GYNOCENTRIC SPACE

Matrifocal Architecture
in Neolithic Europe and Anatolia

by
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AUTHOR'S DECLARATION

I hereby declare that I am the sole author of this thesis. This is a true copy of the thesis, including any required final revisions, as accepted by my examiners.
I understand that my thesis may be made electronically available to the public.



FIGURE.0.1 - Carrowkeel, Ireland

ABSTRACT

This thesis explores how gynocentric values shaped architecture from the Neolithic era, focusing on four regions across Europe and Anatolia: southern Türkiye, Malta, the British Isles, and the island of Crete. These cultures shared similarities in their religious beliefs, art, and architecture, and were connected through a shared history of migration. Each culture was characterized by matrifocal social structures: societies in which women held central and respected roles within both familial and social hierarchies, often emphasizing egalitarianism. Additionally, their spiritual practices revolved around the worship of a female divinity, akin to Mother Earth. Both of these attributes deeply influenced their architectural designs, resulting in the creation of gynocentric spaces.

This thesis analyzes the architectural features of the four selected regions to uncover the defining characteristics of matrifocal architecture. In the analysis, four recurring themes have been identified, which served as the framework of this thesis. Firstly, many buildings resemble the form of the female body. These sites spatially resemble a womb, with an emphasis placed on interior spaces and voids. Several sites also mimic the rounded shapes of the belly, spine and full female body, often appearing curvilinear in shape. Secondly, Neolithic sites have an intimate relationship with the surrounding landscape. Buildings were built upon sites deemed sacred, or were oriented towards important landscape features, such as mountains, rivers, cliffs and valleys. Thirdly, Neolithic architecture reflected their cyclical view of time. Many sites align to key astronomical events, embedding solar, lunar, and stellar rhythms into the built environment. Lastly, Neolithic sites were designed to support embodied rituals. Their architectural forms reflect spiritual practices involving processions, movement, dance, and sound; experiences which fully engage the human body.

This thesis proposes alternative approaches to architectural design by highlighting the interconnection between gender, nature, spirituality, and built form. By reconsidering the ways in which architecture once carried deep symbolic and societal significance, this thesis invites a dialogue on the role of meaning in design today.

LAND AND TERRITORIAL ACKNOWLEDGEMENTS

I acknowledge that I live, work, and study on the traditional territory of the Neutral, Anishinaabeg, and Haudenosaunee peoples. My school and home are both situated on the Haldimand Tract, the land granted to the Six Nations that includes six miles on each side of the Grand River.

The University of Waterloo's School of Architecture is located on the edge of the Grand River in Cambridge while my home is located in central Waterloo. My family moved to the region of Waterloo when I was a child, so I have had the privilege to live, grow, play and study in this region for over two decades. I am deeply grateful for the land and resources I have benefited from, while recognizing that this land rightfully belongs to the Six Nations as per the Haldimand Treaty, an agreement between Canada, the crown and the Six Nations.

While in my thesis I have studied cultures who cared for the land and recognized it as a sacred entity, so too have the Indigenous peoples of Canada treated nature with great care and respect for millennia. As I studied matrifocal cultures, I recognized many themes which are equally present in Indigenous architecture. Both perceive the land as a Mother who gives life to all things, and thus believe humanity's relationship to nature should be reciprocal rather than exploitative. As architects and settlers to this land, we have much to learn from Indigenous perspectives, in particular with our relationship to nature as we face the ongoing climate crisis.

I have been fortunate to learn from Elder William Woodworth who continues to share his knowledge of Haudenosaunee history, architecture and spirituality with the students of the School of Architecture through his courses and weekly workshops. I thank him for his time and generosity of spirit. I am committed to learning more about the rich histories and diverse cultures of the Indigenous communities across Canada. I also recognize that colonial systems and structures continue to impact Indigenous communities, and I commit to ongoing reflection and action in support of Indigenous Peoples.

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TABLE OF CONTENTS

FRONT MATTER i
- Author's Declaration ii
- Abstract v
- Land and Territorial Acknowledgements vi
- Personal Acknowledgements vii
- List of Figures x

INTRODUCTION 1
- Introduction 2
- Methodology 9

1 - NEOLITHIC MATRIFOCAL CULTURES 15
- Introduction to the Four Regions 21

2 - THE FEMALE BODY 39
- The Womb 49
- The Belly 61
- The Spine 65
- The Full Body 69

3 - THE EARTH 77
- Mountains 85
- Rivers 97
- Stone 103

4- CYCLES 109
- Solar Cycles 117
- Lunar Cycles 135
- Stellar Cycles 145

5- EMBODIED RITUAL 153
- Decay 161
- Rebirth 167
- Life 175

CONCLUSION 191

BIBLIOGRAPHY 197

APPENDIX A: THE DEFENSE 213

LIST OF FIGURES

iv Figure.0.1 - Carrowkeel, Ireland
Photo by Author, September 2nd, 2024

INTRODUCTION

3 Figure.0.2 - The Primitive Hut by Charles-Dominique-Joseph Eisen (1775)
Charles-Dominique-Joseph Eisen, *Essai sur l'architecture Frontispiece*, 1775, engraving, Wikimedia Commons, https://en.wikipedia.org/wiki/Marc-Antoine_Laugier#/media/File:Essai_sur_l'Architecture_-_Frontispiece.jpg. (Public Domain)

5 Figure.0.3 - Map of Selected Regions of Study
By Author

5 Figure.0.4 - Westward Neolithic Migration from Anatolia
By Author

8 Figure.0.5 - Newgrange, Ireland.
Photo by Author, August 31st, 2024

11 Figure.0.6 - Crenaia, the nymph of the Dargle by Ferederic Leighton (1880)
Ferederic Leighton, *Crenaia, the nymph of the Dargle*, 1880, oil on canvas, Wikimedia Commons, https://commons.wikimedia.org/wiki/File:Ferederic_Leighton_-_Crenaia,_the_nymph_of_the_Dargle;_1880.jpg. (Public Domain)

NEOLITHIC MATRIFOCAL CULTURES

18 Figure.1.1 - Goddess figurine, Romania (4050–3900 BC)
Ann Longmore-Etheridge, *Goddess figurine, Romania, 4050–3900 BC*, 2009, photograph, Wikimedia Commons, https://commons.wikimedia.org/wiki/File:Goddess_figurine_with_Tattoos.jpg. (Public Domain)

18 Figure.1.2 - Goddess figurine, Malta (3500–3000 BC)
Photo by Author, September 25th, 2024

19 Figure.1.3 - Venus of Hohle Fels, Germany (35,000 BP)
Ramessos, *Venus of Hohle Fels*, 2011, photograph, Wikimedia Commons, https://commons.wikimedia.org/wiki/File:VenusHohlefels2.jpg (CC BY-SA 3.0)

19 Figure.1.4 - Venus of Willendorf, Austria (25,000 BP)
Bjørn Christian Tørrissen, *Venus of Willendorf,* 2020, photograph, Wikimedia Commons, https://en.wikipedia.org/wiki/Venus_of_Willendorf#/media/File:Venus_of_Willendorf_-_All_sides.jpg (CC BY-SA 4.0)

21 Figure.1.5 - Map of Türkiye
By Author

21 Figure.1.6 - Plan of Göbekli Tepe
By Author

24 Figure.1.7 - Plan of Çatalhöyük
By Author

24 Figure.1.8 - Çatalhöyük, Turkey
Murat Özsoy, *Çatalhöyük, 7400 BC, Konya, Turkey*, 2019, photograph, Wikimedia Commons, https://commons.wikimedia.org/wiki/File:%C3%87atalh%C3%B6y%C3%BCk,_7400_BC,_Konya,_Turkey_-_UNESCO_World_Heritage_Site,_08.jpg (CC BY-SA 4.0)

24 Figure.1.9 - Seated Woman of Çatalhöyük (6000 BCE)
Nevit Dilmen, *Seated Woman of Çatalhöyük on black background,* 2012, photograph, Wikimedia Commons, https://commons.wikimedia.org/wiki/File:Seated_Woman_of_Çatalhöyük_on_black_background.jpg. (CC BY-SA 3.0)

25 Figure.1.10 - Map of Malta
By Author

25 Figure.1.11 - Maltese Temple Plans
By Author

27 Figure.1.12 - Temple Elevation Carving, Mnajdra, Malta
Photo by Author, September 24th, 2024

27 Figure.1.13 - Temple Model, Ta' Ħaġrat Temple, Malta
Photo by Author, September 25th, 2024

27 Figure.1.14 - Tarxien Temple, Malta
Photo by Author, September 27th, 2024

28 Figure.1.15 - Skorba Temple Entrance, Malta
Photo by Author, September 28th, 2024

29 Figure.1.16 - Map of Ireland
By Author

29 Figure.1.17 - Loughcrew Cairn T, Ireland
Photo by Author, September 1st, 2024

31 Figure.1.18 - Map of England and Scotland
By Author

34 Figure.1.19 - Maeshowe, Scotland
Stuart Wilding, Maeshowe, 2011, photograph, Wikimedia Commons, https://commons.wikimedia.org/wiki/File:Maeshowe_-_geograph.org.uk_-_3912139.jpg (CC BY-SA 2.0)

34 Figure.1.20 - Wayland Smithy Long Barrow, England
Photo by Author, September 10th, 2024

35 Figure.1.21 - Map of Crete
By Author

35 Figure.1.22 - Palace of Knossos, Crete
Photo by Author, September 19th, 2024

36 Figure.1.23 - Minoan Goddess Figurine
Photo by Author, September 18th, 2024

38 Figure.1.24 - Four Themes Diagram
By Author

THE FEMALE BODY

42 Figure.2.1 - The Female Body Card
By Author

43 Figure.2.2 - Vitruvian Man by Leonardo da Vinci (1492)
Leonardo da Vinci, *Vitruvian Man*, 1492, drawing pen, ink and wash on paper, Wikimedia Commons, https://commons.wikimedia.org/wiki/File:0_The_Vitruvian_Man_-_by_Leonardo_da_Vinci.jpg (Public Domain)

45 Figure.2.3 - The Female Body
By Author

49 Figure.2.4 - The Womb Card
By Author

52 Figure.2.5 - Womb = Temple = Cosmos
By Author

53 Figure.2.6 - Paleolithic cave art in Cussac Cave, France
Don Hitchcock, *Cussac Cave*, 2018, photograph, Wikimedia Commons, https://commons.wikimedia.org/wiki/File:Cussac_Cave_-_1.jpg.
(CC BY-SA 4.0)

54 Figure.2.7 - Għar Dalam Cave Interior, Malta
Photo by Author, September 29th, 2024

54 Figure.2.8 - Oweynagat Cave Interior, Ireland
Barzac Tatak, *Interior image of Oweynagat Cave*, 1998, photograph, Wikimedia Commons, https://commons.wikimedia.org/wiki/File:Interior_image_of_Oweynagat_Cave,.jpg.
(CC BY 4.0)

55 Figure.2.9 - Ħal Saflieni Hypogeum, Malta
Username 'xiquinhosilva', *Hal Saflieni Hypogeum – Middle Level – The Central Chamber*, 2011, photograph, Wikimedia Commons, https://commons.wikimedia.org/wiki/File:Hal_Saflieni_Hypogeum_%E2%80%93_Middle_Level_%E2%80%93_The_Central_Chamber.jpg.
(CC BY 2.0)

55 Figure.2.10 - Ħal Saflieni Hypogeum, Malta
Username 'xiquinhosilva', *Hal Saflieni Hypogeum – Middle Level – The Decorated Chamber*, 2011, photograph, Wikimedia Commons, https://commons.wikimedia.org/wiki/File:Hal_Saflieni_Hypogeum_%E2%80%93_Middle_Level_%E2%80%93_The_Decorated_Chamber.jpg.
(CC BY 2.0)

56 Figure.2.11 - Loughcrew Cairn T, Ireland
Photo by Author, September 1st, 2024

56 Figure.2.12 - Newgrange, Ireland
Photo by Author, August 30th, 2024

57 Figure.2.13 - Newgrange Passageway, Ireland
Einsamer Schütze, *Newgrange Burial Chamber,* 2003, photograph, Wikipedia Commons, https://commons.wikimedia.org/wiki/File:Newgrange_Burial_Chamber.jpg
(CC BY-SA 2.0)

57 Figure.2.14 - West Kennet Long Barrow Passageway, England
Photo by Author, September 11th, 2024

57 Figure.2.15 - Fourknocks Chamber, Ireland
Photo by Author, August 30th, 2024

58 Figure.2.16 - Newgrange Plan
By Author

60 Figure.2.17 - Womb Tomb
By Author

61 Figure.2.18 - The Belly Card
By Author

64 Figure.2.19 - Silbury Hill, England
Photo by Author, September 11th, 2024

65 Figure.2.20 - The Spine Card
By Author

67 Figure.2.21 - Uley Long Barrow (from above looking down at the entrance)
Photo by Author, September 12th, 2024

67 Figure.2.22 - Uley Long Barrow Sketch
By Author

68 Figure.2.23 - West Kennet Long Barrow, England
Photo by Author, September 11th, 2024

69 Figure.2.24 - The Full Body Card
By Author

71 Figure.2.25 - Sheela-na-gig, Kilpeck Church
Username 'Kauczuk', *A 12th-century sheela na gig on the church at Kilpeck*, 2003, photograph, Wikimedia Commons, https://commons.wikimedia.org/wiki/File:SheelaWiki.jpg
(CC BY-SA 3.0)

71 Figure.2.26 - Sheela-na-gig
Username 'Jononmac46', *Sheela na gig in British Museum*, 2022, photograph, Wikimedia Commons, https://commons.wikimedia.org/wiki/File:Sheela_na_gig_in_British_Museum.jpg
(CC BY-SA 4.0)

71 Figure.2.27 - The Double Goddess figurine, Malta
Photo by Author, September 26th, 2024

72 Figure.2.28 - Ggantija Plan
By Author

73 Figure.2.29 - Goddess Figurine, Malta
Photo by Author, September 25th, 2024

73 Figure.2.30 - Goddess Figurine, Malta
Photo by Author, September 25th, 2024

74 Figure.2.31 - West Kennet Long Barrow Plan
By Author

THE EARTH

80 Figure.3.1 - The Earth Card
By Author

85 Figure.3.2 - Mountains Card
By Author

87 Figure.3.3 - Çatalhöyük Map Mural
Rémi Hadad, T*he Çatalhöyük "map," wall painting from the north wall of "shrine VII" (redrawn from Mellaart 1964b: pl. VI),* 2024, illustration, Cambridge University Press, https://www.cambridge.org/core/journals/comparative-studies-in-society-and-history/article/reterritorializing-the-neolithic-architecture-and-rhythms-in-early-sedentary-societies-of-the-near-east/B6BAB6E4063BC82EDB8D03A3DE9B940E
(© Rémi Hadad, 2024, CC BY-NC-ND 4.0)

87 Figure.3.4 - Hasan Dağı
Silke Baron, Hasan Dağı, 2016, photograph, Wikimedia Commons, https://commons.wikimedia.org/wiki/File:Hasan_Da%C4%9F%C4%B1.jpg
(CC BY 2.0)

88 Figure.3.5 - Mount Juktas, view from Knossos palace
Photo by Author, September 19th, 2024

88 Figure.3.6 - Mount Dikti, view from Malia palace
Photo by Author, September 21st, 2024

88 Figure.3.7 - Mount Ida, view from Phaistos palace
Photo by Author, September 20th, 2024

89 Figure.3.8 - Double Peaked Mountain at the Tomb of Marguerite, Crete
Photo by Author, September 22nd, 2024

89 Figure.3.9 - Queen Maeve's cairn, Ireland
Photo by Author, September 1st, 2024

90 Figure.3.10 - Mound of the Hostages, Ireland
Photo by Author, August 31st, 2024

90 Figure.3.11 - View from the Hill of Tara Ireland
Photo by Author, August 31st, 2024

91 Figure.3.12 - The Cailleach by John Duncan (1917)
John Duncan, *Wonder tales from Scottish myth and legend*, 1917, illustration, Wikimedia Commons, https://commons.wikimedia.org/wiki/File:Wonder_tales_from_Scottish_myth_and_legend_(1917)_(14566397697).jpg (Public Domain)

91 Figure.3.13 - The Hag's Chair, Cairn T Loughcrew
Photo by Author, September 1st, 2024

92 Figure.3.14 - Map of Loughcrew
By Author

92 Figure.3.15 - Loughcrew Hills, Ireland
Photo by Author, September 1st, 2024

93 Figure.3.16 - Cairn S at Loughcrew Hills, Ireland
Photo by Author, September 1st, 2024

93 Figure.3.17 - Knowth, Ireland
Photo by Author, August 30th, 2024

94 Figure.3.18 - Alignments betweens mounds, Ireland
By Author

94 Figure.3.19 - Carrowkeel, Ireland
Photo by Author, September 2nd, 2024

95 Figure.3.20 - Solar phenomenon at Croagh Patrick
By Author

97 Figure.3.21 - Rivers Card
By Author

99 Figure.3.22 - Boyne River, Ireland
Photo by Author, August 30th, 2024

99 Figure.3.23 - Stone Carving, Knowth
Photo by Author, August 30th, 2024

100 Figure.3.24 - Brú na Bóinne Map
By Author

100 Figure.3.25 - Avebury Map
By Author

101 Figure.3.26 - The Kennet River Bed
Photo by Author, September 11th, 2024

101 Figure.3.27 - The Kennet River
Photo by Author, September 11th, 2024

102 Figure.3.28 - The Silbury Hill in its flooded state, England
Username 'Swindonian', *Prehistoric Silbury Hill, Wiltshire*, 2014, photograph, Wikimedia Commons, https://commons.wikimedia.org/wiki/File:Prehistoric_Silbury_Hill,_Wiltshire.JPG (CC BY-SA 4.0)

103 Figure.3.29 - Stone Card
By Author

105 Figure.3.30 - Island of Filfla from Mnajdra temple
Photo by Author, September 24th, 2024

105 Figure.3.31 - Ggantija temple facing a valley and cliff
Photo by Author, September 26th, 2024

105 Figure.3.32 - Landscape view from Skorba temple
Photo by Author, September 28th, 2024

106 Figure.3.33 - Maltese Landscape Sketch
By Author

106 Figure.3.34 - Avebury Circle Stones
Photo by Author, September 11th, 2024

107 Figure.3.35 - Dancing Women turned to stone
By Author

CYCLES

112 Figure.4.1 - Cycles Card
By Author

115 Figure.4.2 - Irish Spiral, Newgrange entrance stone
Photo by Author, August 30th, 2024

115 Figure.4.3 - Maltese Spiral, Tarxien Temple
Photo by Author, September 25th, 2024

115 Figure.4.4 - Minoan Spiral, Minoan Pottery
Photo by Author, September 18th, 2024

117 Figure.4.5 - Solar Cycles Card
By Author

120 Figure.4.6 - Knowth Calendar Stone
Photo by Author, August 30th, 2024

121 Figure.4.7 - Solar Year
By Author

122 Figure.4.8 - Sunrise and sunset positions on the solstices and equinoxes
By Author

123 Figure.4.9 - The Heel Stone, Stonehenge
Photo by Author, September 16th, 2024

124 Figure.4.10 - Stonehenge Plan
By Author

124 Figure.4.11 - Stonehenge, England
Photo by Author, September 16th, 2024

126 Figure.4.12 - Silbury Hill Section
By Author

128 Figure.4.13 - Mnajdra Plan
By Author

128 Figure.4.14 - West Kennet Long Barrow Plan
By Author

130 Figure.4.15 - Newgrange Section
By Author

132 Figure.4.16 - Throne Room Sketch
By Author

132 Figure.4.17 - Throne Room Plan, Knossos
By Author

135 Figure.4.18 - Lunar Cycles Card
By Author

137 Figure.4.19 - Venus of Laussel, France (20,000 BP)
Username '120', *Venus of Laussel*, 2008, photograph, Wikimedia Commons, https://commons.wikimedia.org/wiki/File:Venus-de-Laussel-vue-generale-noir.jpg
(CC BY 3.0)

140 Figure.4.20 -Major and Minor Lunar Standstill Moonrise and Moonset
By Author

140 Figure.4.21 - Menstruation Cycle
By Author

141 Figure.4.22 - Station Stone, Stonehenge
Photo by Author, September 16th, 2024

141 Figure.4.23 - Calanais Standing Stones
Username 'A_Peach', *Callanish*, 2019, photograph, Wikimedia Commons, https://commons.wikimedia.org/wiki/File:Callanish_(49231337653).jpg
(CC BY 2.0)

142 Figure.4.24 - Stonehenge Plan
By Author

142 Figure.4.25 - Calanais Standing Stones Plan
By Author

144 Figure.4.26 - Knowth Moon Stone
Photo by Author, August 30th, 2024

144 Figure.4.27 - Knowth Calendar Stone
Photo by Author, August 30th, 2024

145 Figure.4.28 - Stellar Cycles Card
By Author

148 Figure.4.29 -Mnajdra Pleiades Stone
Photo by Author, September 24th, 2024

150 Figure.4.30 -Mnajdra Plan, Pleiades Alignment
By Author

150 Figure.4.31 -Avebury Plan, Deneb Alignment
By Author

EMBODIED RITUALS

156 Figure.5.1 - Embodied Rituals Card
By Author

161 Figure.5.2 -Decay Card
By Author

163 Figure.5.3 - Excarnation Mural at Çatalhöyük
Nancy Jarzombek, *Çatal Höyük, Turkey, sky burial as depicted on mural of house 3, level 6*, 2013, illustration, John Wiley & Sons, Inc., (in *Architecture of First Societies: A Global Perspective* by Mark Jarzombek) https://www.wiley.com/en-in/Architecture+of+First+Societies%3A+A+Global+Perspective-p-9781118142103
(Copyright © 2013, John Wiley and Sons) *See the permission license details at the end of the bibliography*

164 Figure.5.4 - Keshcorran Caves, Ireland
Photo by Author, September 2nd, 2024

165 Figure.5.5 - The Avenue approaching Stonehenge
Photo by Author, September 16th, 2024

167 Figure.5.6 - Rebirth Card
By Author

169 Figure.5.7 - Çatalhöyük Burials
By Author

170 Figure.5.8 - The Goddess Boann
By Author

171 Figure.5.9 - The Womb as a Portal
By Author

175 Figure.5.10 - Life Card
By Author

178 Figure.5.11 - Silbury Hill, England
By Author, September 11th, 2024

179 Figure.5.12 - Minoan Dancers, Kamilari Tholos Tomb (1600 - 1500 BCE)
Photo by Author, September 18th, 2024

179 Figure.5.13 - The Sleeping Lady of Ħal Saflieni
Photo by Author, September 24th, 2024

180 Figure.5.14 - West Kennet Long Barrow Entrance
Photo by Author, September 11th, 2024

180 Figure.5.15 - West Kennet Long Barrow Apse
Photo by Author, September 11th, 2024

180 Figure.5.16 - Helmholtz Resonance Diagram
By Author

181 Figure.5.17 - Belas Knap Long Barrow Eastern Chamber, England
Photo by Author, September 12th, 2024

181 Figure.5.18 - Belas Knap Long Barrow Eastern Chamber Entrance, England
Photo by Author, September 12th, 2024

182 Figure.5.19 - Procession Fresco from Knossos
Username 'ArchaiOptix', *Wall painting of cult procession from Knossos*, 2019, photograph, Wikimedia Commons, https://commons.wikimedia.org/wiki/File:Wall_painting_of_cult_procession_from_Knossos_(Corridor_of_Procession)_-_Heraklion_AM_-_01.jpg
(CC BY-SA 4.0)

182 Figure.5.20 - Knossos Northern Entrance, Crete
Photo by Author, September 19th, 2024

184 Figure.5.21 - Knossos Map and Photographs
Illustration and Photos by Author, September 19th, 2024

185 Figure.5.22 - Silbury Hill as seen from the West Kennet Long Barrow
Photo by Author, September 11th, 2024

186 Figure.5.23 - The West Kennet Avenue
Photo by Author, September 11th, 2024

186 Figure.5.24 - Avebury Circle
Photo by Author, September 11th, 2024

187 Figure.5.25 - Map of Processions at Avebury
By Author

188 Figure.5.26 - Map of Processions at Stonehenge
By Author

CONCLUSION

193 Figure.6.1 - Tea lights left behind at Fourknocks, Ireland
Photo by Author, August 30th, 2024

193 Figure.6.2 - Fruit, nuts and honey left at the Sanctuary in Avebury, England
Photo by Author, September 11th, 2024

APPENDIX A

213 Figure.7.1 - The defense presentation, photograph by Vanessa Drmac
Photo by Vanessa Drmac, March 28th, 2025

213 Figure.7.2 - The illustration cards
Photo by Author, March 28th, 2025

215 Figure.7.3 - The defense room (view 1)
Photo by Author, March 28th, 2025

215 Figure.7.4 - The defense room (view 2), photograph by Riaz Ghafari
Photo by Riaz Ghafari, March 28th, 2025

216 Figure.7.5 - The table display (view 1)
Photo by Author, March 28th, 2025

216 Figure.7.6 - The table display (view 2)
Photo by Author, March 28th, 2025

217 Figure.7.7 - The defense room (view 3)
Photo by Author, March 28th, 2025

217 Figure.7.8 - Illustrations (6 x 10 inches)
Photo by Author, March 28th, 2025

218 Figure.7.9 - Travel Book (exterior)
Photo by Author, March 28th, 2025

218 Figure.7.10 - Travel Book (interior)
Photo by Author, March 28th, 2025

218 Figure.7.11 - Sketchbook (exterior)
Photo by Author, March 28th, 2025

218 Figure.7.12 - Sketchbook (interior)
Photo by Author, March 28th, 2025

218 Figure.7.13 - Travel Notebook (exterior)
Photo by Author, March 28th, 2025

218 Figure.7.14 - Travel Notebook (interior)
Photo by Author, March 28th, 2025

219 Figure.7.15 - Travel Images (Ireland)
Photo by Author, March 28th, 2025

219 Figure.7.16 - Travel Images (England)
Photo by Author, March 28th, 2025

220 Figure.7.17 - Travel Images (Crete)
Photo by Author, March 28th, 2025

220 Figure.7.18 - Travel Images (Malta)
Photo by Author, March 28th, 2025

INTRODUCTION

INTRODUCTION

My interest in the Neolithic, the last era of the Stone Age, began when I discovered that parts of Europe were once matrifocal during this time period. The term 'matrifocal', coined by the archaeologist Marija Gimbutas, refers to a societal structure in which women held a central and respected position within the social and familial hierarchy.[1] Matrifocal cultures emphasized egalitarianism; regardless of whether men and women had distinct or similar roles within society, no gender was regarded as inferior.[2] Women played pivotal roles not only within the family but also in the broader community, influencing social, economic, and spiritual life.[3] The term matrifocal does not imply that women had complete control over all aspects of society, but rather describes cultures which had high levels of gender equality. Although, in recent history, Europe has been home to patriarchal and colonialist civilizations, its architectural history originates in gynocentric societies.

While it is tempting to impose our contemporary views of gender onto Neolithic cultures, their understandings of gender likely differed greatly from present day. Although conceptions of gender might be difficult to determine in preliterate societies, the treatment of male and female bodies can be analyzed in burials in terms of grave goods, placement of the body, and type of burial.[4] Most European Neolithic cultures exhibited high levels of gender equality, as evidenced by a similar treatment of male and female bodies in burials.[5] It is not until the end of the Bronze Age that archaeological evidence for a patriarchal gender hierarchy begins to emerge.[6]

In addition to the study of burials, we can examine depictions of the human body in art and architecture, which, during the Neolithic era, were overwhelmingly female.[7] However, this is not indicative of female rulership, but rather of the worship of a female divinity. During this time period, we see distinct religions who believed in a Goddess, akin to Mother Earth, across Europe and the Middle East.[8] These religions were animistic and believed the world around them was imbued with sacredness.[9] The land, sea, and sky were all perceived as manifestations of the divine, and humanity existed within this sacred ecosystem. These potent spiritual beliefs inspired the creation of temples made from stone and earth, marking the birth of architecture.

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1 Marija Gimbutas, *The Gods and Goddesses of Old Europe* (London: Thames & Hudson, 1974).

2 Gerda Lerner, *The Creation of Patriarchy* (New York: Oxford University Press, 1986).

3 Marija Gimbutas, *The Living Goddesses*, ed. Miriam Robbins Dexter (Berkeley: University of California Press, 1999).

4 John Robb and Oliver J. T Harris, "Before, During, and After Gender: Archaeology and the Ontology of Gender in History," Current Anthropology, accepted 2024.

5 Ibid.

6 Ibid.

7 Arianna Carta, "Who's Afraid of the Goddess? Leopard's Tale, Menopausal Syndrome: Terms of Debate within Archaeology." *Studia Mythologica Slavica* 25 (2022): 245–272.

8 Gimbutas, *The Gods and Goddesses of Old Europe*.

9 Hervey C. Peoples et al., "Hunter-Gatherers and the Origins of Religion," *Human Nature* 27, no. 3 (May 6, 2016): 261–82.



FIGURE.0.2 - The Primitive Hut by Charles-Dominique-Joseph Eisen (1775)

Frontispiece for 'Essai sur l'architecture' by Marc-Antoine Laugier

THE PRIMITIVE HUT

Many architects have speculated on architecture's origins, often overlooking archaeological evidence in favor of romanticized narratives. Scholars, ranging from Vitruvius to Le Corbusier, have written about the 'primitive hut': a speculation of what humanity's first building may have resembled.[10] The 18th century architectural theorist Marc-Antoine Laugier, began his treatise *An Essay on Architecture* with a fictional story of humanity's first building.[11] He describes a story about a man who built a hut, driven by pure instincts, using branches to create a rectilinear building with four columns and a pitched roof. Laugier commands "[l]et us never lose sight of our little rustic hut",[12] and uses this imaginary building to argue that the column, the entablature and pediment are the foundational elements of architecture. Likewise, Le Corbusier describes a site-less 'primitive temple' for which he provides a plan, section and axonometric drawing in his manifesto *Vers Une Architecture.*[13] Le Corbusier also paints a fictional story of humanity's first building and praises the use of simple forms. These examples of fictional primitive buildings are bereft of any symbolism and notably, the architect is always described as a man. These placeless and speculative buildings have inspired architects in their own designs and were used as an argument to 'return' to simple architectural forms.[14]

Contrary to the narratives in these architectural histories, architecture is never placeless, nor void of cultural and social significance. As architects we can study the origins of architecture through the study of ancient buildings, such as those from the Neolithic period. In doing so, we will discover that the origins of architecture and temples were not merely humble rectangular forms, but were rather imbued with symbolism and grounded in rituals which gave meaning to the buildings and landscapes. The female body was a sacred symbol, revered for its life-giving capacity, which inspired spatial forms; this positioned both the female body and women at the center of architecture. The study of Neolithic buildings not only provides an understanding of the precursors to contemporary buildings but also serves as inspiration of how we can build for the future.

10 Adrian Forty, "Primitive: The Word and Concept," in *Primitive: Original Matters in Architecture*, 3–14 (London: Routledge, 2006).

11 Marc-Antoine Laugier, *An Essay on Architecture*, trans. Wolfgang Herrmann and Anni Herrmann (Los Angeles: Hennessey & Ingalls, Inc., 1977; originally published 1753).

12 Laugier, *An Essay on Architecture*, 12.

13 Le Corbusier, *Vers une Architecture*, (Paris: Éditions Crès, 1923).

14 Forty, "Primitive: The Word and Concept."

THE SITES

This thesis focuses on architecture from the Neolithic era in Europe and Anatolia, and I have selected four regions of study to show a diversity of building practices, while limiting the scope of the thesis to ensure feasibility. The chosen cultures include the British Isles (4700 to 2000 BCE), Malta (5500 to 2500 BCE), the Minoan civilization from the island of Crete (6300 to 1100 BCE), and Anatolia in southern Türkiye (9600 to 5700 BCE). At first glance, these regions may appear disconnected from one another, covering a vast time frame and geographical area. However, they are connected through a similarity of cultural and religious beliefs, and architectural styles. I specifically chose Neolithic sites that had a wide body of archaeological records, particularly with literature and artifacts connecting them to Goddess worship and matrifocal customs.[15] *The Living Goddesses* by Marija Gimbutas was a foundational text in selecting sites, as she refers to all four of the regions chosen for this thesis.[16]

These four regions of study are also connected through a shared history of migration; DNA testing of burials confirmed that the Neolithic peoples of the British Isles, Malta and Crete, arrived as a result of a westward migration from Anatolia.[17] Neolithic farming people left Anatolia with cattle and other farming animals and migrated west into Europe, bringing with them their religion, culture and farming methods. These Anatolian populations migrated through two principal routes—through Central Europe and along the Mediterranean coast—a process which occurred slowly over a period of thousands of years.[18] Over the course of this migration, these cultures developed their own unique characteristics by mating with local hunter-gatherer populations and adjusting to different landscapes and climates, however they remain connected through a shared genetic ancestry in Anatolia.

It should be noted that although the Neolithic period was a principal criterion for choosing the selected cultures of study, the Minoan sites are more recent in their dating and belong to the Bronze Age.

15 Even if this fact is not unanimously agreed upon amongst scholars.

16 Gimbutas, *The Living Goddesses*.

17 For more in depth discussion see:
Ayça Omrak, et al. "Genomic Evidence Establishes Anatolia as the Source of the European Neolithic Gene Pool." *Current Biology* 26, no. 2 (2016): 270–75;
Bruno Ariano, et al. "Ancient Maltese Genomes and the Genetic Geography of Neolithic Europe." *Current Biology* 32, no. 12 (2022): 2668–80.e6;
Lara Cassidy et al. "Neolithic and Bronze Age Migration to Ireland and Establishment of the Insular Atlantic Genome." *Proceedings of the National Academy of Sciences of the United States of America* 113, no. 2 (2016): 368–73;
Jeffrey Hughey, et al. "A European Population in Minoan Bronze Age Crete." *Nature Communications* 4 (2013): 1861.

18 Bruno Ariano, et al. "Ancient Maltese Genomes and the Genetic Geography of Neolithic Europe."

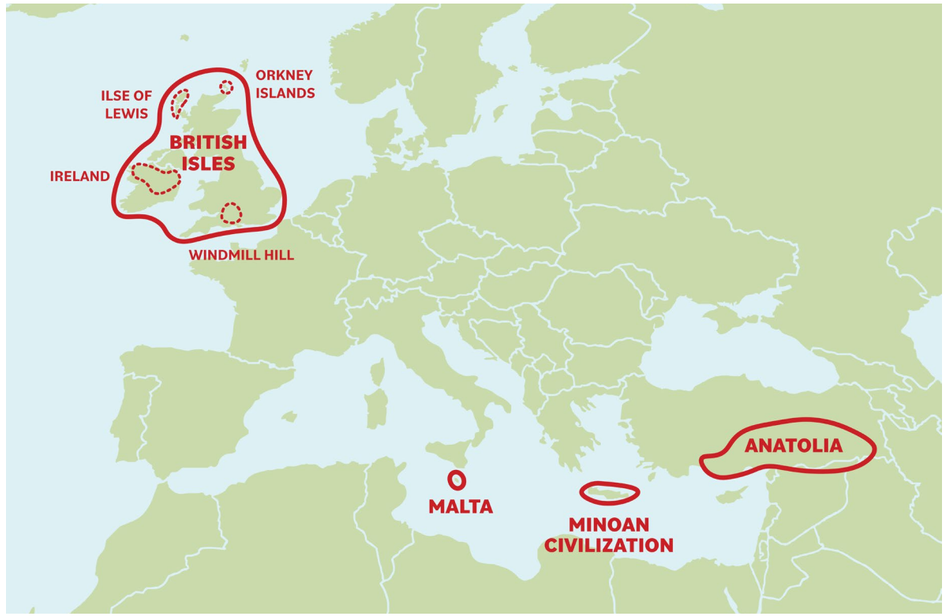


FIGURE.0.3 - Map of Selected Regions of Study

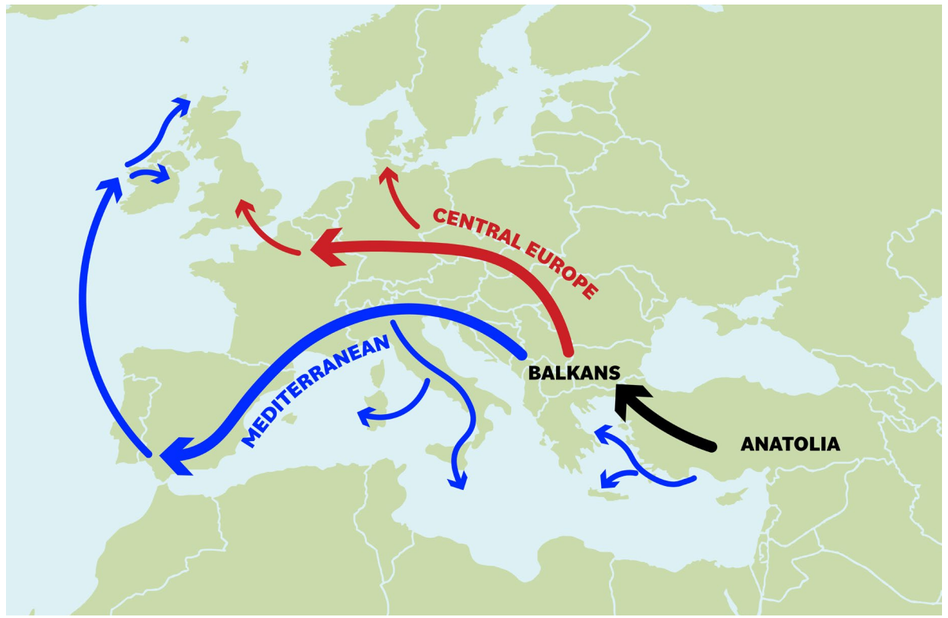


FIGURE.0.4 - Westward Neolithic Migration from Anatolia

The Minoans arrived to the island of Crete around 6300 BCE[19], during the Neolithic era, and survived until 1100 BCE which constitutes the Bronze Age. These sites were intentionally chosen to show diversity of matrifocal architecture which still reflects a continuity of Neolithic spiritual beliefs and building principles; Gimbutas described the Minoan as the last remaining Mother-Goddess worshiping culture of Europe.[20] The ruins of many Minoan Neolithic sites no longer exist due to the Minoans' practice of rebuilding on the same location over several millennia.[21] Thus, the Minoan palaces, which are discussed in this thesis date to the Bronze Age but stand over many layers of Neolithic habitation. Similarly, many sites in England were built on the cusp between the Neolithic and Bronze Ages. In this thesis, the term Neolithic is often used to describe the selected cultures of study in general terms, though it is clear that I am referring to cultures which span multiple archaeological periods.

