Fig. 41.4.

In conclusion, ditches differing in accordance with location and time were the most ubiquitous construction, while regional variations in culture and environment enabled

greater use of stone walls in a relatively open landscape of the south and the construction of timber palisades and earthen walls in the north of Italy.[286]

4.2.1.3. Denotative Functions

Besides the U-shaped ditches, V-shaped ditches were a differentiating feature of the Central European Neolithic. The potential function of characteristic V-shaped ditches can be regarded as defensive since the ditches were impassable obstacles due to them being 5 to 8 metres in width, 5 to 6 metres in depth and with pointed bases for the unprepared attackers.[287]

Alongside the sacral interpretations of the Neolithic Lower Bavarian site of Künzing-Unternberg suggesting ritual and funerary uses, the majority of scholars offer a defensive function such as refuge forts and fortified settlements. On the other hand, winter quarters for animals, animal markets, and market places with high-status residences were suggested for their functional purpose.[288]

Around 600 vessels were found at the site of Altheim (Austria) enclosure (of which 180 were able to be reconstructed) alongside 174 flint arrowheads, large amounts of daub, and the remains of at least 20 humans. Based on the rich finds, P. Reinecke interpreted the enclosure as a fortified farmstead that was demolished after a vicious battle. Most of the researchers were convinced by this theory. However, a few advocated that domestic wares, daub and arrowheads cannot be interpreted unequivocally as a battle narrative. The reason for ritual interpretations was anthropomorphic and zoomorphic figurines found in the ditches. However, as supported by the rebutting evidence, filling up the ditches with sediments and artefacts was not intentional, but progressive through time. Since most of the figurines were not intact, they must have lost their primary functions as ritualistic objects until the time of deposition. Therefore, Petrasch asserts that the primary functions of the ditches were

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[286] Ibid.

[287] Petrasch, "Central European Enclosures".

[288] Ibid.

not rituals yet rituals might have been held somewhere in the interior of the enclosure.[289]

Richard Bradley emphasizes the tendency to embrace a certain interpretation of the evidence of causewayed enclosures and assign it to the category as a whole regardless of their regional culture, which can be falsifying due to reduction. According to these theories, they were either domestic sites or meeting places for ceremonies.[290] Some of the enclosures were placed further away from the settlements, whereas others were associated with houses either flanking them or being around them.[291] It is clear that these monuments were used in different ways although they had same main architectural characteristics such as their ground plan.[292]

4.2.1.4. Connotative Functions

V-shaped ditches of Central European enclosures might have had symbolic characteristics as well due to their excessive dimensions and convex profile. When a person stood at the edge of the profile, they would perceive the ditch as endless. This perception might have enabled different cosmological perspectives including the underground world and the earth. [293]

Sometimes causewayed enclosures in northern and western Europe also had pits, specially excavated shafts, or platforms along their bases of ditches that can be connected with finds like chisels, axes, intentionally fragmented pottery, animal bones and inhumations. For example, at Windmind Hill, England, sherds from the same vessel were found in both a ditch and pit. Given the research that was carried out, Widmind Hill suggests an individual history for each segment of the enclosures. Those materials and artefacts that were discovered in causewayed enclosures must have been

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[289] Ibid.

[290] Bradley, *The Significance of Monuments: On the Shaping of Human Experience in Neolithic and Bronze Age Europe*, 69.

[291] Ibid, 76.

[292] Ibid, 73.

[293] Petrasch, "Central European Enclosures".

chosen deliberately before deposition and the majority of their number were exposed to special treatment such as disarticulation of human and animal bones, especially skulls from the rest of the skeleton, along with intentional fragmentation of ceramics.

Vicki Cummings suggests that most of the communities were mobile with their animals and the labour-consuming construction and use of causewayed enclosures were meant to bring people together to improve and negotiate social relations and networks from different regions in favour of creating new genealogies. The continuous recutting of the trenches can be understood as a reflection of the progression and evolution of relationships.[294] The segmented ground plan enabling multiple access to the enclosures and circular shapes facing every direction from the land might have symbolized the existence of various groups participating in activities from different regions.[295]

There are also causewayed enclosures constructed after a group of houses on the land went out of use.[296] Therefore, enclosures could act as a record of people's adherence to the site and their relationships with each other, albeit in practice they ceased to interact with each other on a daily level. Moreover, the merging of history and myth related to the settlements can justify the deposition of relics in these places.[297]

4.2.2. Timber Circles, Stone Circles and Henges

4.2.2.1. Locality

Henges are the indigenous monuments of British Isles consisting of a ditch and an outer bank which usually encompasses stone or timber circles whereas free-standing stone circles are also found in Brittany besides Britain and Ireland (Fig. 83).[298] In

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[294] Cummings, *The Neolithic of Britain and Ireland (Routledge Archaeology of Northern Europe)*, 134-35.

[295] Bradley, *The Significance of Monuments: On the Shaping of Human Experience in Neolithic and Bronze Age Europe*, 72.

[296]Ibid, 68.

[297]Ibid, 80-2.

[298] Kipfer, *Encyclopedic Dictionary of Archaeology*, 589.

contrast to the polar spreading in the southern and northern extremes of Ireland, the stone circles in England create a more homogeneous distribution image similar to the English timber circles and henges (Fig. 84, 85). The Scottish recumbent stone circles are clustered in the northeast of the country where only a few small-scale henges were built (Fig. 86). The construction of these enclosures had started in the late Neolithic and expanded into the Bronze Age (Table 6).

Figure 83. Avebury Henge consisting of a bank, ditch, and free-standing stones, Wiltshire, England

Source: https://commons.wikimedia.org/wiki/File:Wiltshire-Avebury.jpg

Figure 84. Distribution of stone circles in Ireland

Source: Seán Ó. Nualláin, "A Survey of Stone Circles in Cork and Kerry."
Proceedings of the Royal Irish Academy, Section C: Archaeology, Celtic Studies,
History, Linguistics, Literature 84C (1984): Fig. 26.
http://www.jstor.org/stable/25506112.
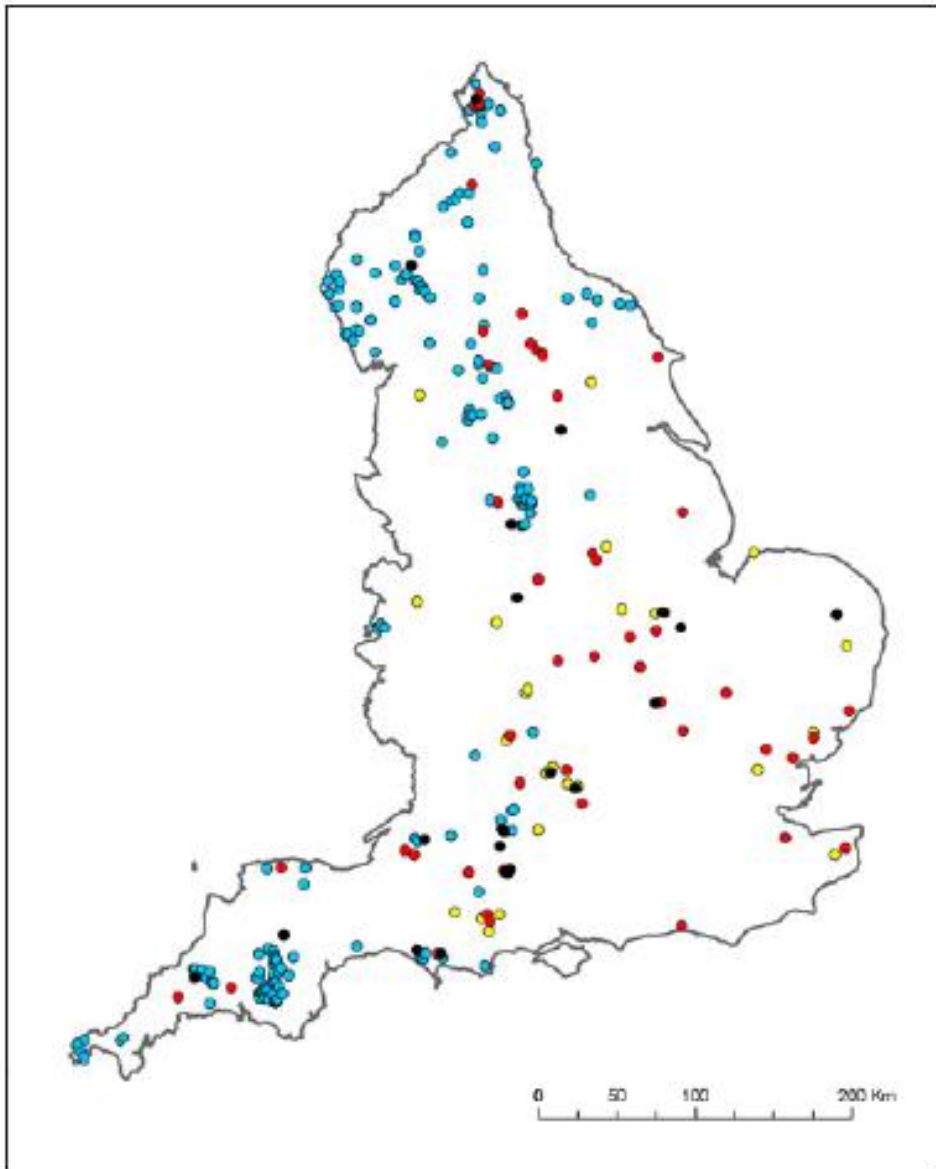
Figure 85. Distribution map of henges (red), stone circles (blue), timber circles (yellow) and combinations of these (black)

Source: "Prehistoric Henges and Circles: Introductions to Heritage Assets," *Historic England,* (Swindon: Historic England, 2018): Fig. 3. HistoricEngland.org.uk/listing/selection-criteria/scheduling-selection/ihas-archaeology/
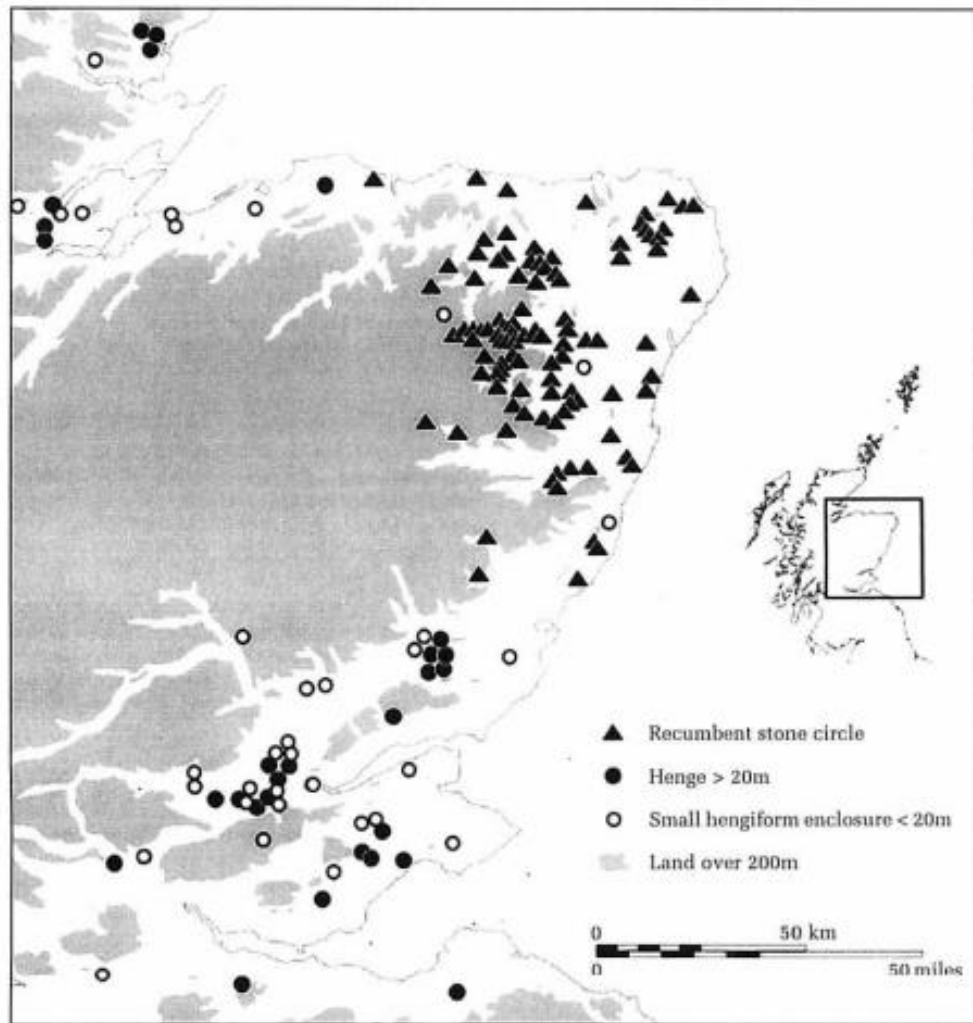
Figure 86. Distribution map of henges, and recumbent stone circles, Scotland

Source: Clive Ruggles and Gordon Barclay, "Cosmology, Calendars and Society in Neolithic Orkney: A Rejoinder to Euan MacKie," *Antiquity* 74, no. 283 (March 2000): Fig. 1. https://doi.org/10.1017/s0003598x00066151.