THEMES OF NEOLITHIC ARCHITECTURE

In my analysis of matrifocal architecture, I have identified four recurring themes which will serve as the focus of this thesis. Firstly, many Neolithic buildings mimicked the form of the female body, often spatially resembling a womb with a particular emphasis placed on interior spaces. Many other sites were curvilinear in form, reflecting the shape of a belly, spine and full female body. Secondly, these Neolithic sites had an intimate relationship to their surrounding landscape, often orienting themselves towards important landscape features, or building upon sites deemed sacred. The most recurring important landscape features are mountains, rivers, cliffs and valleys. Thirdly, Neolithic architecture was reflective of their cyclical view of time and was oriented towards significant astronomical events. Buildings marked solar, lunar and stellar alignments. Lastly, Neolithic sites were designed to support embodied rituals and their architectural forms reflected their spiritual practices which involved processions, movement, dance and sound.

These themes are not unique to the Neolithic era and can be seen in other animistic societies from around the world, across different points in history. For example, many Indigenous buildings take inspiration from the form of the female body, in a manner similar to matrifocal architecture. Notably, Douglas Cardinal, a renowned First Nations architect from Canada, incorporates curvilinear forms inspired by the female body in his work, most prominently in his design for St. Mary's Church in Red Deer, Alberta.[22] His design used large curvilinear volumes, rejecting right angles,

19 This date is based off of the carbon dating of the first level of habitation of Knossos which dates to 6341 ±180 BCE
Gerald Cadogan, *Palaces of Minoan Crete* (New York: Routledge, 1976).

20 Gimbutas, *The Living Goddesses,* 149.

21 Cadogan, *Palaces of Minoan Crete.*

22 Nelly Wat, "Indigenous Architecture with Douglas Cardinal," *The McGill Daily*, September 23, 2019.

and used materials such as warm brown brick to invoke a maternal quality.[23] While curvilinear buildings are not uncommon in the contemporary era, Cardinal's design was imbued with intentional symbolism, which parallels matrifocal architecture, rather than an empty formalism. Throughout the thesis, other global case studies are intentionally included to complement the study of matrifocal architecture. These architectural case studies, particularly of Indigenous origin, share similar symbolic meanings and serve as contemporary examples to contextualize architecture from the Neolithic era.

Although cultural history is an integral part of an architect's education, the Neolithic era is often reserved for the domain of archaeological study. There is an unspoken agreement amongst architects that there is a cut off point in history where certain time periods and cultures are considered irrelevant to our training. In this thesis, I hope to question this notion, and demonstrate how Neolithic architecture has indeed much to teach contemporary architects. As Gabriel Cooney and Conor McHale have argued:

> "Despite our recognition of the capability of people to build monuments such as Newgrange in the Boyne Valley before 3000 BC, with a deliberate orientation of the entrance towards sunrise at the mid-winter solstice, we are still inclined to view them in a simplistic light and judge them through the lens of our own cultural context. We set prehistoric people apart, as being distant and different, less complex culturally than ourselves."[24]

Cultural history education shapes how architects think and design, and thus is critical for shaping the outcome of future buildings. Matrifocal architecture proposes a different way to build, where the sacredness of the female body and embodied rituals inspired form, and architecture was oriented toward sacred landscape or celestial cycles. The integration of spirituality in architecture stands in stark contrast to contemporary architecture, where meaning is often secondary to aesthetics trends or construction budgets. By reconsidering the ways in which architecture once carried deep symbolic and societal significance, this thesis invites a dialogue on the role of meaning in architecture today.

23 *Canadian Architect*. "Q&A: Douglas Cardinal." February 27, 2018.

24 Gabriel Cooney and Conor McHale, *Death in Irish prehistory*, (Dublin: Royal Irish Academy, 2023), 9.



FIGURE.0.5 - Newgrange, Ireland

METHODOLOGY

The methodology employed in this thesis focused on analyzing the architecture of the four selected regions. My aim was to understand their architectural form and the cultural and spiritual beliefs which inspired them. I did not conduct any excavation or anticipate making new archaeological discoveries of my own, nor was my aim to prove whether or not these cultures were matrifocal or matriarchal. My analysis was conducted by gathering information through site visits, literature review, and the study of orthogonal drawings and photographs. In my research I searched for trends and identified design elements that characterized this time period and geographical region.

SITE VISIT

In September of 2024, I had the privilege of visiting most of the sites discussed in this thesis. I had the opportunity to visit Ireland, England, Crete and Malta and document the following sites through photography, sketching and note taking. While visiting the sites I constructed a series of questions which guided how I observed the sites:

- How is the building shaped? Is it curvilinear, round, rectilinear, etc.
- What symbolic forms are reflected in the building? Are there representations of the human body?
- When I stand at the principal entrance to the building, what do I observe in the surrounding landscape?
- Are there any notable landscape features in the vicinity?
- What is the sequence of spaces or procession leading up to the building?
- What is the sequence of spaces inside the building? Does it feel linear, irrational, labyrinthine?
- What is the width and proportions of openings? How do they affect the perception of space?
- How does the interior contrast with the exterior? What does this relationship suggest?
- Do I see circular forms horizontally, elevation, or sectionally?
- When viewed from close-up, what details stand out, and how do they differ when seen from a distance?

REGION	*SUB-REGION*	*TYPOLOGY*	*SITE NAME*
BRITISH ISLES	Ireland	Burial Mound Burial Mound Burial Mound Burial Mound Burial Mound Burial Mound Stone Circle	Brú na Bóinne: Knowth, Newgrange, Dowth Hill of Tara: Mound of the Hostages Fourknocks Loughcrew: Cairn R1, R2, S, T, U, V, W Carrowkeel: Cairn G, H Carrowmore** Lough Gur Stone Circle
	England	Burial Mound - Stone Circle Burial Mound Mound Stone Circle Burial Mound Burial Mound Burial Mound Stone Circle Stone Circle	Wayland Smithy Long Barrow Avebury: Avebury circle West Kennet Long Barrow Silbury Hill The Sanctuary Belas Knap Long Barrow Nympsfield Long Barrow Uley Long Barrow The Nine Stones Stone Circle Stonehenge
	Scotland*	Burial Mound Stone Circle Stone Circle Stone Circle Village	Maeshowe Calanais Standing Stones Ring of Brodgar Stones of Stenness Skara Brae
CRETE	-	Palace Palace Palace Tholos Tomb	Knossos Phaistos Malia Tomb of Marguerites
MALTA	-	Temple Temple Temple Tomb Temple Temple Temple	Ħaġar Qim Mnajdra Ġgantija Ħal Saflieni Hypogeum Tarxien Skorba Ta' Ħaġrat
TÜRKIYE*	-	Temple Temple Village Village	Göbekli Tepe Karahan Tepe Çatalhöyük Asikli höyük

**Country was not visited during my travels*
***Site was closed for restoration work during my travels*



FIGURE.0.6 - Crenaia, the nymph of the Dargle by Ferederic Leighton (1880)

An example of downcast eyes used in paintings of female figures.

ILLUSTRATION

Each of the thematic chapters are accompanied by a set of illustrations done in the style of a tarot card. Tarot cards, which have historically been used for divination, consist of a card with illustrations rich in symbolism and visual metaphors. I chose this medium to visually depict the themes of matrifocal architecture. On one side of each card is a black and white orthogonal drawing of a Neolithic building. When the card is flipped, this same orthogonal drawing is overlaid on a coloured illustration that elucidates the design concept discussed in the associated chapter. The act of flipping the card reveals a new understanding of the architecture's form and symbolism. Each chapter has four to five cards: one principal card encapsulates the design element discussed in the chapter, while the other cards explore a specific building and sub-theme. Each chapter's cards are unified by a distinct colour scheme.

Layer 1: Orthogonal Drawing
I chose to represent one site from each sub-theme through an orthogonal drawing. I used plans and sections to depict the form of the buildings, while I used maps to show the relationship between the architecture and landscape elements. The orthogonal drawing is depicted in black and white on the front side of the cards.

Layer 2: Design Element
The reverse side of the cards depicts the orthogonal drawing of the building overlaid with an illustration which elucidates the chapter's theme. I created the illustrations primarily through hand drawing, while also using a combination of digital techniques using Adobe Illustrator and Photoshop.

In my illustrations, I was very conscientious of how I depicted the female body. The eyes, in particular, were a feature to which I gave much attention. Women in European paintings have historically been portrayed with downcast eyes to intentionally depict them as submissive.[25] During the Renaissance, the eyes and the sense of sight were associated with both knowledge[26] and power.[27] Women in paintings were only allowed to be gazed upon, yet were not permitted for themselves to have vision. Thus, the depiction of women with downcast eyes is a reflection of the misogynistic attitude of that time period, and power dynamics between genders. With this context in mind, I made the decision to depict women staring back at the observer, their eyes wide and open. While the women are often nude in the illustrations, the piercing eyes combats the objectification of the female body. As an observer looks at the illustration, the women stare back at the observer.

25 Martin Jay, *Downcast Eyes: The Denigration of Vision in Twentieth-Century French Thought* (Berkeley: University of California Press, 1993).

26 Juhani Pallasmaa, *The Eyes of the Skin: Architecture and the Senses* (Hoboken, New Jersey: Wiley, 2024).

27 Jay, *Downcast Eyes*.

MATRIFOCAL DISCOURSE AND CONTROVERSY

> "It is not a slogan, but a fundamental statement about truth to say that no social scientist can completely free himself from the prison of his own culture; he can only interpret what he observes in the scientific framework of his own time."[28]

It is important to acknowledge that it is not unanimously accepted amongst all scholars that Neolithic societies were matrifocal. Instead, some scholars argue that they were patriarchal, as Europe has been for the last two millennia.[29] The criticism of the matrifocal theory is often clouded by the misogyny of scholars who could not fathom societies which were not led by men. Additionally, some scholars who did recognize the existence of matriarchal or matrifocal societies, assumed they must have been inferior to patriarchal societies. The following quote, written in 1903 by the archaeologist Jane Ellen Harrison, reflects this misogynistic view:

> "With patriarchy came inevitably the facing of a real fact, the fact of the greater natural weakness of women. Man the stronger, when he outgrew his belief in the magical potency of woman, proceed by a pardonable practical logic to despise and enslave her as the weaker."[30]

In her work, Harrison explains that the only way women could hold power is through magic and deception, therefore humanity shifted to a patriarchal system, which she considered superior. Many other misogynistic writings exist in archaeology when describing matriarchal or matrifocal cultures. Despite the presumed objectivity of the fields of history and archaeology, they are undoubtedly biased and influenced by the narrator telling the story.

Although more feminists have entered the field of archaeology in recent decades, we still see hesitancy to accept these cultures as matrifocal. One prominent writer against the theory is Cynthia Eller, a self-proclaimed feminist, who wrote *The Myth of Matriarchal Prehistory.*[31] She claimed that the "myth of matriarchal prehistory" was overhyped by feminism rather than based on archaeological fact, and in fact hurt the feminist 'agenda'

28 Betty Friedan, *The Feminine Mystique* (1963; New York: W.W. Norton & Company, 2013), 113.

29 While it is not possible to name all those who agree with or oppose the matrifocal theory, some notable scholars who oppose Gimbutas include:
Cynthia Eller, *The Myth of Matriarchal Prehistory: Why an invented past won't give women a future* (Boston: Beacon Press, 2000);
Ian Hodder, "Women and Men at Çatalhöyük." *Scientific American* 290, no. 1 (2004): 76–83;
Ronald Hutton, "The Neolithic Great Goddess: A Study in Modern Tradition." *Antiquity* 71, no. 271 (1997): 91–99.

30 Jane Ellen Harrison, *Prolegomena to the Study of Greek Religion*. (Cambridge: Cambridge University Press, 2010; originally published 1908), 285.

31 Eller, *The Myth of Matriarchal Prehistory*.

by promoting false archaeological findings.[32] Although she claims that feminists have invented an idealized past,[33] she overlooks that matriarchal theory was first brought forth by the anthropologist J.J. Bachofen, who was far from a feminist.

The archaeologist who spearheaded the matrifocal theory is Gimbutas, whose work is often the topic of great debate. Although many other academics have written of history's non-patriarchal past (such as Gerda Lerner, Miriam Robbins Dexter or Gertrude Rachel Levy to name a few), Gimbutas resides at the heart of the matriarchal debate.[34] Her publication of multiple books, such as *The Goddesses and Gods of Old Europe* (1974), *The Language of the Goddess* (1989) and *The Civilization of the Goddess* (1991), paralleled the Goddess movement in North America: a spiritual movement, dominated by women, which sought to reclaim pre-christian pagan spiritual practices. During this time, women from this spiritual movement flocked to Gimbutas and celebrated her archaeological findings, leading to an overlap of archaeology with new age spirituality. The unfortunate result was that these associations led to the discreditation of the valid archaeological study of matrifocal societies.

Unfortunately, some of the criticism of Gimbutas' work lacks academic integrity, focusing instead on a critique of the Goddess movement from the 1960s rather than archaeological fact. It is also important to distinguish that Marija Gimbutas utilizes the term 'matrifocal' which is not synonymous with matriarchal; the former of which implies egalitarianism, while the later implies female rulership. Despite the clear difference in these terms, many critics of Gimbutas' work incorrectly use the term matriarchal which has very different implications. The academic Max Dashú wrote a response to Eller's work, pointing out her lack of archaeological evidence which could disprove Gimbutas' work.[35] Dashú points out that many other archaeologists have proposed theories which were much less credible and evidence-based than Gimbutas' work, but faced little to no criticism, for their topics were not related to gender and women's social position.[36] Archaeological research which relates to gender and women typically receives a disproportionate amount or unfounded criticisms from the wider academic community.[37]

32 Ibid.

33 Ibid.

34 Max Dashú, "Knocking Down Straw Dolls: A Critique of Cynthia Eller's *The Myth of Matriarchal Prehistory*," *Feminist Theology* 13, no. 2 (2005): 185–216.

35 Ibid.

36 Ibid.

37 Ibid.

The study of Neolithic cultures with no system of writing[38] requires us to make assumptions based on the study of architecture, symbols and artifacts. Our own prejudices will undoubtedly influence our interpretations of symbols; this is inevitable. As a student of architecture, I too am bound to my cultural upbringing, my values, and the time in which I live. These personal factors have greatly influenced how I perceive Neolithic architecture, as they have influenced every other historian and archaeologist who has studied these sites.

This thesis is not trying to prove the matrifocal theory, but rather seeks to understand how the female body and feminine principles have been reflected in Neolithic architecture. This thesis hopes to expand the range of buildings, time periods, and cultures which are traditionally studied in architecture, and introduce new gynocentric sites to the architectural discourse.

38 None of the cultures discussed in the thesis used a system of writing, except for the Minoan who used three systems: Cretan Hieroglyphics, Linear A and Linear B. Neither the Cretan Hieroglyphics nor Linear A have been deciphered, which still leaves much room for speculation on Minoan culture.

NEOLITHIC MATRIFOCAL CULTURES

INTRODUCTION

This chapter introduces matriarchal theory and provides an overview of the Neolithic era, followed by a brief introduction to the cultures explored in this thesis to contextualize the thematic chapters. The sites are presented in chronological order, moving from East to West.

THE NEOLITHIC ERA

The Neolithic era, derived from the words for 'neo' for new and 'lithic' for stone, marked a profound shift in architecture history with the first appearance of monumental and religious buildings. The Stone Age, which is characterized by the first appearance of stone tools and ended with the appearance of metallurgy, consists of three eras: The Paleolithic era (approximately 2.5 million BCE to 15,000 BCE), the Mesolithic era (approximately 15,000 to 10,000 BCE) and finally the Neolithic era (approximately 10,000 - 2,500 BCE).[39] The Neolithic era is distinguished by the agricultural revolution and the building of stone megaliths. With the rise in farming practices, humanity moved away from a hunter-gatherer lifestyle, and a newfound surplus of food led to population growth and the creation of cities. Farming required humans to remain in one place and to care for the land they have chosen to farm, resulting in a shift away from nomadic lifestyles. Thus, with the increase in sedentism, this time period showed great advancement in architecture and urban development. Not only do we see the rise in cities and silos, Neolithic societies consecrated great effort in the erection of monuments which served spiritual purposes. These sites were not directly connected to the survival of humans, but were rather dedicated to non-human forces.[40]

MATRIARCHAL THEORY

An understanding of Neolithic Europe's matrifocal social structures began with anthropological writings on matriarchies and was later shaped by archaeological evidence. Theories arose towards the end of the 19th century suggesting that humanity had matriarchal social structures early on in our history, an idea which was first proposed by the anthropologist J.J. Bachofen in 1861.[41] Bachofen argued that the earliest human societies were dominated by women, with religions centered on the worship of female Mother-Goddesses. His research then inspired many other writers in the late 19th century and early 20th century, such as Robert Briffault, E.O.

39 These dates vary depending on the particular region of the world. For example, The Neolithic Era began around 10,000 BCE in Türkiye, yet started 5000 years later in Malta. As we move northwest across the Middle East and Europe the Neolithic era occurred more recently, following the pattern of migration of Anatolian farmers.

40 See: Gertrude Rachel Levy, *The Gate of Horn: A study of the religious conceptions of the stone age, and their influence upon European thought* (London: Faber and Faber Limited, 1968); Gimbutas, *The Living Goddesses,* 55-111.

41 Johann Jakob Bachofen, *Myth, Religion and Mother Right*. trans. Ralph Manheim. (Princeton: Princeton University Press, 1992; originally published 1861).

James, Erich Neumann and Friedrich Engels. These scholars argued that the mother-child bond is the most important relationship which formed the basis for all other social structures.[42] This singular bond, inspired humans to form social connections which were integral to tribal cultures and, later, civilizations. The anthropologist Robert Briffault suggested that paternity was often unknown in early human societies due to a limited biological understanding of procreation, as well as the common practice of non-monogamous sexual relations.[43] The absence of a clear father reinforced the importance of the mother. Additionally, birth was regarded as both a miracle and a mystery, leading to the perception of women as powerful beings due to their ability to create life—an idea that profoundly shaped religious beliefs.[44]

Although these scholars from the late 19th and early 20th centuries made great strides in acknowledging that Homo sapiens are not an inherently patriarchal species, their research is often presented in a misogynistic tone, describing matriarchy as a primitive and early step in human evolution. Social structures are described linearly by these scholars, suggesting that as humanity became more evolved or civilized, it also became more patriarchal.[45] Contrary to this argument, many contemporary cultures from around the world feature various forms of gynocentric social structures.[46] To describe all non-patriarchal social structures as primitive is blatantly inaccurate.

In the later half of the 20th century, more feminists studied and published work on the Neolithic era in Europe. Gimbutas, for example, studied a region she named 'Old Europe' to denote a collection of Goddess-worshipping and matrifocal societies that flourished in the Balkans and

42 Ibid.

43 Robert Briffault, *The Mothers: The Matriarchal Theory of Social Origins* (Belle Fourche: Kessinger, 1927).

44 Contemporary researchers also suggest that early human societies were matriarchal, such as the scholar Cat Bohannon. Bohannon argues that since human birth requires the help of doctors and midwives, the females of our early genetic ancestors would have needed to create strong social ties to aid each other in birth. Ever since our ancestors began walking on two legs, the change in the shape of our pelvis has made human birth an extremely difficult and taxing process for the female body. Bohannon also draws comparisons to our closest genetic neighbours, other primates such as baboons, geladas and bonobos, who display matriarchal social structures.
Cat Bohannon, *Eve: How the Female Body Drove 200 Million Years of Human Evolution* (Toronto: Random House Canada, 2023), 376-400.

45 This idea is implied by many scholars of matriarchal theory. For example, see: Bachofen, *Myth, Religion and Mother Right*; Briffault, *The Mothers: The Matriarchal Theory of Social Origins;* Frederick Engels, *The Origin of the Family: Private Property and the State* (New York, NY: International Publishers, 1978; originally published 1884).

46 The Haudenosaunee or Six Nations, for example, have matrilineal customs, and both the Khasi of Northeastern India and the Mosuo of Southwestern China have been described as matriarchies.
William Woodworth. *Twelve Architectures.* Course, University of Waterloo, Waterloo, ON, 2020; Heide Goettner-Abendroth, "Re-Thinking 'Matriarchy' in Modern Matriarchal Studies Using Two Examples: The Khasi and the Mosuo." *Asian Journal of Women's Studies* 24, no. 1 (2018): 3–27.

the Mediterranean during the Neolithic era.[47] Gimbutas described matrifocal societies as egalitarian and peaceful, with a central focus on women, particularly in religious life. These Neolithic cultures were not matriarchies, a term that implies a hierarchical power imbalance between genders, for which there is no archaeological evidence. Although these were indeed distinct cultures, they share many similarities in their art, religion, and architecture. In her last publication before her passing, The *Living Goddesses*, Gimbutas expanded her area of focus to include sites across Europe, such as Ireland, the Orkney Islands, England and France.[48] In the second part of this book, she analyzed Bronze and Iron Age European cultures, such as the Celts and Minoans, arguing that the continuity of Goddess worship originated in Neolithic Old European traditions.[49]

With the use of the term 'matrifocal' in this thesis, I acknowledge that the different cultures in this thesis did not have identical social structures. This is where my understanding differs from Gimbutas, as she describes this era as one social monolith. Matrifocal is used in this thesis to describe a variety of non-patriarchal social structures that were mostly egalitarian in the treatment of different sexes, yet centered a female figure in their religion.



FIGURE.1.1 - Goddess figurine, Romania (4050–3900 BC)

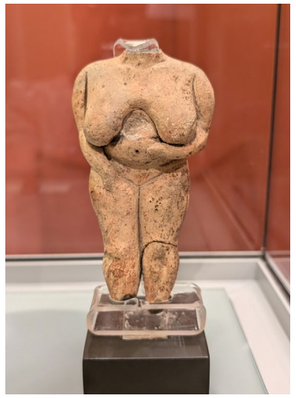


FIGURE.1.2 - Goddess figurine, Malta (3500–3000 BC)

GODDESS WORSHIP

All cultures discussed in this thesis worshiped a central female deity (or multiple female deities), evidenced by the plethora of Goddess figures found across the continent. These figurines are often depicted as nude, and with large breasts, buttocks and stomachs. These figurines are not always evidently pregnant, but often just curvilinear in form. They also have small hands, and feet, and are often designed without facial features, drawing the attention towards their sexual organs. These nude female bodies were not intended to be objectified, but rather revered for their fertile capacity to create life. As stated by Max Dashú:

> "Female nakedness does not equate to pornography, and the old sexist assumption that a vulva signifies a sex object while a phallus indicates power should be tossed out."[50]

These figurines were religious depictions of their deities and no male equivalent has been discovered. The creation of Goddess figurines began prior to the Neolithic era; the oldest one discovered to date is the Venus of Hohle Fels from Germany which is 35,000 years old.[51]

47 Gimbutas, *The Gods and Goddesses of Old Europe.*

48 Gimbutas, *The Living Goddesses*, 127-214.

49 Ibid.

50 Dashú, "Knocking Down Straw Dolls," 206.

51 Nicholas J Conard, "A Female Figurine from the Basal Aurignacian of Hohle Fels Cave in Southwestern Germany." *Nature* 459 (2009): 248–252.

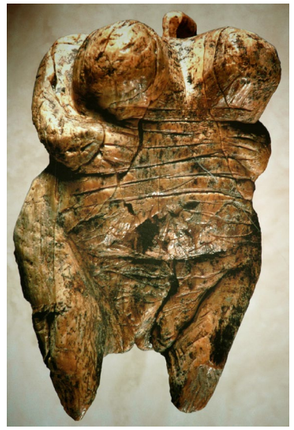


FIGURE.1.3 - Venus of Hohle Fels, Germany (35,000 BP)



FIGURE.1.4 - Venus of Willendorf, Austria (25,000 BP)

The Venus of Willendorf, one of the most famous figurines from the Paleolithic era, is 25,000 years old and was discovered in Austria. This evidence shows the Goddess worship was not unique to the Neolithic era, but rather a characteristic of the entire Stone Age. Evidence also shows that women were the predominant participants in Stone Age rituals, which is evidenced by hand stencils which are found commonly in Paleolithic cave paintings in France and Spain. The archaeologist Dean Snow was able to determine that about 75% of the stenciled hands belonged to women through an analysis of their shape and proportions.[52] Cave paintings were long assumed to be painted by men, an assumption which was based on modern patriarchal views,[53] which has been disproved by Snow's research. Although it appears that Stone Age rituals were not exclusive to women, they were definitely dominated by them.

Throughout the Neolithic era, we can clearly see the continuity of Paleolithic and Mesolithic religious beliefs. Although there was not a single monolithic religion dominating the continent, these various religions nonetheless shared similar iconographic traditions. The Neolithic Goddesses were associated with motherhood, the cycles of life and death, the natural landscape and various types of animals.[54] Gimbutas describes Neolithic religions as centering on the cyclicity of human life, nature and the cosmos. The themes of birth, nurturing, growth, death and regeneration, were all of importance.[55] These aspects of religious life may, in part, have been inspired by crop growth cycles, as farming was a groundbreaking new technology in the Neolithic era. These same regenerative cycles observed in the farming year, were seen mirrored in the human body, the sun, moon and stars. The female body was revered for its role in such cycles of bringing forth new life, and providing sustenance to infants, therefore sustaining life. The female body then became a metaphor not only for birth, but also rebirth; thus, the Neolithic deity reigned over not only birth and life, but death, decay and regeneration as well.

52 Dean Snow, "Sexual Dimorphism in European Upper Paleolithic Cave Art." *American Antiquity* 78, no. 4 (2013): 756.

53 Snow, "Sexual Dimorphism in European Upper Paleolithic Cave Art," 760.

54 Gimbutas, *The Living Goddesses*, 3-42.

55 Gimbutas, *The Living Goddesses*, 3.

Matrifocal religious beliefs are reflected in the temples and sacred sites which were created in worship to the divine. The typologies chosen for this thesis range from villages to tombs; however, many of the sites served multiple functions. For example at in Anatolia, the home is also the site of burial,[56] and in the British Isles, the tomb is also the temple.[57] Religious beliefs and traditions were deeply embedded in matrifocal domestic life. Their activities would have been filled with rituals imbued with spiritual significance. The sites chosen for study in this thesis, which will be described in the following section, were physical manifestations of matrifocal cultural and spiritual beliefs.

56 Hodder, "Women and Men at Çatalhöyük."

57 Prendergast, Kate. "The Neolithic Monument of Newgrange in Ireland: A Cosmic Womb?" In *Archaeology of Mother Earth Sites and Sanctuaries through the Ages: Rethinking Symbols and Images, Art and Artefacts from History and Prehistory*, edited by G. Terence Meaden, 57-64. Oxford: Archaeopress, 2012.



FIGURE.1.5 - Map of Türkiye

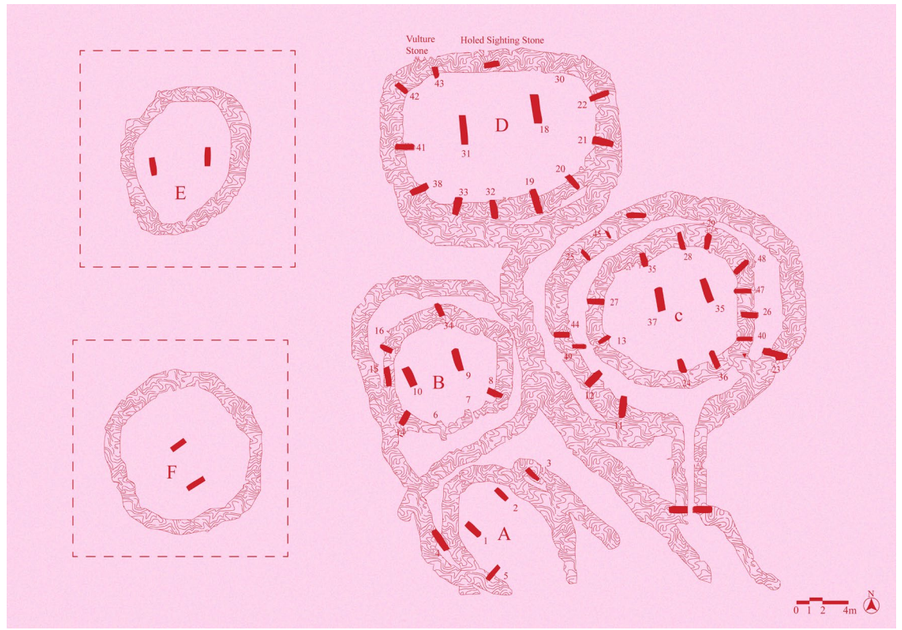


FIGURE.1.6 - Göbekli Tepe Plan

INTRODUCTION TO THE FOUR REGIONS

TÜRKIYE

Anatolia, in modern-day southern Türkiye, is home to many ancient Neolithic sites including temples and villages. Once discovered, these sites prompted scholars to call for a rewriting of history. They date back over 5,000 years before the established civilizations of the Fertile Crescent, challenging previous beliefs about the origins of human civilization. Göbekli Tepe, a temple located in southern Türkiye, is the oldest site which will be discussed in this thesis and dates to 9,600 BCE. This site predates the development of farming and pottery in this region of Anatolia.

The site was discovered in the 1960s and excavated in 1994 by the archaeologist Klaus Schmidt. Through his research, Schmidt determined that Göbekli Tepe was not a domestic site, but rather a temple.[58] The site contains buildings constructed in two phases, with the oldest dating to roughly the 10th millennium BCE and the second dating to roughly the 9th millennium BCE.[59] The focus of this thesis will be the older phase of building, which consists of circular enclosures which scholars believe were aligned to the stars.[60]Although stellar alignments indicate reverence for celestial cycles, the rituals which took place at Göbekli Tepe still remain largely a mystery. Around the year 8,000 BCE, the enclosures were intentionally infilled, burying the entire site for unknown reasons. Other ritualistic sites have also been discovered nearby such as Karahan Tepe, which has circular enclosures which were constructed by carving into the bedrock. Karahan Tepe was discovered very recently in 1997 and very little of the site has been excavated.[61] As two of the earliest known examples of monumental architecture, Göbekli Tepe and Karahan Tepe challenge previous understanding of Neolithic societies and their complex spiritual practices, which developed long before the rise of 'civilizations'. As the discovery of these sites is quite recent and the excavation is ongoing, our understanding of their use, function and symbolism is still unfolding.

Housing settlements are another Anatolian typology, such as Çatalhöyük which was first built around 7400 BCE and was in use until 5500 BCE.[62] The settlement is believed to have housed between thirty five hundred to eight thousand people at a time and is roughly 30 to 35 acres in size. This is arguably the first known example of a dense urban area of shrines, courtyards and homes. Interestingly, Çatalhöyük had no streets; the

58 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, no. 1 (2010): 239–56. https://doi.org/10.4312/dp.37.21.

59 Schmidt, "Göbekli Tepe - The Stone Age Sanctuaries," 240.

60 Marion Dolan. *Decoding Astronomy in Art and Architecture* (Cham, Switzerland: Springer, 2021), 44.

61 Bahattin Çelik, "Karahan Tepe: A New Cultural Centre in the Urfa Area in Turkey." *Documenta Praehistorica* 38, no. 1 (2011): 241–53.

62 Mark Jarzombek, *Architecture of First Societies: A Global Perspective*. (Hoboken, New Jersey: Wiley, 2013), 266.

buildings were directly adjacent to each other, with holes in the roof allowing for sunlight and entry. The roofs may have acted as a method of moving around, also serving as Çatalhöyük's public space.[63] Another Anatolian settlement, Asikli höyük, is located north of Çatalhöyük and displays similar design characteristics.

The homes of Çatalhöyük were multi-generational, and men and women lived very similar lifestyles, with no evidence of gender-based divisions of labour.[64] An examination of the remains of bone have shown that both sexes shared a similar diet, bodily activity and burial practice.[65] At Çatalhöyük, women were not associated with the interior, as they were later on in history. For example, archaeologists found soot from the fires of the hearths inside the homes that remained on the rib bones on decomposed bodies. Because men and women's lungs contained the same amount of soot, it is likely that they spent the same amount of time inside and outside of the home.[66]

Çatalhöyük's matrifocal social structures showed evidence for egalitarianism, while their religion focused on a female mother-divinity. The people of Çatalhöyük were Goddess-worshiping, and forty shrines have been identified in the complex, alongside many Goddess figurines.[67] A particular figurine, named the 'Seated Woman of Çatalhöyük', depicts a woman in a seated position with two feline animals on either side of her.[68] Although she is not depicted in a typical birthing position, this figurine is depicted giving birth with the child's head depicted between her legs. I do not believe this figurine was meant to depict an accurate scene of a woman giving birth, but rather depict their deity's life-giving powers.

63 Ibid.

64 Hodder, "Women and Men at Çatalhöyük," 79.

65 Ibid.

66 Ibid.

67 James Mellaart, *Çatal Hüyük: A Neolithic Town in Anatolia* (New York: McGraw-Hill, 1967).

68 Ibid.

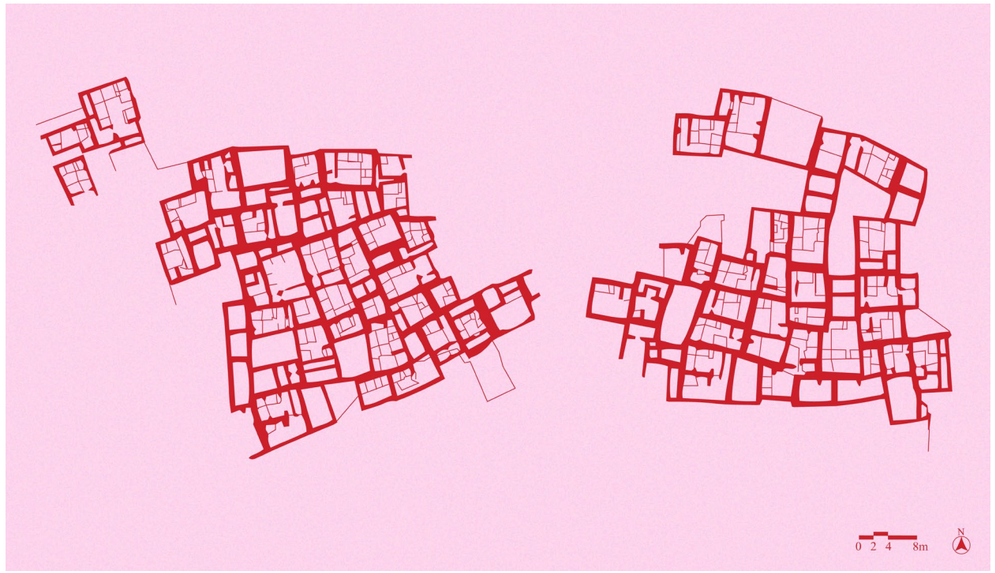


FIGURE.1.7 - Plan of Çatalhöyük



FIGURE.1.8 - Çatalhöyük, Turkey



FIGURE.1.9 - Seated Woman of Çatalhöyük (6000 BCE)

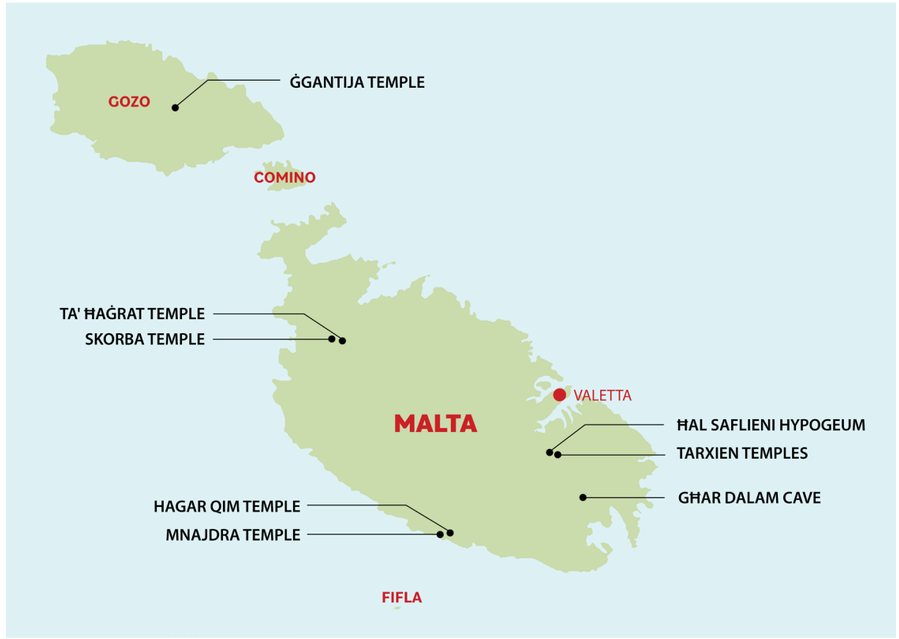


FIGURE.1.10 - Map of Malta

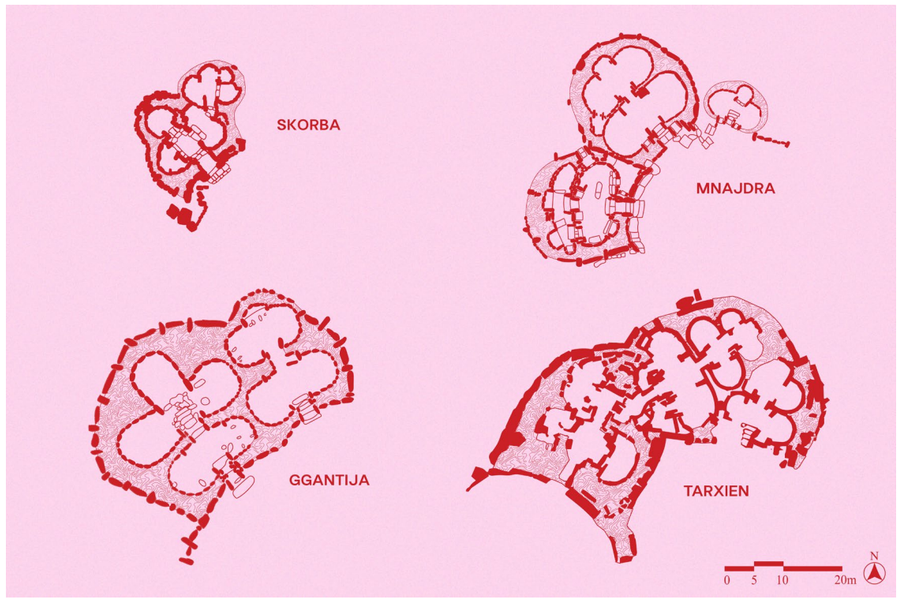


FIGURE.1.11 - Maltese Temple Plans
Top Left Clockwise: Skorba, Mnajdra, Tarxien, Ggantija

MALTA

The second oldest culture that I analyze here are the Neolithic people of Malta. Malta is a small country south of Sicily with three principal islands: Malta, Comino and Gozo. The islands are made from a soft limestone, called Globigerina and Coralline limestone,[69] and the landscape is covered with cliffs and caves that have been carved by the elements. Neolithic farmers arrived to Malta around 5500 BCE, and around 3500 BCE, they started building monuments, creating 30 temples across the islands of Malta and Gozo.[70]

The principal Neolithic typology in Malta are temples, however there also exists one underground cave structure, the Ħal Saflieni Hypogeum. Inside the Hypogeum is a room which was carved to resemble the facades of the temples, which shows the structure's connection to the temples.[71] The temples all share similar structure and layout: they have a singular entrance with a linear path leading to an altar table or chamber. From this linear path emerge a varying number of apses, ranging from three to seven. The range of size and number of apses is not reflective of a linear progression in building capacity, as the smallest temples are not the oldest.[72] Rather, the temples' diversity in design and scale suggests that Maltese builders intentionally designed each temple with unique characteristics. Each temple configuration may have held important symbolic meaning, for example, the temples with four to five apses, have been likened to the shape of the Maltese Goddess figurines.[73]

The Maltese temples were constructed with a double wall composed of an inner and outer layer of limestone and infilled with earth and rubble, and were decorated with carvings of plants, animals, spirals, and dots. Inside the temples, many artifacts were discovered, primarily Goddess figures which were very round in shape. The surviving artwork in these Maltese megalithic buildings are primarily carvings, with the exception of the Ħal Saflieni Hypogeum, which has preserved painted designs of red ochre pigment on its walls. It is also believed that the interior walls of the temples were also covered in plaster and painted with red ochre, which has faded with time[74]. Of the Maltese ornamentation, two primary motifs dominate: spirals and circular shapes; and representations of nature including plants and animals.[75]

The builders of the temples also created miniature models and elevation sketches of the temples, also it is unclear what their use was. While models and drawings are used by architects today to create designs, these artifacts may have served as religious purposes.[76] These artifacts indicate that the temples themselves held symbolic value, and they may have been created for pilgrims visiting from afar or other ritual purposes.[77]

69 Michael Ridley, *The Megalithic Art of The Maltese Islands* (Dorset: Dolphin Press, 1976).
70 Ibid.
71 Ibid.
72 Ibid.
73 Gimbutas, *The Living Goddesses*, 95.
74 Jarzombek, *Architecture of First Societies*, 369.
75 Ridley, *The Megalithic Art of The Maltese Islands*, 20.
76 Jarzombek, *Architecture of First Societies*, 368.
77 Ibid.

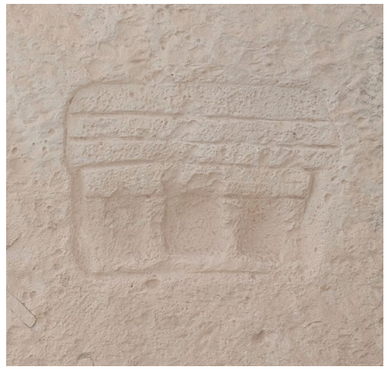


FIGURE.1.12 - Temple Elevation Carving, Mnajdra, Malta



FIGURE.1.13 - Temple Model, Ta' Ħaġrat Temple, Malta



FIGURE.1.14 - Tarxien Temple, Malta



FIGURE.1.15 - Skorba Temple Entrance, Malta

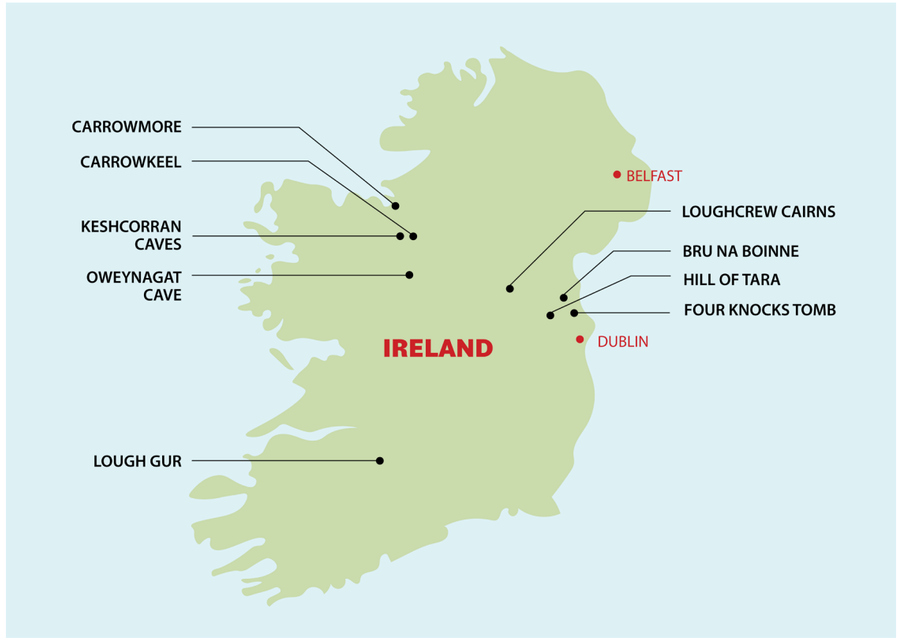


FIGURE.1.16 - Map of Ireland



FIGURE.1.17 - Loughcrew Cairn T, Ireland

THE BRITISH ISLES

The third region studied in this thesis is the British Isles, where the primary typology are burial mounds (which are also referred to as passage tombs or cairns) and stone circles. Burial mounds consist of chambers built from stones, buried underneath large mounds of earth. Although their primary purpose is believed to be funerary,[78] these sites likely acted as religious and ritualistic monuments as well. Within the British Isles, we can identify three primary clusters of sites: central Ireland, southern England, and the Orkney Islands in Scotland.

Ireland

The Neolithic people in Ireland arrived from the Iberian peninsula and landed on the West coast of the island near Sligo before migrating towards the eastern coast of the island, near Dublin.[79] This eastward migration can be observed in the archaeological remains of burial mounds, which become more complex, in terms of structure and ornamentation, as they approach the eastern coast. While the entire island is covered in over a thousand passage tombs, there are four sites which stand out: Brú na Bóinne, Loughcrew, Carrowmore and Carrowkeel. These sites are the largest concentrations of monuments in Ireland, each distinguished by nine or more burial mounds.

On the Western coast of Ireland, near the city of Sligo, is Carrowmore, the earliest collection of sites with the oldest monument dating to 4700 BCE[80]. Within this site, the most common typology is a dolmen grave, consisting of two upright stones and a third lintel stone resting on top. Carrowkeel is located slightly further inland and features more passage tombs atop of mountains. Moving along eastward, we encounter Loughcrew, also known as Slieve Na Calliagh. At Loughcrew we begin to see the appearance of megalithic art with carvings of concentric circles and other abstract shapes on the stones.

Brú na Bóinne is the most eastern cluster of sites, and is considered the most advanced of the Irish Neolithic monuments. The site has many types of monuments, including passage tombs, stone circles, raised pathways, and mounds; however the main structures are three large burial mounds: Newgrange, Knowth, and Dowth. The three mounds, roughly all the same size, are the largest monuments on the site. Knowth is surrounded by seventeen satellite mounds, which are smaller cairns which encircle it. Some of the satellite mounds predate the central mound of Knowth, implying that the site was used before the large mounds were constructed.

78 Michael O'Kelly, *Newgrange Archaeology, Art and Legend* (London: Thames and Hudson, 1982).

79 Heritage Ireland OPW. *Loughcrew Guided Tour*, Loughcrew Megalithic Cemetery. Donore, Ireland, visited September 1, 2024.

80 Jarzombek, *Architecture of First Societies*, 345.



FIGURE.1.18 - Map of England and Scotland

Many of the burial mounds are connected to stories from Celtic mythology, despite the Celts not having built these Neolithic monuments. Newgrange, notably, has many stories and mythological figures associated with the site. This mound is by far the most famous Neolithic site in Ireland and is regarded as a marvel of Neolithic engineering, with its interior chamber remaining completely waterproof for over five thousand years.[81] Newgrange was buried and lost to time, yet was rediscovered by chance in 1699 by the farmer Charles Campbell.[82] George Petrie made the connection between the site of Newgrange and Brú na Bóinne from Celtic mythology in 1845.[83] In Celtic myths, the burial mounds were associated with the Tuatha Dé Danann, which means people or tribe of the Goddess Danu. They are described as a supernatural race who lived in Ireland prior to the Celts. With the arrival of the Celts to Ireland, it is said the Tuatha De Danann retreated into the burial mound to live there eternally. Once they retreated, they became known as fairies or Aos Sidhe or Aos Si, which means folk of the mounds.[84] While these stories do not date from the time of the builders of the burial ground, some scholars, including myself, wonder whether they originate from a time much earlier than the Celts.[85]

Scotland

Scotland is home to many Neolithic sites which parallel the sites in Ireland and England with their primary typologies composed of burial mounds and stone circles. Despite its harsher climate, an abundance of Neolithic sites can be found in Northern Scotland. The focus of Neolithic sites in Scotland in this thesis will be those found on the Orkney Islands and the Isles of Lewis. Orkney Island in particular is home to Neolithic stone circles, burial mounds and villages. Maeshowe, the most famous of the burial mounds, is round in shape and resembles closely the typology found in Ireland, despite that the chamber is more rectilinear in its design. The UNESCO World Heritage has named the monuments of Maeshowe, as well as the Ring of Brodgar and Stones of Stenness, and the village of Skara Brae as the 'Heart of Neolithic Orkney'.[86] Robert Briffault has described the stone circles of the Orkney Islands as "temples of the moon" alluding to possible lunar alignments.[87] The stone circles from the Island of Lewis have equally been observed to have lunar alignments in their orientation.

81 Heritage Ireland OPW, *Brú na Bóinne Tour + Newgrange Chamber Guided Tour*, Brú na Bóinne Monument Complex. Donore, Ireland, visited August 30, 2024.

82 O'Kelly, *Newgrange Archaeology, Art and Legend*, 24.

83 O'Kelly, *Newgrange Archaeology, Art and Legend*, 35.

84 H. D'Arbois de Jubainville, *The Irish Mythological Cycle and Celtic Mythology.* trans. Richard Irvine Best (Dublin: Hodges, Figgis & Co., Ltd., 1903).

85 O'Kelly, *Newgrange Archaeology, Art and Legend,* 48; Murphy, Anthony, and Richard Moore., *Island of the Setting Sun: In Search of Ireland's Ancient Astronomers* (Dublin: The Liffey Press, 2020); Prendergast, "The Neolithic Monument of Newgrange in Ireland: A Cosmic Womb?"

86 UNESCO World Heritage Centre, "Heart of Neolithic Orkney," UNESCO, accessed March 1, 2025, https://whc.unesco.org/en/list/514/.

87 Briffault, *The Mothers: The Matriarchal Theory of Social Origins*, 366.

England

The two primary English architectural typologies discussed in this thesis are long barrows and stone circles. Long barrows are similar to the passage tombs in Ireland and Scotland, but their exterior mound is oblong in shape. While many sites are isolated, there are two clusters of concentrated monuments, Avebury and Stonehenge, both of which are located in southern England. Avebury is composed of four primary monuments which would have formed a grand spiritual centre in Neolithic times: Avebury stone circle, the Sanctuary, West Kennet Long Barrow and Silbury Hill. Avebury stone circle is the largest stone circle in the world surrounded by a circular henge (ditch and mound), inside of which are two smaller stone circles. The Sanctuary lies southeast of the Avebury circle, and is connected to the monument through a path, marked with upright sarsen stones, named the West Kennet Avenue. While the sanctuary has no large stone boulders like Avebury, small post holes were found which indicate the presence of a wood circle or building. West of the Sanctuary is the West Kennet Long Barrow, which is the largest long barrow in all of England dating from around 3250 BCE.[88] The West Kennet long barrow is part of a larger group of long barrows built in a similar style called the Severn-Cotswold group.[89] Moving slightly north of the long barrow, is Silbury Hill, a large human constructed hill which, unlike the passage tombs, has no interior chamber.

Stonehenge sits within another large cluster of sites in England, located south of Avebury. The stone circle of Stonehenge is one of the most well-known monuments from the Neolithic era, whose fame is in part due to its stone lintels which are not found on any other stone circle. The stone circle was built, rebuilt and rearranged multiple times over a span of roughly a thousand years with the first stage dating to 3000 BCE. Stories from English folklore described Stonehenge as a temple used by the Druids. Other stories claim the wizard Merlin commissioned the building of Stonehenge.[90] While these stories may not reveal why Stonehenge was built, it shows the importance of this monument of the last two millennia in English culture.

88 Stuart Piggott, *The West Kennet Long Barrow Excavations 1955-56*. (London: Her Majesty's Stationery Office, 1962).

89 Piggott, *The West Kennet Long Barrow Excavations 1955-56*.

90 Mike Parker Pearson, "Archaeology and Legend: Investigating Stonehenge." *Archaeology International* 24, no. 1 (2021): 144-164. https://doi.org/10.14324/111.444.ai.2021.09.



FIGURE.1.19 - Maeshowe, Scotland



FIGURE.1.20 - Wayland Smithy Long Barrow, England

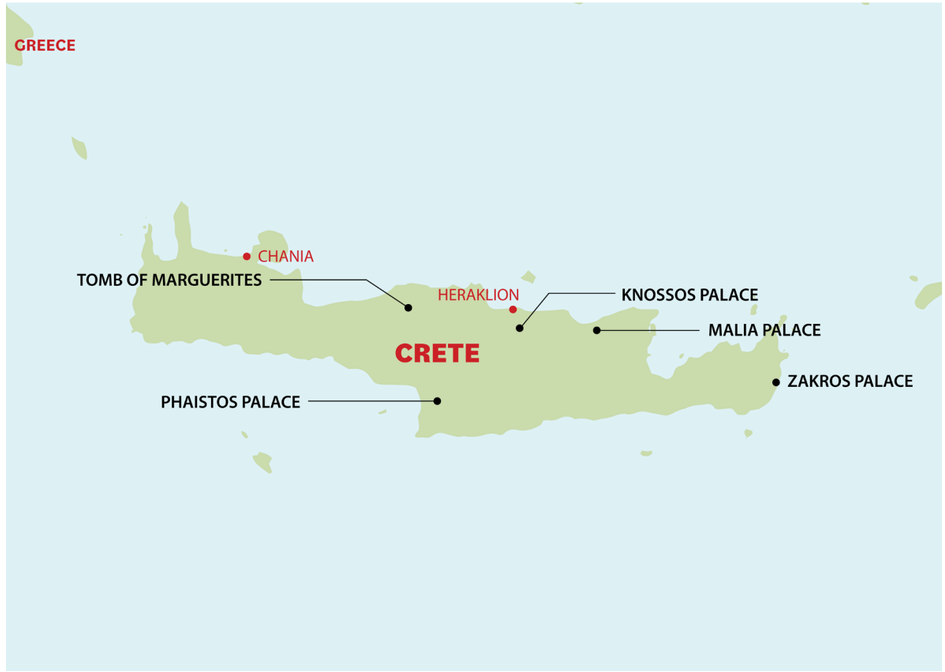


FIGURE.1.21 - Map of Crete



FIGURE.1.22 - Palace of Knossos, Crete

CRETE

The fourth culture I analyze are the Minoans, who arrived to the island of Crete around 6300 BCE extending into the Bronze Age in 1100 BCE. The Minoans were likely not matrifocal, but rather a fully-expressed matriarchy. We know this from their detailed artwork depicting women in positions of powers and men engaged in worship or menial work.[91] Minoan palaces, which are large complexes with many rooms surrounding a central courtyard, will be the primary typology of study for this thesis in addition to tholos tomb. Although scholars typically name these structures palaces,[92] these sites were highly ritualistic in nature, and may have served more as monasteries or religious centers, centered around the worship of a female Goddess.[93]

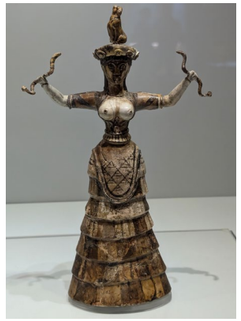


FIGURE.1.23 - Minoan Goddess Figurine

Discovered by the archaeologist Sir Arthur Evans in the early 20th century, one of the most famous architectural sites from Crete is the Palace of Knossos. The palace is decorated in beautiful frescoes depicting female figures with their breasts exposed, as was customary in Minoan dress, and aquatic and terrestrial animals. Knossos was architecturally complex, containing spaces for religious rituals, administrative and economic functions.[94] Some scholars have argued that Knossos was not a palace, but rather a monastery, with many priestesses living and performing rituals at the complex.[95] The island of Crete has many other palatial structures, such as Phaistos, Mallia, and Zakros, which have been described as summer palaces or provincial palaces.[96] If these structures were indeed monasteries, it would provide the stronger argument for why the Minoan built so many of them, as they would have allowed for the spread and upkeep of religious practices across the island.[97]

The Minoans, similar to the Scottish and Irish of the Neolithic era, built circular tombs made from stone with a corbelled roof. An example is the Tomb of Marguerites, a Minoan tomb located between the cities of Heraklion and Chania, in the present day hidden in an olive grove. The Tomb of Marguerites has an exterior passageway leading to the chamber with walls on either side but no roof. The chamber itself feels nestled in the ground, although it is not identical to the Irish and Scottish burials mounds, the tholos tomb bears many similarities.

91 Marymay Downing, "Prehistoric Goddesses: The Cretan Challenge." *Journal of Feminist Studies in Religion* 1, no. 1 (1985): 7–22.

92 Arthur Evans, *The Palace of Minos: Volume 1, The Neolithic and Early and Middle Minoan Ages* (Cambridge: Cambridge University Press, 2014; originally published 1921).

93 Downing, "Prehistoric Goddesses: The Cretan Challenge."

94 Evans, *The Palace of Minos: Volume 1, The Neolithic and Early and Middle Minoan Ages.*

95 Downing, "Prehistoric Goddesses: The Cretan Challenge."

96 Cadogan, *Palaces of Minoan Crete.*

97 For clarity, I continue to refer to these sites as palaces, as they are referred to in the rest of the academic literature.

DEVELOPMENT OF FOUR THEMES

Through the study of photographs, plans, orthogonal drawings, literature review and site visits, I documented the spatial characteristics of these sites. From these spatial characteristics, I found and grouped them into four recurring themes which can be seen across all the regions studied in this thesis; the following diagram explores this categorizing process.

In the first theme we see the similarity between matrifocal buildings and the form of the female body. Generally, Neolithic architecture is curvilinear in form, with Çatalhöyük and the Minoan palaces as exceptions. In matrifocal architecture, we see cave-like structures that emphasize the void within monuments, reminiscent of a womb. Burial mounds, which were made from earth, created physical forms in the landscape; circular mounds reassembled a belly, while elongated mounds resembled a torso. Lastly, the five chambered temples resemble the seated position of the Goddess figurines. Of all these metaphors of the female body, the womb is the most ubiquitous symbol.

The second theme we see is the careful placement and orientation of Neolithic sites towards landscape elements. These landscape forms often have an anthropomorphic shape, which they perceived to be the very body of their deity, akin to Mother Earth. Mountains were the principal form of focus, which buildings were constructed in axis to, or on top of. Clusters of sites, such as Avebury or Brú na Bóinne, were placed within river bends or at the junction of multiple rivers. In Malta, we see temples intentionally placed near valleys and cliffs. These placements showed a careful consideration for and reverence towards the Earth.

Additionally, many of these sites have astronomical alignments and were oriented towards sun cycles, star cycles, and moon cycles. Buildings with solar alignments were typically oriented towards the sunrise or sunset of the solstices and equinoxes, which created dramatic lighting effects. While moon cycles and star cycles created less dramatic effect, there is still evidence of sites that were oriented towards the rising and setting of the moon and stars. Matrifocal societies aligned their lives to the cycles of the cosmos, as nearly all sites have a celestial alignment.

Lastly, matrifocal rituals emphasized embodied experiences that highlighted the central role of the body. These embodied rituals shaped architectural design, leaving archaeological traces of movement, sound, dancing and creation. Neolithic religion focused heavily on cycles of regeneration—thus, rituals were deeply intertwined with the human life cycle: birth, decay, death, and rebirth. This can be seen in extended funerary rites which involve many phases, and evident womb references in burials implying a belief in rebirth. Neolithic architecture functioned as an extension of the human body and a mediator between the living, the dead, and the cosmos.

The following chapters will explore these themes in more depth and will both describe the spatial characteristics of these Neolithic sites, as well as expand on how they exemplify the four identified themes.

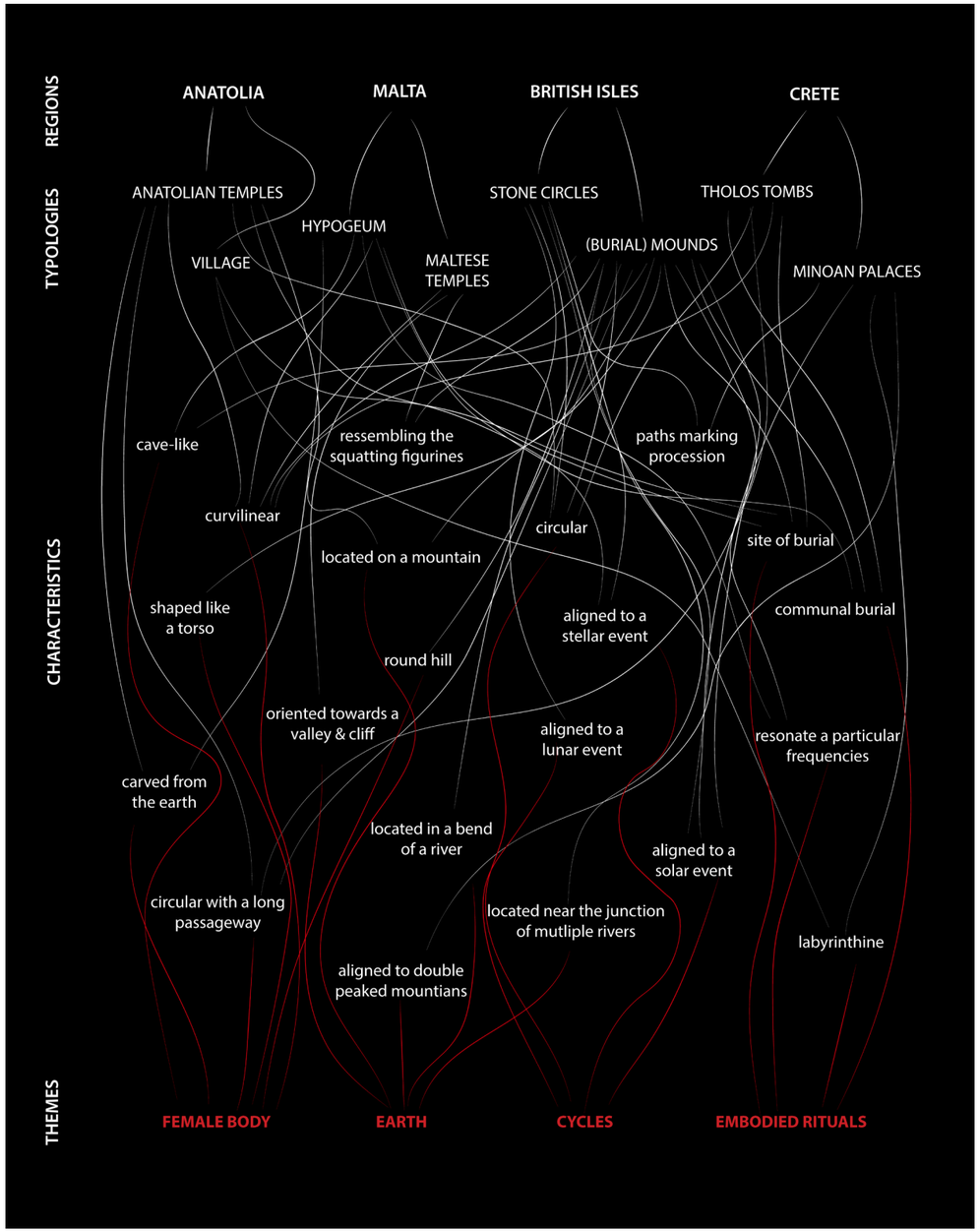
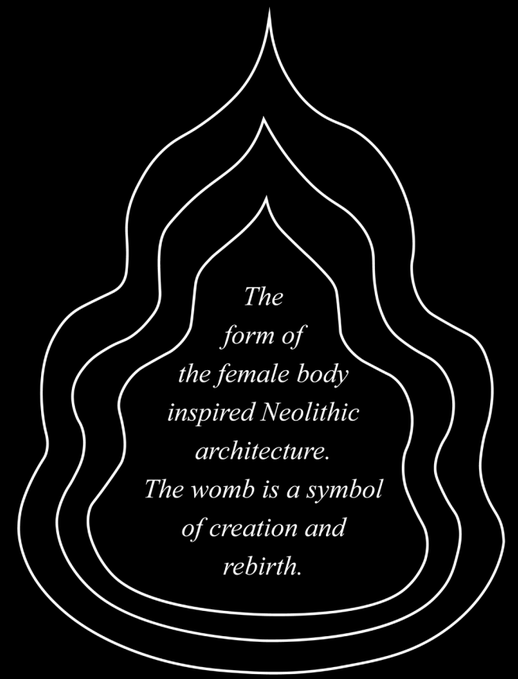


FIGURE.1.24 - Four Themes Diagram

THE FEMALE BODY



I - THE FEMALE BODY

INTRODUCTION

The first mode of expression of Neolithic architecture is its clear anthropomorphic characteristic. Matrifocal societies sought to spatially represent the female body in their architectural designs, as a symbol of their Mother-Goddess, paralleling the creation of Goddess figurines which drew upon the female body as a religious image. Of all the female metaphors in matrifocal architecture, the womb is the most ubiquitous symbol. Naturally occurring caves were the first spatial symbol of the womb, and were used as a space for ritual as early as the Paleolithic era. The use of naturally occurring caves for spiritual purposes continued into the Neolithic era; however, matrifocal societies simultaneously began building their own cave and womb-like buildings during this time period. The symbolism of the female body also expanded, and we see architecture which takes the form of the belly, the spine, and the full female figure. The emphasis on the female form in Neolithic architecture, both spatially and sculpturally, greatly contrasts later patriarchal societies who focused heavily on the male body and form.

THE MALE BODY IN ARCHITECTURE

From the Neolithic era to present, architecture has always been concerned with the human body: forms and colours delight the eyes, textures stimulate our sense of touch, and protection from the elements increases our comfort. Architecture serves to increase the pleasure and well-being of the human body. Beyond just serving physiological purposes, architects have also endeavoured to relate the proportions of their buildings to the human form. While Neolithic communities sought to represent the female body in their architecture, recent history has been more concerned with physical representations and proportions of the male body, which has been a subject of study repeatedly throughout architecture history over the last two millennia.

To appreciate how radical it is to see the female body represented in Neolithic architecture, we must first understand how the female body has been treated in recent history, where patriarchal structures have positioned it as 'profane' or 'inferior' to the male body—an idea which has been reinforced by architectural theory. The Roman architect, Vitruvius, published *Ten Books on Architecture* which explores the mathematical symmetry and proportions of the human body, which was limited to the male body, and architecture.[98] He stated that a human body, when outstretched, could fit perfectly within a circle and a square. Therefore, a person's height should equal their arm span.[99] Vitruvius was interested in finding perfect ratios within the human body, which could inspire perfect

98 Vitruvius Pollio, *The Ten Books on Architecture*, trans. by Morris Hicky Morgan (Cambridge, MA: Harvard University Press, 1914. Originally published ca. 30–15 BCE).

99 L. Sue Baugh,"Vitruvian Man," *Encyclopædia Britannica*, December 6, 2024.



I - THE FEMALE BODY

FIGURE.2.1 - The Female Body Card

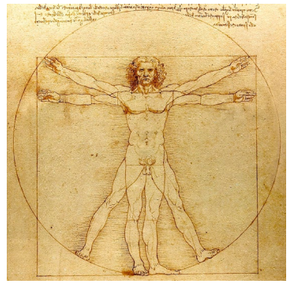


FIGURE.2.2 - Vitruvian Man by Leonardo da Vinci (1492)
Visual depiction of Vitruvius' ideas.

proportions in architecture. The Vitruvian man was then famously illustrated by Leonardo Di Vinci in 1487. The drawing illustrates a nude male figure in two standing positions, overlaid one on top of the other, within the bounds of a square and a circle, perfectly illustrating Vitruvius' ideas.[100] Although such proportions are not universal for all humans, and represent only a singular body and set of measurements, architects of the Renaissance were inspired by these 'godly' ratios of the body which they sought to incorporate into their designs.[101]

Almost two millennia after Vitruvius, Le Corbusier created his own version of ideal human proportions in 1948: *The Modulor Man*. The Modulor Man is drawn using the golden ratio of 1.618, and is used to determine the ideal dimension of architectural elements.[102] This analysis of human form is also seen in the *Architectural Graphic Standard,* first published in 1932. This text, which has served as a reference guide for Western architects, depicts the dimensions and the proportions of the human figure in its first chapter with a similar purpose as the Modular Man.[103] Although the last two examples use seemingly abstract figures, they are both undoubtedly representations of male bodies.[104] The use of the male body as the perfect base for all architectural dimensions suggests the inherent imperfection of the female body.[105]

The 'godliness' of the male body and the implied 'profaneness' of the female body transcend beyond the architectural discourse. We see the subordination of the female body across multiple disciplines, and as a cultural phenomenon in patriarchal societies. In the words of Elke Krasny: "Structurally, binaries operate by privileging one term and devaluating the other through a process of feminization and othering."[106] In patriarchal societies, the natural processes which the female body undergoes are considered 'impure' and must be hidden away from the rest of society.[107] We see this in the Western patriarchal taboo surrounding menstruation, menopause, and miscarriage; all of

100 Ibid.

101 Maria Da Piedade Ferreira, "The Narrative Body and The Body of Paradigm," in *Embodied Emotions: Observations and Experiments in Architecture and Corporeality* (Lisbon: Faculdade de Arquitectura da Universidade de Lisboa, 2016), 77–90.

102 Monica Arellano, "On the Dislocation of the Body in Architecture: Le Corbusier's Modulor," trans. Maggie Johnson. *ArchDaily*, September 27, 2018.

103 Lance Hosey, "Hidden Lines: Gender, Race, and the Body in 'Graphic Standards.'" *Journal of Architectural Education (1984-)* 55, no. 2 (2001): 101–12.

104 Ibid.

105 Ibid.

106 Krasny, Elke. "Architecture and Care." In *Critical Care: Architecture and Urbanism for a Broken Planet*, ed. Angelika Fitz, Elke Krasny, and Architekturzentrum Wien, (Cambridge: MIT Press, 2019), 35.

107 Sherry B. Ortner, "Is Female to Male as Nature Is to Culture?" In *Woman, Culture, and Society*, edited by M. Z. Rosaldo and L. Lamphere, 68–87. (Stanford, CA: Stanford University Press, 1974).

which are female bodily experiences that are encouraged to be kept secret and not openly discussed in public. In North America, menstrual products are marketed to be discreet and scented to mask any evidence of menstruation. In other parts of the world, such as Nepal and India, menstrual huts are commonly used to isolate menstruating women, otherwise their family will be ostracized and may even be forced to pay a fine to their local temple.[108] These menstrual huts are often in poor conditions, leading to women getting infections, and thus are illegal in both India and Nepal, yet are still widely practiced due to the ingrained societal belief that menstruating women are impure.[109] It is important to distinguish that despite the negative implications of the menstrual hut in these regions, in some cultural practices, such as the Objiwe People, the menstrual hut and menstruation are seen as a positive celebration of womanhood.[110]

The female body fails to meet the standards established by androcentric values. Notions of the purity and divine order of the male body are abstract ideas, not grounded in tangible evidence. Although the male body was used as a medium to seek perfect ratios in the field of architecture, the actual diversity of male bodies makes it impossible to find a singular absolute proportion. These efforts were not just rejections of the female body, but of all 'imperfect' or 'ungodly' bodies. As we all know, sex is not the only determination of body size; age, race, physical abilities all impact the shape and dimensions of the body.[111] Seeking to represent one perfect body did not just exclude women, but all of humanity's diversity.

108 Sushmita Pathak, "A Controversial Solution To Menstrual Exile: Building Better Menstrual Huts." *NPR*, August 29, 2021.

109 Ibid.

110 Mary Annette Pember, "'Honoring Our Monthly Moons': Some Menstruation Rituals Give Indigenous Women Hope." *Rewire News Group*, February 20, 2019.

111 Hosey, "Hidden Lines: Gender, Race, and the Body in 'Graphic Standards.'"

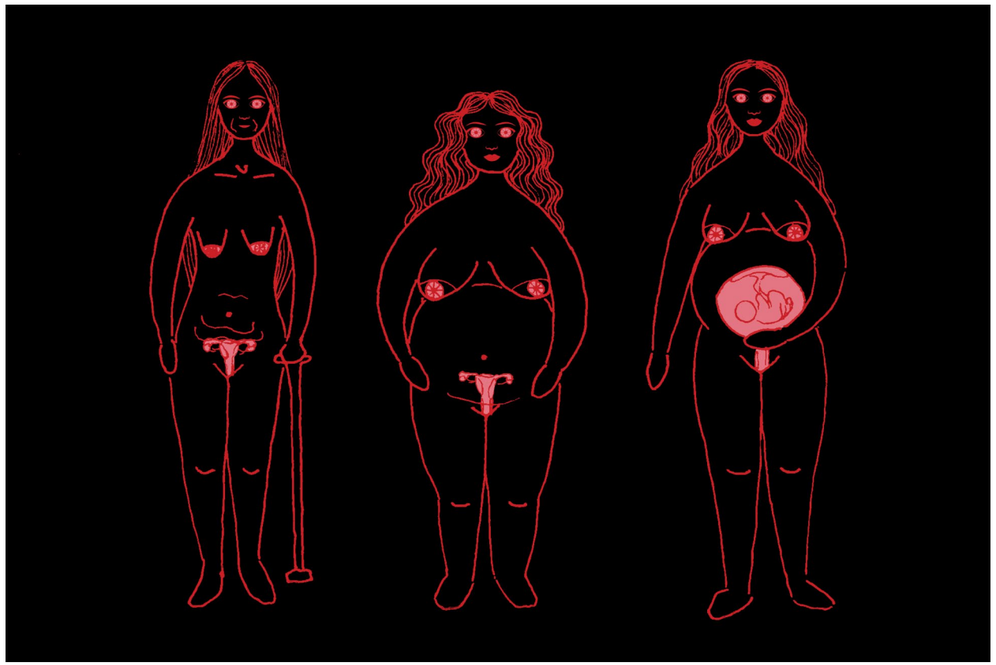


FIGURE.2.3 - The Female Body

THE FEMALE BODY

In addition to the field of architecture, discourse around the female body has been largely absent in all fields of study. Even healthcare, a field one would assume studies all sexes equally, has largely omitted women from scientific studies due to the complexity and length of their hormonal and menstrual cycles.[112] This was the case until 1993, when the United States passed a bill which forced clinical trials to include women.[113] The common notion has been that the male body is the standard, whether that be for a new drug trial or an architectural study of proportions, and the female body was not worthy of study. Despite the female body being viewed as secondary, recent research has turned towards a better understanding of the female body across multiple disciplines. One such example is Cat Bohannon, a researcher who has made groundbreaking contributions to our understanding of how the female body has led the evolution of our species.

While Bohannon's work deepens our biological understanding of the female body, it may also offer insight into how its life-giving and life-sustaining attributes developed into a central religious symbolism in the Neolithic era. In her book titled *Eve: How the Female Body Drove 200 Million Years of Human Evolution*, Bohannon outlines various traits and organs the female body ingeniously evolved over the past 205 million years in order to allow for the survival and proliferation of humankind.[114] First, the female body developed the capacity to lactate to provide babies nourishment and hydration after birth; the mother's body is highly attuned to her infant's needs, and breast milk will change its composition depending on a reading of the infant's saliva.[115] Additionally, while our earliest ancestors laid eggs, during Chicxulub, the event which led to the extinction of the dinosaurs 66 million years ago, our ancestors then evolved to carry the fetus inside the body, giving birth to live young. During this time, the female body evolved to have a menstruating uterus and a placenta during gestation. The womb allowed the fertilized egg to develop inside the mother's body, protected from the elements and predators. While it is likely that this evolutionary trait allowed our distant ancestors a higher chance of survival, this process is much more taxing on the female body compared to laying eggs.[116]

The female body has evolved to sacrifice much of its own wellbeing during pregnancy and birth, in order to give her offspring an increased likelihood of survival. While these distant ancestors reassembled more of a squirrel-like animal, the first ape that walked on two legs appeared 4.4 million years ago. This shift in our ancestor's posture narrowed the position of our hips,

112 Bridget Balch, "Why We Know So Little About Women's Health." *AAMC*, March 26, 2024.

113 Ibid.

114 Bohannon, *Eve: How the Female Body Drove 200 Million Years of Human Evolution.*

115 Bohannon, *Eve,* 27-70.

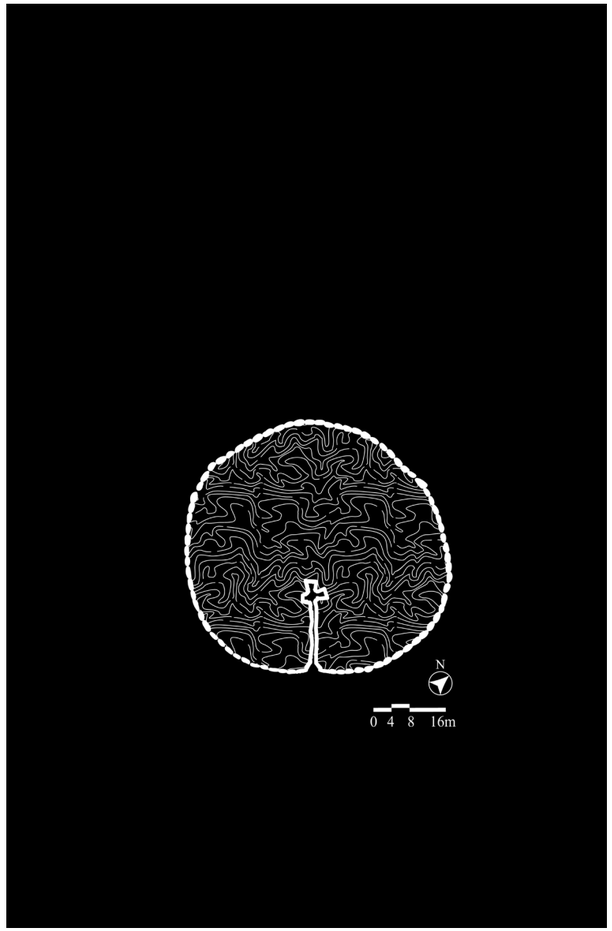
116 Bohannon, *Eve,* 73-74.

making birth even more challenging.[117] The importance of this research, such as that of Cat Bohannon, is to show that the female body is not inferior to the male body but rather an important protagonist in the history of humanity.