Table 6. Timeline of henges, stone circles and timber circles in England

Source: "Prehistoric Henges and Circles: Introductions to Heritage Assets," *Historic England,* (Swindon: Historic England, 2018): Fig. 3. HistoricEngland.org.uk/listing/selection-criteria/scheduling-selection/ihas-archaeology/
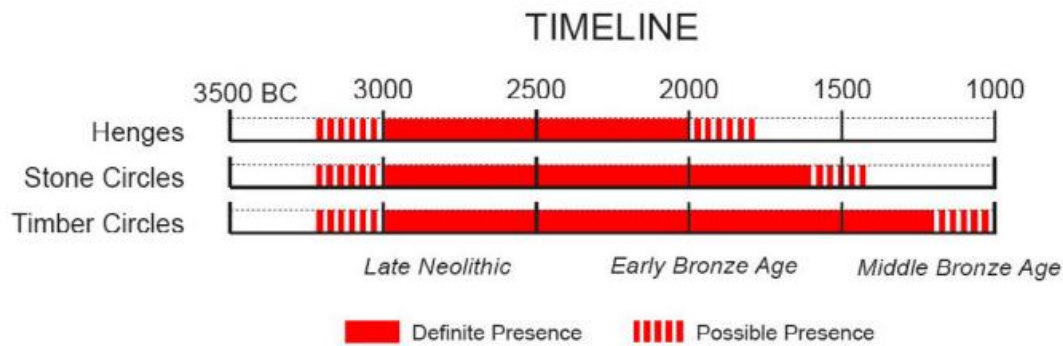
The modification and use of these enclosures whose construction started in the Late Neolithic continued to the Bronze Age.[299] All of these monuments are usually constructed in relation to each other and to other types of monuments in the landscape which makes them open-air complexes usually connected to each other through avenues, rivers or other features of the landscape (Fig. 87).[300] Brú na Bóinne complex is a site in Ireland where timber circles and henges were constructed alongside a river in a landscape encompassing passage graves of Knowth, Dowth and Newgrange, which were built earlier in the middle Neolithic (Fig. 88).[301] Sometimes the site is accompanied by Neolithic settlements as in the case of the Brodgar-Stennes complex and Barnhouse village in Orkney, Scotland; or Durrington Walls, England (Fig. 89, 90).[302]

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[299] Cummings, *The Neolithic of Britain and Ireland (Routledge Archaeology of Northern Europe)*, 191.

[300] Ibid, 203.

[301] Ibid, 210.

[302] Ibid, 204.
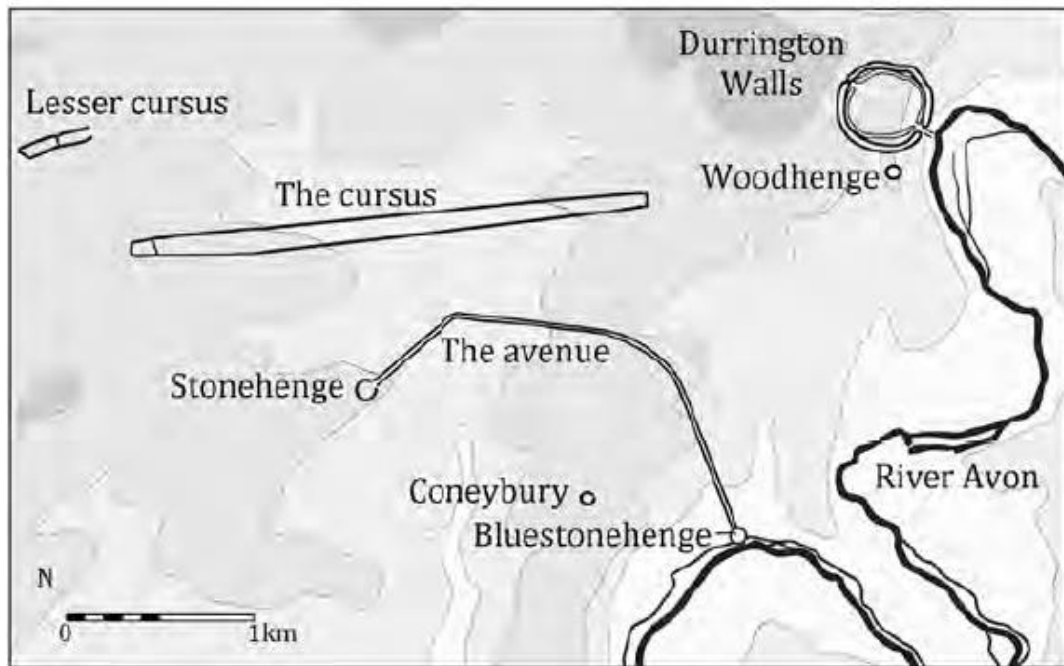
Figure 87. "The Stonehenge/Durrington Walls complex, showing the main late Neolithic monuments"

Source: Vicki Cummings, *The Neolithic of Britain and Ireland (Routledge Archaeology of Northern Europe)*, 1st ed. (Routledge, 2017), fig. 8.24; after Joshua Pollard, "Living with sacred spaces: the henge monuments of Wessex" in *Enclosing the Neolithic*, ed. A. Gibson, (Oxford: British Archaeological Reports, 2012), 93–107.
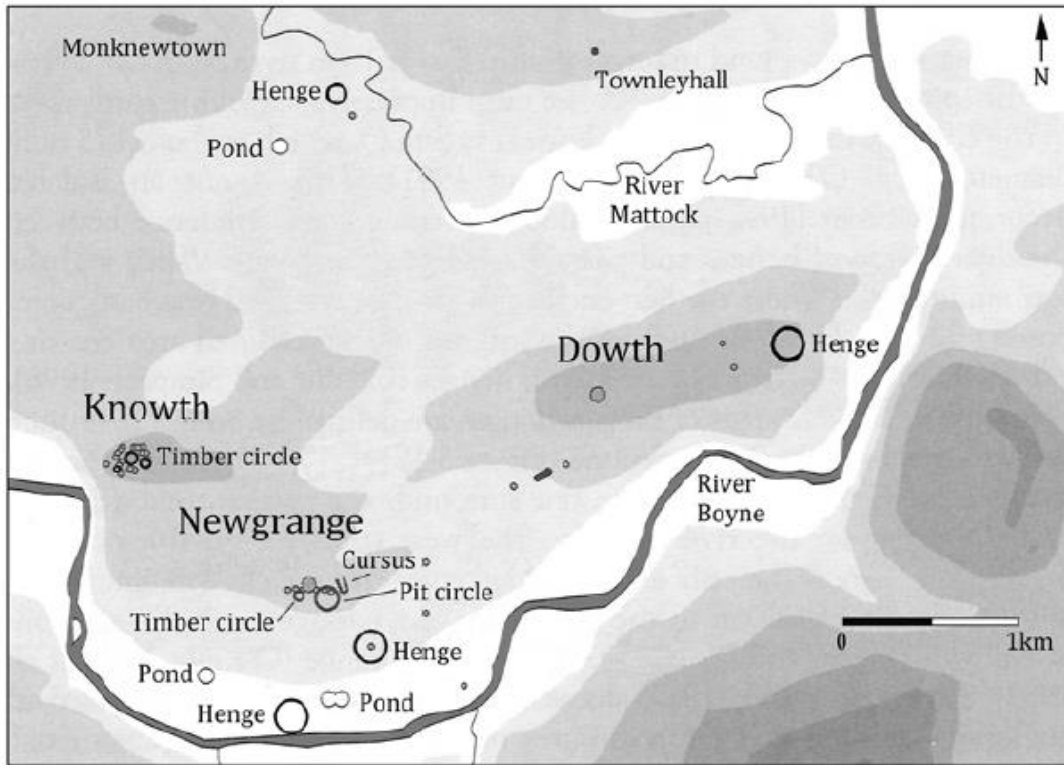
Figure 88. "The Bru Brú na Bóinne landscape in the late Neolithic"

Source: Vicki Cummings, *The Neolithic of Britain and Ireland (Routledge Archaeology of Northern Europe)*, 1st ed. (Routledge, 2017), fig. 8.19; after G. Cooney, *Landscapes of Neolithic Ireland*, (London: Routledge, 2000).

Figure 89. The late Neolithic architecture in the Brodgar-Stennes complex.

Source: Vicki Cummings, *The Neolithic of Britain and Ireland (Routledge Archaeology of Northern Europe)*, 1st ed. (Routledge, 2017), fig. 8.11; after C. Richards, *Building the great stone circles of the north*, (Oxford: Windgather, 2013).

Figure 90. The neolithic settlement near Durrington Walls.

Source: 3D reconstruction by Peter Lorimer.

https://www.reddit.com/r/papertowns/comments/7ailrc/archeological_reconstruction_of_the_neolithic/

4.2.2.2. Architectural Characteristics

Timber circles might comprise single or multiple rings of wooden posts placed in the pits that are arrayed either sparsely or tightly without intervals.[303] However, the rearrangements, alterations and substitutions of the elements of late Neolithic enclosures through recurring construction phases were common; therefore their forms

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[303] Ibid, 193.

and context were not static.[304] Sometimes, timber circles could have been encircled by a henge comprising a ditch and a bank like some stone circles, or former posts could have been replaced by stones in later stages.[305] However, the possibility of employment of both materials signifying different meanings at the same time should not be excluded (Fig. 91).[306] Moreover, in some cases, stone circles feature various kinds of rocks brought from different locations to the site (e.g. Ring of Brodgar). [307]

Figure 91. One of the possible appearances of The Sanctuary monument involves the use of both timber and stone material

Source: Peter Urmson.

https://www.english-heritage.org.uk/visit/places/the-sanctuary/history/.

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[304] Ibid, 195-96.

[305] Ibid, 196.

[306] Ibid, 200.

[307] Ibid.

Multiple types of enclosures were usually combined together to construct complex monumental sites in the landscape. Henges usually enclose smaller circular monuments and have one or more causeways for access. With a nearly 490 metres maximum diameter and two opposed entrances, the immense henge of Durrington Walls encompasses two wooden circles (north and south) which were built in multiple phases of construction having dimensions that are equal to those of some small-scale henges (Fig. 92).[308] To the south of the Durrington Walls there existed a smaller henge, called Woodhenge, which comprised of six concentric circles of timber posts whose holes bore material depositions lays (Fig. 93).[309] Similarly, two stone circles featuring inner stone entities were surrounded by a larger stone ring with a 335-meter diameter which is encircled by a henge with a 9-meter deep ditch and 5-meter high bank at the Avebury site (Fig. 94, 95).[310]

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[308] "Henge monuments at Durrington Walls and Woodhenge, a round barrow cemetery, two additional round barrows and four settlements" *Historic England* online. https://historicengland.org.uk/listing/the-list/list-entry/1009133?section=official-list-entry.

[309] Cummings, *The Neolithic of Britain and Ireland (Routledge Archaeology of Northern Europe)*, 219.

[310] Ibid, 203.
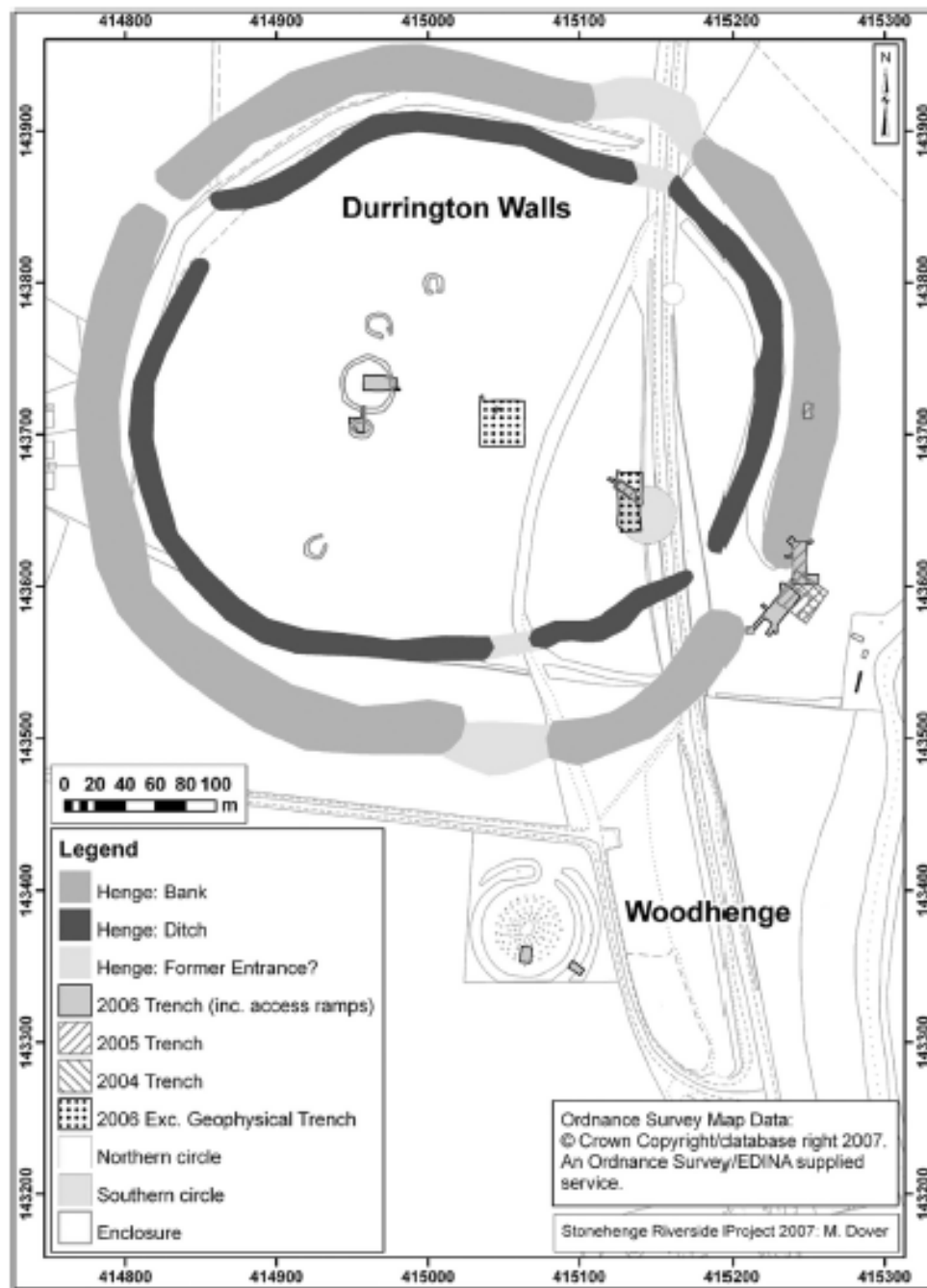
Figure 92. Durrington Walls henges

Source: Elizabeth Wright et al., "Age and Season of Pig Slaughter at Late Neolithic Durrington Walls (Wiltshire, UK) as Detected through a New System for Recording Tooth Wear," *Journal of Archaeological Science* 52 (December 2014): Fig. 1, https://doi.org/10.1016/j.jas.2014.09.009.