Women's role in the continuation of our species is both physically and psychologically intensive. However, despite the female body's key part in human survival, its role in reproduction and breastfeeding, has given women a secondary status in patriarchal societies, preventing them from engaging and achieving in activities outside of motherhood. Meanwhile, male bodies are not involved in the biological processes of pregnancy, menstruation, birth, and breastfeeding, and are thus able to devote more time to other pursuits. While women and the female body are associated with nature, survival and lower ambitions, men and the male body are associated with culture, progress and the divine.

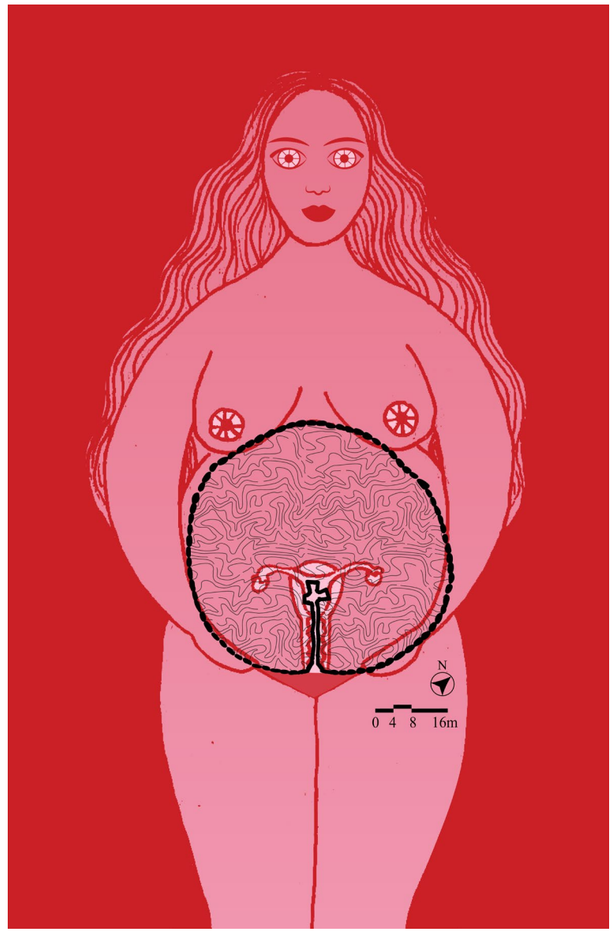
Despite the subordination of women in patriarchal societies for her role in motherhood, this very same role gave her an elevated status during the Stone Age. In matrifocal societies, women were revered for their capacity to create life, sustain life, and bleed cyclically. As such, Neolithic religions centered around a Mother-Goddess, akin to Mother Earth. The female body became a religious symbol, and we see it abundantly represented in Neolithic architecture despite it being largely absent from the field over the last two millennia. This appreciation for the female body is reflected in matrifocal architecture through the spatial representation of various parts of her body: the womb, the belly, the spine and her entire form.

117 Bohannon, *Eve: How the Female Body Drove 200 Million Years of Human Evolution,* 397-398.



I.I - THE WOMB

NEWGRANGE



I.I - THE WOMB

NEWGRANGE

FIGURE.2.4- The Womb Card

THE WOMB

The most ubiquitous representation of the female body in Neolithic architecture is the womb. We can imagine the human body as a spatial entity, our mother's womb (the uterus) is the first home we experience. During pregnancy the fetus is enclosed in all directions within the uterus. Within this space, the fetus' first sense to develop is touch and their sense of hearing is quite strong, meanwhile their sense of smell, taste, and sight are present yet muted.[118] Thus the spatial characteristics of the womb are dark and enclosed. Many Neolithic buildings chose to intentionally embody these spatial characteristics. Just as the female reproductive organs are primarily internal, so too does Neolithic architecture place an emphasis on interior spaces rather than facades.

During pregnancy, the fetus grows for a period of nine months, or ten lunar months, inside the womb of the mother before being born. At the moment of birth, the baby is pushed out through the vaginal canal through a series of contractions. After birth, infants continue to heavily rely on their mother's body for survival and nourishment. The mother's body is our first exposure to the notion of a 'home'. In the words of Iris Marion Young:

> "Everyone is born in loss. Ejected from the dark comfort of the mother's body, we are thrown into a world without walls, with no foundation to our fragile and open-ended existence. Speaking mortals must come to terms with this separation from the mother, to find and form meaning and identity for ourselves, without foundation or certainty...Man deals with the loss by building, in order that he may recover his dwelling."[119]

In her paper titled *House and Home: Feminist Variations on a Theme*, Young discusses the unconscious longing to reconnect with the maternal archetype, a desire which, according to Luce Irigaray, in patriarchal gender systems is mediated through the act of building and the objectification of women.[120] In contrast, Neolithic people were acutely aware of this longing to reconnect with the 'mother' and made explicit efforts through their religion and architecture to achieve this reconnection. Neolithic societies viewed the world around them as a female, and used the womb symbolism abundantly in their art and architecture. Erich Neumann, inspired by the work of Carl Jung, described 'The Great Mother' as a ubiquitous human archetype.[121] He describes the symbol of the female body as that of a vessel;

118 Jamie Morgan, "Fetal Sensory Development: What to Know About Senses in the Womb," *UT Southwestern Medical Center*, August 1, 2017.

119 Here Young is addressing Luce Irigaray's gendered interpretation of Martin Heidegger's idea of the subordinate relationship of dwelling to building in which man must build to establish his place in the world.
Iris Marion Young, "House and Home: Feminist Variations on a Theme." In *Motherhood and Space*, ed. Sarah Hardy and Caroline Wiedmer, (London: Sarah Hardy and Caroline Wiedmer, 2005), 120.

120 Ibid.

121 Erich Neumann, *The Great Mother: An Analysis of the Archetype,* 2nd ed. Translated by Ralph Manheim (Princeton, NJ: Princeton University Press, 1970).

the womb, which is unique to the female body, is a container or vessel which can hold life.[122] In early human religions, this metaphor is then extended to the cosmos, since they viewed the natural world as the body of their mother-deity:

> "We arrive at a universal symbolic formula for the early part of mankind: woman = body = vessel = world. This is the basic formula for the matriarchal stage." (Neumann 1970, 43)[123]

However, Neumann's equation implies that women were solely their vessel-like bodies. Contrarily, Gimbutas argues that Neolithic women were engaged in societal life and played a central role in religion,[124] meaning women's value in the Neolithic era transcended their body's contribution to reproduction. The female womb in matrifocal societies was not perceived as just an empty vessel waiting to be filled, but the very creator of life. Thus, the formula by Neumann could be changed to more appropriately reflect Neolithic belief to womb = temple = cosmos.



FIGURE.2.5 - Womb = Temple = Cosmos

STONE AGE CAVE

Creating these spatial connections to the womb began during the first era of the Stone Age, the Paleolithic Era.[125] Going back to this time, we see that caves were of great importance to humanity, both as our very first shelters and also as religious spaces.[126] Naturally occurring caves are crevices or voids in the earth, formed either by erosion or by water dissolving minerals in the rocks, and while all caves are unique, they share similar spatial characteristics: darkness, dampness and enveloping.

Naturally occurring caves, which were of use during the Stone Age, were perceived as the womb of Mother Earth. Worship of a female mother deity pervaded the Stone Age, as evidenced by Goddess figurines discussed in the previous chapter, and their religious rituals took place inside of caves. The Cro-magnon humans and Neanderthals, who lived concurrently in Paleolithic Europe and the Near East, used caves for domestic, funerary and spiritual purposes.[127] Deep inside these Stone Age caves, far from the entrance, paintings decorate the walls depicting animals, human hands, and representations of the female body. It is only deep inside caves that evidence for ritual is found; rituals and art were not produced near cave openings

122 Neumann, *The Great Mother: An Analysis of the Archetype,* 42.

123 Neumann, *The Great Mother: An Analysis of the Archetype,* 43.

124 Gimbutas, *The Living Goddesses*.

125 Levy, *The Gate of Horn*.

126 Holley Moyes, "Introduction." In *Sacred Darkness: A Global Perspective on the Ritual Use of Caves*, 1–14 (Boulder: University Press of Colorado, 2012).

127 Although Neaderthals are believed to be brute apes, archeological evidence proves they were much more advanced culturally. Neaderthals participated in burials, and what appears to be rituals which are spiritual in nature.
Levy, *The Gate of Horn*.
Jean Clottes, "Ritual Cave Use in European Paleolithic Caves." In *Sacred Darkness: A Global Perspective on the Ritual Use of Caves*, 15–26 (Boulder: University Press of Colorado, 2012).

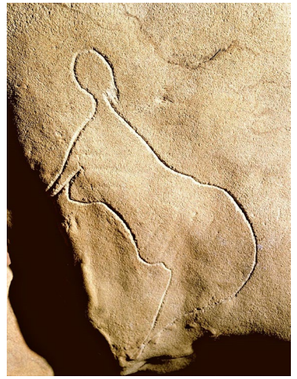


FIGURE.2.6 - Paleolithic cave art in Cussac Cave, France

Paleolithic engraving of a female silhouette.

where natural light could reach, but rather in parts of the cave which would have been completely dark, illuminated only by torch light.[128] The dark and enclosed spatial qualities of these caves were womb-like in character. Stone Age people perceived the earth to be the body of their deity: the mountains were her breasts, the rivers her veins, and the caves they inhabited were her womb:

> "Although Plato does not seem to have thought much about this point, a cave is - as Freud pointed out - a female place, a womb - shaped enclosure, a house of earth, secret and often sacred. To this shrine the initiate comes to hear the voices of darkness, the wisdom of inwardness. In this prison the slave is immured, the virgin sacrificed, the priestess abandoned."[129]

Cave art was decorated with a red pigment called ochre, also known as iron oxide, which has a deep rusty red colour. This pigment was used as early as 340 thousands years ago, and is seen used in many different locations around the world[130]. Red ochre often takes on the symbolism of blood due to its similarity in colour, and more specifically symbolism of menstrual blood. The anthropologist Camilla Power postulates that some of the earliest use of red ochre was women painting their legs with the pigment to mimic menstrual blood in order to appear fertile.[131] Since ovulation often does not produce visible symptoms, menstruation is the most obvious signal to a woman's fertility. Power suggests that this practice would prevent discrimination within a community between cycling or fertile women and non-cycling or non-fertile women. This practice ties the use of red ochre, which was used abundantly in cave paintings, to the female body. The use of red ochre continued into the Neolithic era with the painting of temple walls, such as the temples and Hypogeum of Malta[132] which I propose was intended to connect these spaces to the female body, in particular the womb.

NEOLITHIC CAVE

Caves continued to carry spiritual significance into the Neolithic era. In particular, the Minoans considered naturally occurring caves to be sacred, with many religious artifacts and votive offerings found by archaeologists in these spaces.[133] Many caves in Crete are associated with childbirth, strengthening this spatial connection to wombs. The Cave of Inatos, located on the southern shore of Crete, was a place for the worship of Eileithyia,

128 Clottes, "Ritual Cave Use in European Paleolithic Caves."

129 Sandra M. Gilbert and Susan Gubar, *The Madwoman in the Attic* (Second Edition. New Haven: Yale Nota Bene, 2000), 93.

130 Jarzombek, *Architecture of First Societies*, 10-14.

131 Power, Camilla. "Women in Prehistoric Art." Essay. In *New Perspectives on Prehistoric Art*, 75–103 (London: Praeger Publishers Westport, 2004).

132 Jarzombek, *Architecture of First Societies*, 369.

133 Richard Bradley, *An Archeology of Natural Places* (London: Routledge, 2000).

the Minoan Goddess of childbirth.[134] Additionally, both the Psychro Cave, also known as the Cave of Diktaion Andron, and the Cave Ideon Antron are speculated to be the birthplace of Zeus.[135] While these connections to Zeus are Greek in origin, rather than Minoan, it is possible that these caves were connected to rituals of birth, or fertility in Minoan times, whose themes then trickled down into Greek mythology after the invasion of the Mycenaeans. Minoan caves were not domestic, but rather a space of religious ritual, evidently related to birth, fertility and connection to the divine.

We also see the use of caves across other parts of Europe, not coincidentally nearby Neolithic sites. Due to the importance of these caves, spanning the Paleolithic to the Neolithic, matrifocal societies likely chose to build near them. Close to the Maltese temples, is one of the oldest caves with human activity: the Għar Dalam Cave in southern Malta, inside of which pottery shards and teeth were found.[136] The Għar Dalam Cave is shaped like a long tunnel which gets more narrow as you descend into the earth. Similarly the Oweynagat cave in Ireland, also features a tunnel-like shape. The Oweynagat cave is even more narrow, and requires visitors to crawl on all fours to enter the cave. Once inside, the cave expands in its height while remaining narrow in width. Both of these caves have a singular opening, thus visitors always enter and then exit from the same opening in the ground. These long and narrow caves take on a female form, mirroring the shape of the birth canal; this very semblance to female anatomy may have given these sites their special importance and many Neolithic buildings mirror this particular shape.

CHTHONIC ARCHITECTURE

In the Neolithic era we begin to see communities building their own cave-like megaliths, an aspect of which is building by subtraction: the act of removing material to create a space. One such example is the Ħal Saflieni Hypogeum in Malta, which is an underground burial site carved from limestone. This structure is 3 stories of curvilinear connected chambers that held the remains of over 7000 bones.[137] This structure was created by hollowing out the limestone in the ground to create an expansive underground structure. The walls were painted red using ochre, giving the impression of blood, strengthening the womb-like characteristic of the Hypogeum. Inside, the chambers follow a pattern of contraction and expansion in size, forcing visitors to keep shifting from bending over to

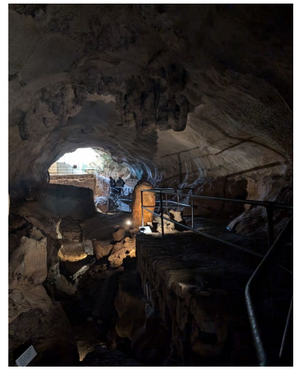


FIGURE.2.7 - Għar Dalam Cave, Malta

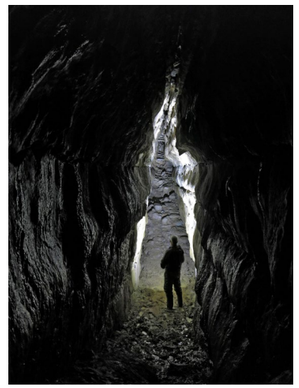


FIGURE.2.8 - Oweynagat Cave Interior, Ireland

134 Günther Hölbl, *The Shrine of Eileithyia, Minoan Goddess of Childbirth and Motherhood at the Inatos Cave in Southern Crete, I: The Egyptian-Type Artifacts*. With contr. by Ph. P. Betancourt, K. Chalikias (Philadelphia: INSTAP Acad, 2022).

135 Stuart Thorne, "Diktaian Zeus in Later Greek Tradition." *British School at Athens Studies* 6 (2000): 149–62.

136 Heritage Malta. *Welcome Exhibition*, Għar Dalam Cave and Museum. Birżebbuġa, Malta, September 29 2024.

137 Heritage Malta. *Ħal Saflieni Hypogeum Guided Tour*, Ħal Saflieni Hypogeum Museum and Archaeological Remains. Paola, Malta, visited September 27 2024.



FIGURE.2.9 - Ħal Saflieni Hypogeum, Malta



FIGURE.2.10 - Ħal Saflieni Hypogeum, Malta

standing up straight. The buildings of the Hypogeum likely did not have a preconception of the design prior to building, as they carved along the natural fixtures of the stone, allowing the stone itself to play a part in the designing process. These same chthonic building techniques of carving the bedrock to create architectural spaces are similarly employed at religious temples in Anatolia, particularly Göbekli Tepe and Karahan Tepe.[138] The act of removing materials to build a space contrasts the common methods of adding materials together to build a space. The focus on creation of voids through this subtractive building technique, mirrors the womb's inherent void spatiality.

BURIAL MOUNDS AND MYTH

Striking architectural resemblance to the female reproductive organs are found in the burial mounds from Ireland and Scotland. These burial mounds consist of a cave-like stone chamber, built underneath an artificial mound of earth and rubble. The interior chamber features a long narrow passage, suggestive of the vaginal canal, which leads to a large chamber, evoking the form of the uterus. Scholars, most notably Maria Gimbutas, Kate Prendergast, and Anthony Murphy have written about this connection between the mounds and the female reproductive organs, and the term womb tomb has been coined in the field of archeology to describe such sites.[139] The burial mounds bear no facade, with only a singular opening. From the exterior the mounds may resemble an ordinary hill, yet the interior reveals an intricate structure with ornate carvings. While it is believed that the burial mounds were built by creating the chamber of stones first and then placing layers of rubble, then earth on top, the final design gives a similar impression as the Hypogeum or Göbekli Tepe of having been carved from the earth.

In addition to spatially resembling the female reproductive organs, many of the mounds are associated with a female deity in Celtic folklore. The connection to female mythological figures strengthens the burial mounds' connections to women and the female body. The Loughcrew complex, for example, is associated with a female divinity named the Cailleach. Also known as 'Sliabh na Caillighe' meaning the old woman's mountains, Loughcrew is a collection of burial mounds in Ireland on four consecutive hills. The Cailleach is a female giant and ancient divinity whose lore spans the British Isles; her stories extend past Ireland, into Wales and Scotland. Numerous Irish cairns and mountains are named after her, and she is said

138 Schmidt, "Göbekli Tepe - The Stone Age Sanctuaries.";
Çelik, "Karahan Tepe: A New Cultural Centre in the Urfa Area in Turkey."

139 Gimbutas, *The Living Goddesses*, 55-67;
Anthony Murphy and Richard Moore, "Newgrange: Womb of the Moon." in *Island of the Setting Sun: In Search of Ireland's Ancient Astronomers* (Dublin: The Liffey Press, 2020);
Prendergast, "The Neolithic Monument of Newgrange in Ireland: A Cosmic Womb?"

to have built many burial mounds by carrying stones in her skirt or apron which she then dropped across the landscape, building the monuments over the period of a single night.[140] Her most famous association is with the Loughcrew complex, which is also known as 'Sliabh na Caillighe' meaning the old woman's mountains. The Cailleach is often described as a elderly deity or witch who is "wild and indomitable".[141] She is not associated with a single concept or object, but rather all of nature and all animals. Loughcrew is described as being both her home and her throne.[142]

Similarly, Newgrange, the most prominent mound of the Brú na Bóinne collection of sites, is closely linked to the Celtic myth of the Goddess Boann of the Boyne river.[143] Newgrange is located less than a kilometre north of the Boyne River, and sits within the largest bend of the river. The most famous Celtic myth tells the story of the Goddess Boann mating with the God Dagda. Boann becomes pregnant, and the Dagda makes the sun remain at a standstill for nine months so that outside Newgrange only a day has passed. Boann then gives birth to a child, Oengus, on the same day he was conceived, which happens to be the winter solstice.[144] Newgrange is known in Celtic myth as 'Brú na Bóinne', which today is a term used to describe the entire complex of sites within the bend of the Boyne River.[145] While Brú or Brugh means home or mansion in Irish, it means womb in old Irish.[146] Thus, Brú na Bóinne's original meaning in old Irish was 'womb of the Boann of the Boyne River'. Newgrange was likely built as a symbol of the womb Neolithic deity associated with the Boyne River.

While the Celts did not build Newgrange, archaeologists, including Micheal O'Kelley who led the excavation of Newgrange, speculate that perhaps these myths were passed down through time from the original builders of the mound.[147] Oral storytelling and history keeping has been used reliably by many ancient and indigenous cultures from around the world. It is very possible that elements or themes remain from original Neolithic mythology, which were passed through contact between the different cultures. In the words of the archaeologist John Waddell: "[t]he longevity of potent myths anchored to a monument like Newgrange need not surprise. Enduring monuments like this could well be the focus for the preservation

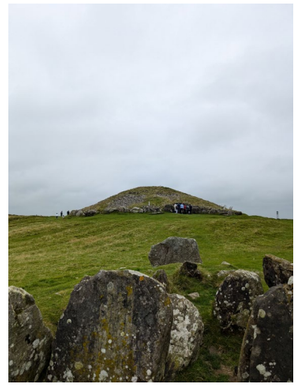


FIGURE.2.11 - Loughcrew Cairn T, Ireland



FIGURE.2.12 - Newgrange, Ireland

140 Max Dashú, *Witches and Pagans: Women in European Folk Religion, 700-1100* (Veleda Press, 2016).

141 Dashú, *Witches and Pagans: Women in European Folk Religion, 700-1100*, 175.

142 Dashú, *Witches and Pagans: Women in European Folk Religion, 700-1100*, 186.

143 John Waddell, Archaeology and Celtic Myth: An Exploration (Dublin, Ireland: Four Courts Press Ltd., 2014).

144 Ibid.

145 John Waddell, "2014 Rhind Lecture 2: 'The Otherworld Hall on the Boyne'." Lecture, presented by Society of Antiquaries of Scotland, November 14, 2014. Accessed April 7, 2024.

146 eDIL. *An Electronic Dictionary of the Irish Language*, based on *Contributions to a Dictionary of the Irish Language*. Dublin: Royal Irish Academy, 1913–1976. 2019. https://dil.ie/7037. Accessed February 8 2025.

147 O'Kelly, *Newgrange Archaeology, Art and Legend*, 48.

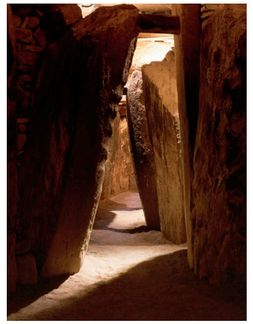


FIGURE.2.13 - Newgrange Passageway, Ireland

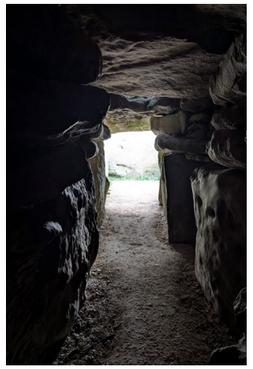


FIGURE.2.14 - West Kennet Long Barrow Passageway, England

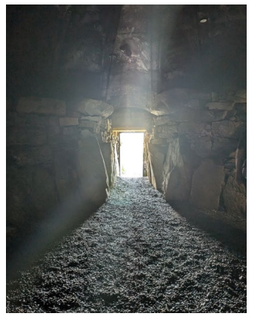


FIGURE.2.15 - Fourknocks Chamber, Ireland

of remnants of the beliefs of a pre-literate society."[148] Stories and memories tied to architecture are able to live longer due to being rooted in something tangible. As evidenced by the multitude of cairns associated with female figures in myth, I suggest that these mounds were physical representations of the womb of the female deity or deities worshiped during the Neolithic Era. While many myths have been lost to time, perhaps all burial mounds were once associated with a female divinity.

RITUAL OF BIRTH

While the rituals which took place at the burial mounds, beyond the burial of the dead, remain speculative, the spatial similarity to a womb suggests that rituals may have been related to the theme of birth or rebirth.[149] Consider Newgrange, which resembles a hill from its exterior, and sits within a large stone circle. The interior of the mound has a long corridor which leads to a chamber with three small apses. When walking through the passageway at Newgrange, your body is hugged by the stones. At no point can one comfortably stand up straight, always crouching or turning your body to fit through the passageway. The narrowest point of the passage is 39 centimeters, and the shortest point is 114 centimeters.[150] The stones tilt inwards from top, as if to caress your shoulders when walking through the passageway. Once through, the space opens up to a larger chamber 6 meters tall. The last two stones of the passageway lean in more closely as if to squeeze you tighter before stepping into the chamber. The chamber is circular in form with a corbelled roof. The tight fit of the passageway is clearly done by design, given their capacity to create a large central chamber. At Maeshowe, a burial mound in Scotland whose form closely resembles that of Newgrange, one cannot even walk through the passageway, but rather must crawl on all fours or walk bent over to reach the chamber. Once inside Maeshowe's chamber, the space opens up and feels expansive compared to the spatial compression of the passageway.

The chambers of the mounds were meant to be experienced in darkness. Everyday at Newgrange, just a very faint path of light on the floor reaches the chamber; the artificial light we see in illuminated photographs is misleading. Even the light from the solstice alignment does not fully illuminate the chamber beyond the floor. Those in the chamber on the winter solstice would have stood in complete darkness waiting for the light to come:

> "No light, water or sound penetrates this inner sanctum, buried deep in a huge earthen mound at the end of a long and narrow passage. It would be difficult to think of a space more womb-like in its construction, and it is almost certain to be deliberate"[151]

148 Waddell, *Archaeology and Celtic Myth: An Exploration*, 25.

149 Prendergast, "The Neolithic Monument of Newgrange in Ireland: A Cosmic Womb?"

150 Heritage Ireland OPW, *Welcome Exhibition*, Brú na Bóinne Visitor Centre. Donore, Ireland, visited August 30, 2024.

151 Prendergast, "The Neolithic Monument of Newgrange in Ireland: A Cosmic Womb," 58.

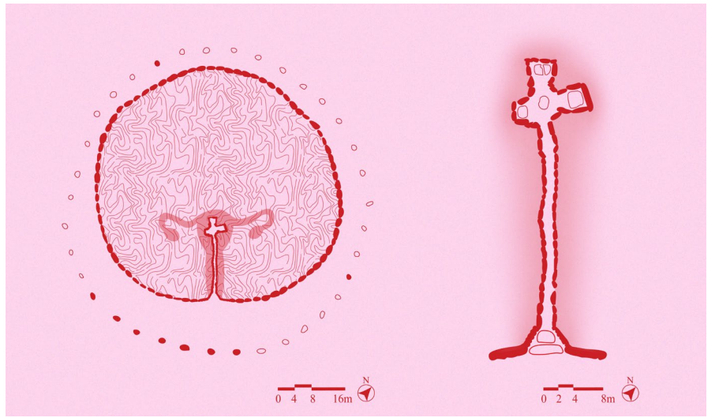


FIGURE.2.16 - Newgrange Plan

It appears that the spatial and lighting designing at Newgrange, and other burial mounds, were meant to recreate the experience of birth. Just as a baby in the womb lives in darkness in their mothers womb, sight is not the principle sense used, but rather touch and likely hearing.[152] Scholars speculate that music and sound may have been a vital part of the yearly rituals at Newgrange.[153] After the rituals were concluded inside the chamber, participants would have exited through the passageway. The physical pushing motion to move through the passageway mimics the motions of birth. Once outside of the mound, ritual participants return to the brightness of the morning and are greeted with sunlight.

Like the burial mounds of the British Isles, the Sweat Lodge is a contemporary building which replicates the spatial characteristics of the womb.[154] The lodge, cultural to the Indigenous peoples across North America, is a small, dark, domed building which represents the womb of Mother Earth. The ceremony conducted inside the lodge is intended for purification and allows for a spiritual rebirth upon leaving the womb-shaped lodge.[155] The entrance of the Sweat Lodge would generally face East, the direction of the rising sun and cosmological symbol of rebirth (which will be discussed further in Chapter 4). The ritual conducted at the burial mounds of the British Isles also entailed a spiritual rebirth, both for the dead buried in the mounds, and the living who conducted the rituals; womb symbolism in architecture is intrinsically connected to themes of birth.

152 Morgan, "Fetal Sensory Development: What to Know About Senses in the Womb."

153 Heritage Ireland OPW, *Welcome Exhibition*, Brú na Bóinne Visitor Centre. Donore, Ireland, visited August 30, 2024.

154 William Asikinack, "Sweat-Lodge Ceremony." Indigenous Saskatchewan Encyclopedia, December 14, 2018.

155 Asikinack, "Sweat-Lodge Ceremony."; Aimée Craft, "Giving and Receiving Life from Anishinaabe Nibi Inaakonigewin (Our Water Law) Research." In *Methodological Challenges in Nature-Culture and Environmental History Research*, 125–39. Routledge, 2017.

WOMB TOMBS

While no two burial mounds have the same dimensions or proportions, I observed that most internal structures follow a similar shape of a singular passageway which leads to a central circular chamber. From this chamber there are typically three apses, whose size vary from being a ledge in the wall, to the size of a room. Given the universality of the passageway and a circular chamber, I propose that this was a base form for matrifocal temples and tombs. The passageway clearly mimics the vaginal canal, while the central chamber mimics the uterus or womb. It is also evident that dimensions and proportions were not of key importance, whereas the basic combination of these two forms was.

We see some of the mounds in Ireland have very long passageways, like at Newgrange or Knowth, while others have wider and shorter passageways, such as in Fourknocks and Loughcrew Cairn T. Clearly, the proportions and dimensions of these internal chambers were not singular and quite diverse. Additionally, chambers with five or more apses, such as the Maltese temples, could be argued to follow this similar pattern due to the clearly defined passage which the apses branch off from.[156] The walls of the Maltese temples were painted in red ochre[157] and with the roof structure intact, which has eroded with time, the temples would have had a cave or womb-like effect. All these mounds and temples have only a singular entrance from which you must enter and exit.

The Minoan tholos tombs also follow this structure, yet without any apses. Minoan tholos tombs are circular in shape, and were built with a corbelled roof and are nestled into the earth, similar to the mounds in the British Isles. The Tomb of Marguerites, located an hour west of Knossos, is one of the few Minoan tombs still in decent condition today. While the passageway at the Tomb of Marguerites is still narrow, it allows for more freedom of movement than the Irish and Scottish burial mounds, and is not covered with a roof. Similarly at Maeshowe, the passageway starts at the exterior of the mound, with two walls defining the space, before continuing inside the mound.

156 Ridley, *The Megalithic Art of The Maltese Islands*.
157 Jarzombek, *Architecture of First Societies*, 369.

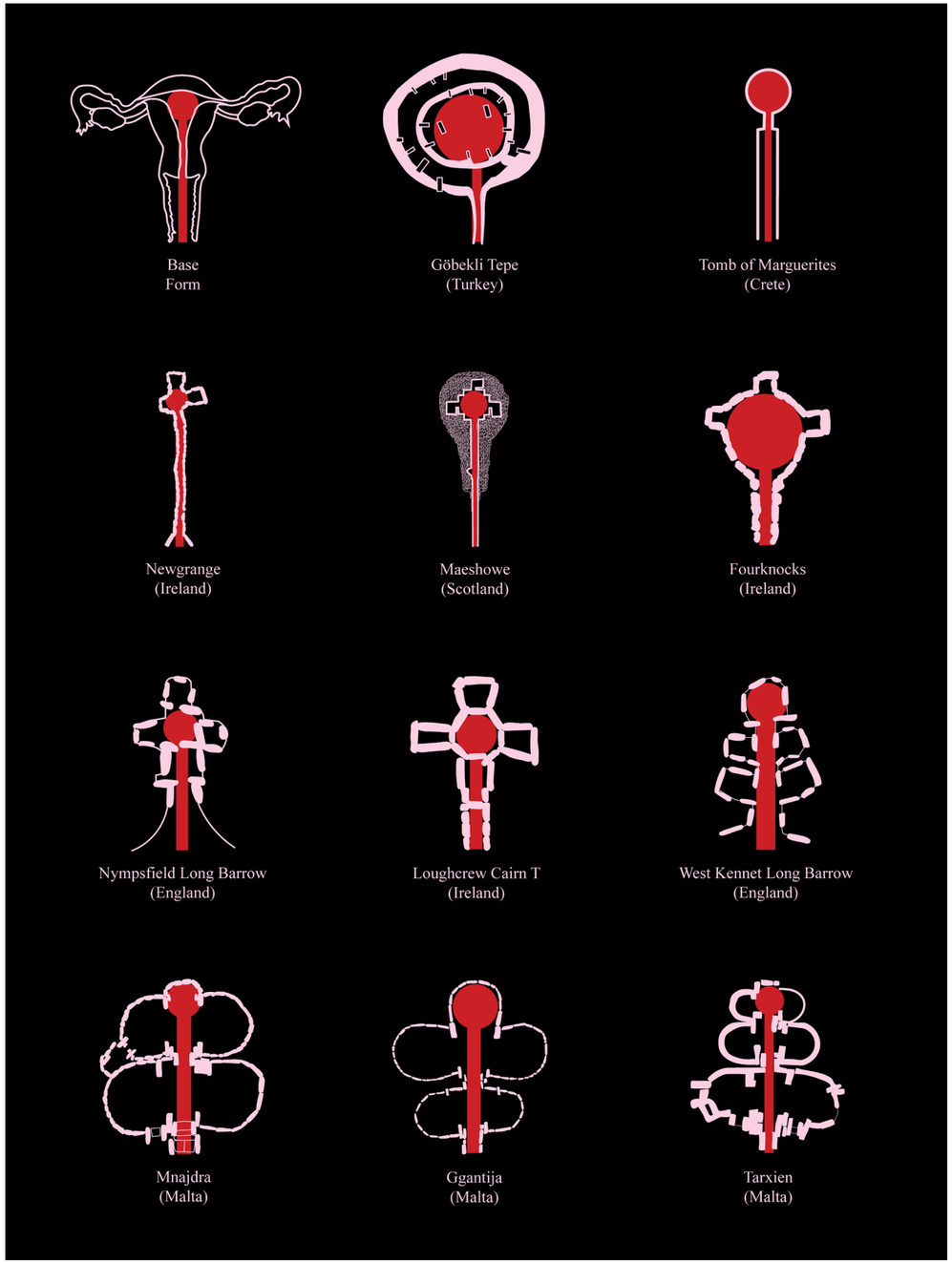
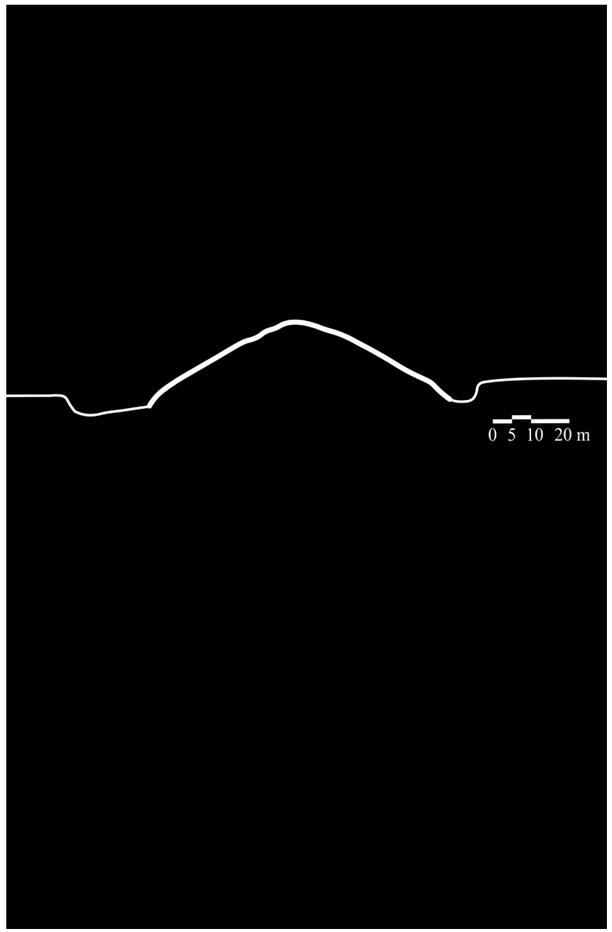
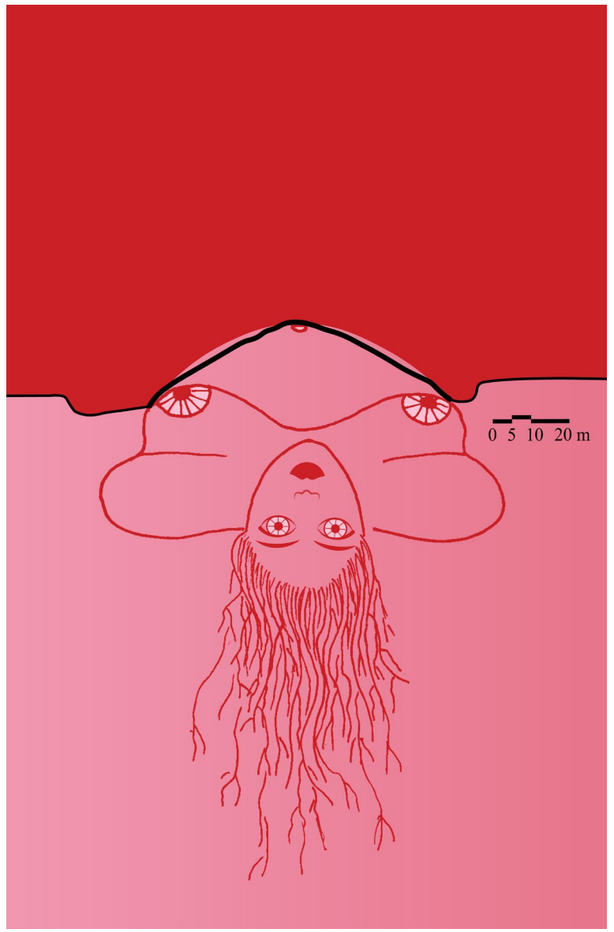


FIGURE.2.17 - Womb Tomb



I.II - THE BELLY

SILBURY HILL



I.II - THE BELLY

SILBURY HILL

FIGURE.2.18 - The Belly Card

THE BELLY

The exterior of the circular burial mounds from Ireland and Scotland, which are shaped like a rounded hill, resemble a round pregnant belly. This is a natural extension of the womb symbolism of their interior chambers; while the womb is represented through negative space, the belly is the female form in positive space.[158] Silbury Hill in England is another monument which resembles a round belly, however in contrast to the burial mounds, its interior does not contain any chamber. Local myth from the 17th century talked of a treasure hidden inside the mound. Locals believed a great king was buried inside Silbury Hill, and some myths spoke of a statue of a horse and rider made from solid gold and at a 1:1 scale.[159] When the hill was finally excavated, first by antiquarians and later by archaeologists, they were surprised to find that the centre of the mound had no treasure.[160] Unlike the burial mounds, no stone chamber, or occupiable space was found inside Silbury Hill.