Figure 93. Woodehenge, reconstructed

Source: https://www.english-heritage.org.uk/visit/places/stonehenge/history-and-stories/stonehenge-reconstructed/
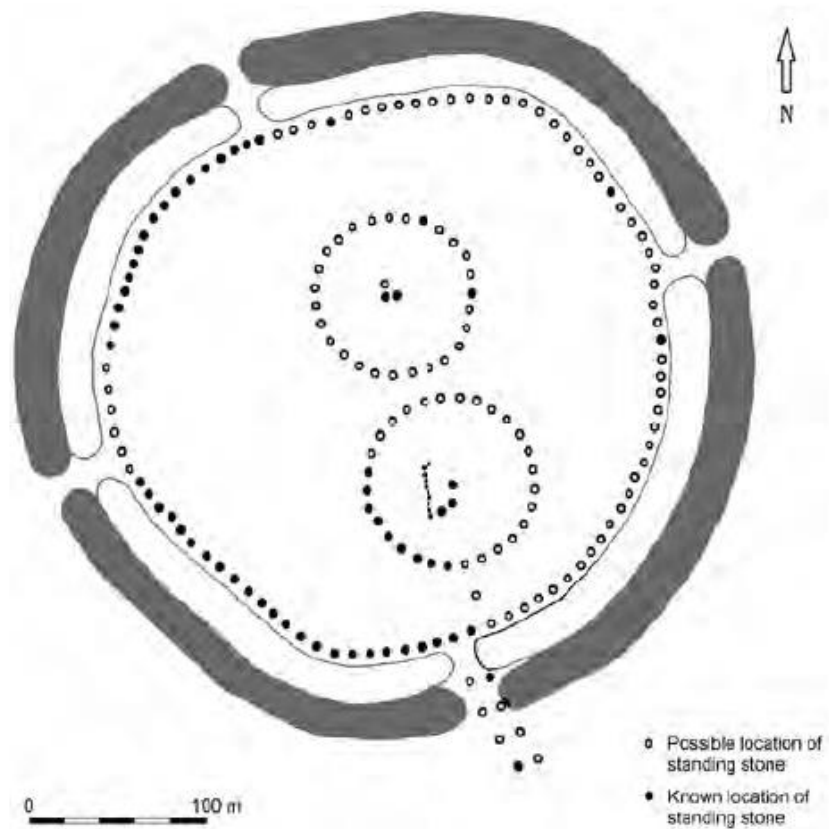
Figure 94. Plan of the stone circles and henge at Avebury

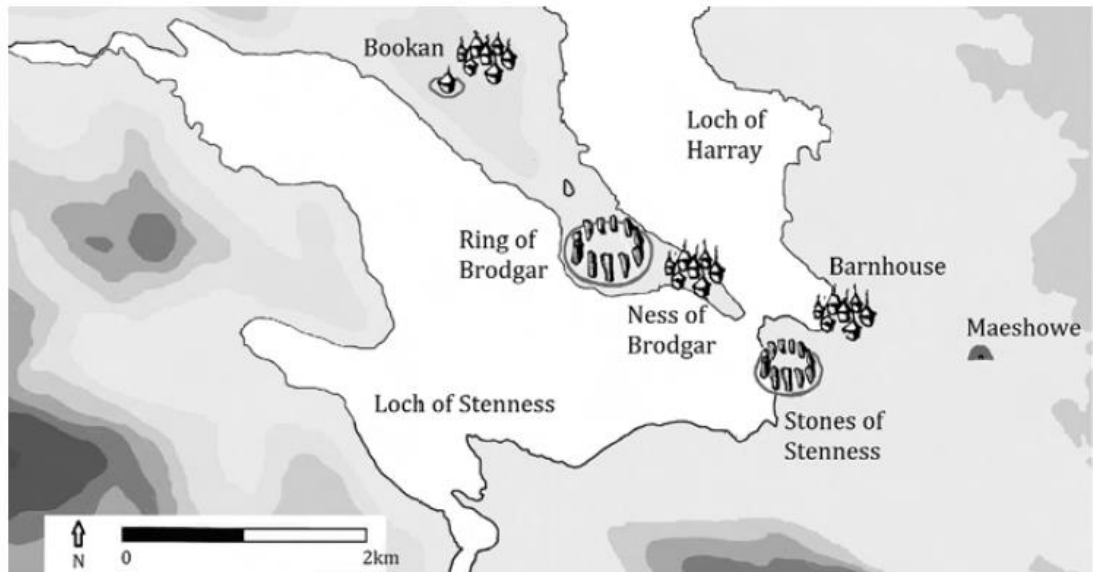**Source:** Vicki Cummings, *The Neolithic of Britain and Ireland (Routledge Archaeology of Northern Europe)*, 1st ed. (Routledge, 2017), fig. 8.9; after J. Pollard and A. Reynolds, *Avebury: biography of a landscape*, (Stroud: Tempus, 2002).
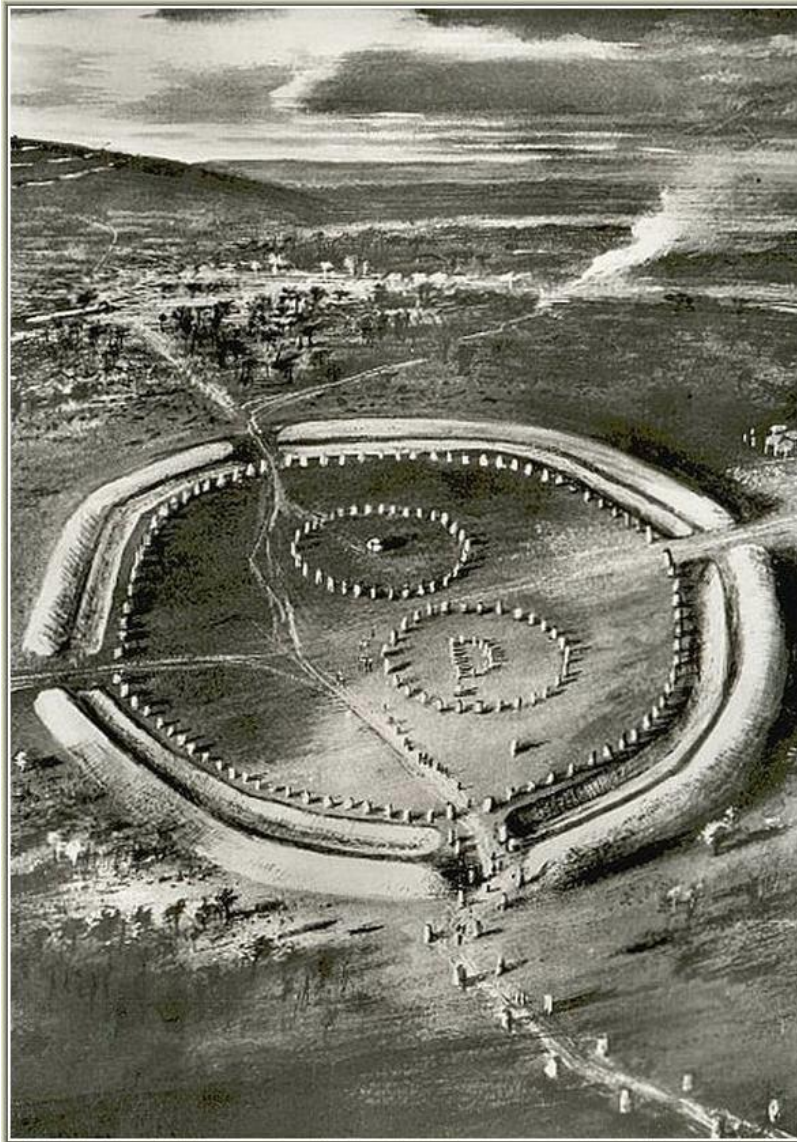
Figure 95. Aerial depiction of Avebury

Source: http://www.avebury-web.co.uk/avebury_then.html

Stonehenge is another monumental site built and transformed through a series of construction phases that started in late Neolithic and extended to the Bronze Age. A ditch with an inner bank and two entrances was dug and a circle of "bluestones" which were quarried and transported from Pembrokeshire were erected in the sockets packed with cremated human bones during the first construction phase which began at the very beginning of the 3rd millennium BC. Additionally, there also existed some timber installations within the enclosure at the north-eastern entrance that faced the

midsummer sunrise, which makes it a combination of different materials (Fig. 96).[311] Towards the end of late Neolithic, c. 2500 BC, the second phase of construction comprised the construction of an outermost circle of sarsen (a type of sandstone) megaliths as a post-and-lintel system consolidated via mortise and tenon joints; a bluestone ring; a horseshoe arc of five trilithons consisting of two sarsen uprights connected through a lintel whose dimensions exceeding outer sarsens; and an innermost bluestone horseshoe involving a central, so-called, "altar stone" (Fig 97, 98).[312] The avenue of Stonehenge linking an enclosure next to the river Avon whose dismantled bluestones were used to build the Stonehenge monument was added to the site during the subsequent phase of construction.[313]
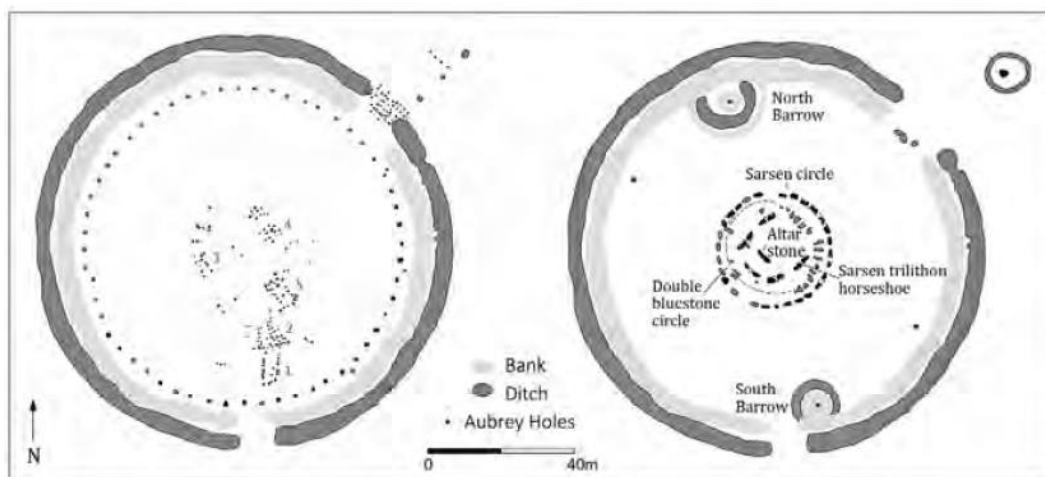
Figure 96. The first two phases of Stonehenge

Source: Vicki Cummings, *The Neolithic of Britain and Ireland (Routledge Archaeology of Northern Europe)*, 1st ed. (Routledge, 2017), fig. 8.25; after M. Parker Pearson, *Stonehenge: making sense of a prehistoric mystery*, (York: CBA, 2015).

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[311] Ibid, 216.

[312] Cummings, *The Neolithic of Britain and Ireland (Routledge Archaeology of Northern Europe)*, 216; M. Parker Pearson, *Stonehenge: making sense of a prehistoric mystery*, (York: CBA, 2015), 24–8.