While Silbury Hill could represent a state of pregnancy, I propose that it could also represent a 'well-fed' belly. With the rise of farming in the Neolithic era, human populations finally had a steady supply of food, and depending on the year, perhaps even an oversupply of food. Proper nutrition is vital for the health of an expecting mother's fetus; malnourished women do not give birth to healthy infants.[161] Even prior to conception, females will not begin menstruation, or may stop menstruation (amenorrhea) if their body does not meet a minimum threshold of body fat. This is the body's way of preventing the possibility of pregnancy, if it does not have the reserves to carry the fetus to term.[162] While studies on the correlation between body fat and fertility are recent, Neolithic communities would have been able to observe the trend between the size of the female body and menstruation, a visible indicator for fertility. To ensure the health of future generations, Neolithic communities likely ensured their women were well fed. Curvaceous women with an excess supply of body fat were a symbol of both health and fertility. Many Goddess figurines, such as the Venus of Willendorf, are curvaceous with round belly, but are not depicting a state of pregnancy.

Through radiocarbon dating, archaeologists were able to determine that Silbury Hill was constructed over a period of 155 years; this was a continuous process which spanned multiple generations.[163] The archaeologist Jim Leary argues that the hill was constructed as a ritual of

158 Neumann, *The Great Mother: An Analysis of the Archetype*, 44.

159 Michael Dames, *Silbury Treasure* (London: Thames and Hudson, 1976).

160 Ibid.

161 Bohannon, *Eve: How the Female Body Drove 200 Million Years of Human Evolution,* 92.

162 Rose E. Frisch, "Fatness and Fertility." *Scientific American* 258, no. 3 (1988): 88–95.

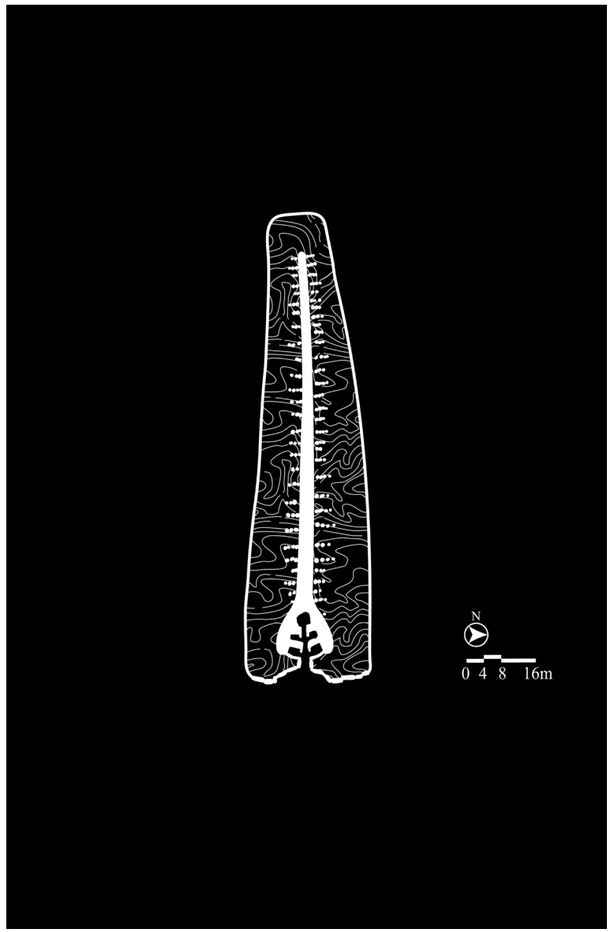
163 Jim Leary and David Field. "Ways of Understanding Prehistoric Silbury Hill." in *Silbury Hill: The largest prehistoric mound in Europe*, (Swindon: English Heritage, 2013), 207.

adding material to the mound little by little.[164] This ritual act could be seen as them 'feeding' the belly, allowing it to grow in size over time. The belly of Silbury Hill would have grown over years and multiple generations, as religious devotees brought soil and offerings; the belly would grow, even without a child.



FIGURE.2.19 - Silbury Hill, England

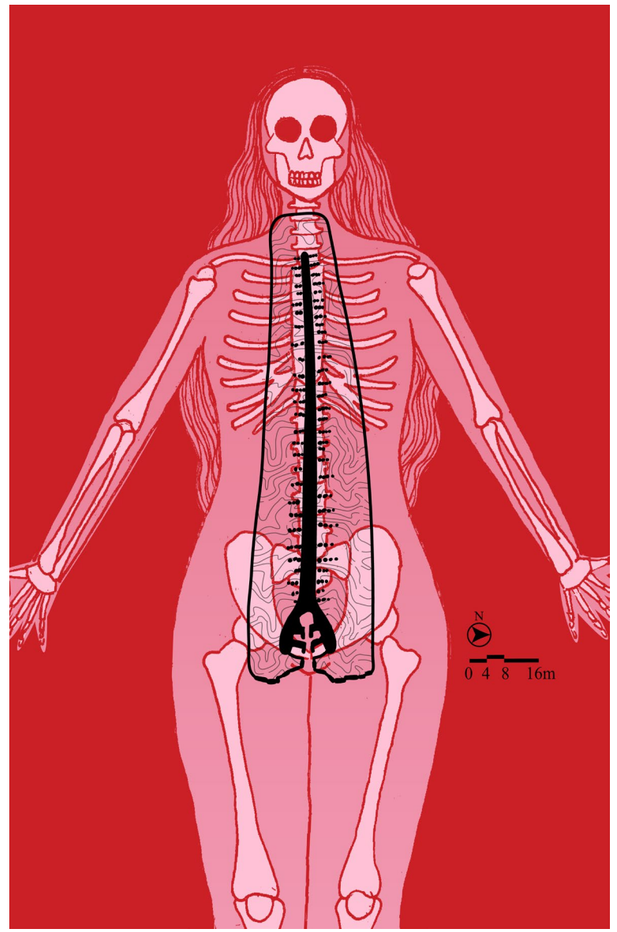
164 Leary and Field,"Ways of Understanding Prehistoric Silbury Hill.", 207.



I.III - THE SPINE

WEST KENNET LONG BARROW

FIGURE.2.20- The Spine Card



I.III - THE SPINE

WEST KENNET LONG BARROW

THE SPINE



FIGURE.2.21 - Uley Long Barrow, England (from above looking down at the entrance)

At certain long barrows, the mound extends past the entrance, resembling legs. See sketch below.



FIGURE.2.22- Uley Long Barrow Sketch

The third aspect of the female body which is represented in Neolithic architecture, is that of the spine which can be observed in the English long barrows. Neolithic communities were familiar with the anatomy of human skeleton due to a burial process called excarnation, which involved leaving the body to decompose or for animals to scavenge until only the skeleton is left.[165] The bones were then placed in burial sites such as the cairns and long barrows. The spine is the central part of the skeleton which structurally supports the body and allows it to twist and move. While we do not know the extent of Neolithic communities' understanding of the function of the spine, especially in its role of encasing our nervous system' spinal cord, it is clear that the long barrows are intended to represent the body in its gigantic form.

The long barrows are slightly different from other types of burial mounds in the British Isles: rather than being circular in shape, the mound is elongated into an oblong hill. The West Kennet Long Barrow in southern England, for example, is over 100 metres in length. Archaeologists are unsure about why long barrows are so long, as the burial only occurs in a small chamber in the eastern part of the barrow.[166] The historian Michael Dames suggests the length is meant to symbolize the spine of the body of the Goddess.[167]

During an archaeological dig led by Stuart Piggott, the mound was cut laterally, revealing that the mound was built on a central line of sarsen stone with perpendicular offshoots, underneath the rubble and turf.[168] When observing the plan of the long barrow, we can see the middle of the mound has a central axis which resembles a spinal cord with branches which resemble ribs.[169] The length of the mound, according to current academic knowledge, serves no functional purpose: the chamber is the only occupiable space, and no burials occurred in the mound itself. Thus, the length of the mound serves purely symbolic purposes. While not all long barrows have been excavated to reveal what is hidden under the mound of earth, they all share a similar oblong shape reminiscent of a human torso.

Today there is very little folklore or stories remaining about the long barrows, which may be due to the invasion of the Romans of England, and eventual Christianization of the country at a much earlier date than the rest of the British Isles. Micheal Dames suggests perhaps the West Kennet long barrow represented the 'hag mother';[170] the burials inside the chamber connect the long barrow to death and decay, therefore Dames proposes that

165 Cooney and McHale, *Death in Irish prehistory*.

166 Stuart Piggott, *The West Kennet Long Barrow Excavations 1955-56* (London: Her Majesty's Stationery Office, 1962).

167 Michael Dames, *The Avebury Cycle* (London: Thames and Hudson, 1977), 29-31.

168 Piggott, *The West Kennet Long Barrow Excavations 1955-56.*

169 Dames, *The Avebury Cycle*, 29-31.

170 Dames, *The Avebury Cycle*, 30..

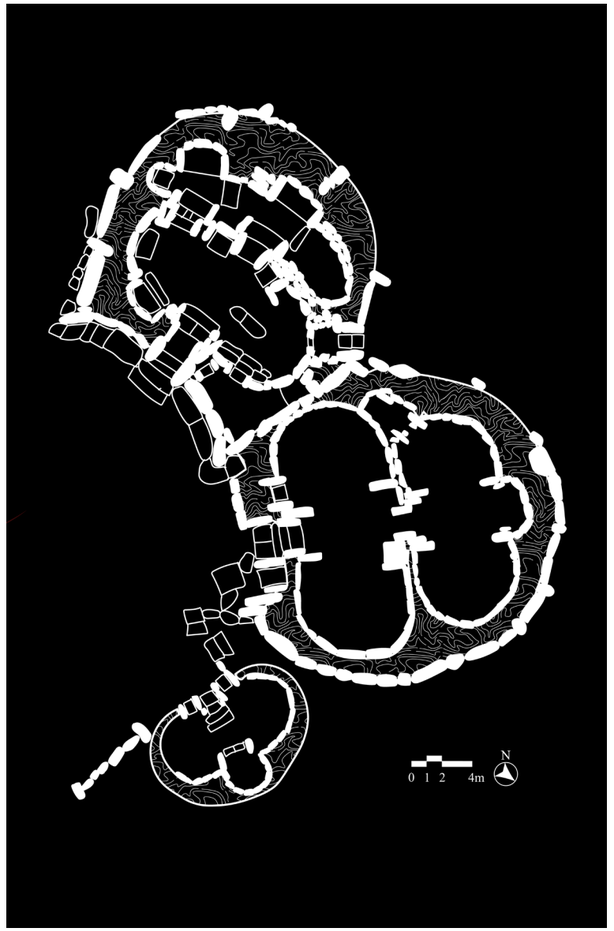
the long barrow may have been a symbol of a crone and or aged deity. The scholar Cat Bohannon discusses the vital importance grandmothers would have played in the survival of our species, particularly in the Neolithic era as human lifespans began to increase.[171] As humans began to live longer, elderly were able to share knowledge and wisdom from past experiences to help younger generations progress. While the evolutionary reason for menopause is still debated, it allowed women, once they had reached a particular age, to redirect their attention from procreation to supporting their community.[172] These women would have had vast knowledge from their lived experience which they could pass down to their children and grandchildren. Just as myths from all corners of the British Isles tell the story of the Cailleach, a giant primordial deity, in southern England, they too may have worshiped a gigantic deity, whose body they sought to represent in the long barrows. At the base of the spine of sarsen stone is the internal chamber which resembles a womb, giving the mound a clear female form. Based on this evidence, it is very possible that these long barrows represented a grandmother figure, whose spine represents the support given to their community.



FIGURE.2.23 - West Kennet Long Barrow, England

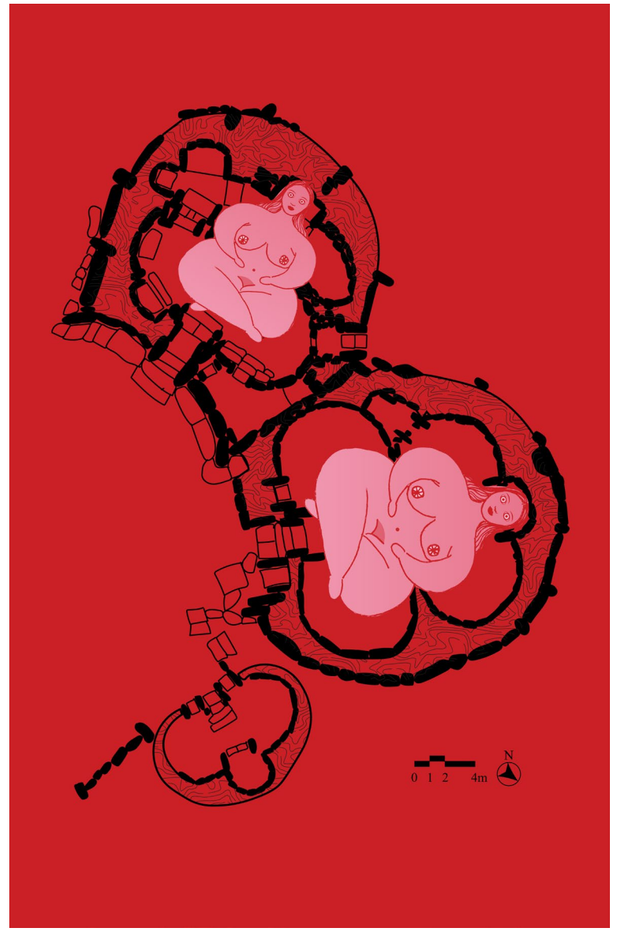
171 Bohannon, *Eve: How the Female Body Drove 200 Million Years of Human Evolution,* 337-368.

172 Ibid.



I.IV - THE FULL BODY

MNAJDRA



I.IV - THE FULL BODY

MNAJDRA

FIGURE.2.24 - The Full Body Card



FIGURE.2.25 - Sheela-na-gig, Kilpeck Church

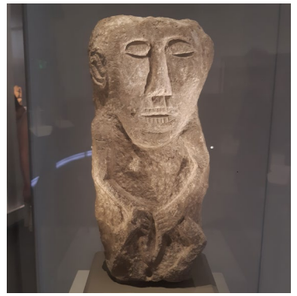


FIGURE.2.26 - Sheela-na-gig



FIGURE.2.27 - The Double Goddess figurine, Malta

THE FULL BODY

The final symbol of the female body is that of her entire body in a squatting position. Micheal Dames refers to this shape as the 'squatting Goddess' whose body is fully depicted in a seated or squatting position. "The goddess squatted because she was in labour".[173] Rather than looking more closely at her womb, this form represents her whole body, which is simplified as five concentric chambers: a curve for her head, two curves for her arms, and three curves for her legs. The image of the squatting female form is also seen in the Sheela-na-gigs in the British Isles from the medieval ages. Sheela-na-gigs, female squatting gargoyles both on the interior and exterior of churches, are a mystery to historians in terms of their origins and meaning.[174] Their squatting position forms five curves, similar to the Neolithic 'full figure' form. Their naked squatting position exposes the genitals, and they are often pulling their labia lips open.[175] While the Sheela-na-gigs, and the 'full figure' represent the entirety of the female body, the attention is also returned to her reproductive organs, and life-giving capacities; the full figured symbol seeks to represent the Neolithic Goddess in her entirety.

Many of the Maltese Goddess figurines depict the female form in a seated position, giving the figure a distinct form of five curves. Many of the Maltese temples, notably Mnajdra and Ggantija, mirror this shape with their five apses within a singular chamber.[176] Both of these temples have two chambers which resembles a famous Maltese figurine of two female forms sitting next to each other, joined at the hip. The two temples may represent the dual nature of their deity: life and death, maiden and crone, or summer and winter.[177]

Some archaeologists deny that the Maltese Goddess figurines represent a female form, since emphasis is placed on the roundness of the arms and thighs, rather than the reproductive organs.[178] Estrogen, the female sex hormone, places fat storage on "the breasts, hips, thighs and buttocks",[179] which is the same fat placement on the Maltese figurines, although the breasts are smaller at times. Contrarily, male bodies, due to the hormone androgen, tend to accumulate fat in the stomach region.[180] Due to the fat placement of the figurines, it is unlikely that these Maltese figurines were

173 Dames, *Silbury Treasure*, 52.

174 Barbara Freitag, *Sheela-Na-Gigs: Unravelling an Enigma* (London: Routledge, 2004).

175 Ibid.

176 Gimbutas, *The Living Goddesses*, 95.

177 Ibid.

178 Caroline Malone and Simon Stoddart. "Figurines of Malta." In *The Oxford Handbook of Prehistoric Figurines*, edited by Timothy Insoll, 729–754. Article 32. Oxford: Oxford University Press, 2017.

179 Rose E. Frisch, "Fatness and Fertility." *Scientific American* 258, no. 3 (1988): 88.

180 Karine Blouin, et al. "Androgens and Body Fat Distribution." *The Journal of Steroid Biochemistry and Molecular Biology* 108, no. 3–5 (February 2008): 272–280.

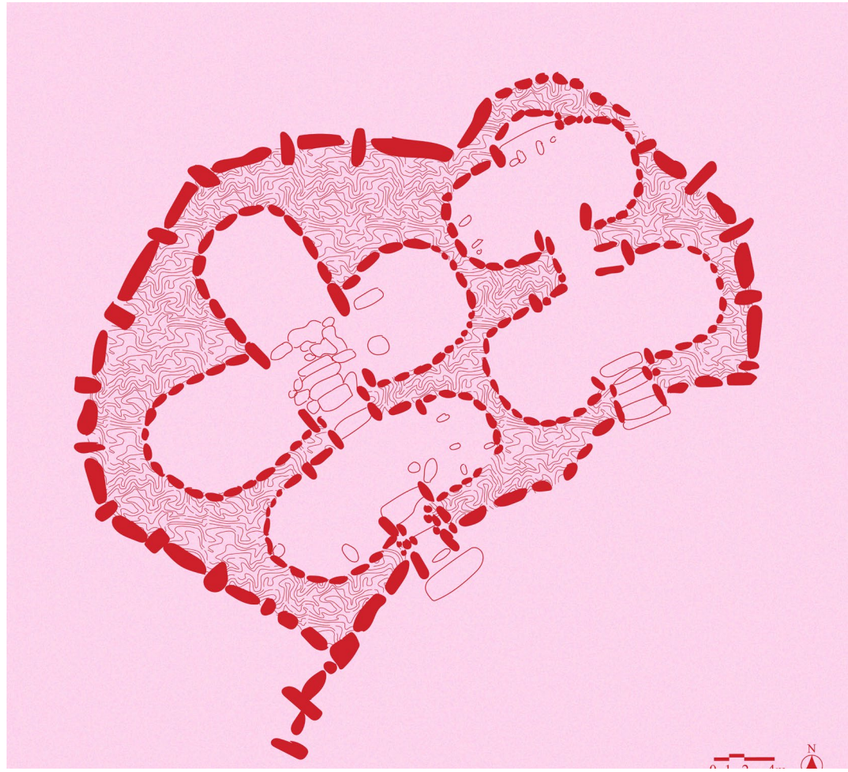


FIGURE.2.28 - Ggantija Plan

Ggantija's plan displays its two chambers which mirror the shape of the double goddess figurine.



FIGURE.2.29 - Goddess Figurine, Malta

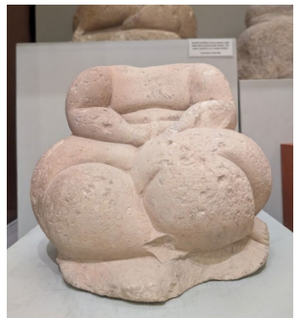


FIGURE.2.30 - Goddess Figurine, Malta

other than female. Naming these figurines as androgynous or male erases the female presence in Maltese Neolithic religion.[181]

The Maltese temples are also associated with a female figure in myths surrounding Ggantija, the largest of all the Maltese temples whose name means 'belonging to the giant'. Ggantija is associated with the local myth of a female giant named Sansuna. Just as at Newgrange and Loughcrew, it is no surprise that architecture which emulates the female body is associated with a female figure. It is possible all of these monuments had rich stories and folklore of female deities, but were simply lost to time. Sansuna was a female giant who lived on the island of Gozo, and had a diet of only honey and fava beans. She fell in love and had a child with one of the local human men from the island. While the child was on her back, she built the temple of Ggantija over the period of one night. Due to her giant form, she was able to carry the large stones with ease. The temple was meant to bring forth rain and fertility. The myth said she carried the stones from a site over 4 km away, showing her great strength.[182] As we saw at Loughcrew and Newgrange, it's interesting when we see architecture connected to the female body in its form, and also connected to a female figure in its myth.

Ggantija's five apses clearly mimic the goddess figurines, depicting the female form in a round shape, likely signifying fertility and health. The temple equally has womb-like characteristics, as described above, giving the Maltese temples multiple layers of metaphors of the female body. During the Neolithic era, when Ggantija's roof was intact, the chamber would have had a cave or womb-like spatiality.[183] The long barrows are another typology which typically feature a chamber with five apses. Similar to the Maltese temples, the five apses likely symbolized the full female squatting figure.[184] The long barrows have multiple layers of symbolism, the spine, the womb and the full squatted figure all within one form.

181 Arianna Carta, "Who's Afraid of the Goddess? Leopard's Tale, Menopausal Syndrome: Terms of Debate within Archaeology." *Studia Mythologica Slavica* 25 (2022): 245–272.

182 Kathryn Rountree, "Re-inventing Malta's Neolithic Temples: Contemporary Interpretations and Agendas." *Journal of Mediterranean Studies* 13, no. 2 (2003): 299–322;
John Vella, "Homer's Ogygia: An Imaginary or a Historiography?" *Athens Journal of History* 3, no. 1 (2017): 49–70.

183 Today, only the walls remain from the Maltese temples, leaving them open to the sky. A small temple model was found at the Ta Hagrat temple, and an elevation drawing of a temple was carved at the temple Mnajdra. Both of these temple representations depicted them with a horizontal slabbed roof, showcasing the original design of the temples.

184 Dames, *The Avebury Cycle*, 34.

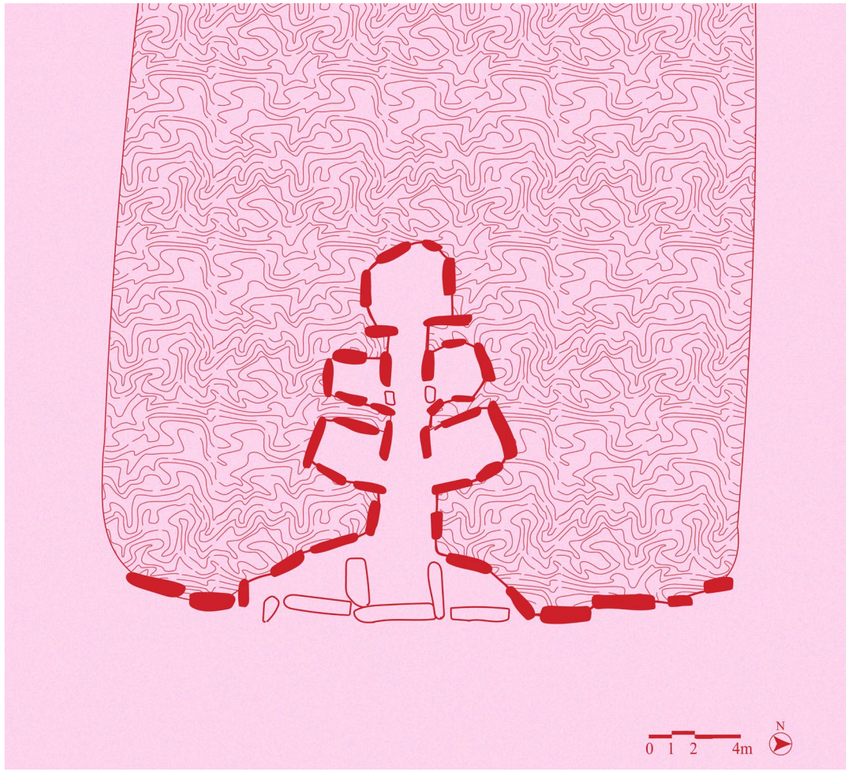


FIGURE.2.31 - West Kennet Long Barrow Plan

The West Kennet Long Barrow's plan displays its five apses which parallels the Maltese temples.

CONCLUSION

In Neolithic architecture, we see representations of the female body in multiple aspects: the womb, the belly, the spine, and the full body. The spatial expression of the female body was not merely aesthetic, but also spiritual, representing the body of the Neolithic deity architecturally. The womb was a symbol of rebirth, and was a container for rituals relating to the rebirth of the dead and spiritual rebirth of the living. The belly was a symbol of growth, mirroring the agricultural surplus which characterized the Neolithic agricultural revolution. The spine was a symbol of the wisdom of the crone archetype, who provided support to her community. Lastly, the full rounded figure embodied all aspects of the Neolithic deity, emphasizing fertility, creation and the cycles of life.

The female body represented in architecture contrasts the last two millennials of patriarchal architecture. Unlike the proportional systems of Vitruvius or Le Corbusier, matrifocal architecture did not aim to find divine proportions in architecture; matrifocal architecture embraced variation. Within each typology of burial mounds, Maltese temples, and long barrows, each site displayed unique dimensions and form. Neolithic architecture connected to the divine with a diversity of dimensions; it is clear the Neolithic communities did not aspire to find singular proportions in the body, nor in architecture.

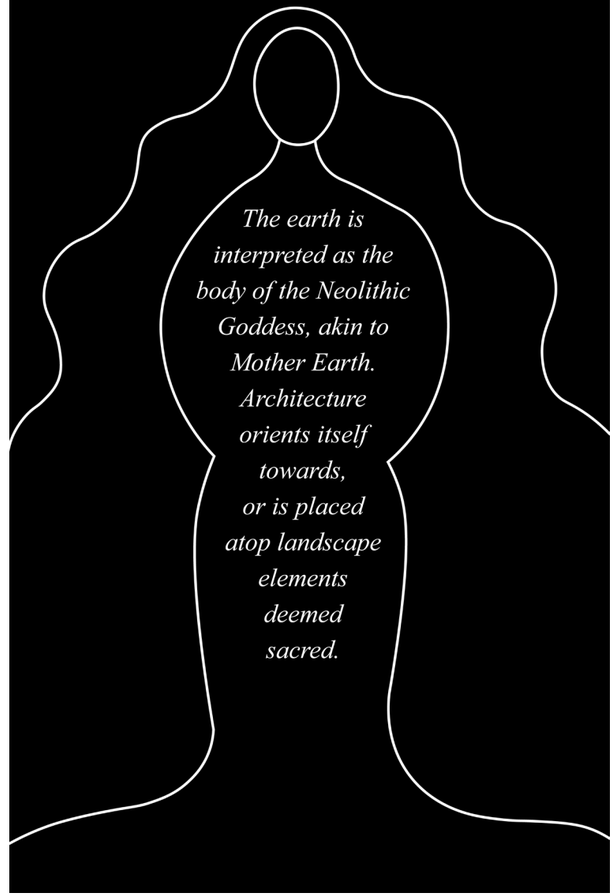
These metaphors of the female body, which are abundant in matrifocal societies, have returned in western art as a feminist symbol in the last century. The female body has been used by contemporary feminist to challenge social norms and reclaim agency within a patriarchal context. Ana Mendieta, for example, is a Cuban artist from the 1970's and 1980's, who often used her own naked body in her artwork[185]. Mendieta's work draws on connections between ancient spiritual traditions, nature, and contemporary feminist discourse. In her series Silueta, she created silhouette's of the female body in nature, using her body, earth or pigment, which she then photographed[186]. Through this series her aim was to reconnect with nature through the female form, evoking a Mother Earth-like archetype[187]. Through her art, Mendieta recontextualized the ancient symbolism of the female form, highlighting its enduring significance in discussions about gender, culture, and the environment. These artworks echo the reverence for the feminine seen in Neolithic art and architecture. The female body, in its nude, diverse and unsexualized state, seen in both Stone Age and contemporary feminist representation, provides an empowering alternative from its objectified state in patriarchal representations.

185 Alessandrini, Christopher, and Stephanie Wuertz. "Remembering Ana Mendieta." The Metropolitan Museum of Art. Accessed February 16, 2025.

186 Kelleher, Philip. "CURDLING THE PHOTOGRAPHIC IMAGE: ANA MENDIETA'S SILUETA." *Woman's Art Journal* 44, no. 2 (2023): 13-21.

187 Ibid.

THE EARTH



II - THE EARTH

INTRODUCTION

As evidenced in the previous chapter, Neolithic communities represented the female body in their architectural designs, however they also saw the female form reflected in nature. Matrifocal societies saw the earth around them as the body of their deity. Recognizing the personhood of the natural world is characteristic of animistic spiritualities, and is seen likewise in Indigenous cultures globally. Matrifocal societies intentionally chose to build near or on landscape elements they perceived as sacred. Mountains and hills are the most common feature, which certain cultures chose to build in axis to, while others built directly on top of. River bends and junctions were also key points in the landscape, and were locations of great spiritual centers in the British Isles. Lastly, we see a clear relationship of Maltese temples to nearby cliffs and valleys in the landscape, highlighting the importance of the local limestone both in positive and negative space. These landscape alignments and placements reflect a matrifocal understanding of the sacrality of nature.

CLIMATE CHANGE

Nature is an all encompassing term used to describe the collection of all the physical elements of planet Earth: hills, valleys, plains, mountains, cliffs, rivers, oceans, plants, animals, etc. Matrifocal religion was a form of animism, which is distinguished by the belief that animals, plants, and every other component of nature has a spirit or living force.[188] Seeing the earth as divine cultivated a deep reverence for the natural environment; they saw themselves as one with the cycles of nature, rather than living divorced from them.

> "The animism of primal peoples has been called "childish"...When human survival depends on such a sensitive rapport with the environment - as it always has, and always will - such a conception is not infantile, but crucial." (Sjöö & Mor 2012, 80)[189]

Seeing ourselves as part of nature, changes our relationship from one of ownership to stewardship; we care for and borrow from the land, as opposed to exploiting it. Today, the eurocentric perception of nature is very different from Neolithic times. Settler-colonial thought sees humans as superior beings, who were emancipated from the natural world with the development of urban cities.[190] Modern technology has created an illusion for the upper and middle classes living in highly industrialized countries that we are disconnected from the nature: during a heat wave, we can remain indoors utilizing air conditioning to maintain constant comfort; our food arrives to us in big box grocery stores without any effort on our part to grow our food; anything we could possibly want can arrive at our doorstep in a matter of days, if not hours, with no reins to our overconsumption; our

188 Peoples et al., "Hunter-Gatherers and the Origins of Religion."

189 Monica Sjöö and Barbara Mor, *The Great Cosmic Mother: Rediscovering The Religion of The Earth (*San Francisco: HarperOne, 2012), 80.

190 Maria Mies and Vandana Shiva, *Ecofeminism* (London: Zed Books, 2014).



II - THE EARTH

FIGURE.3.1- The Earth Card

garbage is collected from us and disposed of in a 'void' which exists outside of our minds.

Yet, when talking about the relationship between nature and humans, one cannot ignore the ongoing climate crisis. Living in a highly developed postindustrial economy, we do not always feel the direct repercussions of our lifestyle. With rising global temperature, rising sea levels, overflowing landfills, extreme weather events, topsoil depletion, the climate-related problems are too long to list. Coastal regions, such as the Gulf of Mexico, Southeast Asia and island countries, are disproportionately affected by climate change, as they face stronger storms and rising sea levels. While modern industrialized nations mistakenly believe themselves to be exalted over nature, humanity absolutely relies on the natural world as much as our Neolithic ancestors did. We still need fresh air, clean water and whole foods to survive, which only our planet can provide. As a species, we must urgently reconceptualize our relationship to the earth:

> "The Earth's disease is ours. We are literally of the same stuff. Either we shall come to terms with limits, or we will continue to ransack ourselves." (Martinez 1992, 58)[191]

NATURE VERSUS CULTURE

In continental philosophy, nature has been associated with the feminine; this notion has been true since the Stone Age. We see more specifically, across many patriarchal cultures globally, that women are associated with nature, while men are associated with culture.[192] In these formulations, culture is defined as manifestations of human intellect and is perceived as superior to the natural world. In their paper titled *Is Female to Male as Nature Is to Culture?*, the anthropologist Sherry Ortner outlines three reasons why women are repeatedly associated with nature: firstly, a female body is largely dedicated to the procreation and sustenance of infants; secondly, due to the first fact, a woman's social role is limited to child rearing, which is at a lower status than the role of men; and lastly, a woman's physiology and social role shapes her mentally, and she does not transcend the bound of our human physiology, and is thus closer to nature.[193] Although nature is not inherently feminine, women and nature have been associated with one another due to their secondary statuses in patriarchal cultures.

Ecofeminist theory, which was popularized by Maria Mies and Vandana Shiva, draws parallels between the negative treatment of both nature and of women and looks to patriarchy and capitalism as the cause.[194] In patriarchal societies, women and nature are both objectified, yet in the matrifocal societies both had personhood. This objectification justifies the exploitation of both women's labour and nature's resources. Contrary to patriarchal views, in matrifocal societies women and nature were also associated one with the other, however this was due to the reverence and sacred status that was given to both. Women's role as a mother was not perceived as inferior, and her role in societal life was not limited to only motherhood.[195] Women in matrifocal societies were not isolated from culture, but rather had associations to both nature and culture.

CONTROLLED VERSUS WILD

Just as nature has been juxtaposed against culture, resulting in the diminishment of women, many other social binaries were developed to subordinate women. These binary notions such as pure versus impure, good versus bad, beautiful versus ugly, are used to control not only women, but landscapes as well. For example, with modern North American landscape designs, such as a backyard or garden, the goal becomes to control the land and contort it to align with a specific ideal of beauty. Property owners unreasonably expect the land to stay static, and labour tirelessly to prevent change by cutting, trimming, weeding, herbicide and pesticide use. The term 'weed' is used in a derogatory manner to describe native plants which are unwanted, and threaten the vision of the garden.[196] Restrictive visual standards which are used as a means of controlling landscapes parallels the treatment of female bodies by patriarchal societies. Women's bodies are equally subject to rigorous visual 'beauty' standards which require intense labour and financial investment to upkeep, thus monopolizing women's time, financial resources, and mental focus for fear of societal ostracization.[197]

Many designers disagree with this approach towards land, despite the 'manicured garden' being an omnipresent beauty standard. Mary Reynolds, a landscape architect from Ireland, argues for returning as much land as possible to its 'original wild state'. She argues for optimizing plant biodiversity and embracing changes in designs that come with plant growth, criticizing the standard practice of designing all green spaces to be grass lawns, which emphasize "neatness and control".[198] The garden is seen as a still life, and secondary ornamentation to architecture, rather than an important ecosystem which sustains life, including our own. In Reynolds own words:

> "There is no sanctuary for [animals] in our gardens, which we fill with purchased, pretty, non-native 'garden plants'. Gardens are controlled and poisoned to the point of being a still life, with no room at the inn for anything other than our own visions of how we

191 Inez Martinez, "Interiority." *Art Journal* 51, no. 2 (1992): 58. https://doi.org/10.2307/777396.

192 Ortner, "Is Female to Male as Nature Is to Culture," 1974.

193 Ibid.

194 Mies and Shiva, *Ecofeminism*.

195 Gimbutas, *The Living Goddesses*, 112-120.

196 Mary Reynolds, *Garden Awakening* (Cambridge: UIT Cambridge Ltd., 2016).

197 Naomi Wolf, *The Beauty Myth* (London: Vintage Books, 2015).

198 Reynolds, *Garden Awakening*, 80.

want things to be." (Reynolds 2022, 18)[199]

The settler-colonial perception of wild landscapes is as 'terra nullius': nobody's land, a home to none, and a blank slate to build upon. In the words of Elke Krasny: "[m]odernist ideology of the so-called tabula rasa, where architecture occupies a blank slate or a green meadow, has led to the colonialist erasure and annihilation of the existing" (Krasny 2019, 39).[200] Although these wild landscapes are indeed functional spaces, complex ecosystems providing habitat for many species, they do not hold any value in patriarchal eyes. Even though North American cities emphasize neatness and control in landscape designs, the paradox is that we find respite in wild settings. Since the time of ancient Rome, humans regularly escape the cities we have created, seeking relaxation in nature. The villa or cottage provides an escape from city life, as do activities such as camping or hiking. Modern cities evoke feelings of malaise and despair.[201] As such, we must escape our cities into the wild, to receive a sense of calm and respite.

> "There is a good deal of irony in the fact that to stave off physical and mental deterioration the urban dweller periodically escapes his splendidly appointed lair to seek bliss in what he thinks are primitive surroundings: a cabin, a tent, or, if he is less hidebound, a fishing village or hill town abroad. Despite his mania for mechanical comfort, his chances for finding relaxation hinge on its very absence." (Rudofsky 1964, 8)[202]

Not only does the wellbeing of our physical body depend on what nature provides, such as the need for clean air, food and water, but so does the wellbeing of our minds. This is confirmed by studies conducted in Japan on the effect that forest bathing, also known as Shinrin-yoku, has on the mind.[203] Studies confirmed that spending time in a forest improved the subject's emotional state, feelings of anxiety and depression, adaptive behaviours as well as multiple physical factors such as cardiovascular function.[204] It has become obviously clear that we do not just rely on the earth for physical sustenance, but we rely on wild natural landscapes in their original, untouched state for our mental well being. Every aspect of humans, both physical and psychological, depends on the earth. Thus, Western thought requires a radical shift in how we treat and relate to the land we inhabit.

199 Reynolds, *Garden Awakening*, 18.

200 Krasny, "Architecture and Care," 39.

201 Mies and Shiva, *Ecofeminism,* 133.

202 Rudofsky, *Architecture without architects*, 8.

203 Florence Williams, *The Nature Fix: Why Nature Makes us Happier, Healthier, and More Creative* (New York: W.W. Norton & Company, 2018).

204 Wen, Ye, et al. "Medical Empirical Research on Forest Bathing (Shinrin-Yoku): A Systematic Review." *Environmental Health and Preventive Medicine* 24, no. 1 (December 2019).

ENVIRONMENTAL PERSONHOOD

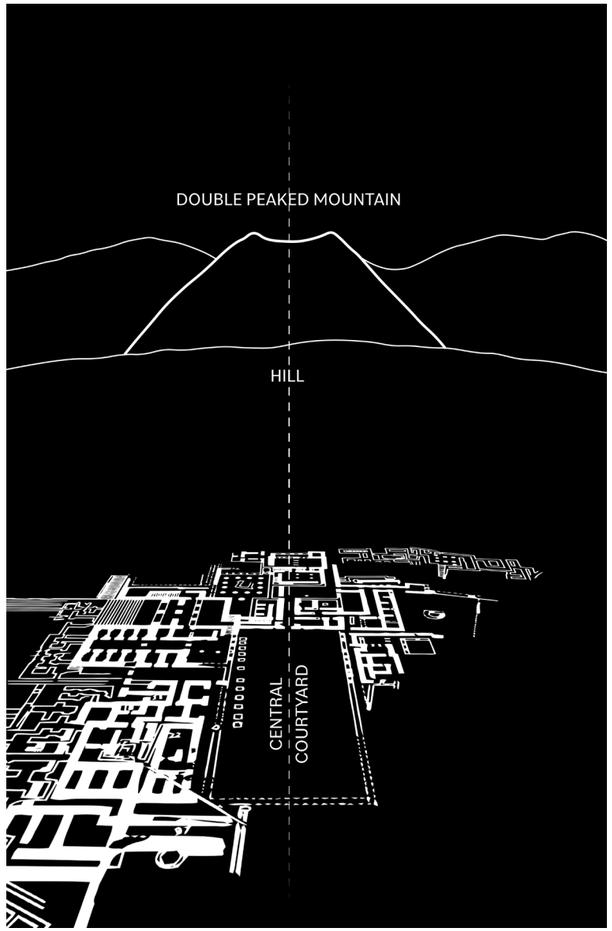
The connection between women and nature can be further explored in their access to personhood rights. It was not until October 18th 1929 that women were granted legal personhood in Canada.[205] Five women from Alberta challenged the Supreme Court of Canada on the definition of the word 'person' used in British North America Act of 1867. In 1929, this definition was changed to include women. While the days when women were not legally considered 'persons' seems long ago, this momentous achievement was won less than one hundred years ago. Today, Indigenous people from around the world are working to grant landscape elements legal personhood. In 2009, Ecuador was the first country to grant nature personhood and legal rights in its constitution. A few years later in New Zealand, the Māori people were able to grant the Te Urewera mountains legal personhood in 2014, and it was additionally granted in 2017 to the Whanganui river.[206] The act of giving personhood to natural landscape elements in New Zealand has greatly decreased littering and pollution of these sites. Environmental personhood has been growing globally, and the primary motive has been protecting landscape elements from further destruction caused by humans. This act of granting legal personhood, is reinstating a respect for nature that has existed for centuries amongst Indigenous peoples. Colonisation shifted the dynamic between humans and nature to an extractive relationship, and thus these efforts are not introducing new ideas, but rather returning to the non-extractive relationship which had previously existed between Indigenous peoples and the land they inhabit. In 2019, all rivers in Bangladesh were granted personhood,[207] and more cases kept arising globally with Indigenous peoples at the forefront of this movement and climate resistance.

This notion of nature having personhood mirrors the treatment of the earth in Neolithic societies. Neolithic societies saw the divine reflected in both the land and sky. As such, their architecture was designed as a complement to the land. Today, landscape architecture is often intended to complement buildings, yet in Neolithic times the hierarchy was reversed. Just as the Minoan palaces were aligned to sacred mountains, the burial mounds of the British Isles have an intimate relationship with their neighbouring rivers and hills. In Malta, the temples were intentionally situated across from a valley and coralline limestone cliff. These relationships were non-extractive, and spiritual in nature. Neolithic people engaged in reciprocal relationships where landscape elements not only had personhood but also a divine status.

205 "Persons Day." *Women and Gender Equality Canada (WAGE)*, September 25, 2024.

206 Erin L. O'Donnell and Julia Talbot-Jones. "Creating Legal Rights for Rivers: Lessons from Australia, New Zealand, and India." *Ecology and Society* 23, no. 1 (2018).

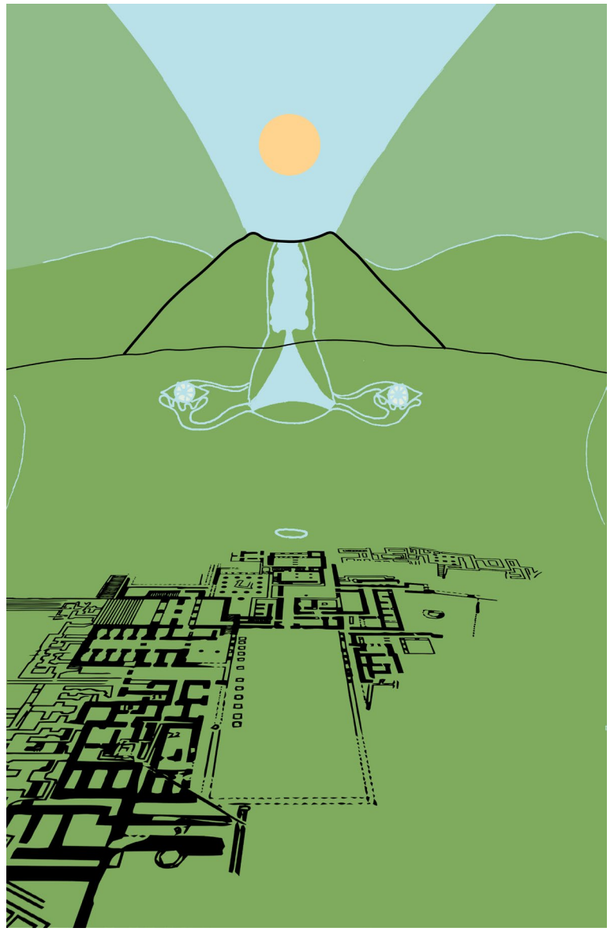
207 Westerman, Ashley. "Should Rivers Have Same Legal Rights as Humans? A Growing Number of Voices Say Yes." *NPR*, August 3, 2019.



II.I - MOUNTAINS

PHAISTOS

FIGURE.3.2 - Mountains Card



II.I - MOUNTAINS

PHAISTOS

MOUNTAINS

DRAWING RELATIONSHIPS TO LANDSCAPE



FIGURE.3.3 - Çatalhöyük Map Mural

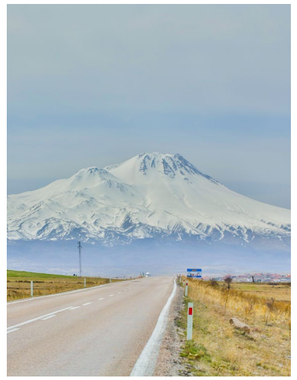


FIGURE.3.4 - Hasan Dağı

The most common sacred landscape form we see in Neolithic societies are mountains. Çatalhöyük is one of the oldest examples to have shown interest in a mountainous figure in their landscape, which was revealed in a wall painting at the site. One of the oldest depictions of a map in the world is a mural found at Çatalhöyük that depicts rectilinear shapes below a large double peaked mountain. James Mellaart, the archaeologist who excavated the site, interpreted the forms as a representation of the city, and the large figure as the volcano of Hasan Dağı; a map drawn in elevation form.[208] This volcano can be seen from Çatalhöyük, and its double peaked profile matches the form in the mural. Mellaart interpreted line work drawn above the volcano to be a depiction of its eruption.[209] The map draws a clear relationship between architecture, a representation of the people of Çatalhöyük, and the volcano of Hasan Dağı. While the nature of this relationship can only be speculated, scientists have confirmed the eruption of Hasan Dağı around the year 6960 ± 640 BCE,[210] which is concurrent with the settlement of Çatalhöyük. Perhaps the locals feared another eruption, or perhaps they revered the mountain which was also a source of pumice and obsidian stones. Çatalhöyük, and the neighboring village of Asikli Höyük, were known to use obsidian stone which was likely harvested from Hasan Dağı.[211] However, it is likely that the relationship to Hasan Dağı was much more complex than the explanations that I have just proposed. This large volcano was likely a focal point in the landscape which helped these communities orient themselves in space. Perhaps the power of Hasan Dağı transcended past its physical presence and contained a spiritual power as well. In the following sites, we see communities draw clearer relationships between architecture and landscape monuments through their orientation and location.

DOUBLE PEAKED MOUNTAINS

In Neolithic Europe, many sites are aligned to, or were built on top of mountains, particularly in Crete where the mountains are striking, contrasted by the softness of the ocean shore. The Minoans were in awe of the natural beauty of their island, which is evidenced by the repeated nature motifs in their frescoes and artwork. They were also very intentional in choosing the location of their palaces, and chose specific spots based on the presence of key landscape features. Vincent Scully's work was crucial for identifying the relationship between both Minoan and Greek

208 James Mellaart, *Çatal Hüyük : A Neolithic Town in Anatolia* (New York: McGraw-Hill, 1967).

209 Mellaart, *Çatal Hüyük : A Neolithic Town in Anatolia*.

210 Axel K. Schmitt, et al. "Identifying The Volcanic Eruption Depicted in a Neolithic Painting at Çatalhöyük, Central Anatolia, Turkey." *PLoS ONE* 9, no. 1 (January 8, 2014).

211 Jarzombek, *Architecture of First Societies*, 266.

architecture and their landscape.[212] He identified three landscape features that the Minoans required to deem a location as sacred and all features were necessary for choosing the site of a Cretan palace. The first requirement was an enclosed valley, this is where the palaces were to be located; then a hill which is located on axis with the palace either to the north or to the south; third, a double peaked mountain which is situated beyond the hill and within the same axis.[213] The Minoan palaces are large complexes centered around a rectangular courtyard. It is the long axis of this central courtyard which points towards the double peaked mountain and low lying hill. This mountain would be clear in view from the open courtyard, and the courtyard's length would draw the viewer's gaze towards the mountain peak. The double peak of the mountain is an important feature and Scully suggests that it might symbolize a pair of horns, female cleft, raised arms, or breasts which belong to the Minoan Goddess.[214]

The land beneath the Minoan palaces was always considered sacred, which is evident in the early occupation of Knossos dating back to 6341 BCE.[215] Many generations chose to build on top of each, and a total of 10 distinct layers of settlement have been discovered underneath the palace of Knossos. Similarly at Phaistos, the original palace was destroyed by an earthquake, and a secondary palace built directly on top of the previous one.[216] They likely chose to rebuild instead of relocating due to the perceived sacredness of the site.

Of all the suggested symbols, the shape of these Cretan mountains most strongly resemble a female pubic mound. As Scully argued in his book, *The Earth, the Temple, and the Gods,* we should not assume the landscape and symbols possessed only a singular meaning, as they likely possessed multiple. However, the double peaked mountains do not clearly resemble raised arms, horns or a pair of breasts as Scully had suggested.[217] In comparison, the cleft of the mountains in Crete are much smaller, and the inverted 'V' shape of the mountain reads very clearly as a singular volume. In Scully's list of possible symbolism, he mentions the 'female cleft', by which he means the vulva cleft formed by the labia majora,[218] which I believe is the most convincing symbolism of the mountains. If the mountain indeed represents the pubic mound, the low-lying hill in front of the double peaked mountain might symbolize a belly. In his work, Scully does not provide an interpretation for this conical hill which consistently



FIGURE.3.5 - Mount Juktas, view from Knossos palace



FIGURE.3.6 - Mount Dikti, view from Malia palace



FIGURE.3.7 - Mount Ida, view from Phaistos palace

212 Vincent Scully, *The Earth, The Temple, And The Gods* (New York: Frederick A. Praeger Publishers, 1969).

213 Scully, *The Earth, The Temple, And The Gods*, 11.

214 Ibid.

215 Cadogan, *Palaces of Minoan Crete*.

216 Ibid.

217 To contrast the Cretan mountains, a pair of mountains in Ireland have been named 'Paps of Anu' after the Celtic Goddess Anu (Coyne 2000). These mountains have a clear breast-like shape with two distinct mounds. We can trace back the sacred importance of the Paps of Anu to Neolithic times due to the remains of burial mounds found on the summits (Coyne 2000).

218 Scully, *The Earth, The Temple, And The Gods*, 11.

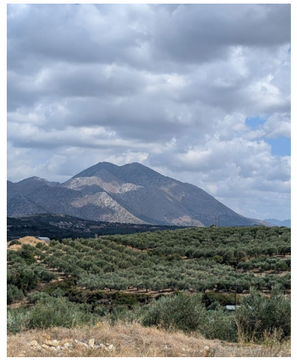


FIGURE.3.8 - Double Peaked Mountain at the Tomb of Marguerite, Crete

appears in front of the double cleft mountain. To strengthen this argument, sacred Minoan caves, which were imbued with womb symbolism, were often located on mountain peaks. For example, at the peak of Mount Ida which Phaistos faces, there is the Kamares Cave, and at the peak of Mount Juktas which Knossos faces, we find Cave Chostou Nerou. The double peaked mountain, symbolising the pubic mound, signals the entrance of these womb-like caves.

When I visited the Tomb of Marguerite, a Minoan tholos tomb, it was interesting to observe the same landscape pattern from the palaces found there as well. Although surrounding views were more difficult to see, as the tomb today is nestled within an olive grove, the tomb is built on an axis with a smaller hill and a double cleft mountain behind it. The presence of the double cleft mountain implied the presence of the Minoan deity. These auspicious sites were ideal for both rituals performed in the palace, and the burial of the dead.

In Minoan times, the island of Crete was given a feminine identity, and was the physical manifestation of their deity. This notion of nature having personhood is strengthened with clear symbolism of the female body. Nature was the very body of the Minoan Goddess, as evidenced by the orientation of their buildings towards anthropomorphic landscape elements. The palace, although not anthropomorphic in shape, could have been built as a continuation or complement to the female deity's body. The palaces are built in conversation with the land, "so that the natural and the man-made create one ritual whole, in which man's part is defined and directed by the sculptural masses of the land and is subordinate to their rhythms" (Scully 1969, 11).[219]

SACRED MOUNTAINS AND HILLS

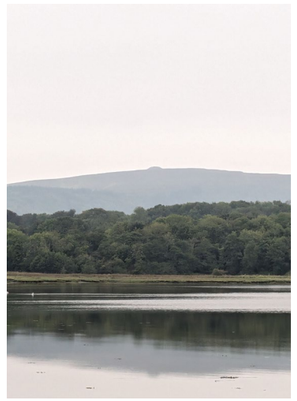


FIGURE.3.9 - Queen Maeve's cairn, Ireland

From a distance, the Irish passage tombs appear to be a moulding of the earth itself. While the Minoan palaces are oriented towards sacred landscape elements, the passage tombs of the British Isles focus their orientation primarily on astronomical alignments. However, the location of the tombs was carefully considered to be near or on top of sacred landscape elements. The burial mounds across Ireland are all located on top of hills, providing clear views of the surrounding landscape. This is more evident on the west coast of the island, compared to the flatter landscape of the east coast. The Carrowmore cluster of sites on the western coast of the island, are centered around a large mountain named Knocknarea. One cairn, named Queen Maeve's cairn is located on top of this mountain. Similarly, the Carrowkeel passage tombs, also located near the western coast, are located on top of the Bricklieve mountain range and the Keshcorran cliff. Keshcorran is a large standalone cliff with large cave openings located on its side. However, even on the eastern coast of Ireland, which is a much flatter

219 Scully, *The Earth, The Temple, And The Gods*, 11.

landscape in comparison, the burial mounds are always located on a hill or the point of highest elevation in a given area. This same phenomenon is observed in the English long barrows, which were all placed on top of hills and cliffs.[220] This allows the mound to be visible from further away and gives visitors to the mound a clear view of the landscape that surrounds them.

Mountains stand out starkly in the landscape, and help humans orient themselves around this focal point. Due to their height, their presence is impactful, and they are often interpreted as places of power.[221] Many Irish hills have female associations in mythology, such as the Hill of Tara, Loughcrew and Paps of Anu,[222] and similarly to Crete it is possible that the hills were believed to be the body of their Mother-Goddess. As burial mounds and long barrows are a moulding of the earth itself, symbolic of the body of their deity with clear anthropomorphic elements, the hill or mountain may be an extension of this anthropomorphic metaphor. While the form of Irish hills does not resemble the pubic mound, as is the case in Crete, their parabolic shape mirrors the curvilinear form of the female body's breasts, hips, belly and buttocks. The relationship to hill was not strategic, nor extractive in nature. Mountains were seen as places of power and sacredness, as is reflected in the very presence of religious matrifocal architecture.



FIGURE.3.10 - Mound of the Hostages, Ireland



FIGURE.3.11 - View from the Hill of Tara Ireland

MYTHOLOGY & STORIES

Many hills and mountains in Ireland have associations with female figures and deities in Celtic myth. The Hill of Tara, a tall hill on the eastern coast which provides 360-degree views of the surrounding land, is one such example. In Celtic myth this hill is considered a royal capital of Ireland, and was a source of both spiritual and political authority. Despite its association with Celtic Kings, no palace exists on the hill, only earthworks and Neolithic mounds, with the oldest site being the Mound of the Hostages, a burial mound from 3000 BCE. The hill was of such importance to Celtic traditions, that it was also adopted by Christianity and is now associated with St. Patrick. The sacredness and power of the site in Celtic mythology refer to the mountain itself, rather than the sites built on top of it. While the myths of the hill of Tara, which is sometimes called 'House of the Women', are overshadowed by stories of kings and power, the hill also has associations with female figures. Celtic kings, who were in reality closer to chieftains, were considered secondary in power to a Mother Earth deity

220 This was an unexpected pattern which I observed during my site visits. In the Avebury cluster of sites, the West Kennet long barrow sits alone atop a hill. Not all of the Avebury sites are located on top of hills, this appears to be a key characteristic of the long barrows. This phenomenon was observed at the following long barrows: Wayland Smithy, West Kennet, Belas Knap, Nympsfield and the Uley long barrow.

221 Edwin Bernbaum, "Sacred Mountains: Themes and Teachings." *Mountain Research and Development* 26, no. 4 (2006): 304–9.

222 While the Irish myths surrounding these sites are Celtic in origin, it is likely that their sacredness was passed down by their Neolithic predecessors.



FIGURE.3.12 - The Cailleach by John Duncan (1917)



FIGURE.3.13 - The Hag's Chair, Cairn T Loughcrew

and had to symbolically marry her in order to assure a plentiful harvest,[223] a ritual which may have occurred at the Hill of Tara. The name of the hill itself is also named after a female Queen Tea, also known as Múr Tea, the wife of King Eremon.[224] These overshadowed female associations of the Hill of Tara and the presence of a womb-shaped burial mound, may allude to the hill's original connection to a Mother Earth-like deity. Although any original myths from the Neolithic era have been lost to time, we can imagine that this site received its power from a feminine divine source.

Another example of a storied mountain is found at Loughcrew, a complex of cairns located on the summits of four hills in County Meath. These four hills stand out in height compared to the rest of the County Meath's softer rolling hills and the third peak is the highest summit in the entire county. Loughcrew is associated with the Cailleach from Celtic mythology, who is said to have looked over the entirety of County Meath. With time, the record of her stories changed, she was no longer described as a powerful deity, but rather as a sad nun. Stories were also written to 'kill her off' despite being described as an immortal being.[225] During the Christianization of Ireland, a new story appeared which said that the Cailleach was put to a test to keep her reign over the county; she was tasked with hopping over all four hills at the location of Loughcrew. The Cailleach was able to hop from the first to the second, and then to the third hill. When she leapt to the fourth hill she fell to her death. While this story was probably created to mythically kill off the Cailleach, who was previously described as immortal, her association to the cairns and the hills had stayed.[226] At Cairn T of Loughcrew, a particular kerb stone which is shaped like a bench has been named the 'hag's chair', and is said to be where she sat to look over County Meath.[227] The hag's chair is decorated in Neolithic art, and its age predates the cairn itself.[228] It is possible that the hills of Loughcrew were also of importance prior to the building of the cairns. The presence of the womb-shaped building on top of hills, and their associations to female names or female figures in myth, makes it possible that these hills and mountains themselves were seen a feminine forms, just as the mountains in Crete.

223 Ronald Hicks, "The Sacred Landscape of Ancient Ireland." *Archaeology* 64, no. 3 (2011): 40–45.

224 Ibid.

225 Dashú, *Witches and Pagans: Women in European Folk Religion, 700-1100*, 193-195.

226 Heritage Ireland OPW, *Loughcrew Guided Tour*, Loughcrew Megalithic Cemetery. Donore, Ireland, visited September 1, 2024.

227 Dashú, *Witches and Pagans: Women in European Folk Religion, 700-1100*, 186.

228 Heritage Ireland OPW, *Loughcrew Guided Tour*, visited September 1, 2024.

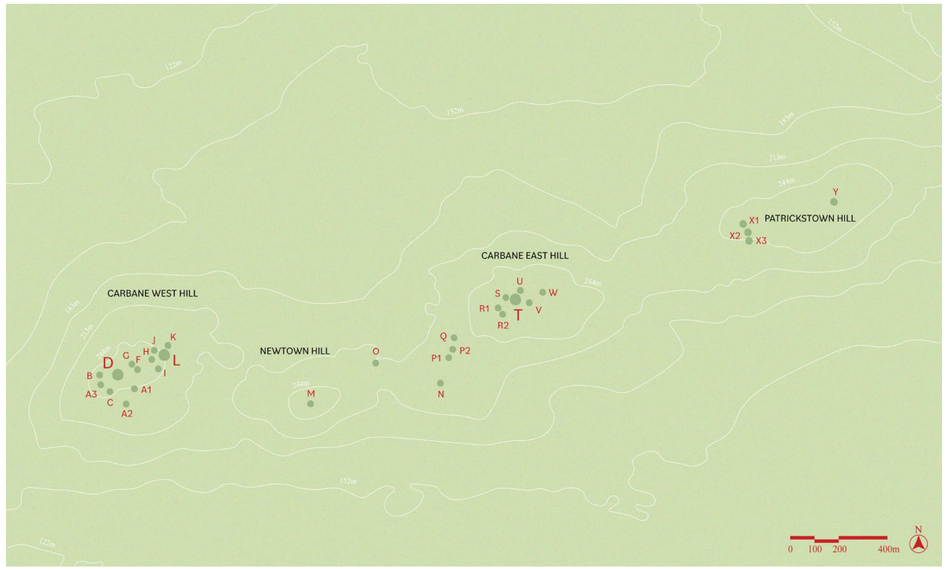


FIGURE.3.14 - Map of Loughcrew



FIGURE.3.15 - Loughcrew Hills, Ireland
View of Carbane West Hill and Newton Hill from Carbane East

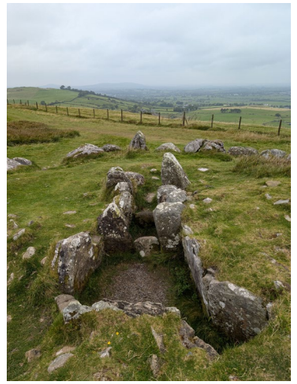


FIGURE.3.16 - Carin S at Loughcrew Hills, Ireland

This cairn points towards Knocknarea atop of which Queen Maeve's Cairn is situated.



FIGURE.3.17 - Knowth, Ireland

The principal mound at Knowth is surrounded by satellite mounds which face towards it.

ALIGNMENTS

While the mounds in both Ireland and Scotland are circular, a shape with no inherent hierarchy, their entrances have meaningful alignments. Many mounds have solar alignments, while other mounds have their entrances oriented towards other burial mounds.[229] For example, one of the satellite mounds of Cairn T at Loughcrew is oriented towards the collection of passage tombs at Knocknarea which is located on the other side of the country.[230] The alignments between mounds, with secondary mounds facing primary mounds,[231] creates a rich network across the island of Ireland.[232] While there existed these minor hierarchical relationships, no one site dominated the religious landscape. I propose that these alignments between mounds may have acted as markers for pilgrims travelling across Ireland, and thus the web of relationships between sites reflect the flow of religious devotees visiting different sites at different times of year.

The cairns of Ireland were built at different times with the older mounds appearing on the western coast and the more recent cairns appearing closer to the eastern coast. However, many sites have not been carbon dated, so their exact age is uncertain.[233] With this lack of carbon dating, it is unclear if the secondary mounds which face the primary mounds are newer and built afterwards. While this scenario is most likely, if the secondary mounds prove to be older, their orientation may be towards a sacred hill or mountain on top of which they later decided to build the primary mounds;[234] this would reinforce the argument for the sacredness of hills and mountains across the Irish landscape. There are cases where the opposite is true, and a primary mound has been built, likely intentionally, within the line of sight of the secondary mound. Newgrange, for example, is famously built in orientation towards the winter solstice sunrise, but also towards a smaller mound named Fourknocks, located roughly 15 kilometers away. Fourknocks is evidently not the inspiration for Newgrange's orientation, it was built afterwards once Newgrange's orientation had already been set. However, if visitors to Newgrange followed walked in a line marked by its entrance's orientation they would eventually be led to Fourknocks, which reinforces the notion of a pilgrimage between sites. Many invisible lines are

229 Frank Prendergast, "Interpreting Megalithic Tomb Orientation and Siting within Broader Cultural Contexts." *Journal of Physics: Conference Series* 685 (February 11, 2016).

230 Heritage Ireland OPW, *Loughcrew Guided Tour*, visited September 1, 2024.

231 This terminology was developed for this thesis for clarity purposes.

232 These alignments most often appear in pairs, one mound is aligned to a second mound, although the second mound most often does not face back to the first. These pairs may be located close one to another, while others draw relationships across the country. At other sites, such as Knowth in the Boyne valley, we see one large primary mound surrounded by multiple smaller secondary mounds whose orientation often points towards the central larger mound.
Prendergast, "Interpreting Megalithic Tomb Orientation and Siting within Broader Cultural Contexts."

233 Prendergast, "Interpreting Megalithic Tomb Orientation and Siting within Broader Cultural Contexts."

234 Ibid.

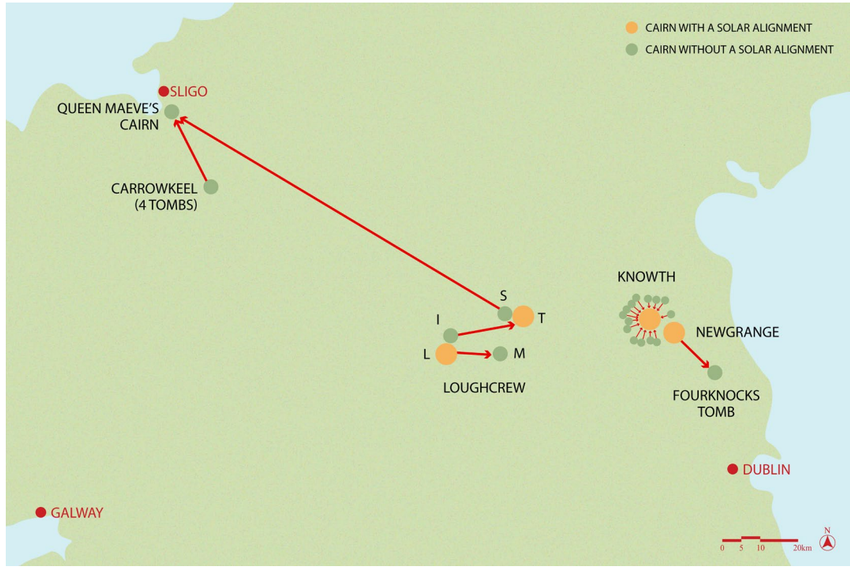


FIGURE.3.18 - Alignments betweens mounds, Ireland
This illustration does not depict all the relationships between cairns across Ireland but highlights a few for demonstration. For a longer list of cairn to cairn orientations see: Prendergast, "Interpreting Megalithic Tomb Orientation and Siting within Broader Cultural Contexts."



FIGURE.3.19 - Carrowkeel, Ireland
The mounds at Carrowkeel primarily face towards Knocknarea.

drawn across the country connecting the burials in a series of processions.

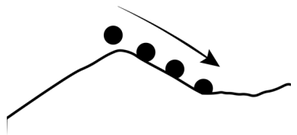


FIGURE.3.20 - Solar phenomenon at Croagh Patrick

While many solar orientations are marked by Neolithic architecture, in some cases the natural landscape marks the celestial cycle, creating a beautiful harmony between the earth and sky. One notable example is Croagh Patrick, which is a site of pilgrimage for the local Irish to this day. Croagh Patrick is a conical mountain in Northwestern Ireland which stands out starkly in the landscape due to its height. The mountain is visited around the Celtic festival of harvest called Lughnasa in August.[235] During the Christianization of Ireland, it became a Christian pilgrimage site, and the mountain was named after St. Patrick. Christian missionaries regularly adopted strong pagan symbols to ease the conversion of the local Celtic people; thus, Christian myth adopting Croagh Patrick implies its symbolic importance which can be traced to Neolithic times.[236] Many Neolithic sites, such as cairns, stone circles, and standing stones, are placed near Croagh Patrick, and are carefully situated to provide clear views to the mountain.[237] The archaeologist Chris Corlett suggests that the absence of Neolithic art on the peak itself was to preserve the sanctity of the mountain.[238] A site at Boheh provides clear views to the Croagh Patrick. This site has a rock covered in Neolithic stone carvings of concentric circles which has been called the Boheh stone or St. Patrick's chair. At this site, during sunset in August, the sun appears to roll down the mountain, perfectly touching the mountain's profile. The site of Boheh was clearly important to Neolithic people who observed this unique astronomical and landscape phenomenon.

The mountains and hills of Ireland's sacredness began in the Neolithic era and continued into the Christianization of the country. Similar to the double cleft mountains of Crete, Croagh Patrick is an example of a mountain being observed from afar. Scholars have proposed that mountains were sacred because standing on their peaks brings us closer to heaven which is found in the sky above us.[239] However, in animistic societies the divine is not just found in the sky above us, but is rather all around us. The mountains, being constructed from the flesh of the divine, are sacred themselves.

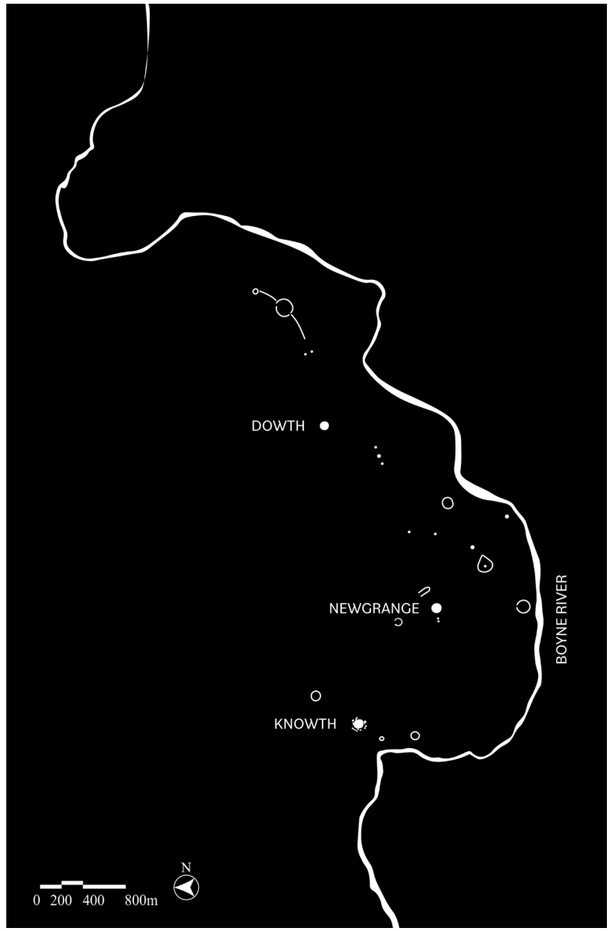
235 Christiaan Corlett, "The Prehistoric Ritual Landscape of Croagh Patrick, Co. Mayo." *The Journal of Irish Archaeology* 9 (1998): 9–26.

236 Ibid.

237 Ibid.

238 Christiaan Corlett, "Prehistoric Pilgrimage to Croagh Patrick." *Archaeology Ireland* 11, no. 2 (1997): 8–11.

239 Bernbaum, "Sacred Mountains: Themes and Teachings."; Mircea Eliade, *The Sacred and the Profane: The Nature of Religion* (Translated by William R. Trask. New York: Harcourt, Brace & World, 1959).



II.II - RIVERS

BRÚ NA BÓINNE

FIGURE.3.21 - Rivers Card



II.II - RIVERS

BRÚ NA BÓINNE

RIVERS

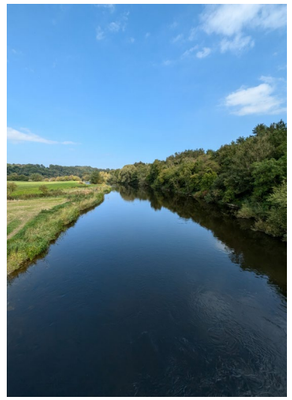


FIGURE.3.22 - Boyne River, Ireland



FIGURE.3.23 - Stone Carving, Knowth

The second landscape feature of importance in Neolithic sites are rivers. Historically, humans have always had a close relationship with rivers as most of the world's major cities arose on the banks of a river,[240] such as Rome, Delhi, Cairo amongst many others. Humans depend on clean water for our own survival, and have historically used rivers as a means of transportation: "Water is the elixir of life; without it, this planet would have remained barren."[241] In the Boyne Valley, the Brú na Bóinne collection of Neolithic sites is located in a bend of the Boyne River. The main monuments are three burial mounds, Newgrange, Knowth and Dowth, around which are other smaller satellite mounds, wood circles and circular henges.

In many cultures, a river acts as a medium or passageway between worlds. For example, in Greek mythology, the river Styx needs to be crossed to enter the underworld. Similarly the Boyne River may have acted as a divide or threshold between the land of the living and the land of the dead. While there are many curves and bends in the river, Brú na Bóinne sits in the largest bend of the river. Within this 'U' shape only sacred or ritualistic architecture was built; it is believed that the actual villages perhaps sat south of the river, although they have yet to be discovered or excavated.[242] Additionally, amongst the carvings at the monument of Knowth, stones are decorated with a squiggly line. It is thought perhaps this is meant to abstractly represent the river Boyne,[243] showing the importance the river played to the builders of Brú na Bóinne.

Rivers are also often feminized or associated with a female deity, which is evident with the Celtic myth of the Goddess Boann, the embodiment of the Boyne River. Many rivers across Europe can trace their name back to pagan Goddesses, such as the Seine, the Danube, and of course the Boyne river.[244] During the Bronze Age, Goddesses became fragmented and multiple in number, whereas the Neolithic people worshipped one all encompassing Mother-Goddess. The Neolithic Goddess was both the water, rivers, ocean, and the earth, caves and hills. The rivers were the Goddess' veins, and the water her blood.

Very often rivers, too, resembled women's shapes and figures. For example, examining the map of Brú na Bóinne, it is evident that the shape of the river, at the location of the monuments, resembles the outline of a pregnant woman. I suggest that the builders of Brú na Bóinne chose this particular

240 David Suzuki, *The Sacred Balance: Rediscovering Our Place in Nature* (Vancouver: Greystone Books, 1997), 59.

241 Suzuki, *The Sacred Balance: Rediscovering Our Place in Nature*, 59.

242 Heritage Ireland OPW, *Brú na Bóinne Tour + Newgrange Chamber Guided Tour*, Brú na Bóinne Monument Complex. Donore, Ireland, visited August 30, 2024.

243 Ibid.

244 Noémie Beck, "The River-Goddess in Celtic Traditions: Mother, Healer and Wisdom Purveyor." In *Mélanges en l'honneur de Pierre-Yves Lambert*, 2015. ffhal-03275671f.



FIGURE.3.24 - Brú na Bóinne Map

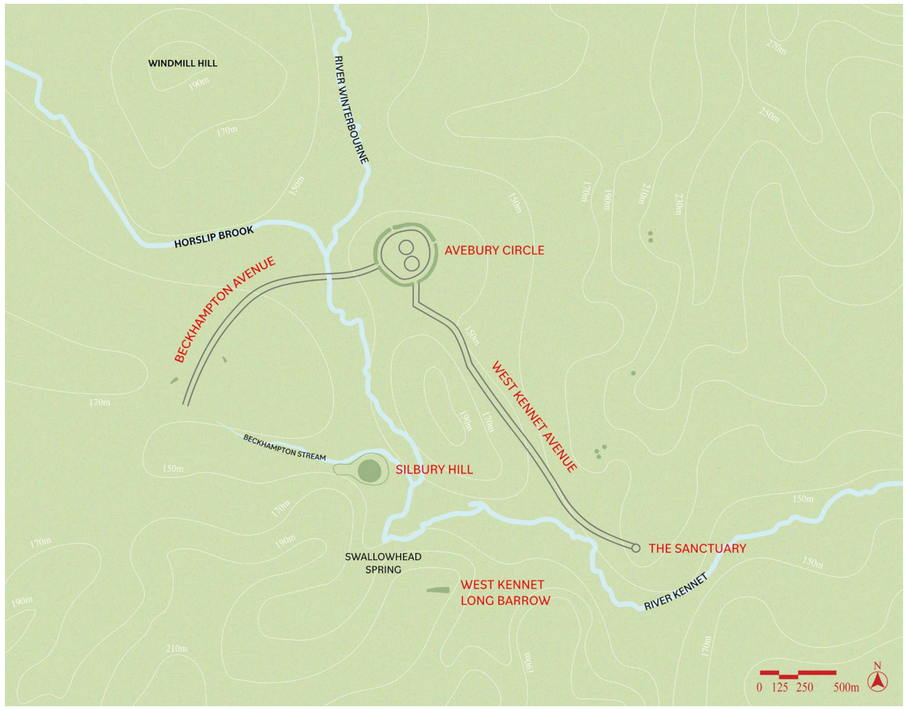


FIGURE.3.25 - Avebury Map



FIGURE.3.26 - The Kennet River Bed

Parts of the Kennet River began to dry up in September, as the river disappears yearly in the fall.

location, due to the belly shape the river forms. Micheal O'Kelly, who excavated Newgrange between 1962 and 1975, discovered that the chamber was constructed with water rolled stones from the bed of the Boyne River.[245] The mound was constructed with the very flesh of Boann. The larger stones came from other locations along the coast of Ireland, but would have been transported via the Boyne.[246] The Boyne river was perceived as the physical body of their Goddess, revered for its key role in sustaining life by providing water, transportation, and sustaining crops, for whom they then built Newgrange as an extension of her body.