[313] Cummings, *The Neolithic of Britain and Ireland (Routledge Archaeology of Northern Europe)*, 217.
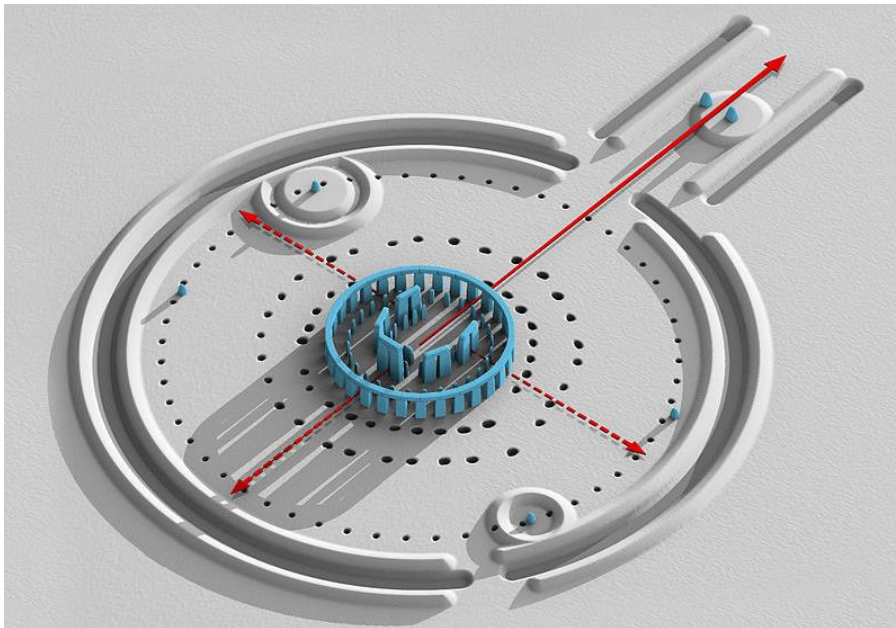
Figure 97. 3D reconstruction of the second phase of Stonehenge

Source: Joseph Lertola,
https://en.wikipedia.org/wiki/Stonehenge#/media/File:Stonehenge_render.jpg.
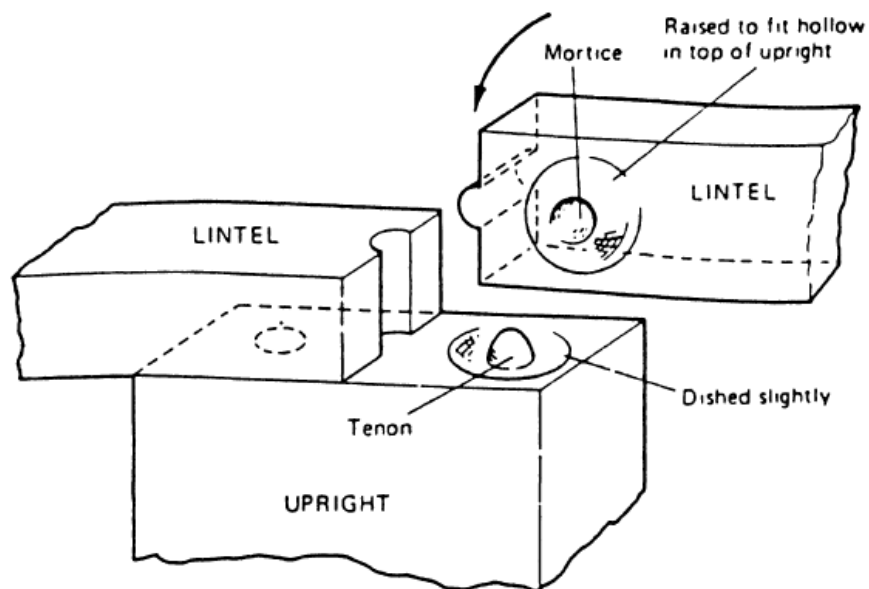
Figure 98. The connection of lintels and uprights

Source: Benjamin C. Ray, "Stonehenge: A New Theory." History of Religions 26,
no. 3 (1987): Fig. 8. http://www.jstor.org/stable/1062375.

Scottish recumbent stone circles of Aberdeenshire, with an average 20-meter diameter, are a much smaller subtype whose construction began in the third millennium BC than English stone rings surrounded by vast henges.[314] This type consists of a setting of a horizontal stone positioned in the south or south-west direction with two vertical flankers being the tallest stones in the circle, and a series of stones that gradually rise in height towards the recumbent stone framing the midsummer full moon (Fig. 99).[315]

Figure 99. Scottish recumbent stone circle

Source: https://commons.wikimedia.org/wiki/File:Tomnaverie_Stone_Circle_-_geograph.org.uk_-_7035.jpg

There are two Scottish stone circles which have unusual elements or design deviating from common rings of stone: Stone of Stenness and Calanais. First one features a hearth in the centre and other remnants of a Neolithic barnhouse design which caused

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[314] Gordon Barclay, *Farmers, Temples and Tombs (Making of Scotland S.)*, 2nd ed. (Birlinn, 2005), 33.

[315] Ibid.

the suggestion of a former Neolithic house presence at the site which was enclosed by stone circles and a henge later (Fig. 100, 101).[316] On the other hand, Calanais stone circle surrounding a chambered tomb is thought to be an interpretation of passage grave architecture whose avenue alludes to the passage (Fig. 102).[317]

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[316] C. Richards, "*Wrapping the Hearth*. Building the Great Stone Circles of the North," in *Building the Great Stone Circles of the North* (Windgather Press, 2013), 64–89.

[317] Cummings, *The Neolithic of Britain and Ireland (Routledge Archaeology of Northern Europe)*, 209-10.
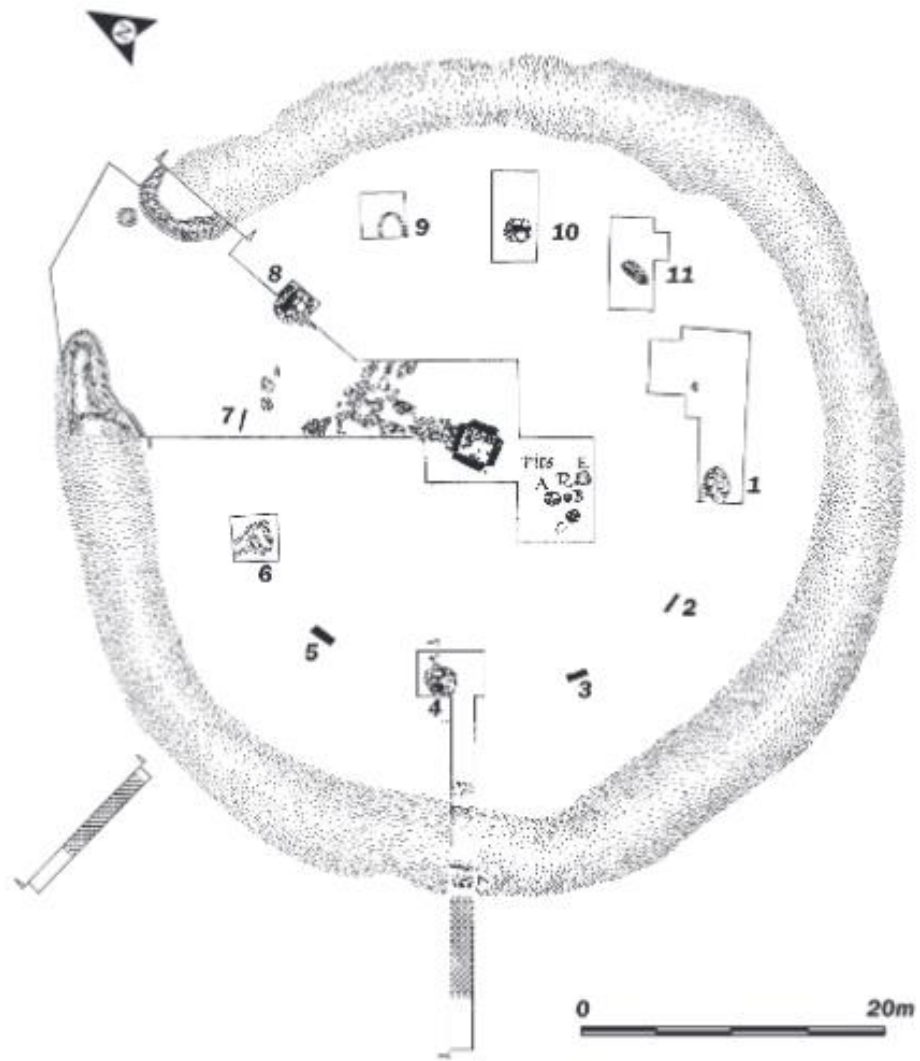
Figure 100. Plan of the Stones of Stennes

Source: Colin Richards, *Building the Great Stone Circles of the North* (Windgather Press, 2013), Fig. 3.7. Drawing by J. N. G. Ritchie, 1976.

Figure 101. Plan of a Neolithic barnhouse design

Source: Colin Richards, *Building the Great Stone Circles of the North* (Windgather Press, 2013), Fig. 3.7.
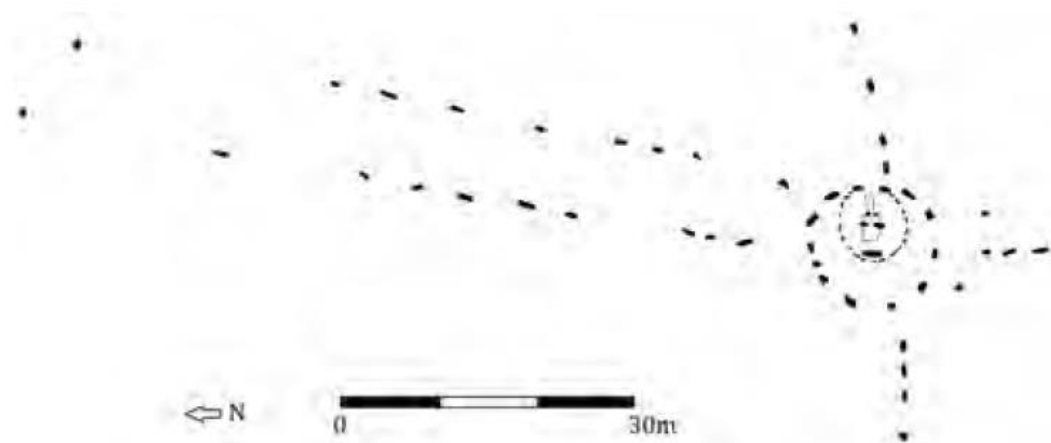
Figure 102. Calanais standing stones surrounding a chambered tomb and avenues, resembles passage grave design

Source: Vicki Cummings, *The Neolithic of Britain and Ireland (Routledge Archaeology of Northern Europe)*, 1st ed. (Routledge, 2017), fig. 8.17, after C. Henley, "Choreographed monumentality: recreating the centre of other worlds at the monument complex of Callanish, western Lewis," in *Set in stone*, ed. V. Cummings and A. Pannett, (Oxford: Oxbow, 2005), 95–106.

4.2.2.3. Denotative Functions

Unfortunately, precise identification of the primary functions of these enclosures is not possible due to the very few residues of material culture that is suggestive of any particular activity. Indeed, they can most simply be described as Neolithic open public spaces due to their accessibility and the large facility areas they define.

The general absence of burials in the stone circles led to the idea that these monumental sites were gathering spaces for public ceremonies or rituals which can be corroborated by the fact that the stones of Ring of Brodgar actually belonged to various resources

from different locations, perhaps even transported by different groups of people uniting together for construction and events.[318]

It is revealed that the henge of Durrington Walls was constructed on a circumference of a timber circle enclosing a habited land, therefore it could have stood for the memorial of the former settlement as in the case of Stone of Stennes featuring a central hearth which could originally belong to a former house.[319]

Rodney Castleden thinks that rituals performed in the stone circles were related to the Middle Neolithic passage graves encompassed in the monumental complex.[320] Scottish recumbent stone circles and Stonehenge indicate celestial rituals or ceremonies when their specific orientations are considered. Furthermore, cremations traced in Avebury holes of Stonehenge also imply the role of the site in relation to ancestral rites and connections.[321]

4.2.2.4. Connotative Functions

The use of various materials to build close-by recurrent monuments having the same shape can be associated with the signification of different concepts or entities, such as the living represented by organic wood constructions receiving depositions and appearing near settlements housing feasts during midsummer and midwinter. In this arrangement, the deceased was represented by a stone one set aside for the purpose which was associated with cremations.[322] The close similarity of layout plans,

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[318] Colin Richards, *Building the Great Stone Circles of the North* (Windgather Press, 2013) **quoted in** Vicki Cummings, *The Neolithic of Britain and Ireland (Routledge Archaeology of Northern Europe)*, 1st ed. (Routledge, 2017), 200.

[319] Colin Richards, *Building the Great Stone Circles of the North* (Windgather Press, 2013), 72-4, **quoted in** Vicki Cummings, *The Neolithic of Britain and Ireland (Routledge Archaeology of Northern Europe)*, 1st ed. (Routledge, 2017), 219, 208.

[320] Rodney Castleden, *The Stonehenge People: An Exploration of Life in Neolithic Britain 4700-2000 BC*, 1st ed. (Routledge, 1990), 143.

[321] Cummings, *The Neolithic of Britain and Ireland (Routledge Archaeology of Northern Europe)*, 193.

[322] M. Parker Pearson and Ramilisonina, "Stonehenge for the ancestors: the stones pass on the message," Antiquity 72, (1998): 308–26, **quoted in** Vicki Cummings, *The Neolithic of Britain and Ireland (Routledge Archaeology of Northern Europe)*, 1st ed. (Routledge, 2017), 200, 227; Mike Parker Pearson*,* "Stonehenge and the Beginning of the British Neolithic," in *Image, Memory and Monumentality archaeological engagements with the material world: a celebration of the academic*

dimensions, and participant capacity of the southern timber circle of Durrington Walls and Stonehenge portrays this potential relationship and narrative well as being echoes of one another (Fig. 103).[323] Moreover, the solstice orientation of Stonehenge could have been based on naturally shaped periglacial ridges extending in the same direction on the Neolithic land, which made the Stonehenge axis mundi where a cosmological unity of sun, moon, and earth emerged.[324] Therefore, a combination of two realms signified by architectural entities within the surrounding monument and landscape complex bearing all kinds of natural phenomena might have been perceived as a microcosm.[325]

From a sociological perspective, the collection of stones and timbers from various locations for construction might be an indication of the cooperation of more than one dispersed community uniting for this performance which intensified collective identities and generated new social bonds and units.[326]

achievements of Professor Richard Bradley (Prehistoric Society Research Papers), ed. A. M. Jones et al., (Oxford: Oxbow Books, 2012).

[323] Mike Parker Pearson et al., "The Stonehenge Riverside Project: Exploring the Neolithic Landscape of Stonehenge," *Documenta Praehistorica* 35 (December 31, 2008): 163, https://doi.org/10.4312/dp.35.11.

[324] Parker Pearson, "Stonehenge and the Beginning of the British Neolithic," 20, 22.

[325] Cummings, *The Neolithic of Britain and Ireland (Routledge Archaeology of Northern Europe),* 230.