WATER'S ORIGINS

Just as Newgrange has a special relationship to the Boyne River, so too do the Avebury have a relationship with its nearby rivers. Through the collection of sites, the Winterbourne River and Kennet River meet, as well as the Horslip Brook and Beckhampton Stream. Of all the Avebury monuments, Silbury Hill is located the closest to Swallowhead Spring, which the archaeologist Jim Leary suggests was an intentional placement.[247] Swallowhead Spring, the source of the River Kennet, flows into the Thames, which archaeologists believe was considered sacred due to the Neolithic votive offerings discovered within its waters. Thus, Swallowhead was likely also deemed sacred as the source of this sacred river.[248]



FIGURE.3.27 - The Kennet River

Silbury Hill is surrounded by an asymmetrical ditch which seasonally floods with water; a phenomenon which can be observed today and would have occurred more often during the Neolithic Era.[249] Dames has noted the feminine characteristic of this ditch, likening it to a female body in profile view.[250] The intentional lowland position of Silbury Hill and seasonal flooding strengthens the monument's connection to water and contrasts the placement of burial mounds on top of mountains. Additionally, Silbury Hill's exterior layer has a thin layer of clay which forces rainwater down its slopes and into the ditch, allowing it to fill quickly with water. The disappearance and appearance of water would have been closely observed by the local people in Neolithic times. Every year, the Kennet River disappears into the ground around the month of November. This hydrological phenomenon would have been observed in Neolithic times as well.[251] As water is crucial for our bodies, agriculture and transportation, the disappearance of the river may have been met with rituals and ceremonies to bring it back. Perhaps this was the very ritual which formed Silbury Hill.

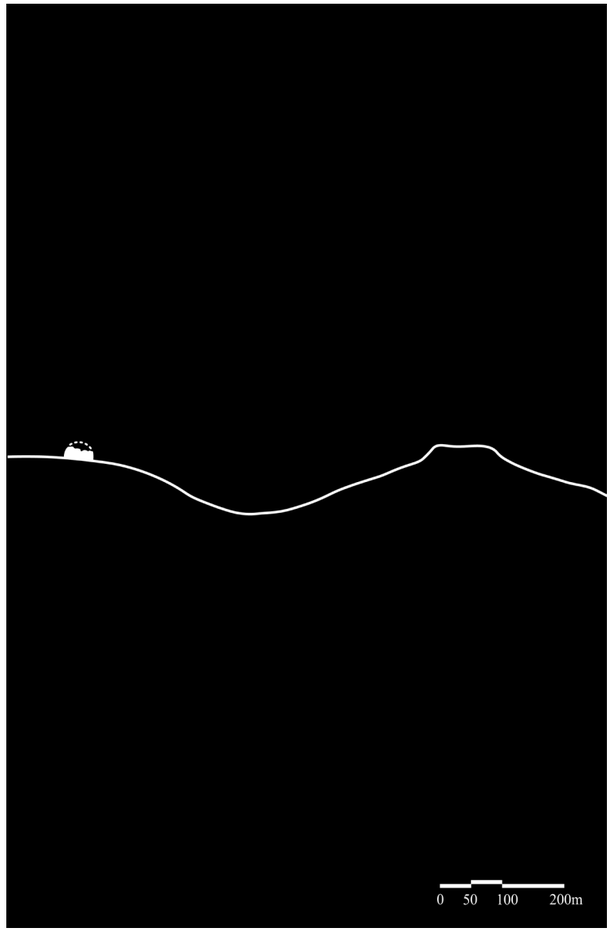
245 John Waddell, "2014 Rhind Lecture 2: 'The Otherworld Hall on the Boyne.'" Lecture, presented by Society of Antiquaries of Scotland, November 14, 2014.
246 Ibid.
247 Leary and Field,"Ways of Understanding Prehistoric Silbury Hill," 218.
248 Leary and Field,"Ways of Understanding Prehistoric Silbury Hill," 219.
249 Leary and Field,"Ways of Understanding Prehistoric Silbury Hill," 218.
250 Dames, *The Silbury Treasure*, 54.
251 Dames, *The Avebury Cycle*, 35.



FIGURE.3.28 - The Silbury Hill in its flooded state, England

Water has been described by Mircea Eliade as a purifying and regenerating force across every religion: "The waters symbolize the universal sum of virtualities...they precede every form and support every creation".[252] It is no surprise then, that water held important value in Neolithic times. Water allowed for nourishment of the body, growth of plants and transportation. The rivers in England were paths for procession, being the unifying link in large clusters of monuments. This occurred equally at Avebury as it did at Stonehenge, which will be discussed further in Chapter 5. The Avebury monuments are deeply rooted in their geographical and ecological context. By designing architecture that honours the relationship between humans and nature, place-specific designs not only meet practical needs but also foster a profound sense of connection between human communities and the more-than-human world.

252 Eliade, *The Sacred and the Profane*, 130.



II.III - STONE

MNAJDRA



II.III - STONE

MNAJDRA

FIGURE.3.29 - Stone Card

STONE

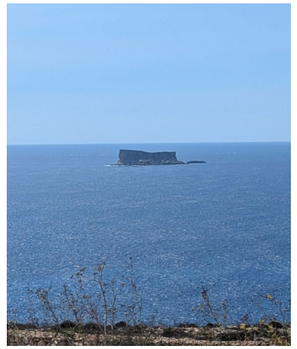


FIGURE.3.30 - Island of Filfla from Mnajdra temple

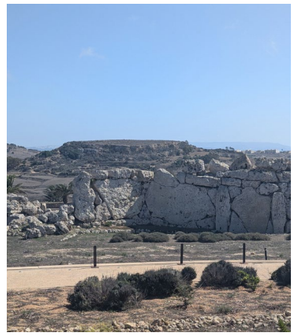


FIGURE.3.31 - Ggantija temple facing a valley and cliff



FIGURE.3.32 - Landscape view from Skorba temple

The last of the key landscape features is that of the limestone cliffs and valleys I observed on the island of Malta. The islands of Malta and Gozo, despite their small size, are covered in Neolithic temples. While some astronomical orientations of the temples have been recorded, there is no literature on their relationship to nature and the island itself. The largest complex of Neolithic architecture would be the temple site of Ħaġar Qim and Mnajdra on the south west coast of the island. The temples of Ħaġar Qim and Mnajdra are built only 100 metres away from one another right on the Western coast of Malta. Ħaġar Qim is built on a hill, whereas Mnajdra is built halfway on a hill, and incorporates a level change between the western and eastern chambers to accommodate the topography. When walking around and between the two temples, an island stands out clearly amongst the landscape and ocean. The island of Filfla is located roughly 5 kilometres from the temples, and resembles a large cliff, parallel to the Maltese shore. The island would have been even larger and more prominent in Neolithic times, based on geological research;[253] it is almost certain that the builders of this temple would have had a different view looking out into the ocean. Twelve thousand years ago, Fifla was attached to the mainland island of Malta. By the time Mnajdra and Ħaġar Qim were built, the island would have been separated by water from the mainland, as it is today, however the coasts were closer one to another.[254]

We can describe this landscape feature as a valley and cliff; the island is a vertical rock face cliff, and the space between the island and the coast of Malta is a valley. When visiting other sites, this landscape pattern repeats itself. Ggantija is built on a hill which faces a valley and a cliff on the other side. The temples of Skorba and Ta' Ħaġrat, two temples situated near each other on the northern part of the island, are also built facing a valley with a cliff on the other side. Tarxien, a temple complex located close to the country's capital, was harder to analyze due to its location in an extremely dense urban region.

Seeing this repeated pattern suggests an intentional decision made by the Maltese people on where to build. Although it is unclear why this decision was made as there are no obvious anthropomorphic elements of these landscape features; was the valley of importance? Was the cliff considered sacred? While I can only speculate what meaning these landscape elements held to the Maltese people, I propose these elements revealed their appreciation for coralline limestone: the material from which these cliffs are made, and which they used to build their temples: "The ready supply of limestone on the islands probably helped more than anything else to kindle

253 Federica Foglini, et al. "Late Quaternary Coastal Landscape Morphology and Evolution of the Maltese Islands (Mediterranean Sea) Reconstructed from High-Resolution Seafloor Data." *Geological Society, London, Special Publications* 411, no. 1 (September 15, 2015): 77–95.

254 Ibid.

the great megalithic tradition which developed there."[255] The combination of the cliff and valley visually displays the limestone in both positive and negative space.

The island is made of soft limestone which is easily carved. These cliffs display this stone, while the valley shows its ability to be easily carved. This same limestone was quarried and used as a building material for the temples. The Ħal Saflieni Hypogeum also displays an in-depth understanding of the material properties of this stone. The Ħal Saflieni Hypogeum is an underground structure which was built by cutting along the natural figures of the stone. By following these pre-existing fixtures, the builders of the Hypogeum would have needed an in-depth understanding of the natural limestone from the island of Malta. They also would have needed to approach the design with a great deal of flexibility, and yielded to the existing geology of the chosen location. The Hypogeum was built with an element of surrender to nature, allowing the landscape to play an equal role in the design process.

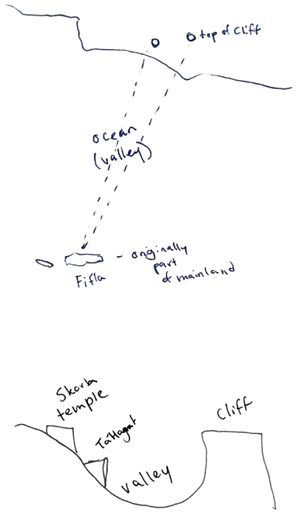


FIGURE.3.33 - Maltese Landscape Sketch

Similarly to Malta, the material of stone was of great importance in other Neolithic societies as it was an important building material from this time period. In the folklore from the British Isles, many stone circles are said to be people, particularly dancing women or maidens, who were then turned to stone.[256] This myth exists at both the Nine Maiden stone circle and the Merry Maidens in England, amongst others.[257] Many stone circles are also sites of burial, such as Stonehenge, Avebury and the Sanctuary, and some of the burials occur directly underneath a standing stone.[258] Seeing the stones associated with a person through myth and burials, it is plausible that a particular stone took on the personhood of the person buried underneath it. The use of stone was not purely a practical building method from this time period, but rather was imbued with spiritual importance across various cultures of the Neolithic era.

The fact that limestone was used to build the Maltese temples may appear on the surface to be an extractive relationship. However all architecture and landscape architecture is made from material that came from the earth, this is unavoidable. Animistic societies gave back to the earth with ceremonies, rituals and reverence. To the modern mind, a spiritually reciprocal relationship may not make sense, yet it shaped attitudes to only take what was needed, and imbued respect towards nature in all their actions. In all the Neolithic societies, the building material used for their monuments would have been interpreted as the flesh of their deity. Neolithic monuments were understood as extensions of nature.



FIGURE.3.34 - Avebury Circle Stones

255 Ridley, *The Megalithic Art of The Maltese Islands*, 11.

256 Stuart McHardy, *The nine maidens: Priestesses of the ancient world* (London: Luath Large Print, 2023).

257 McHardy, *The nine maidens*; Colin Richards, and Vicki Cummings, *Stone circles: A field guide* (New Haven: Yale University Press, 2024).

258 Dames, *The Avebury Cycle*, 70.

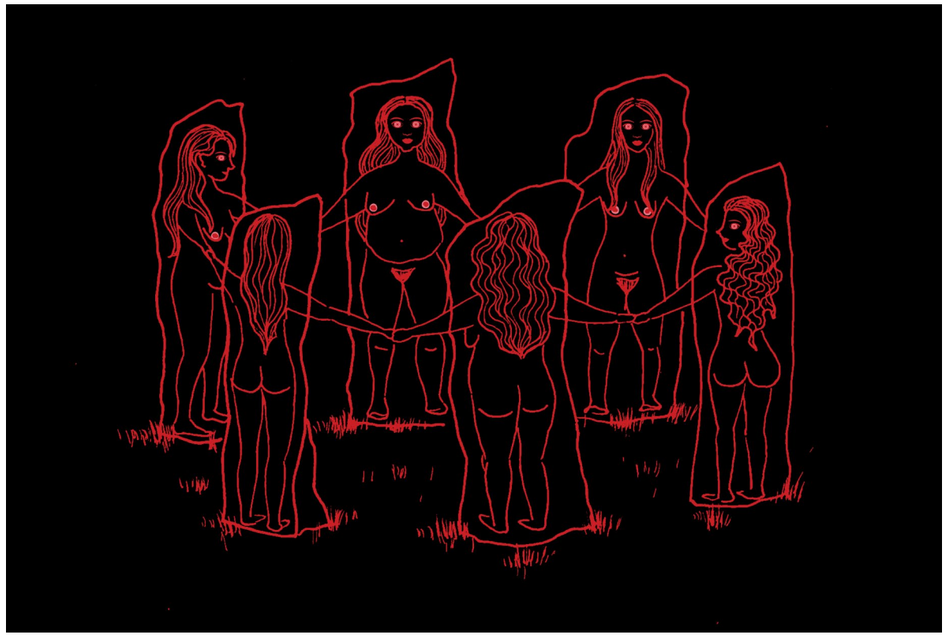


FIGURE.3.35 - Dancing Women turned to stone

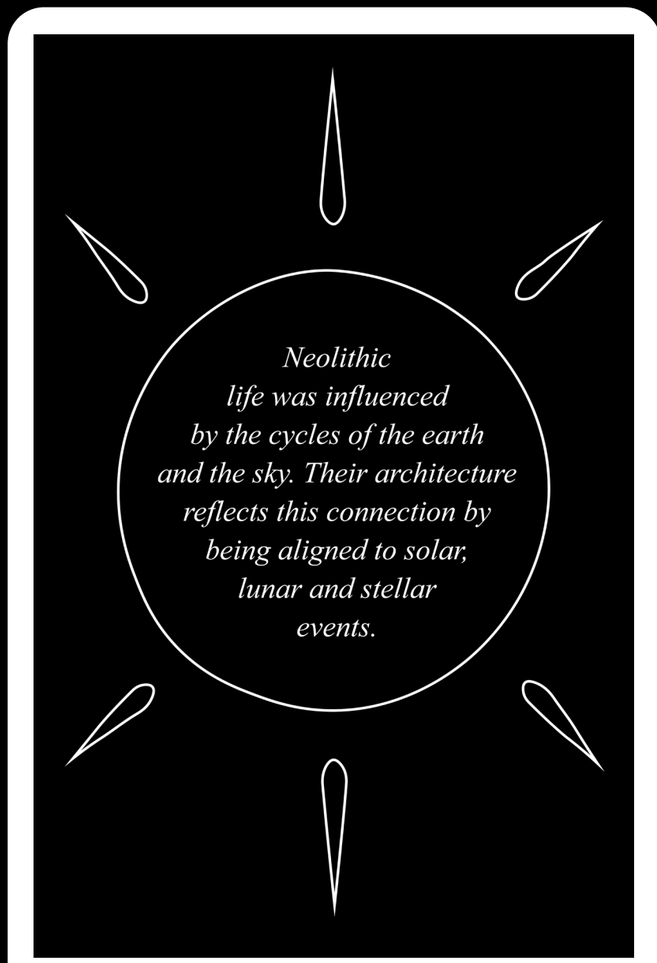
CONCLUSION

The landscape to Neolithic communities was of sacred importance, thus the location and orientation of their buildings was carefully considered. In the words of Vincent Scully: "That place is itself holy and, before the temple was built upon it, embodied the whole of the deity as a recognized natural force."[259] While Scully's work focuses on Minoan and Greek relationships to the land, this idea is relevant to all of Neolithic architecture. Neolithic societies were fully immersed in the sacred, which they saw as completely surrounding them.[260] As the land and sky was the physical manifestation of the divine, nature held great value. Not an extractive value, but rather value in terms of nature's role in supporting diverse ecosystems including our own species, value in providing beauty, spiritual value and an intrinsic value as an entity of its own. When visiting these Neolithic sites, the landscape we see surrounding the site is not identical to the one the Neolithic communities saw. The vegetation is likely completely different; if they believed a tree near to the site was sacred, we would never know. However, we know that these seemingly permanent landscape elements, valleys, cliffs, mountains and rivers, were given personhood and treated with reverence. In Neolithic eyes, "the world is impregnated with sacredness."[261]

Animistic religions have historically been perceived as primitive, due to the assumption that these spiritual beliefs were solely inspired by a helpless dependence on nature. However, this view diminishes the intelligent, creative, and cooperative relationship that the Neolithic societies had with their world. Animism fosters respect towards and reciprocity with nature. Highly industrialized countries require a radical ideological shift in order to confront climate change, as modern capitalism sees the earth in terms of its extractive value. Globally, we must shift our relationship to nature from one of ownership to stewardship, and learn from ancient and Indigenous societies, who viewed nature through the holistic lens of animism.

259 Scully, *The Earth, The Temple, And The Gods*, 1.
260 Eliade, *The Sacred and the Profane*.
261 Eliade, *The Sacred and the Profane*, 116.

CYCLES



III - CYCLES

INTRODUCTION

Neolithic communities saw the world around them as sacred. In addition to considering landscape features in the placement of their buildings, matrifocal societies also considered celestial cycles in their orientation. Matrifocal societies were very attentive to rhythmic changes in the sky that often go by unnoticed today; astronomy and architecture were inseparable and were likely not seen as separate disciplines as they are today. Many Neolithic sites have an orientation toward solar, lunar and stellar cycles. Orientation towards such events reflected key moments in the year which were celebrated through rituals performed in their temples and sacred spaces. Solar alignments provided dramatic lighting conditions, whereas lunar and stellar events provided much more subtle effects. The alignment to these celestial cycles reflected a cyclical understanding of time.

CAPITALIST TIME

Time can be presented in two ways: cyclical and linear.[262] The movement of the sun, or our daily routines which don't change from day to day, are examples which are cyclical in nature. In contrast, linear time moves forward, often sequentially, such as the movement through successive grades in school or career growth. Settler-colonial frameworks often view life as a linear process: we are born, we grow, we go to school, get a job, achieve all of life's expected milestones and then we die. In contrast, matrifocal cultures saw human life as cyclical, where death was never final, but rather followed by rebirth. Just as the natural world is cyclical, Neolithic people believed humans were part of these natural cycles as well.

Contrasting to the Neolithic view of time is capitalist time, which blossomed with the invention of the clock. In the modern world, clocks shape how individuals structure their lives. We may use clocks to schedule meetings, appointments and family gatherings. However, clock time, the tracking of hours, minutes, and seconds, is a relatively new invention in the history of humankind.[263] The Egyptians, around 1300 BCE, were the first to divide day and night into twelve hours each, however the length of one hour was inconsistent due the varying lengths of daylight throughout the solar year.[264] These temporal hours were in use throughout different parts of the world and were tracked with various devices such as sundials and water clocks.[265] The invention of the mechanical clock in the 14th century allowed for the standardization of the hour; day and night were divided into 24 standard hours, creating the time system that is still in use to this day.[266]

262 Sjöö and Mor, The Great Cosmic Mother: Rediscovering The Religion of The Earth.

263 Camilla Power, "How to Breathe." *Journal of Global Faultlines* 9, no. 2 (2023).

264 Rebecca Struthers, "A Love Letter to Timekeeping: How Clocks Have Shaped Our World." BBC News, November 17, 2023.

265 Ibid.

266 Ibid.



III - CYCLES

FIGURE.4.1 - Cycles Card

In the 17th century, clocks began to track minutes and seconds,[267] allowing people to track smaller and smaller units of time.

With the industrial revolution in the 19th century, the measure and control of time was rooted in systems of power. As productivity and mass production became the highest priorities, factory worker's time became more regulated by their employers. In some cases, employers would abuse their control of time by setting clocks back in the evening to force employees to work longer hours.[268] With industrialization, time spent working increased, while time "to be human" decreased.[269] This is a term which the anthropologist Camilla Power uses to describe the human need for time outside work demands: care for the body, time spent with loved ones, domestic tasks, or time to breathe.[270] Despite the need for time to care for our physical and psychological well being, corporations control time to exploit their workers and achieve higher profits.

The phrase "time is money" accurately describes the capitalist attitude towards time. Phrases such as time being 'wasted' or time being 'spent' are commonly used, as if time was truly a monetary currency.[271] The 9 to 5 working hours, with 40-hour work weeks have become standard in many industries, although the concept of working overtime is not uncommon. This framework for the work week was created by Henry Ford in 1926, which actually reduced working hours from what they previously were.[272] Ford believed this change would increase productivity in his workers.[273] However, this capitalist system intuitively favoured men's hormonal processes. While the hormone cortisol naturally rises during the day, making all humans more alert and awake, males have the advantage of their testosterone levels additionally rising in the morning and declining in the evening, allowing for extra energy during the day.[274] The daily male hormonal cycles align conveniently to this standardized work schedule, allowing for optimum productivity within this framework. Female hormonal cycles, however, do not follow a daily cycle but rather a monthly one and thus, female bodies will feel a spike in energy and productivity around the ovulation phase of their cycle.

267 William J. H. Andrewes, "A Chronicle of Timekeeping." Scientific American, February 1, 2006.

268 Struthers, "A Love Letter to Timekeeping: How Clocks Have Shaped Our World."

269 Power, "How to Breathe," 130.

270 Ibid.

271 Ibid.

272 Jack Kelly, "Working 9-To-5 Is an Antiquated Relic from the Past and Should Be Stopped Right Now." *Forbes*, July 25, 2021.

273 Ibid.

274 Manasvi Reddy, "The 9–5 Is Biologically Sexist. Here's How to Fix It." *Medium*, June 6, 2023.

Not only does the modern work week excessively value productivity, exploiting worker's hours and time, the current standard framework works inadequately for female bodies.[275] Capitalism views time as a resource with a direct correlation to profits, and does not consider the human body's innate cycles or the need for time "to be human".[276]

Clock time is presented as an unbiased and fixed method of measuring time; however, our perception of time is constructed by the way we measure it.[277] Time, although seemingly an objective unit, is experienced in a completely subjective manner. Cultures that associate productivity with time must reevaluate how both are measured. The primary disadvantage to the evolution of clock time, or patriarchal time, is the disregard for the human body and nature's own inert cycles:

> "The ultimate expression of white supremacy is control of time itself, through the Gregorian calendar which subdued cosmological and ecological time" (Power 2022, 126).[278]

Few indigenous societies have measured time using clocks, but instead used celestial and nature-based cycles.[279] Colonization has attempted to eradicate Indigenous methods of perceiving the world, and thus clock time has become a global standard used across all countries. This can be seen in the dismissive eurocentric attitudes towards North American Indigenous methods of history keeping, which are based in oral myths rather than using a linear time-based tracking of events.[280] Due to the different methods of recording past events, Indigenous peoples are regarded as having no 'history'.[281] Eurocentric methods for tracking time and history are not more accurate than Indigenous methods, nor are they more 'scientific' or 'unbiased'.

Indigenous perceptions of time are rooted in "place, spirituality and materiality" (Bawaka Country et al. 2017, 82)[282], aligning with both nature

275 See: Chung, Heejung, and Tanja van der Lippe. "Flexible Working, Work–Life Balance, and Gender Equality: Introduction." *Social Indicators Research* 151, no. 2 (November 26, 2018): 365–81; Maraziotis, Filippos. "Flexibility for Equality: Examining the Impact of Flexible Working Time Arrangements on Women's Convergence in Working Hours." *British Journal of Industrial Relations* 62, no. 2 (January 19, 2024): 410–45; Sonia Ponzo et al., "Menstrual Cycle-Associated Symptoms and Workplace Productivity in US Employees: A Cross-Sectional Survey of Users of the Flo Mobile Phone App." *DIGITAL HEALTH* 8 (January 2022).

276 Power, "How to Breathe."

277 Andrewes, "A Chronicle of Timekeeping."

278 Power, "How to Breathe," 126.

279 Power, "How to Breathe."

280 Deborah Doxtator, "INCLUSIVE AND EXCLUSIVE PERCEPTIONS OF DIFFERENCE: NATIVE AND EURO-BASED CONCEPTS OF TIME, HISTORY AND CHANGE" In *Decentring the Renaissance*, 33-47. (Toronto: University of Toronto Press, 2001).

281 Ibid.

282 Bawaka Country et al. "Co-Becoming Time/s: Time/s-as-Telling-as-Time/s." In *Methodological Challenges in Nature-Culture and Environmental History Research*, 82. Routledge, 2017.



FIGURE.4.2 - Irish Spiral, Newgrange entrance stone



FIGURE.4.3 - Maltese Spiral, Tarxien Temple



FIGURE.4.4 - Minoan Spiral, Minoan Pottery

and the sky. Being in tune with these cycles, reflects a deep respect for the natural world in Indigenous and animistic world views. The use of the moon, sun and stars and time tracking devices naturally allows for periods of work, rest and sacrality due to the cyclical nature of these celestial bodies. Using these cycles to measure time inevitably encourages fluctuations in productivity and work throughout the day and the year. Similarly to other animistic practices, matrifocal cultures from the Neolithic Era, aligned their lives to the seasons and celestial cycles. The clearest evidence for this fact is the abundance of alignments in matrifocal architecture to cycles of the sun, moon and stars.

CYCLICAL TIME

In the Neolithic Era, cues in the skies would have governed matrifocal society's use of time. Today, however, light pollution clouds our vision of the night sky in urban centers. While we are likely to notice the rising and setting of the sun every day, the modern urbanite is less likely to notice the sun's elevation in the sky, the moon's phase and positioning, or which constellations are in the sky. Cyclical time is easily observable in the natural, non-urban world: the seasons, solar solstices and equinoxes, moon phases, rising and setting of stars, and crop growth cycles. These cycles, from the earth and the sky, allowed matrifocal societies to orient themselves within both time and space.[283] Noting the sun, moon, and stars' cycles can allow the observer to determine their positioning in time (such as time of day or night, time of year), and their positioning in space (such as latitude on the earth). All cycles we can observe in the sky are an interplay between the celestial bodies, including the earth. For example, seasons are a result of the earth's own tilt in combination with its orbit around the sun. How we experience or view these celestial cycles is highly dependent on our positioning on the planet; these cycles are site specific.

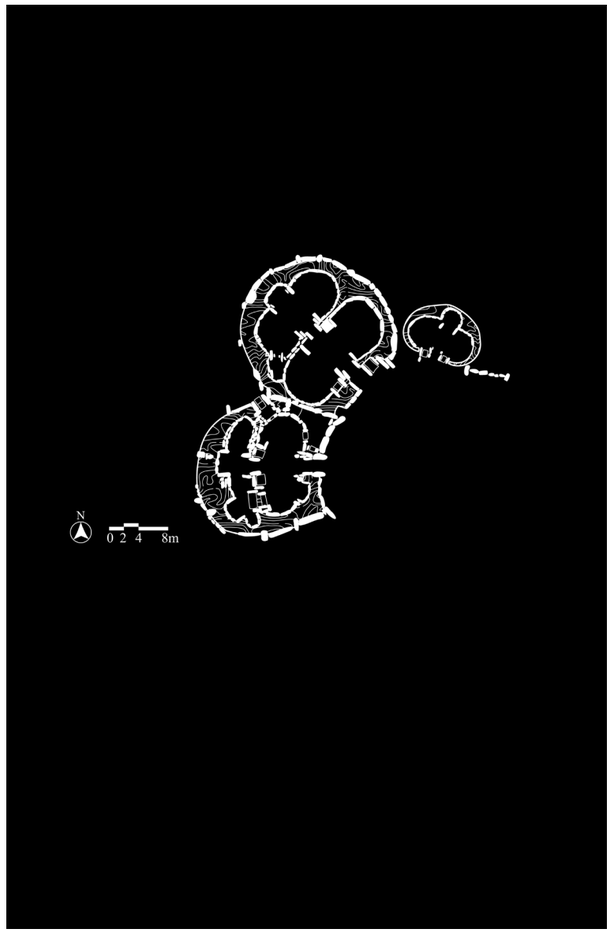
We see this cyclical approach to life reflected in the ornamentation of matrifocal architecture and pottery through the shape of the spiral. In many Neolithic temples and clay figurines across Europe, the spiral was the most ubiquitous symbol. While there is no consensus about what this symbol means, one suggestion is that the spirals represent growth, renewal, and life itself.[284] The symbol of the spiral is seen across the many different carvings of Maltese temples, burial mounds in the British Isles, as well as the Goddess figurines in the Balkans. In Malta, the 'S' shaped spiral is most common,[285] while in Ireland the triple spiral is often used. The ubiquity of the spiral might be a merging of the two types of time: cyclical time with the growth of linear time. Cyclical time does not typically see any change, yet the diameter of the spiral increases as it is drawn. This growth is an aspect we associate typically with linear time as described above. It is most

283 Dolan. *Decoding Astronomy in Art and Architecture*, 6.
284 Gimbutas, *The Living Goddesses*, 6-15.
285 Ridley, *The Megalithic Art of The Maltese Islands*, 20.

likely that spirals had multiple meanings and conveyed "various complex religious ideas and associations in a single form".[286]

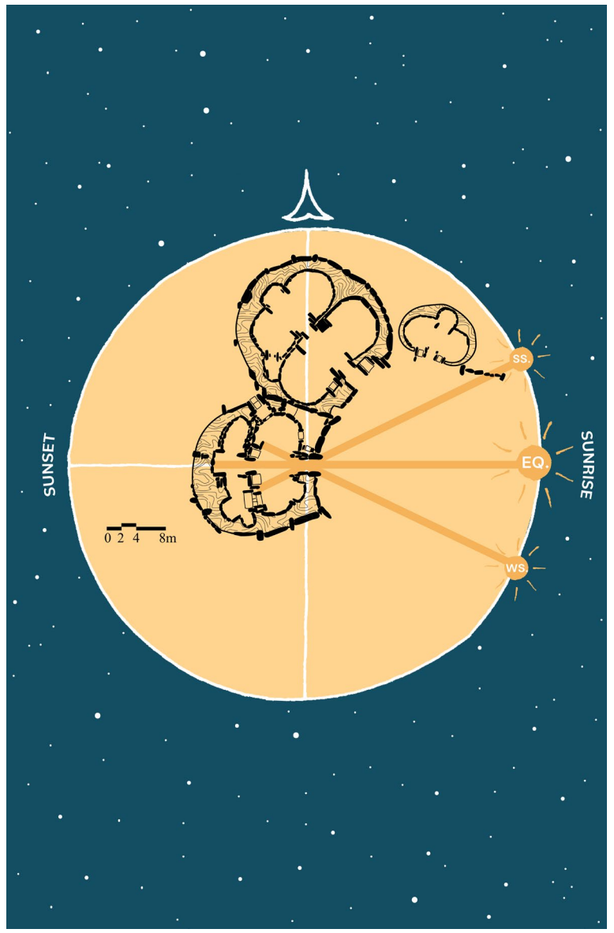
Matrifocal societies' cyclical view of time is identifiable through both the spirals in their ornamentation and the orientation of their buildings. The alignment of stones and the orientation of the entrances of Neolithic buildings marked the rising and setting and the sun, moon and stars. In contrast to patriarchal clock methods of time keeping, matrifocal societies used nature's cycles to dictated use of their time for work, pleasure and sacred rituals. Solar cycles provided dramatic lighting effects, which added theatrical effects to the cyclical rituals they performed. Orientations towards the moon were less visually dramatic, but may have been tied to the cycles observed in the female body such as that of menstruation. The moon also allowed for the tracking of smaller units of time, such as the period of a month, through an easily observable phenomenon in the night sky. Constellations provided an indication of a very specific moment in time; the rising and setting of certain stars may have marked important moments throughout the year, such as the beginning of religious holidays, or when to plant seeds for farming. Although the Neolithic mythology around the sun, moon, and stars has been lost to time, the evidence for their importance can still be very clearly read and observed in their architecture.

286 Ridley, *The Megalithic Art of The Maltese Islands*, 26.



III.I - SOLAR CYCLES

MNAJDRA



III.I - SOLAR CYCLES

MNAJDRA

FIGURE.4.5 - Solar Cycles Card

SOLAR ALIGNMENTS

Across Neolithic sites, alignment to solar cycles is the most common type of celestial orientation. Solar cycles are deeply felt by all humans, as many of our own bodily cycles mirror the motion of the sun. For example, our melatonin and cortisol cycles give us energy when the sun is up and help us feel drowsy at night once the sun has set. The sun creates the most visibly noticeable cycles, and casts a dramatic lighting effect on matrifocal architecture. With agricultural revolution and the new heightened role of farming in Neolithic life, the sun's cycles dictate these communities' use of time and activities throughout the year. For example, knowledge of the solar year would help Neolithic communities know when to plant seeds and harvest plants. Plants experience a cycle of birth, growth, death and rebirth, aligned to the solar year; the solar cycle of life and rebirth transcended farming, and influenced matrifocal spiritual beliefs and religious practices. Alignment to solar cycles has been observed in many religious sites such as stone circles, burial mounds, Maltese temples and Minoan palaces. These sites are oriented towards different times of the year, such as the solstices, equinoxes, and days in between.

Many monuments orient themselves to the solstices, equinoxes or other points in the solar year. The solar year is marked by four key events: the spring equinox (approximately falls on March 21st), the summer solstice (June 21st), the fall equinox (September 21st), and finally the winter solstice (December 21st). The summer solstice is the longest day of the year and the highest point of the sun in the sky, while the winter solstice is the shortest day of the year and the lowest point of the sun in the sky. The equinoxes mark the halfway point between these two solar events. Architects are quite familiar with solstices and equinoxes, since they mark the highest and lowest point of the sun in the sky and use these sun positions to draw sunlight diagrams in sections. These dates are most important, as Neolithic solar orientations are most often aligned to the sunrise or sunset of the equinoxes and solstices.[287]

The archaeoastronomer Alexander Thom, who did extensive research on astronomical alignments of stone circles in the British Isles in the 1960s, proposed that Neolithic societies divided the year into sixteen parts.[288] The four solstices and equinoxes were the principal days in the year; the halfway points between these events can be called cross-quarter days: February 1st, May 1st, August 1st, November 1st. Marking the halfway point between the cross-quarter days results in 16 different points in the year. One of the

287 The sun's rising position on the eastern side of the horizon shifts slightly more north during the summer solstice, and south during the winter solstice. The solstices are easier to observe, as the sun's rising position at the horizon, after reaching its extreme, lingers there for a few days before shifting the opposite direction towards the other solstice. The equinoxes as with any other point in the solar year would be more difficult to observe, as there isn't this period of lingering, yet many monuments still align themselves to the equinoxes.

288 Alexander Thom, *Megalithic Sites in Britain* (Oxford: Clarendon Press, 1967).

main arguments for this calendar was that Thom observed solar alignments on these sixteenth days, which did not correspond to any stellar or lunar alignments.[289] Kerbstone number 15 at the monument of Knowth is carved with a design of a semi-circle which has been interpreted as a calendar. This semi-circle is decorated with 16 squares on its perimeter which has been interpreted as the 16 months from Thom's hypothesis.[290] Doubt in Thom's work, back when it was first published, arose from disbelief in Neolithic societies' capacity for precise astronomical measurements,[291] however many solar alignments from Neolithic sites today are considered indisputable. As research into Neolithic architecture and societies continues, the academic community becomes continually reminded of how advanced Neolithic knowledge and skills were, which was far from primitive.



FIGURE.4.6 - Knowth Calendar Stone

The squares demarcating the 16 solar months from Thom's calendar are highlighted in red.

289 Ibid.

290 Euan W. MacKie, "The Prehistoric Solar Calendar: An Out-of-Fashion Idea Revisited with New Evidence." *Time and Mind* 2, no. 1 (2009): 9–46.

291 Ibid.

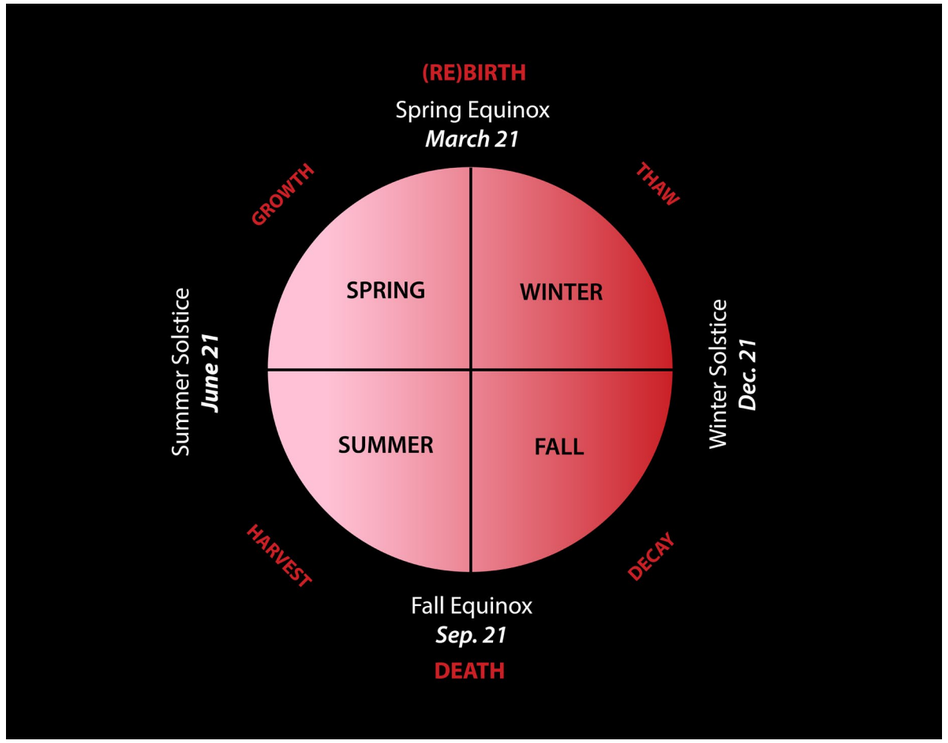


FIGURE.4.7 - Solar Year

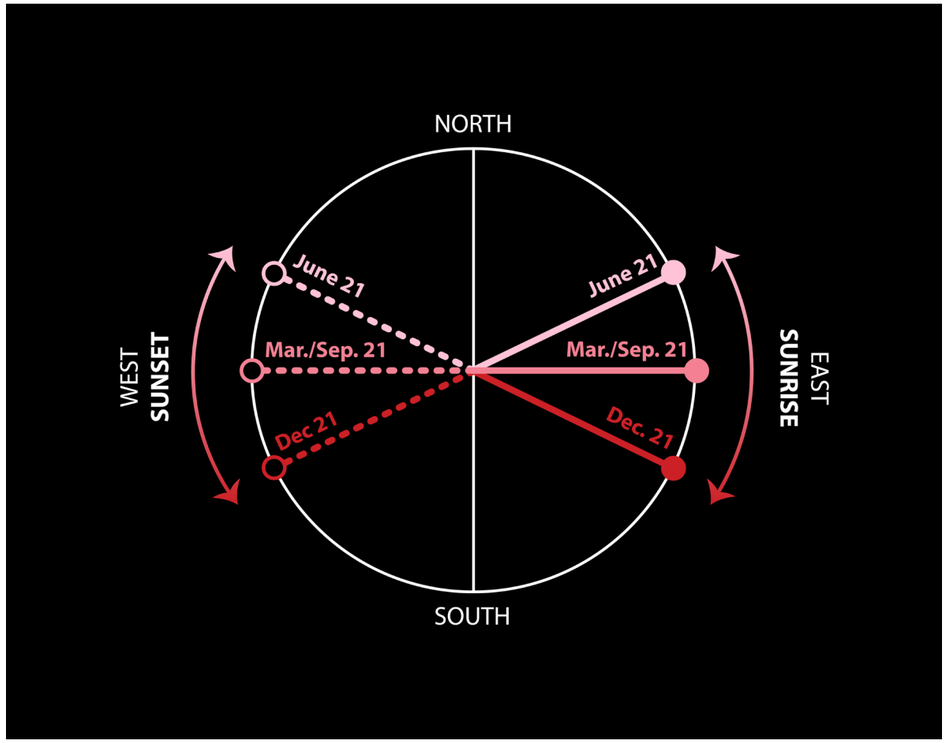


FIGURE.4.8 - Sunrise and sunset positions on the solstices and equinoxes



FIGURE.4.9 - The Heel Stone, Stonehenge

THE CIRCLE

Most stone circles in the British Isles have astronomical alignments which mark the movements of the sun, in addition to those of the moon and stars, of which Stonehenge is by far the most famous. Stonehenge consists of a stone circle which is located within an even larger circular henge (bank and ditch made from earth). Inside the stone circle are stones placed in a U shape, which opens towards a path. This path, named the Avenue connects Stonehenge to the Avon river. Both the henge and the avenue are earthworks, as they were built by creating ditches and banks in the landscape. Stonehenge's stone circle, and inner 'U' formation, are quite unique because they were constructed with columns and lintels, and is the only stone circle in the world to have lintels. The lintels were secured with a tongue and groove connection, a technique which is typically reserved for wood building. Stonehenge was constructed in three different phases. The first phase consisted of the building a circular henge and the Avenue. Post holes were found at Stonehenge, which led archaeologists to believe that the first iteration of Stonehenge may have been made from wood. The remnants of Stonehenge that we see today date from the third and final stage.