[326] Ibid, 226, 231.
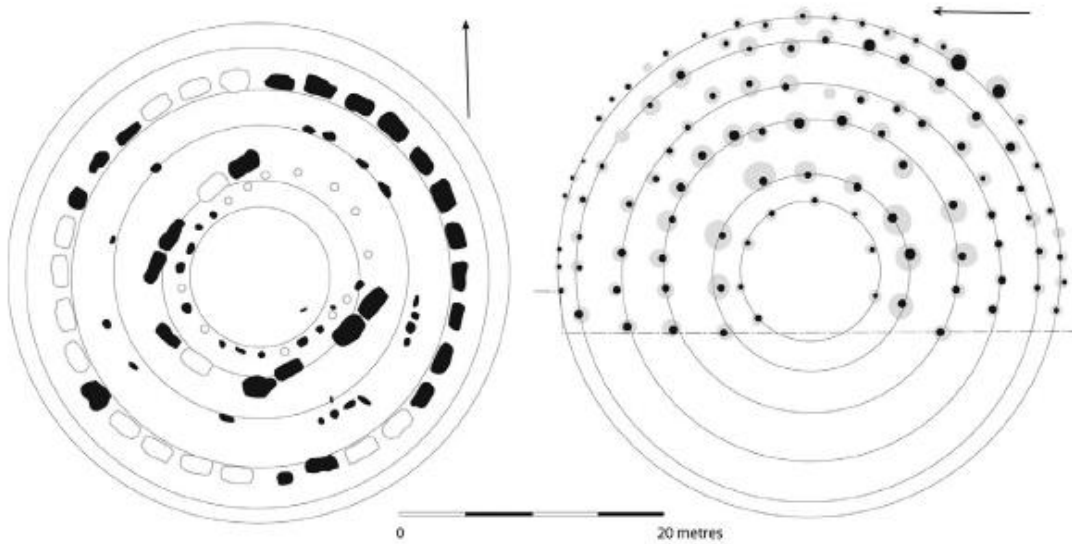
Figure 103. "Comparisions of the plans of the Stonehenge and the Southern Circle"

Source: Drawing by Julian Thomas. Mike Parker Pearson et al., "The Stonehenge Riverside Project: Exploring the Neolithic Landscape of Stonehenge," *Documenta Praehistorica* 35 (December 31, 2008): Fig. 15, https://doi.org/10.4312/dp.35.11.

Figure 104. The parallel ridges beneath the Stonehenge Avenue's banks, 2008

Source: Photographed by Adam Stanford of Aerial-Cam A. M. Jones et al*., Image, Memory and Monumentality archaeological engagements with the material world: a celebration of the academic achievements of Professor Richard Bradley (Prehistoric Society Research Papers),* (Oxford: Oxbow Books, 2012), Fig. 4.3.

CHAPTER 5

CONCLUSION

5.1. Overall Assessment

5.1.1. Locality

Near Eastern Neolithic settlements tended to be established around the vicinity of easily accessible water sources and fertile lands. Therefore, multi-functional and ritualistic buildings coexisted with domestic structures such as in the case of the sites of Jerf el-Ahmar and Mureybet, which was explored in the thesis. However, the ritual structures of Göbekli Tepe were built far from the water source and in a position overseeing the Harran plain, and consequently, archaeologists do not anticipate the discovery of any residential structures in the next excavation periods.[327] In this sense, Klaus Schmidt's interpretation of the site as a pilgrimage centre for PPN communities seems valid. The fact that the number of grinding stones found in Göbekli Tepe far exceeds the number of grinding stones in other PPN regions alongside the bone finds supports the interpretation that indicated the possibility of public crowded feasts where plenty of meat was consumed along with alcoholic beverages. However, other archaeological sites of south-eastern Turkey featuring T-shaped monoliths should not be forgotten.[328] The excavations that will eventually be carried out in these areas in the

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[327] Jens Nötroff, Oliver Dietrich and Klaus Schmidt, "Building Monuments – Creating Communities. Early monumental architecture at Pre-Pottery Neolithic Göbekli Tepe," in Approaching Monumentality in the Archaeological Record. (SUNY Press, 2014).

[328] Bahattin Çelik, "Differences and Similarities between the Settlements in Sanlıurfa Region where "T" Shaped Pillars are Discovered/Sanlıurfa Bölgesinde "T" Sekilli Dikmetas Bulunan Yerlesimlerin Farklılık ve Benzerlikleri," *Türkiye Bilimler Akademisi Arkeoloji Dergisi* 17, (2015): 9–24.

future may reveal further clues that can allow the existing interpretations to be altered or corroborated.

Tombs-shrines of Neolithic Europe tended to be built on the fringes of settlement areas, positioned in relation to other monuments in a landscape of their own.[329] The dense concentration of its continental distribution on coastlines has been attributed to different reasons. Colin Renfrew suggested that the stress of the population aggregation coming from the east pushed people toward the west; hence ancestral burial monuments were constructed as territory markers. However, Christopher Tilley disputes this view as there is no evidence of such pressure. Vicki Cummings, asserts that these monuments were built in the locations where sea and land meet due to cosmological zeitgeist, which enables the observation of sea vistas. Cummings gives a similar interpretation that applied to timber and stone circles and henges.

5.1.2. Architectural Characteristics

Pre-Pottery Neolithic subterranean circular structures in the Near East were built from upright posts, cobblestones, or moulded mudbricks. Unlike the above-ground free-standing rectangular structures, these structures were bound to be built in round form due to the statics equilibrium requirements. Although the quality of the building materials used might have improved over time, the fact that rectangular and round structures were built simultaneously in some regions and that round buildings could have also been erected above the ground with mudbricks indicates that the "transition" from round form to rectangular did not necessarily prerequisite an innovation in construction technology. Moreover, if these societies were capable of designing complex syntaxes with proportions and measurement units, then solving a simple corner joint construction shouldn't have required more advanced cognitive skills or creativity in the presence of flat-sided standard rectangular mudbricks. Therefore, perhaps this transition was between ground floor levels which shifted from below-ground to above-ground rather than forms. At this very point, although the Pre-Pottery Neolithic B settlements are identified with rectangular buildings, maintenance of the

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[329] Hutton, *Pagan Britain*.

construction of subterranean circular structures, especially in the arid regions of the southern Levant, seems like a detail that needs to be considered.[330] On the other hand, given that once buildings were not under the pressure of earth thrust, they were able to be planned, articulated freely and built with linear walls. This process has been observed in Gusir Höyük as the gradual "rectangularization" of the round structures as they were moved onto the ground levels (See section 3.2.2.5).

If the reason is not the lack of a limestone source from which the monoliths were hewn, the choice of wooden uprights of the multi-purpose and ritual structures in Hallan Çemi, Jerf el-Ahmar, and Mureybet instead of symbolically shaped and ornated monoliths may imply the pragmatic approach to the construction of these structures. In the Near East, megaliths were used only for columns with symbolic meanings, like at Göbekli Tepe, while European monuments consisted of megalithic structural elements. Instead of building walls from small stones, abundant Neolithic glacial boulders in the landscape may have been used as building elements to save time besides other connotative functions. The common characteristic of both is that they were made of stone, a durable material that could withstand time, and that they required a great investment of labour and time for their construction. However, Göbekli Tepe enclosures were intentionally buried at the end of life cycles. Therefore, although they were intended to endure time, they were not meant to become memorials, which is a characteristic that distinguishes them from the European monuments.

European monuments were usually built from megaliths, sometimes processed, sometimes not. Since timber circles, stone circles and henges are not subterranean, their form is an outcome of human agency rather than an ecological necessity. Regarding enclosures, which aimed to enclose an area in any form possible, the circle might have been preferred because it possesses the shortest perimeter among several geometric shapes with the same area. Therefore, the most effective option to save labour and time is to limit this area with a circle, whether it is a question of delimiting

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[330] Simmons and Bar-Yosef, *The Neolithic Revolution in the Near East: Transforming the Human Landscape*, 134.

an area with a ditch or with pillars. However, given the vast sizes of henges and enclosures, time and energy consumption saving does not seem to be the main case.

Considering that the case of constructing mounds allowed to cover an object, the stacking of material on the object could naturally lead to the formation of a round mound. However, the layers of different materials wrapping the chamber of passage graves show that these mounds were not the result of a monotonous and random material accumulation process. Moreover, smooth hemispherical shapes and the kerbstones limiting the edge of the mounds attest to the control over the form of the monument and the mound building process. Nevertheless, the rectangular and linear chambers of some passage graves were built below the ground level, which meant that they were exposed to the earth thrust. However, this does not cause a destruction problem because these chambers and passages are under the pressure of their capstones increasing their resistance due to the linear relationship of the friction force and weight of the object.

Spatial arrangements, syntaxes, of Near Eastern structures differ in accordance with the intention of use. The space of multifunctional buildings is divided for different facilities, whereas ritual buildings usually have a holistic indiscrete space for the comprehensible interaction of inhabitants.

Enclosed dolmens, passage graves, and chambered cairns create confined indoor spaces for the containment of things and execution of rituals for a limited number of attendees whereas earthwork enclosures, timber and stone circles along with henges create permeable and more accessible open spaces for public use, which could have been used by more members of the community simultaneously.

5.1.3. Denotative Functions

The primary functions of the Near Eastern buildings can be summarized as providing shelter, and serving as a space for deposition, gathering, ritual and burial. In this sense, they serve a similar ritualistic way as passage graves and chambered cairns. However, the primary functions of the tomb-shrines were not just this. Due to their massive size and endurance, they also performed as landmarks in their respective geographic landscapes and as memorials in the minds of people.

Timber and stone circles, earthwork enclosures, and henges were also meeting places for rituals and monuments. While the rituals conducted in the passage graves and chambered cairns pertained to the ancestors and the deceased, the ones performed in timber and stone circles and henges were associated with circular symbolism, which involved celestial bodies, and annual cycles. On the other hand, Near Eastern structures were built to create introverted-indoor spaces at smaller scales for different kinds of rituals, possibly serving less crowded groups.

The radially compartmentalized multi-functional buildings of the Near East remains least predictable in terms of explaining their subterranean-ness given that people were able to design and construct more spacious and elaborated syntaxes with rectangular forms. The deposition function of artefacts for daily use does not require the condition of the space being under the ground, even if it was meant to protect grains, since there are better options to produce moisture-tight conditions. In this case, Dhra' granaries portray an instance of well-protected depositions for food supplies. Thus, perhaps the preference for their ground level might have had something to do with connotative function related to burials beneath the floors.

5.1.4. Connotative Functions

Residential, multi-functional, and ritual buildings in the Near East could have been associated with the connotations of household bonds, sharing, solidarity, cooperation, unity, deceased, and ancestors. Among these structures, Göbekli Tepe specimens are the most favourable for connotative functions can be elaborated since they bear the richest symbolism in terms of artistic representation. The limited capacity and hierarchic symbolism of the structure may be an indication of a spiritual order or transcendental institutionalization. On the other hand, European tomb-shrines and enclosures connote ancestors, concepts of hereafter, wrapping, enclosing, delimiting, sense of belonging and Neolithic circular symbolism.

5.2. Monumental Architecture in the Neolithic Period

We are able to trace the beginning of construction of round planned structures from the Natufian culture onwards for now. In addition to domestic round huts in the Natufian and PPNA periods of the Levant, there were also multifunctional round

structures thought to be in common use. Although the Göbekli Tepe buildings share a similar basic circular form and possess columns that were built to support the possible roof, they differ in terms of intensive expression of symbolism, its gigantic scale and the labour that was required. The Göbekli Tepe complex was monumental, while others were not. Despite their monumentality, were the Göbekli Tepe enclosures meant to become monuments acting as memorials directed to the future?[331] Deliberate burial of buildings after at the end of a certain decades of use weigh against this notion.[332] They were built for the use and communal consciousness of their inhabitants, but the potential of the buildings becoming memorials and the conveyance of visual narratives they bare for the next generations seems to be prevented. Moreover, after their burials, enclosures did not become landmarks like the mounds in the European landscape. Instead, they were rendered invisible and inaccessible under an earthen platform below the slope on which the rectangular building clusters, some still bearing T-shape-related symbolism, were constructed centuries later in the subsequent PPNB period.[333]

European round mounds and dolmens were containers for the dead; spaces for the living to perform their rituals; and the focal point to the eye and movement of the people due to their scale and inviting circular shape. The latter two functions also apply to timber and stone circles, and henges. Aside from the role of Neolithic monuments serving as both the means for owning and dominating land and also as permanent structures, Joshua Pollard argues that they were not the imposition of forms that were usually built on a wasteland. Pollard states that they were rather the product of a new form of activity that was performed in places that have previously had significant importance and thus become privatized. This deduction is consistent with the examples attested by many archaeologists, with the fact that Neolithic monuments were often remodelled and sometimes deliberately destroyed after construction rather than left as they were permanently. Julian Thomas argued that what really mattered were the

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[331] Courtney Nimura and Richard Bradley, *The Use and Reuse of Stone Circles: Fieldwork at Five Scottish Monuments and Its Implications*, Illustrated (Windgather Press, 2016), 122.

[332] Clare et al., "Establishing Identities in the Proto-Neolithic: "History Making" at Göbekli Tepe from the Late Tenth Millennium cal BCE," 125.

[333] Ibid, 127.

relevant places, and that the human-made artefacts placed there were meant to bring attention to those sites and to serve certain activities there. This still does not change the fact that a piece of land is controlled and exploited, but it also acknowledges the significant potential for that land to be seen as a potent and lively agent in human relations in and of itself. Furthermore, from the model of building and rebuilding, it can be interpreted that the act of making a Neolithic monumental architecture was a vivid activity in itself, a long-term ritual of immense importance to religious and social life.[334]

5.3. Contextualization of Prehistoric Architecture in Architectural Historiography

Is it possible to write an architectural "history" of prehistory? The question itself might appear counterintuitive due to the separate denominations attributed to the divisions of the past and the study of architecture built in the past. On the one hand, history is "the study of the past through written records, which are compared, judged for truth, placed in chronological sequence and interpreted in light of preceding, contemporary, and subsequent events".[335] On the other hand, architectural history is more than a history, it is the study of the past through the investigations of buildings and monuments that are concrete entities bearing their own syntactic and technical codes that have to be decoded. Therefore, history of architecture must be studied through these codes, even in the absence of written records.

Architectural historians are expected to "place buildings both in their wider political and social context, and the more particular social and economic context" given their historian identity.[336] This is not a problem when the structures belong to a literate society that has provided us with textual evidence. However, when the case is prehistory, one bumps into "Hawkes' ladder" which is a ranking of how difficult it would be for archaeologists to research issues outside of historical texts or oral

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[334] Hutton, *Pagan Britain,* 39-41.

[335] Kipfer, *Encyclopedic Dictionary of Archaeology*, 600.

[336] Arnold, preface to, *Rethinking Architectural Historiography*, xvii.

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tradition.[337] In Hawkes' view, technology appeared to be the most straightforward archaeologically surveyable subject, followed by economics; the socio-political organization of that time was hard to retrieve, and religious beliefs remained impossible to explore.[338]

If we were to arrange a ladder of architectural codes for prehistory, it would be easiest to identify the technical codes referring to structural elements, such as load bearer orthostasts of the grave chamber, megalithic columns of Göbekli Tepe enclosures or corbel roof system since laws of statics are universal and timeless. However, it is not feasible to define technical codes for earthwork enclosures, circles, and most of the henges since they do not comprise a superstructure that connects the uprights. Nonetheless, Stonehenge whose trilithons built as a post-and-lintel system is an exception. These monuments are meant to generate spatial organizations rather than being a structure. It can be said that encirclement phases and arrays of different materials represented a space design code that was not constrained by a strict set of standards. Instead, it highlighted the typology and form that were desired to be maintained. Furthermore, some syntactic codes concerning spatial arrangement policies and typologies can be established as was observed in the many examples throughout this thesis. These examples include how twin pillars were always placed in the centre around peripheral ones in Göbekli Tepe; how enclosed dolmens were surrounded by an outer stone circle defining an open space or platform; how passage graves always featured passages sometimes divided into sections; and lastly in how some chambered cairns bear elaborately defined space design with side recesses and circulation guiding platforms and so on. These codes can be established to cover a structure type in general, or they can be developed for individual structures with unique characteristics. For instance, from the cases explored, it could be noted that "the passage and the room length of the tomb are designed in relation to each other in a way that the winter sunrise beams hit the stone basin in front of the rear wall" or "thresholds between space sections are marked through engraved megalithic art".

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[337] C.F. C. Hawkes, "Archaeological theory and method: some suggestions from the Old World," *American Anthropologist* 56 (1954): 155–68, **quoted in** Guy Halsall, "Archaeology and Historiography," in *Companion to Historiography*, 1st ed. (Routledge, 1997), ed. Michael Bentley, 791.
[338] Ibid.

Although the use of some architectural components can be very explicit, such as how "gaps in the walls are the doorways to the interior", semantic codes seem to be least ascertainable for prehistory as there is always room for other interpretations and designations of primary and secondary functions. It should be noted that in the absence of textual or pictorial evidence or direct observation of inhabitation, let alone connotative functions, sometimes even denotative functions which might appear obvious and reasonable to infer remain elusive for prehistory. A platform defined as a "bench" might have never been used for sitting in the first place. Likewise, post-processual (interpretive) archaeologists assert that the artefacts are polysemic or even intentionally equivocal.[339] Nevertheless, it is demanded to choose among the possible functions and meanings of the object consistent with the argument contended by the researcher to create as numerous as possible, sometimes the thinnest, fibers oriented in the same direction led by fresh evidence. Furthermore, one should redirect wires if necessary, based on the tenets of Peircian scientific reasoning. As Guy Halsall states by referring to Hodder's argument:

> we are not locked in a hermeneutic vicious circle, but rather our work represents a 'hermeneutic spiral', a dialogue with the past, where our experience of the data shapes our conceptions, as well as being structured by them. There may be no 'right answers', but we can establish that some answers are less wrong than others.

It is impossible to define religious systems, if one ever existed in the Neolithic, without textual evidence, especially for the dolmens or earthwork enclosures lacking symbolic decorations related to lost semantic codes. However, thanks to the practice of archaeology retrieving and examining material culture and human remains, it is possible to acquire some clues about ritual activities, cosmologic understandings and ideologies that most likely paved the way for Neolithic communities' transcendental values. Without a doubt, monumental Neolithic architecture bears traces of some of them, as in the case of the hierarchical organization and symbolism of Göbekli Tepe enclosures, or celestial orientations of stone circles and passage graves. Furthermore, the potential of archaeological practice and its analysis methods to shed light on the

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[339] Halsall, "Archaeology and Historiography," 797.

relationship between the sign-vehicle and connotative functions of the structures is quite exciting as well as promising. The finding of a now-disassembled stone circle whose diameter and midsummer sunrise orientation are the same as Stonehenge's and its construction date, c. 3000 BC (which is just before the earliest construction phase of Stonehenge) must be intriguing.[340] If the discoveries were limited to this, it could be interpreted superficially as the presence of two structures in different locations belonging to the same architectural tradition, which were built according to the same cosmology and ritual understanding. However, isotopic analysis of the cremation burials held in Stonehenge demonstrates that some of the ancestors lived on the Ordovician/Silurian rocks in southwest Wales, which is the region of the bluestone quarries of Stonehenge, thus providing a more elaborate history: that of migration of people and their monuments from Wales to Stonehenge.[341] Then this would stimulate further connotations and semantic codes concerning identity, ancestors, migration, devotion, allegiance and so on. Therefore, historiography of prehistoric architecture tends to be rather stylistic and descriptive without the practice and methods of archaeology unearthing the crumbs of behaviours, actions and traditions that seem to be long gone completely awaiting to be associated with architectural codes.

5.4. Contributions and Limitations of the Thesis and Recommendations for Further Studies

In addition to the arrangement of interpretations and archaeological data published by many researchers in numerous sources within an architectural-oriented framework, the most significant and exciting aspect of this study is the fact that it brings attention to the potential laws of statics affecting structural form, which has been overlooked by archaeologists or at least have never been explained explicitly by referring to principles of statics and structural analysis. Contrary to popular belief that "rectangular structures built on the ground are more stable", they are not stronger than subterranean round buildings constructed using the same materials and techniques. In fact, round

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[340] Mike Parker Pearson et al., "The Original Stonehenge? A Dismantled Stone Circle in the Preseli Hills of West Wales," *Antiquity* 95, no. 379 (February 2021): 85, https://doi.org/10.15184/aqy.2020.239.

[341] Ibid.

structures exhibit a more resistant behaviour against earthquake forces. It is hoped that archaeologists, who are the leading experts on the Neolithic, will consider this point of view and evaluate the possible conditions that laid the way for the "transition from the period of structures that were built underground to the period of structures built above ground" besides the transition from round structures to rectangular structures. Where these two kinds coexisted together, it can be considered as a preference, i.e. agency related; when they "evolved" in succession within different periods, then there could be operations of ecological or social parameters, i.e. structure.[342]

Due to being written during the pandemic, this work is purely an interpretation of the published, primarily online, sources available to the author. All of the above structures have yet to be visited on-site. For further studies, the durability of materials can be tested with samples taken from areas such as Göbekli Tepe and Karahan Tepe, where excavations are still ongoing, and the effect of the earth thrust, which has been explained based on theory, on the form can be tested through the appropriate quantitative methods of structural analysis. However, this method does not apply to European monuments whose forms of mounds, henges, timber circles, and stone circles seem to be a deliberate choice related to connotative meanings rather than restricting natural laws.

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[342] It can be said that there is an ongoing debate in social sciences about whether human behavior is shaped by structure or agency. Structure can be defined as existing forces, assets, and laws in nature acting upon opportunities, whereas agency is the capacity of individuals to make decisions and choices independently.

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APPENDICES

A. TURKISH SUMMARY / TÜRKÇE ÖZET

İyi korunmuş ve sofistike mimarisiyle inşa edilmeden önce gerçekleştirilmiş bir mimari tasarım sürecinin ürünü olduğu izlemini veren Göbekli Tepe, son yıllarda en gösterişli arkeolijik keşif ve birçok arkeoloğun araştırma alanı haline gelmiştir. Gerçekten de Göbekli Tepe, Levant'ın Natufian kültürü ile Anadolu'nun Çanak Çömlekli Neolitik yerleşimleri arasında hem coğrafi hem de kronolojik bir geçiş bölgesi olması ve Neolitik Çağ toplulukları ile insan türünün daha iyi anlaşılması için çözülmeyi bekleyen bir düğüm olması sebepleriyle arkeologlar için vazgeçilmez ve karşı konulmaz bir değerdir. Ancak üzerinde düşünülmesi gereken bir mimari ürün varken, arkeologlar geçmişi mimarlık üzerinden açıklamaya çalışırken, asıl uzmanlık alanı yapılar olan mimarlık tarihçileri bu bağlamda nerede durmaktadır? Geçmişe yönelik çalışmaların tarih ve "tarihöncesi" olarak ayrıldığı düşünülürse, mimarlık tarihi disiplininin doğası, kapsamı ve yetkinliği, "tarihöncesi mimarlığın tarihini" yazmamızı mümkün kılar mı? Elbette, yazılı kanıta dayalı tarih ve kendi söylemi olmayan bir geçmiş üzerine yapılan çalışmalar farklılık göstermelidir. Ancak okuryazar bir topluma ait olsun ya da olmasın, bir parça mimari her zaman mimarlıktır. İlgili yazılı kaynakalrdan bağımsız olarak, mimari eser var olduğu sürece, somut varlığı üzerinden bir söylem geliştirmemize olanak sağlayabilir. Ancak, çoğu zaman bilişsel olarak kabul ettiğimiz olaylara ilişkin bir disiplinin, yani tarihin ilkelerine dayanarak ilgi alanı fiziksel dünyada somut olarak bulunan maddi nesneler olan bir disiplinin, yani mimarlığın, "tarihini" yazmak ne kadar uygundur? Her iki alan da bize geçmişle ilgili açıklamalar sağlamayı amaçlıyor olsa da, ele aldıkları konuların farklı doğası, metodolojilerinin de farklılaşmasını zorunlu kılmaktadır. Bu nedenle, aynı türden kanıtları ele alan, mimarlık tarihi ve arkeoloji, tarihle olduğundan daha fazla ortak zemine sahip olmalıdır. Farklı disiplinlerin amaçlarını merkeze alan mimarlığın geçmişini incelemede üç yönelim isimlendirilebilir: (i) mimarlık tarihi aracılığıyla

mimarlık, (ii) mimarlık aracılığıyla tarih ve (iii) mimarlık aracılığıyla antropoloji. İlki, günümüzün mimari tasarım pratiğine dair fikir edinmek için eski binaları incelemek olarak tanımlanabilir. İkincisi, genellikle maddi kanıtların kaydedilen bilgileri doğrulaması ile kültür-tarihi yaklaşımına hizmet eder. Ve sonuncusu, arkeologların kültürleri ve toplumları anlamak için peşinden koştukları şeydir. Mimarlık tarihinin yukarıda sayılan tüm soydaş dalları kapsayan ve onlara hizmet eden bir sorgulama olabileceği söylenebilir.

Prehistorya esas olarak arkeoloji disiplinin çalışma alanı olarak kabul edilmektedir. Altmışlı yıllardan itibaren arkeologlar, arkeolojik teorinin gelişmesiyle birlikte, kazı yapmak ve eserleri sınıflandırmak için incelemenin yanı sıra, çeşitli yaklaşımlar ve yöntemlerle geçmişin farklı açıklamalarına da katkıda bulunmaya başlamışlardır. Ek olarak, tarihöncesi toplumların dünya görüşlerini ortaya koyacak yazılı kaynakların ve birincil ağzıdan anlatımların olmaması, mimarlık tarihçilerinin, özellikle konut mimarisi dışındaki mimarinin neden oldukları gibi tasarlandığını deşifre etme görevini zorlaştırmaktadır. Belki de ortaya çıkan bu belirsizlik, birçok mimarlık tarihçisinin tarih öncesi mimari üzerinde çalışmayı düşünmemesinin nedenlerinden biridir. Ancak bu, mimarlık tarihçilerini, tarihöncesinin de geçmişin bir parçası olduğu ve binaların ve anıtların mimarlığın birincil arşivleri olduğu gerçeğini göz önünde bulundurarak, tarih öncesini araştırmaktan alıkoymamalıdır.[343] Bu mevcut maddi kanıtlar ve hem Yakın Doğu hem de Avrupa'nın Neolitik mimarisi üzerine yayınlanmış çalışmalar düşünüldüğünde, yazılı tarihten yoksun bir geçmişi anlamanın yeterlilikleri ve zorlukları keşfedilebilir. Bu çalışma, arkeologların egemen olduğu alana, bir noktada, Yakın Doğu ve Avrupa'daki dairesel mimari tipolojilerine mimarlık tarihi açısından farklı bir bakış açısı kazandırmayı amaçlamaktadır.

Benzer kanıtlar üzerinde çalışan mimarlık tarihi ve arkeoloji, pek çok ortak yönü olan iki alandır. Bu tez, bu ortak noktayı daha derin araştırmakta ve Yakın Doğu ve Avrupa Neolitik yuvarlak yapılarını analiz etmektedir. Yayılmacı ve öyküleyici yaklaşımlardan kaçınan bu çalışma, Yakın Doğu ve Avrupa'daki Neolitik yuvarlak

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[343] Dana Arnold, preface to, *Rethinking Architectural Historiography*, 1st ed., ed. Dana Arnold, Elvan Altan Ergut, and Belgin Turan Ozkaya (Routledge, 2006), xvi.

yapılar arasında süreklilik veya bağlantı kurma amacı gütmez. Bunun yerine, Umberto Eco'nun mimari semiyotik kuramına dayalı bir okumayla, binaların ve anıtların biçim, strüktür, mekânsal düzenlemeleri ve sembolizm ilişkilerine odaklanır.[344]

Eco'nun mimari semiyotik kuramı, arkeolojik teorinin gelişme süreci boyunca ulaşılan aşamaların faydalı öğrenme çıktılarını entegre ettiği, biçimsel ve tipolojik sanat tarihi ve kültür-tarih çözümlemelerinin teknik ve mekan-dizimsel kodlara göre gelişmiş bir versiyonunu teşvik ettiği, süreçsel ve post-süreçsel arkeoloji yaklaşımlarının da kapsadığı anlamsal kodlar ışığında pratik ve sosyo-kültürel kullanıma yönelik anlam çalışmalarını benimsediği için önemlidir. Ancak bu tezin amacı, anlama dair senaryolar üretmeyi amaçlayan çok daha derin ve sofistike arkeolojik teori çalışmalarından biri olmak veya bir yüksek lisans öğrencisinin yeterlilik düzeyini aşacak sosyokültürel evrim hakkında genel sonuçlar çıkarmak değildir. Bunun yerine, bu çalışma Eco'nun mimari semiyotik kuramından türetilen bir metodoloji ile değerlendirilmiş, belirli bir formla sınırlı olan Neolitik yapılar hakkında yayınlanmış bilgilerin bir derlemesidir.

Eco, kuramındaki yapıların düzanlamsal ve çağrışımsal işlevlerini, anlamsal kodlarla ilişkili olarak mimari varlıkların yapısal veya mekânsal elemanlarıyla ilişkilendirmesine rağmen, birincil-ikincil işlev veya düzanlamsal-çağrışımsal anlam ataması yapılara daha büyük ölçekte ve daha basit bir mantıkla uygulanabilir. Bu nedenle tezde, Eco'nun "yerleşimin çağrışımsal ideolojileri" olarak adlandırdığı şey, yapıların tipolojilerine göre "düzanlamsal işlevlerini" veya "birincil anlamlarını" tanımlamak için kullanılmıştır. Kaydedilmiş kanıt eksikliğinden dolayı, çoğu durumda her mekansal birimin birincil işlevlerini belirtmek mümkün değildir. Dolayısıyla düzanlamsal işlev kavramı, tüm yapıyı veya anıtı kapsayan daha geniş bir ölçekte örneklere uygulanırken çağrışımsal işlevler, olası sosyo-kültürel, ideolojik ve kozmolojik kodlarla ilişkilendirilmiştir. Bu nedenle, "Çağrısal İşlevler" başlıkları, Neolitik yuvarlak yapıların birçok akademisyen tarafından öne sürülen yorumlarını değerlendirmektedir. Öte yandan, yuvarlak yapıların yapı elemanları, inşa teknikleri ve mekânsal tipolojileri, mevcut yayınlanmış arkeolojik veriler doğrultusunda, teknik

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[344] Umberto Eco, "Function and Sign: The Semiotics of Architecture," 11-69, in *Signs, Symbols and Architecture*, ed. Geoffrey Broadbent, Richard Bunt, and Charles Jencks, First Edition (John Wiley & Sons Inc, 1980).

ve mekan-dizimsel kodlar yapıların somut materyalist özelliklerini dikkate aldığı için, bu iki grup aynı "Mimari Özellikler" başlığı altında toplanabilir.

Neolitik dönemde yuvarlak formlu yapılar ve anıtlar hem Yakın Doğu'da hem de Avrupa'da sık görülen fenomenlerdir. Tezin Yakın Doğu kısmında, yuvarlak formun arkasında sembolik bir tezahür olup olmadığını incelemek için, Jerf el-Ahmar gibi yeraltı dairesel ve yer üstü dikdörtgen yapılarının bir arada bulunduğu Çanak Çömleksiz Neolitik yerleşimler incelenmiştir.[345] Dahası, Göbekli Tepe ve Aşıklı Höyük gibi Neolitik yerleşim yerlerinde dairesel yapıların dikdörtgen yapılardan daha önce inşa edildiği düşünüldüğünde, yuvarlaktan dikdörtgen forma geçiş, Neolitik toplumların inşa etme becerilerinin geliştirilmesini gerektiren bir sürecin varlığını sorgulatmıştır.[346] Tartışmayı bir ileri seviyeye taşımak ve gelecekteki araştırmalar için dairesel Neolitik yapılarla ilgili kapsamlı bir yayın oluşturmak için, tez aynı zamanda yuvarlark Avrupa Neolitik anıtlarını da inceliyor: mezar-türbeler ve çevirmeler. Ronald Hutton, dolmeleri, geçit mezarları ve odalı höyükleri, insan mezarı içermeyen örneklerini de kapsaması adına mezar-türbeler olarak adlandırmıştır.[347] Türkçeye "çevirmeler olarak çevrilebilecek olan "enclosure" anıtlar ise ahşap çemberler, taş çemberler, "henge"ler ve hendeklerden oluşmaktadır.

Çanak Çömleksiz Neolitiğin yere gömülü yuvarlak yapıları ağaç direkler, moloz taşları veya kalıp kerpiçten inşa edilmiştir. Yer üstünde bulunan dikdörtgen yapıların aksine, yere gömülü binalar statik denge gereksinimlerini sağlamak için yuvarlak yapılmalıydı. Kullanılan yapı malzemelerinin kalitesinin zamanla iyileşmiş olabilmesine rağmen, dikdörtgen ve yuvarlak yapıların bazı bölgelerde eş zamanlı inşa edilmiş olması ve yuvarlak binaların aynı zamanda yer üstünde inşa edilebiliyor olması

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[345] Gil Haklay and Avi Gopher, "Geometry, a Measurement Unit and Rectangular Architecture at Early Neolithic Jerf El-Ahmar, Syria," *Paléorient*, no. 46 1-2 (December 3, 2020): 31–42, https://doi.org/10.4000/paleorient.297.

[346] Klaus Schmidt, "Göbekli Tepe – the Stone Age Sanctuaries. New Results of Ongoing Excavations with a Special Focus on Sculptures and High Reliefs," *Documenta Praehistorica* 37 (December 31, 2010): 239–56, https://doi.org/10.4312/dp.37.21 ; Güneş Duru et al., "Space Making and Home Making in the World's First Villages: Reconsidering the Circular to Rectangular Architectural Transition in the Central Anatolian Neolithic," *Journal of Anthropological Archaeology* 64 (December 2021): 101357, https://doi.org/10.1016/j.jaa.2021.101357.

[347] Ronald Hutton, *Pagan Britain*, Reprint (Yale University Press, 2015).

gerçeği, yuvarlak formdan dikdörtgen forma geçişin inşaat teknolojisinde bir yeniliğin gerekliliğinin zorunlu olmadığını işaret ediyor. Dahası, eğer bu toplumlar ölçü birimleri ile karmaşık ve oranlı mekânsal dizimler yapabilecek kapasitede iseler, standartlaşmış, düz yüzeyli dikdörtgen kerpiçlerin varlığında basit bir köşe bağlantısını çözmek daha gelişmiş bilişsel beceriler gerektirmiş olmamalıdır. Bu yüzden, belki de bu geçiş yapıların yeraltından yer üstüne kayan, zemine oturtulduğu seviyeler arasındaydı. Tam da bu noktada Çanak Çömleksiz Neolitik B yerleşimleri dikdörtgen yapılarla özdeşleşse de, özellikle güney Levant'ın kurak bölgelerinde yeraltı dairesel yapıların inşasının sürdürülmesi üzerinde durulması gereken bir detay olarak görünmektedir.[348] Öte yandan, yapılar toprak itkisi kuvveti etkisinde olmadıkları zaman doğrusal duvarlarla serbestçe planlanıp, eklemlenip inşa edilebiliyordu. Bu süreç, Gusir Höyük'te yuvarlak yapıların zemin üstü seviyelere taşınmasıyla dikdörtgenleşmesi olarak gözlemlenmiştir.[349]

Yakın Doğu'da megalitler, Göbekli Tepe'de olduğu gibi yalnızca sembolik anlamı olan sütunlar için kullanılırken, Avrupa'nın yuvarlak planlı anıtları megalitik yapı elemanlarından oluşuyordu. Küçük moloz taşlardan duvarlar inşa etmek yerine, peyzajda bol miktarda bulunan Neolitik buzul kayalar, diğer çağrışımsal işlevlerin yanı sıra, zamandan tasarruf etmek için yapı öğesi olarak kullanılmış olabilir. Her ikisinin de ortak özelliği, zamana karşı dayanıklı bir malzeme olan taştan yapılmış olmaları ve yapımları için büyük bir emek ve zaman yatırımı gerektirmiş olmalarıdır. Ancak Göbekli Tepe yapıları, yaşam döngülerinin sonunda kasıtlı olarak gömülmüştür. Bu nedenle, zamanın yıpratıcılığına karşı dayanmaları amaçlanmış olsa da, onları Avrupa anıtlarından ayıran bir özellik olan anıt haline gelmeleri amaçlanmamıştır.

Avrupa anıtları genellikle işlenmiş veya işlenmemiş megalitlerden inşa edilmiştir. Ahşap çemberler, taş çemberler ve "henge"ler yeraltında inşa edilmediğinden, onların

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[348] Simmons and Bar-Yosef, *The Neolithic Revolution in the Near East: Transforming the Human Landscape*, 134.

[349] Necmi Karul, "Gusir Höyük: Yukarı Dicle'de İlk Yerleşik Avcılar," in *Batman Müzesi Ilısu Barajı Kurtarma Kazıları / Batman Museum Ilısu Dam Excavations*, (Batman Müze Müdürlüğü, 2018).

formları, çevresel faktörlerdense, insan failliğinin bir sonucudur. Bir alanı mümkün olan herhangi bir şekilde çevrelemeyi amaçlayan hendeklerde, aynı alana sahip geometrik şekillerden en kısa çevreye sahip olduğu için daire tercih edilmiş olabilir. Bu nedenle, iş gücünden ve zamandan tasarruf etmenin en etkili yolu, ister bir hendekle ister ağaç direklerle bir alanı sınırlandırmak olsun, bu alanı bir daire ile sınırlamaktır. Ancak, hendeklerin ve hengelerin devasa boyutları göz önüne alındığında, zaman ve enerji tüketiminde tasarruf etmek asıl durum gibi görünmemektedir.

Höyüklerin bir nesneyi örttüğü düşünülürse, nesnenin üzerine bir tür malzemenin istiflenmesi doğal olarak yuvarlak bir tümsek veya höyük oluşmasına neden olabilirdi. Ancak geçit mezrlarını saran farklı malzeme katmanları, bu höyüklerin tekdüze ve gelişigüzel bir malzeme biriktirme sürecinin sonucu olmadığını göstermektedir. Ayrıca, pürüzsüz yarım küre şekilleri ve höyüklerin kenarlarını sınırlayan bordür taşları, anıtın biçimi ve höyüğün inşa süreci üzerindeki kontrolü kanıtlamaktadır. Bunula birlikte, bazı geçit mezarların dikdörtgen ve doğrusal formdaki odaları zemin seviyesinin altına inşa edilmiştir, bu da onların toprak itkisi kuvvetine maruz kaldıkları anlamına gelmektedir. Ancak bu bir tahribat sorunu yaratmaz çünkü bu odalar ve geçitler nesnenin ağırlığı ile sürtünme kuvvetinin doğrusal ilişkisinden dolayı dirençlerini arttıran kapak taşlarının basıncı altındadır.

Yakın Doğu yapılarının mekânsal düzenlemeleri ve dizimleri, kullanım amaçlarına göre farklılık göstermektedir. Çok işlevli binaların alanı farklı tesisler için bölünmüşken, ritüel yapıları genellikle kullanıcıların anlaşılır etkileşimini sağlamak için için bütünsel, bölünmemiş bir alana sahiptir.

Dolmenler, geçit mezarlar ve odalı höyükler, sınırlı sayıda katılımcı için eşyaların ve ölülerin muhafazası ve ritüellerin yürütülmesi için kapalı alanlar oluştururken, hendekler, ahşap ve taş çemberler ile hengeler, aynı anda topluluğun daha fazla üyesi tarafından kullanılmak için geçirgen ve daha erişilebilir açık alanlar oluşturur.

Yakın Doğu yapılarının temel işlevleri barınma, toplanma, ritüel ve cenaze törenleri için bir mekan sağlama olarak özetlenebilir. Bu anlamda, geçit mezarlar ve odalı höyükler gibi benzer bir ritüel hizmeti sunarlar. Ancak mezar-türbelerin birincil işlevleri bundan ibaret değildir. Muazzam boyutları ve dayanıklılıkları nedeniyle, aynı

zamanda kendi peyzajlarında yer işaretleri ve insanların zihinlerinde anıtlar olarak yer etmiştir.

Ahşap ve taş çemberler ile hendekler de ritüeller ve anma törenleri için buluşma yerleriydi. Geçit mezarlarda ve odalı höyüklerde gerçekleştirilen ritüeller atalara ve ölenlere aitken, ahşap ve taş çemberler ve hengelerde gerçekleştirilen ritüeller, gök cisimlerini ve yıllık döngüleri içeren dairesel sembolizmle ilişkilendirilmiştir. Öte yandan, Yakın Doğu yapıları, muhtemelen daha az kalabalık gruplara hizmet eden, farklı ritüel türleri için daha küçük ölçeklerde içe dönük-kapalı alanlar yaratmak için inşa edilmişti.

Yakın Doğu'nun radyal olarak bölümlere ayrılmış çok işlevli binaları, insanların dikdörtgen formlarla daha geniş ve gelişmiş mekan dizinleri tasarlayabildikleri ve inşa edebildikleri göz önüne alındığında, onların yeraltılıklarını açıklamak açısından en az tahmin edilebilir olarak kalıyor. Araç gereçlerin günlük kullanımı veya tahılları koruma amacı bile, alanın toprak altında olmasını gerektirmez, çünkü nem geçirmez durumu sağlamak için daha iyi seçenekler vardır. Bu durumda, Dhra' tahıl ambarları, yiyecek tedariki için iyi korunan depoların bir örneğini tasvir eder. Bu nedenle, belki de bu yapıların zemin seviyesi tercihi, zeminin altına gömülen cenazelerle ilgili, yani sembolik olabilir.

Yakın Doğu'daki konut, çok işlevli ve ritüel yapıları, hanehalkı bağları, paylaşım, dayanışma, işbirliği, birlik, merhum ve ataların çağrışımlarıyla ilişkilendirilebilir. Bu yapılar arasında Göbekli Tepe örnekleri, sanatsal temsil açısından en zengin sembolizmi taşıdıkları için çağrışımsal işlevlerin detaylandırılmasına en elverişli olanlardır. Yapının sınırlı kapasitesi ve hiyerarşik sembolizmi, ruhsal bir düzenin veya doğaüstüne ilişkin bir kurumsallaşmanın göstergesi olabilir. Öte yandan, Avrupa mezar-türbeleri ve çevirmeler, ataları, ahiret kavramlarını, sarmayı, kuşatmayı, sınırlandırmayı, aidiyet duygusunu ve Neolitik döngüsel sembolizmi çağrıştırır.

Tüm bu anlatılanlara göre, tarihöncesinin bir mimarlık "tarihini" yazmak mümkün müdür? Geçmişin bölümlenmesine ve geçmişte inşa edilen mimarlığın çalışılmasına atfedilen ayrı adlandırmalar nedeniyle sorunun kendisi mantığa aykırı görünebilir. Bir yandan tarih, "karşılaştırılan, doğruluğuna karar verilen, kronolojik sıraya yerleştirilen ve önceki, çağdaş ve sonraki olayların ışığında yorumlanan yazılı kayıtlar yoluyla

geçmişin incelenmesi"dir.[350] Öte yandan, mimarlık tarihi bir tarihten daha fazlasıdır, kendi deşifre edilmesi gereken mekan-dizimsel ve teknik kodlarını taşıyan somut varlıklar olan bina ve anıtların incelenmesi yoluyla geçmişin incelenmesidir. Dolayısıyla mimarlık tarihi, yazılı kayıtlar olmasa da bu kodlar üzerinden incelenmelidir.

Tarihçi kimlikleri göz önüne alındığında, mimarlık tarihçilerinden "binaları hem daha geniş siyasi ve sosyal bağlamlarına hem de daha özel sosyal ve ekonomik bağlamlarına yerleştirmeleri" beklenir. Yapılar bize yazılı kanıtlar sağlayan okuryazar bir topluma ait olduğunda bu bir sorun değildir. Bununla birlikte, durum tarih öncesi olduğunda, arkeologların tarihsel metinler veya sözlü gelenek dışındaki konuları araştırmalarının ne kadar zor olacağının bir sıralaması olan "Hawkes'ın merdiveni" ile karşılaşılır.[351] Hawkes'ın görüşüne göre teknoloji, arkeolojik olarak araştırılabilir en basit konu gibi görünüyordu, ardından ekonomi geliyordu; o zamanın sosyo-politik örgütlenmesini yeniden inşa etmek zordu ve dini inançları keşfetmek çok büyük olasılıkla imkansızdı.[352]

Tarihöncesi için bir mimari kodlar merdiveni düzenleseydik, statik fiziğin yasaları evrensel ve zamansız olduğundan, odalı höyüklerin taşıyıcı ortostastları, Göbekli Tepe yapılarının megalitik sütunları veya bindirme çatı sistemi gibi yapısal öğelere atıfta bulunan teknik kodları belirlemek en kolayı olurdu. Ancak, dikmeleri birbirine bağlayan bir üst yapı içermediklerinden çevirmeler, taş çemberler ve hengelerin çoğu için teknik kodların tanımlanması mümkün değildir. Bununla birlikte, trilitonları bir lento sistemi olarak inşa edilen Stonehenge bir istisnadır. Bu anıtlar, bir yapı olmaktan çok mekansal organizasyonlar üretmeyi amaçlamıştır. Kuşatma evrelerinin ve farklı malzeme dizilimlerinin katı standartlarla sınırlandırılmamış bir mekan tasarım kodunu

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[350] Barbara Ann Kipfer, *Encyclopedic Dictionary of Archaeology*, 2nd ed. 2021 (Springer, 2021), 600.

[351] C.F. C. Hawkes, "Archaeological theory and method: some suggestions from the Old World," *American Anthropologist* 56 (1954): 155–68, **quoted i**n Guy Halsall, "Archaeology and Historiography," in *Companion to Historiography*, 1st ed. (Routledge, 1997), ed. Michael Bentley, 791.

[352] Ibid.

temsil ettiği söylenebilir. Bunun yerine, sürdürülmek istenen tipoloji ve form öne çıkarılmıştır.

Ayrıca, bu tez boyunca birçok örnekte gözlemlendiği gibi, mekansal düzenleme politikalarına ve tipolojilerine ilişkin bazı mekan-dizimsel kodlar oluşturulabilir. Bu örnekler, Göbekli Tepe'de ikiz sütunların her zaman çevredeki sütunların merkezine yerleştirildiği; dolmenlerin bir açık alan veya platformu tanımlayan bir dış taş daire ile nasıl çevrelendiği; geçit mezarların her zaman, bazen bölümlere ayrılmış, geçitler içerdiği; ve son olarak, bazı odalı höyüklerin, yan girintiler ve sirkülasyonu yönlendiren özenle tanımlanmış alanlar içermesi olarak sıralanabilir. Bu kodlar, genel olarak bir yapı tipini kapsayacak şekilde oluşturulabilir veya benzersiz özelliklere sahip tekil yapılar için de geliştirilebilir. Örneğin, incelenen örneklerden, "geçit mezarın pasaj ve oda uzunluğunun, kış gün doğumu ışınlarının odanın arka duvarının önündeki taş leğene çarpacak şekilde birbiriyle ilişkili olarak tasarlandığı" veya "Mekan bölümleri arasındaki eşikler, oyulmuş megalitik sanatla işaretlenmiştir" gibi söylemler geliştirilebilir. "Duvarlardaki boşlukların içeriye açılan kapılar olduğu" gibi bazı mimari elemanların kullanım amaçları çok açık olabilse de, anlamsal kodlar tarihöncesi için en az tespit edilebilir olarak kalmaktadır, çünkü her zaman birincil ve ikincil işlevlerin diğer olası yorumlarına yer vardır. Yazılı veya görsel kanıtların veya yerleşimin doğrudan gözleminin yokluğunda, çağrışımsal işlevleri bırakın, bazen açık ve mantıklı görünen düzanlamsal işlevlerin bile tarihöncesi için anlaşılmasının zor olduğu belirtilmelidir. "Bank" olarak tanımlanan bir platform, en başta oturmak için hiç kullanılmamış olabilir. Aynı şekilde, post-süreçsel arkeologlar, eserlerin çok anlamlı ve hatta kasıtlı olarak belirsiz kılındığını iddia eder.[353] Yine de, araştırmacının savunduğu iddia ile tutarlı olarak, mümkün olduğu kadar çok, bazen en ince, aynı yönde yönlendirilmiş, taze kanıtlar doğrultusunda yönlendirilmiş lifler oluşturmak için baz alınan nesnenin olası işlevleri ve anlamları arasından seçim yapılması gerekmektedir. Ayrıca, Peircian bilimsel muhakemenin ilkelerine dayanarak gerekirse kablonun lifleri yeniden yönlendirilmelidir. Guy Halsall'ın Hodder'ın argümanına atıfta bulunarak belirttiği gibi:

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[353] Guy Halsall, "Archaeology and Historiography," in *Companion to Historiography*, 1st ed. Ed. Michael Bentley, (Routledge, 1997), 797.

hermenötik bir kısır döngüye hapsolmuş değiliz, işimiz daha çok bir "hermenötik sarmalı", geçmişle verilerle ilgili deneyimlerimiz kavramlarımızı şekillendirdiği kadar onlar tarafından yapılandırıldığı bir diyaloğu temsil ediyor. "Doğru cevaplar" olmayabilir, ancak bazı cevapların diğerlerinden daha az yanlış olduğunu tespit edebiliriz.[354]

Neolitik dönemde var olmuşsa bile, yazılı kanıt olmadan, özellikle de kayıp semantik kodlarla ilgili, sembolik süslemelerden yoksun dolmenler ve hendekler için dini sistemleri tanımlamak imkânsızdır. Fakat, arkeolojinin maddi kültür ve insan kalıntılarına ulaşma ve onları inceleme pratiği sayesinde, büyük olasılıkla Neolitik toplulukların doğaüstü değerlerinin yolunu açan ritüel faaliyetleri, kozmolojik anlayışları ve ideolojileri hakkında bazı ipuçları elde etmek mümkündür. Hiç şüphesiz anıtsal Neolitik mimari, Göbekli Tepe yapılarının hiyerarşik organizasyonu ve sembolizminde veya taş çemberlerin ve geçit mezarların göksel yönelimlerinde olduğu gibi, bu inançların bazılarının izlerini taşır. Dahası, arkeolojik pratiğin ve analiz yöntemlerinin yapı ve çağrışımsal işlev arasındaki ilişkiye ışık tutma potansiyeli umut verici olduğu kadar oldukça heyecan vericidir de. Çapı ve yaz ortası gün doğumu yönlenmesi Stonehenge'inkiyle aynı olan; ve şimdi demonte edilmiş bir taş çemberin bulunması ve Stonehenge'in en erken inşaat aşamasından hemen önce inşa edilmesi (yaklaşık MÖ 3000)) merak uyandırıcıdır.[355] Keşifler bununla sınırlı olsaydı, bu durum, yüzeysel olarak, aynı kozmoloji ve ritüel anlayışa göre inşa edilmiş, aynı mimari geleneğe ait iki yapının farklı lokasyonlarda bulunması şeklinde yorumlanabilirdi. Fakat, Stonehenge'de bulunan yakılmış ölü gömütlerinin izotopik analizi, atalardan bazılarının, Stonehenge'in mavitaş ocaklarının bulunduğu güneybatı Galler'deki Ordovisiyen/Silüriyen kayalıklarında yaşadığını gösteriyor ve böylece daha ayrıntılı bir tarih sunuyor: Galler'den Stonehenge'e insanlar ve anıtlarının göçü.[356] O zaman bu bilgi, kimlik, atalar, göç, bağlılık, vb. ile ilgili daha fazla çağrışımı ve

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[354] Ibid.

[355] Mike Parker Pearson et al., "The Original Stonehenge? A Dismantled Stone Circle in the Preseli Hills of West Wales," *Antiquity* 95, no. 379 (February 2021): 85, https://doi.org/10.15184/aqy.2020.239.

[356] Ibid.

anlamsal kodları tetikler. Bu nedenle, tarih öncesi mimarinin tarih yazımı, çoktan yok olmuş gibi görünen ve nihayetinde mimari kodlarla ilişkilendirilmeyi bekleyen davranışların, eylemlerin ve geleneklerin kırıntılarını ortaya çıkaran arkeolojinin uygulamaları ve yöntemleri olmadan oldukça stilistik ve betimleyici olma eğilimindedir.

Pek çok araştırmacı tarafından çok sayıda kaynakta yayınlanan yorumların ve arkeolojik verilerin mimari odaklı bir çerçevede düzenlenmesinin yanı sıra, bu çalışmanın en önemli ve heyecan verici yanı, arkeologlar tarafından göz ardı edilmiş veya en azından statik ve yapısal analiz ilkelerine atıfta bulunularak hiçbir zaman açıkça bahsedilmeyen yapısal formu etkileyen potansiyel statik yasalarına dikkat çekmesidir.

"Yer üstünde inşa edilen dikdörtgen yapılar daha sağlamdır" şeklindeki yaygın inanışın aksine, dikdörtgen binalar, aynı malzeme ve teknikler kullanılarak inşa edilen yeraltı yuvarlak binalardan daha sağlam değildir. Aslında yuvarlak planlı yapılar deprem kuvvetlerine karşı daha dayanıklı bir davranış sergiler. Neolitik dönemin önde gelen uzmanları olan arkeologların, bu bakış açısını göz önünde bulundurarak, "yuvarlak yapılardan dikdörtgen yapılara geçiş" vurgusundan ziyade, "yeraltında inşa edilen yapılar döneminden, yer üstünde inşa edilen yapılar dönemine geçişin" yolunu açan olası koşulları da değerlendirecekleri umulmaktadır. Bu tez, Yakın Doğu'da iki yapı türünün bir arada var olduğu yerlerde yuvarlak formun faillik temelli bir tercih olarak kabul edilebileceğini, öte yandan bu formların art arda geliştiği yerlerde ekolojik veya sosyal parametrelerin, yani yapının, işlemesinin etkin olmuş olabileceğini göstermektedir.

Pandemi sırasında yazılmış olması nedeniyle, bu çalışma, öncelikle çevrimiçi yayımlanmış ve yazarın erişimine açık olan kaynakların bir yorumudur. Yukarıdaki yapıların tümü henüz yerinde ziyaret edilmemiştir. Daha sonraki çalışmalar için Göbekli Tepe ve Karahan Tepe gibi kazıların devam ettiği alanlardan alınan numunelerle malzemelerin dayanıklılığı ve teoriye dayalı olarak açıklanan toprak itkisinin forma etkisi yapısal analizin uygun nicel yöntemleriyle test edilebilir. Bunula birlikte, bu yöntemin uygulanması, doğa yasalarının bir sonucu olmaktan

ziyade çağrışımsal anlamlarla ilgili kasıtlı bir seçim gibi görünen höyükler, geçit mezarlar, hendekler, ahşap ve taş çevreler Avrupa anıtları için geçerli değildir.

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