The building of an elaborate structure marks not only time, through astronomical alignments, but space as well. Thus, these stone circles were likely places of rituals and were used to define sacred time and space,[292] which would have allowed a distinction between sacred and ordinary time. In the words of Mircea Eliade:

> "For religious man time too, like space, is neither homogeneous nor continuous. On the one hand there are the intervals of a sacred time, the time of festivals (by far the greater part of which are periodical); on the other there is profane time, ordinary temporal duration, in which acts without religious meaning have their seeing. Between these two kinds of time there is, of course, solution of continuity; but by means of rites religious man can pass without danger from ordinary temporal duration to sacred time." (Eliade 1959, 68)[293]

We observe astronomical alignment in Stonehenge in the placement of a conspicuous stone. As the avenue approaches Stonehenge, there is a singular stone placed in the middle of the path, named the Heel Stone. The Heel stone plays the role of the 'outlier stone', to draw the line toward the solar alignment. For any astronomical alignment, two points of reference must be present, from which we can draw a line which can be extended

292 Previously scholars believed that Stonehenge was constructed with the purpose of being a calendar and calculating lunar and solar eclipses, although this theory has been rejected by more recent research. If the objective was to merely calculate a particular time, only two stones would have sufficed to determine an alignment. Mike Parker Pearson, "Stonehenge." *Encyclopædia Britannica*. Last modified December 20, 2024.

293 Mircea. *The Sacred and the Profane: The Nature of Religion*, 68.

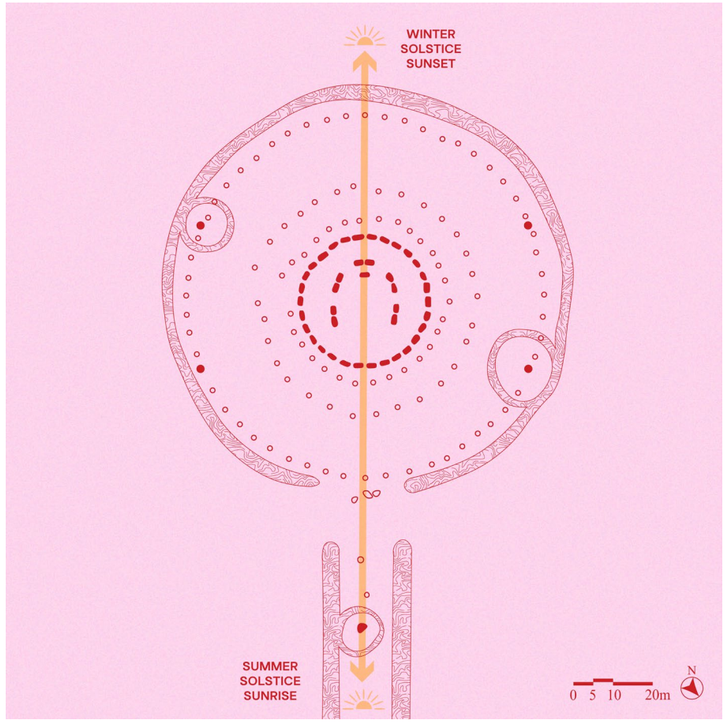


FIGURE.4.10 - Stonehenge Plan



FIGURE.4.11 - Stonehenge, England

toward the horizon.[294] In the case of stone circles, an 'outlier stone' is typically present from which we can draw a line toward the center of the circle, or toward another stone from the circle's perimeter.[295] At Stonehenge, the center of the U shape of stones looking out to the Heel Stone aligns with the summer solstice sunrise. Meanwhile this same line, but from the position of the Heel Stone looking towards the center of Stonehenge is aligned to the winter solstice sunset. Both alignments are recognized by archaeoastronomers, however some believe the winter solstice sunset to be the intended alignment as it more precisely aligns with the circle and the Heel stone.[296] The Avenue is built over and parallel to natural ridge sand fissures in the rock.[297] These markings in the natural rock are aligned to the winter solstice sunset and summer solstice sunrise.[298] It is possible that Neolithic people saw this natural alignment between the solstices and the markings on the rock, which deemed the location of the monument sacred.

The circular form of Stonehenge was used to mark sacred space. Stonehenge, as with all other stone or wood circles, is shaped in a circle on the horizontal plane. While not all Neolithic architecture is circular, we see this point very strongly in the British Isles, where most Neolithic monuments are circular in shape, such as stone circles, henges and burial mounds. The circle is a clear symbol of cyclicity; having no beginning nor end; no front nor back. It is the only shape without inherent hierarchy, as every point on the circle's perimeter is equidistant from its center. We see the shape of the circle repeatedly in Neolithic architecture, both in ornament and in plan-view, on the horizontal plane of buildings.

In addition to marking sacred space, Stonehenge marks sacred time with its astronomical alignment.[299] The outliner stone at stone circles determined when sacred time was, whereas the circle determined where sacred space was. Cycles were marked in time and represented physically in the shape of the circle. The circle is a microcosm of the cosmos, mimicking the horizon which encircled Stonehenge's builders. While not all the Neolithic sites mentioned in the chapter were circular, they achieve the same goals of acting as markers of sacred time and space.

294 Thom, *Megalithic Sites in Britain.*

295 Ibid.

296 Dolan. *Decoding Astronomy in Art and Architecture*, 67.

297 Michael J. Allen, et al. "Stonehenge's Avenue and 'Bluestonehenge.'" *Antiquity* 90, no. 352 (July 19, 2016): 991–1008. https://doi.org/10.15184/aqy.2016.98.

298 Ibid.

299 This practice of aligning times of ritual to astronomical events is still seen in religions and cultures around the world today. For example, Christian Easter is celebrated on the first Sunday after the first full moon after the spring equinox.

SUMMER

The various times comprising the solar year hold symbolism shaping the seasonal rituals. During the summer, the days are long and warm, and farming crops are yielding high returns. The summer solstice day is typically a celebration of harvest and all the earth's offerings such as warmth, food, and sunshine. Similar to Stonehenge, Avebury Circle also has an alignment to the summer solstice sunrise. Inside the circle, is a collection of four stones called the Cove. The Cove consists of a semi-circle formed from three standing stones, and a fourth stone further off into the distance, which draws a line to the summer solstice sunrise. The fourth stone casts a shadow directly on the center of the semi-circle during this summer solstice sunrise.[300] These summer solstice alignments mark rituals which would occur around June 21st every year.

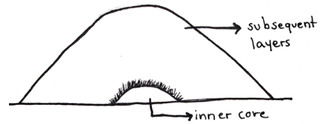


FIGURE.4.12 - Silbury Hill Section

Silbury Hill's rituals also likely took place in the summer, as archaeologists were able to determine that its construction took place around late July.[301] While the hill is made of natural materials, the inner core was composed of a smaller mound made of soil and turf and moss. Shocked that the inner grass and moss had been able to preserve most of its green colour over a period of thousands of years, archaeologists looked more closely at this inner core to discover when the mound was constructed.[302] Amongst the grass, archaeologists found small ants with wings, who typically reach this stage of development by late July. This means the turf was collected and quickly covered with chalk in the middle of the summer.[303] The moss is believed to have been collected from somewhere wet, likely the nearby river, and shells from river snails were interspersed in this inner core.[304] It is likely that the ritual which surrounded Silbury Hill was celebrated around August 1st, the halfway mark between the summer solstice and the fall equinox. Jim Leary suggests that there was likely a continuity between the ritual of construction which created Silbury Hill and those conducted thereafter.[305] The rituals taking place would have mirrored what was happening in the world around them. This would have been a time of harvest and plenty, which mirrors the symbolism of the growing belly of Silbury.

FALL / SPRING

The rituals surrounding the equinoxes, which happens twice a year, relate to the theme of death and rebirth, and these moments within the solar year mirror the decay and rebirth of the natural world. The summer solstice

300 G. Terence Meaden, "The Five Megaliths of the Avebury Cove" In *Archaeology of Mother Earth Sites and Sanctuaries through the Ages: Rethinking Symbols and Images, Art and Artefacts from History and Prehistory*, edited by G. Terence Meaden, 67-72. Oxford: Archaeopress, 2012.

301 Caroline Malone, *The Prehistoric Monuments of Avebury*. 2nd ed. London: English Heritage, 1994.

302 Ibid.

303 Ibid.

304 Leary and Field,"Ways of Understanding Prehistoric Silbury Hill.", 218-219.

305 Leary and Field,"Ways of Understanding Prehistoric Silbury Hill.", 204-207.

and August 1st cross-quarter day is then followed by the fall equinox. As temperatures cool, plants begin to die, and animals prepare for hibernation, this season is a time of decay. The fall equinox is the halfway point between the two solstices, and the sun reaches the midpoint in the sky. The position of the rising sun on the horizon on the fall equinox is the exact same as the position of the sun on the spring equinox in march. Thus, orientations towards the equinox sunrises will display perfect solar alignments on both September and March 21st, and thus likely had two major celebrations every year. The spring equinox is a time of rebirth; animals come out from hibernation, temperatures rise, and flowers start to bloom. This is also New Year's Day in Persian, Kurdish and Celtic calendars, as well as the astrological new year. The buildings aligned to the equinoxes mark the death and rebirth of the universe and are deeply tied to the cycle of life.[306]

An example of an equinoxial alignment is Mnajdra, a temple located on the south west coast of Malta. This temple features two main chambers that have 4 concentric apses each with a smaller altar space at the top. A third chamber, which is much smaller, is located on the eastern side of the temple. The three chambers face an oval shaped court. The entrance of the most western chamber of Mnajdra is aligned to the rising and setting sun of the equinoxes. For solar alignments inside temples and burial mounds, a line can be drawn from the chamber to the entrance, and extended out into the horizon to mark the rising of the sun. In the case of burial mounds, the passageway is always parallel to this alignment. At Mnajdra, on the morning of the equinoxes, the sun pierces through the entrance and reaches the altar space at the back of the temple in a straight beam of light. While it is unknown what rituals took place, or what objects were located on the altar table, this space was clearly of high importance as it is lit up, as if with a spotlight, twice a year. Gimbutas suggests that the rituals at Mnajdra were linked to the cycles of life, death and rebirth.[307]

Many burial mounds of the British Isles have similar equinoxial alignments. Knowth, one of the primary mounds in the Brú na Bóinne complex, has two equinoxial alignments. This mound has two passageways on opposite sides of the cairn: the eastern facing passageway is aligned to the equinox sunrise, meanwhile the western passageway is aligned to the equinox sunset. The West Kennet long barrow's chamber is also aligned to the equinox sunrise. The light enters through the chamber entrance and illuminates the furthest back wall of the chamber. Unlike the mounds in Ireland, the English long barrows, as the name suggests, are very long and elongated in shape. The long shape appears to be an arrow in the landscape pointing towards a specific position on the horizon. Due to its form, the orientation of the long barrows is very clear, even when viewed from a distance.

306 Gimbutas, *The Living Goddesses*.
307 Gimbutas, *The Living Goddesses*, 96-97.

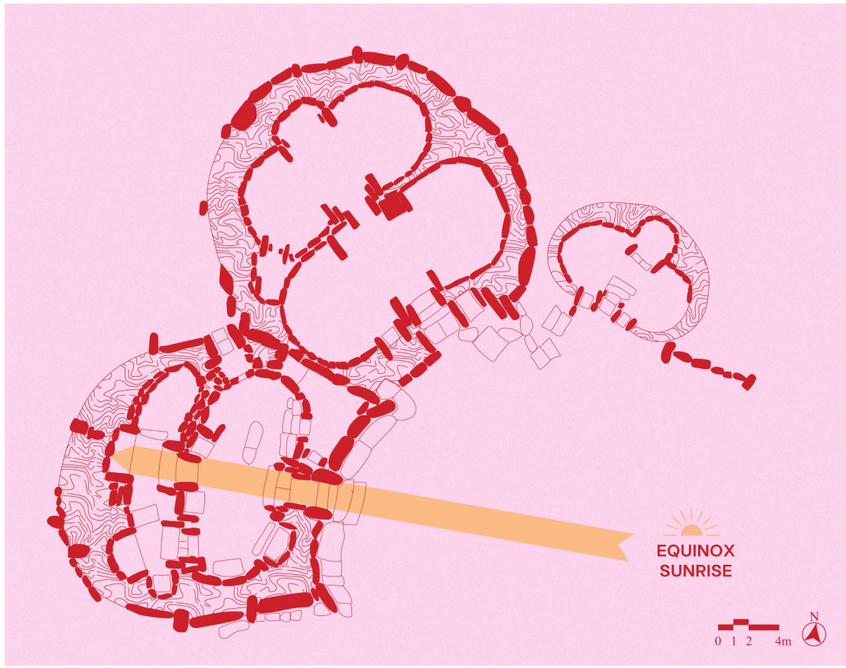


FIGURE.4.13 - Mnajdra Plan

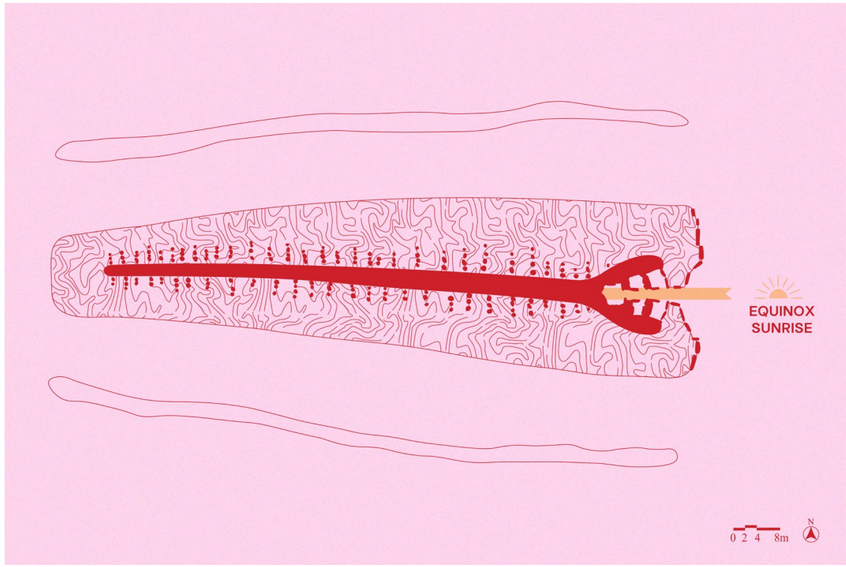


FIGURE.4.14 - West Kennet Long Barrow Plan

WINTER

The Winter solstice, the last of the sun's primary events during the year, also offers opportunities to display and appreciate spectacular solar alignments within the architectural monuments. From December 21 onwards, the days get longer, and the nights get shorter, therefore it is typically celebrated as a day of hope. This day is celebrated in pagan traditions from around the world, such as Shabe Yalda in Persian culture, and as Yule in Celtic tradition. [308] The celebration of the winter solstice can be traced back to Neolithic times, and is thus a practice with over 5000 years of continuity in Europe. One of the most spectacular solar alignments on the winter solstice happens at Newgrange. On the morning of the solstice, a beam of light pierces through the passageway and reaches the furthest back wall of the chamber. The light does not enter through the entrance, but through a lightbox above the entrance which was discovered by Micheal O'Kelly.[309] The entrance is invisible from the chamber, as the passageway rises two meters in height. The lightbox, which is essentially a small window, is level with the floor of the chamber. When the light enters, the entire chamber is completely dark, except for the beam of light on the floor. This bright rod of light is like a spotlight in the chamber and only lasts seventeen minutes. This lightbox is an invention unique to Newgrange; all other burial mounds receive their light from the entrance itself.

At the burial mound of Maeshowe, the entrance is also aligned to the winter solstice. However, instead of being aligned to the sunrise, its entrance is aligned to sunset.[310] In addition to having a solar alignment on the same day, Maeshowe shares many physical characteristics with Newgrange: both mounds have a long passageway leading to a chamber, three apses, all under a circular mound of earth. It is curious to speculate how the rituals or meanings behind Maeshowe would have differed with a sunset alignment. Gimbutas proposes that sunset alignment in Neolithic buildings symbolized

308 The modern Christmas celebrations, although celebrated a few days later, are mainly inspired by pagan winter solstice celebrations: the decoration of a christmas tree, the yule log, kissing under the mistletoe, giving of gifts, etc. (Parry 2022). Although Christmas is a christian holiday, many of the traditions and rituals were taken from the Celtic Yule, the Roman Saturnalia, and other pagan winter solstice traditions from across Europe (Parry 2022). The adoption of pagan traditions aided in the christianization of Europe and conversion of local peoples. Due to this history, the global North-West takes a break around the winter solstice, one of the few times each year that corporations are closed, and people are encouraged to rest and spend time with loved ones.

309 O'Kelly, *Newgrange Archaeology, Art and Legend*, 93-96.

310 The archaeologist Euan Mackie also observed that two other solar alignments can be viewed when standing in front of Maeshowe's entrance. In front of Maeshowe's entrance, two hills are visible; the sun touches the base of the first hill on January 12th and November 29th, the first and fifteenth markers of Thom's Neolithic calendar. The sun then touches the base of the second hill on February 4 and November 4, the second and fourteenth markers of Thom's calendar. This is an example where celestial events are observed in tandem with landscape elements.
MacKie, "The Prehistoric Solar Calendar: An Out-of-Fashion Idea Revisited with New Evidence."

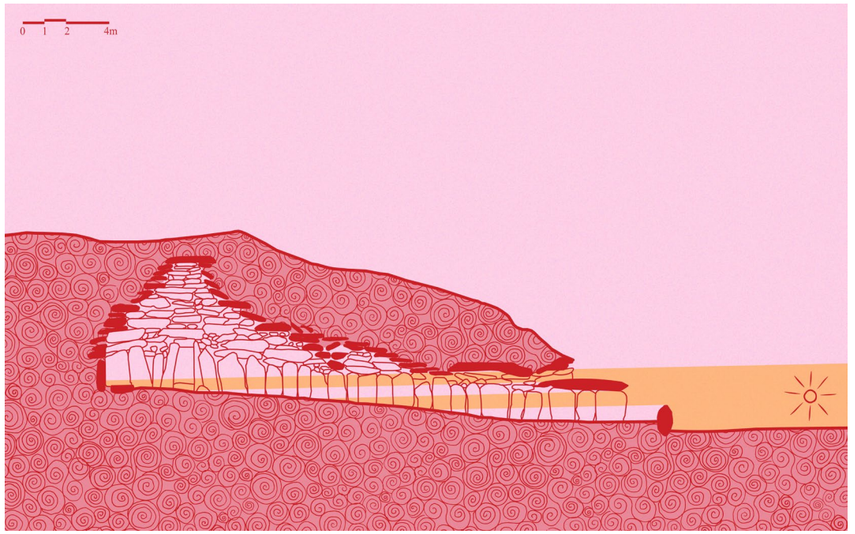


FIGURE.4.15 - Newgrange Section

death, whereas sunrise represented birth.[311] While it is unlikely that the two mounds had radically different symbolic meanings, it is possible that the difference in sunset and sunrise reflects a different time of day that the local populations chose to conduct their rituals relating to the solstice: while the Irish perform their rituals with sunrise, the Scottish performed theirs with sunset. These minor differences could reveal differences in local customs and preferences across the British Isles during the Neolithic Era.

311 Gimbutas, *The Living Goddesses*, 95.

ILLUMINATION AND DRAMA

In addition to marking the cycles of the solar year, astronomical alignments allowed for a light spectacle during rituals, adding drama and intensity. One of the most striking examples of the reliance on the cycles of the sun to bring drama to ritual is found in the Minoan palaces. Dominated by the central rectangular courtyard, which is aligned to the north south axis, Minoan palaces are organized around the rising sun. Important ceremonial rooms at the Minoan palaces are located on the western portion of the palaces, facing east. These ceremonial rooms are illuminated in the morning by the sun. While Knossos is roughly symmetrical in its proportions, the palaces of Phaistos and Malia's western wings are much larger than any other portions of the palace. These western portions face east, the location of the rising sun, and similar to Knossos, utilize this western wing for ceremonial rooms. The position of the sun changes throughout the year, interacting with how Minoans designed their rooms. For example, at Knossos, the rooms dedicated to ritual flow in a sequence from the sunlight courtyard. One of these rooms is the throne room, a ritualistic space within the palace of Knossos, though scholars are divided on what types of rituals occurred here. Entered directly from the courtyard, the throne room is entered through a narthex-like vestibule. When excavated, Sir Arthur Evans, the archaeologist who first discovered Knossos, found a highly decorated chair opposing a stone basin in the middle of the room; murals of griffins covered the walls.[312] The throne faces a lustral basin, a sunken area of the room, accessible by a few steps. It is most commonly believed that the lustral basins in Minoan architecture were filled with water and had purely ritual purposes, such as purification. The throne room then leads to a small room, named the altar room. In the afternoon, because the throne room is attached to the courtyard by the vestibule, the light enters the space in a diffuse manner. The windowless altar room receives almost no borrowed light and is usually a very dark, sombre space.

Light plays a crucial role in the performative character of these rooms. Since the throne room faces east, the morning sun filters through the vestibule and penetrates beams of light into the room. During the equinox sun rises in September and March, the sunlight reaches past the throne room and pierces through the darkness of the altar room, connecting the two rooms by a shard of light. Meanwhile, during the winter solstice sunrise in December, the base of the throne becomes illuminated. During the summer solstice sunrise in June, the furthest corner of the lustral basin is illuminated. This phenomenon was first observed by the photographer Carlos Guarita, that specific elements inside the throne room were lit up during different times of the year.[313] Given the ritual nature of this room, it is likely that these solar markings were not used to track the sun, but rather

312 Evans, *The Palace of Minos: Volume 1, The Neolithic and Early and Middle Minoan Ages*.

313 Lucy Goodison, "From Tholos Tomb to Throne Room: Some Considerations of Dawn Light and Directionality in Minoan Buildings." *British School at Athens Studies* 12 (2004): 339–50.

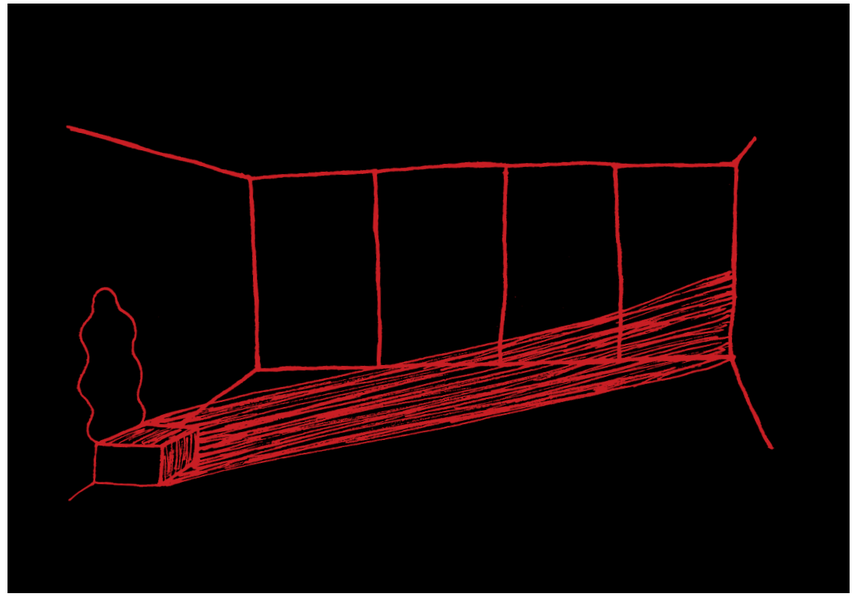


FIGURE.4.16 - Throne Room Sketch

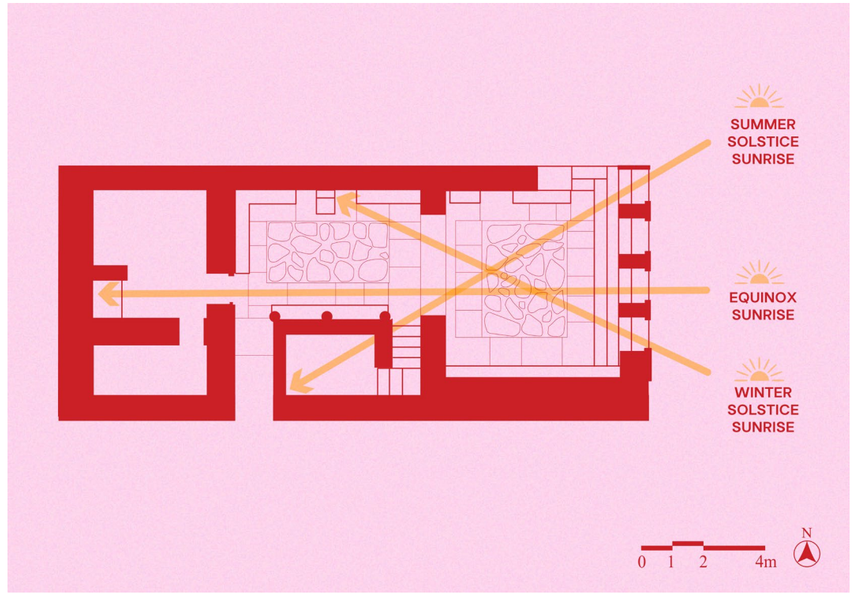


FIGURE.4.17 - Throne Room Plan, Knossos

to add drama to the rituals which occurred in this space.[314] The throne room was likely used for rituals throughout the year, but especially on the days of the equinoxes and solstices. This resulted in a year-long ritual performance which was in tune with the movement of the sun and the changing of the seasons.

This interpretation extends to other Neolithic monuments with solar alignments, suggesting that light served far more complex purposes than merely tracking time. Solar alignments added drama to the sites on the day that rituals were performed, just as today stage lights are used to intensify the emotions conveyed on a performance stage. Similar alignments of the sun highlighting particular areas of a room are also seen in Malta. Although the principal alignment at Mnajdra is on the equinox sunrise, the solstice sun rises also illuminate different parts of the temple. The winter solstice sunrise illuminates a stone to the right of the central corridor, while the summer solstice sunrise illuminates a stone to the left. Ħaġar Qim is the only other Maltese temple with a solar alignment. A circular window is carved on the side of the temple which is in perfect alignment to the summer solstice sunrise.[315] A beam of light enters this window and illuminates the chamber. These solar alignments illuminate key rooms and religious tools which were likely of key importance in rituals. With different solar alignments illuminating different spaces and artifacts on different days, this may suggest the progression or shifts in the rituals throughout the year.

The different solstices and equinoxes mark different festivals and types of rituals, which mirror the stages of human life: birth, growth, death, and rebirth. The cycles of rebirth were seen and interpreted in everything. Mircea Eliade describes sacred time as uniquely cyclical, as the return of festivals and sacred time allows religious devotees to connect to a time immemorial.[316] We see this cyclical reconnection to the past with the return of celebrations at Neolithic sites. Every year, tens of thousands gather at Stonehenge to witness both solstices, and thousands of people who gather at Newgrange on the winter solstice. Although the rites and rituals differ from modern day compared to the Neolithic Era, the gathering of people and enactment of rituals connects these observers to a time seemingly immemorial.

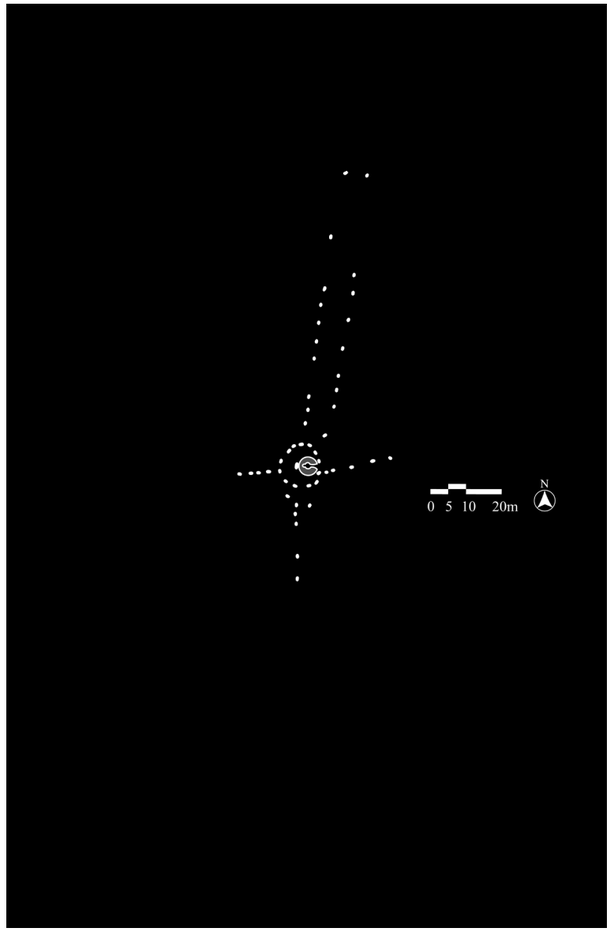
I have compiled the data in the table to the right to show some of the various solar alignments from the Neolithic Era. This table is not an exhaustive list of all documented alignments from this time period, but rather reflects the sites most important to this thesis.

314 Ibid.

315 Heritage Malta. *Welcome Exhibition*, Ħaġar Qim and Mnajdra Archaeological Park Qrendi, Malta, September 24 2024.

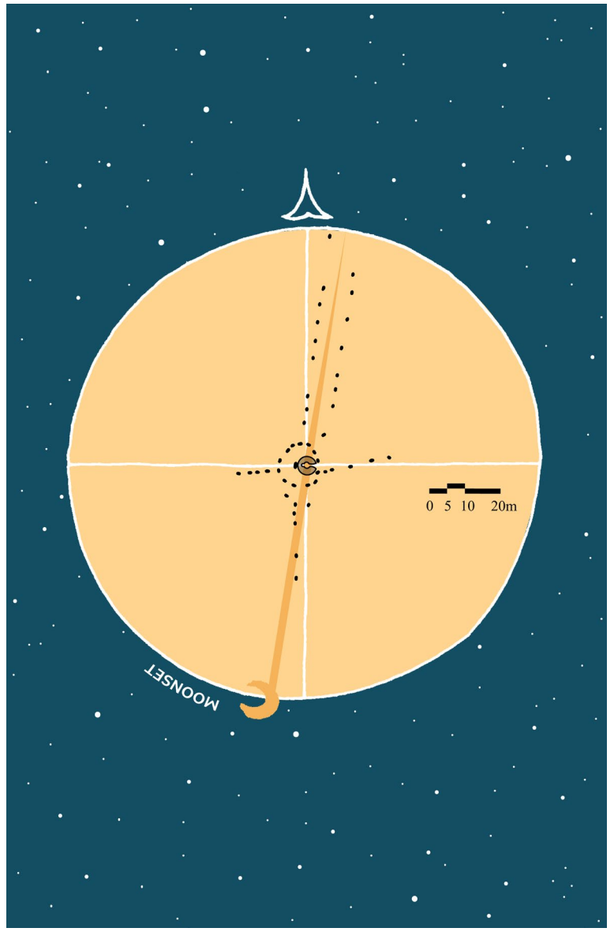
316 Mircea. *The Sacred and the Profane: The Nature of Religion*.

SUMMER SOLSTICE	**CROSS QUARTER DAY**	**EQUINOXES**	**CROSS QUARTER DAY**	**WINTER SOLSTICE**
JUNE 21	***AUGUST 1***	***SEPTEMBER 21 MARCH 21***	***NOVEMBER 1 FEBRUARY 1***	***DECEMBER 21***
Mnajdra (left stone)	Silbury Hill (not an alignment but confirmation of when it was built - Early August)	Mnajdra	Mound of the Hostages	Mnajdra (right stone)
Knossos (basin)		Knossos (altar room)	Dowth (North chamber)	Knossos (throne)
Stonehenge		Knowth	Loughcrew - Cairn L	Stonehenge
~~Ħaġar~~ Qim (window)		West Kennet Long Barrow		Newgrange
Avebury Circle (The Cove)		Loughcrew - Cairn T		Maeshowe
				Dowth (South chamber)



III.II - LUNAR CYCLES

CALANAIS STANDING STONES



III.II - LUNAR CYCLES

CALANAIS STANDING STONES

FIGURE.4.18 - Lunar Cycles Card

LUNAR CYCLES



FIGURE.4.19 - Venus of Laussel, France (20,000 BP)

Lunar cycles were also of importance in matrifocal architecture. The moon's phases can be observed to track the period of a month. The parallels between this cycle and the menstrual cycles were likely observed, giving the moon a feminine characteristic. However, Neolithic monuments were aligned to a more complex lunar cycle; the moon's most northerly and southerly rise and setting position, a cycle which lasts 18.6 years. The moon's cycle was not tied to any labour practices, such as farming, and thus served purely spiritual purposes in the Neolithic imaginations.

While the solar calendar dominates the contemporary western world, some of the first human calendars, dating the Paleolithic era, were lunar.[317] One example can be found on a Goddess figurine from the Paleolithic era named the Venus of Laussel. The Venus of Laussel, which was created around 25,000 BCE and found in France, is a relief carving of a female figure holding what appears to be a horn. Upon close inspection, we see that this horn has 13 markings which archaeologists have interpreted as a lunar calendar; thirteen markings representing the lunar months in a year.[318] Artifacts of bones with markings used to track the lunar year have been found across Europe.[319] It is very likely that the object the Venus of Laussel is holding is in fact a horn or bone, representing this practice of making lunar calendars.

The moon was likely chosen as the basis for ancient calendars because its phases are easily observable from the naked eye. The moon's cycles are also shorter units of time, which are units of months, compared to solar cycles, which are units of years, making the tracking of time easier. However, tracking the moon might be more complex than it initially seems, as the moon goes through multiple different types of cycle. For example, the moon takes 27.3 days to orbit around the earth; this is called the sidereal cycle. The moon also appears in different phases: full, waning, dark, and waxing. The phases are created by the moon's position in the sky relative to both the earth and the sun, whose light it reflects. The moon takes 29.5 days to go through all these different phases which is called the synodic cycle. The synodic cycle is more easily observable from the naked eye compared with the sidereal cycle.[320]

The lunar year and solar year do not line up, which adds a layer of

317 Michael A. Rappenglück, "Palaeolithic Stargazers and Today's Astro Maniacs: Methodological Concepts of Cultural Astronomy Focused on Case Studies of Earlier Prehistory." In *Ancient Cosmologies and Modern Prophets: Proceedings of the 20th Conference of the European Society for Astronomy in Culture*, edited by Ivan Šprajc and Peter Pehani, 83–102. Ljubljana: Slovenian Anthropological Society, 2013.

318 Dolan. *Decoding Astronomy in Art and Architecture*, 19.

319 Dolan. *Decoding Astronomy in Art and Architecture*, 16.

320 Many cultures today use a lunar calendar, including the traditional Chinese, Jewish and Islamic calendars and typically track the moon's synodic cycles.

complexity when following the cycles of both celestial bodies. A lunar calendar typically tracks the synodic cycle, and will have 12 or 13 months in a year. A lunar month is described as a moon's full rotation through all its phases, beginning with a crescent moon and ending with a new moon or dark moon. This equates to either 354 (12 lunar months) or 384 days (13 lunar months) in a year, which is different from the solar calendar by 11 to 19 days. Let's observe this discrepancy with an example: if one year, the winter solstice lined up with a full moon, the following year the moon's phase would be different due to the difference between the lunar and solar calendars. It would take 19 years for the moon to be full again on the winter solstice. This pattern is called the metonic cycle, which looks at the interrelation of the solar cycle and the moon's synodic cycle. The moon's phase on a particular calendar date from the solar calendar will recur only every 19 years. For the years in between, the moon will be in a different phase of its cycle. This cycle is very important for calendars that use both lunar and solar cycles, and it is a moment of harmony between the two cycles. Despite the complexity of the lunar cycles, and the disparity between the two solar and lunar years, the shorter intervals of time in a lunar month helped Neolithic societies track time throughout a year.

MENSTRUATION

The moon is associated with many female figures in myths from around the globe; for example, this can be seen North and South American Indigenous context,[321] Greek and Roman myth, as well as Celtic myth. The moon is often associated with the female figures and female body, due to the similarities between the human menstrual cycle roughly and lunar cycles. While all mammals have a menstrual cycle, very few shed their uterine lining or have what most call a period. Humans are one of the few species who have a period, which means to visibly bleed every month, while most mammals reabsorb their uterine lining.[322]

No studies have been able to successfully explain the correlation between the human menstrual cycle and the moon. Charles Darwin believed it is because we evolved from the ocean, and our bodies felt the cycles of the moon through the tides.[323] Although women's menstrual cycles vary greatly, when looking at data from period tracking apps it was found that the average human menstrual cycle is 29.3 days,[324] which almost lines up

321 Gregory Cajete and Leroy Little Bear, *Native Science: Natural Laws of Interdependence*, (Santa Fe: Clear Light Publishers, 2000).
As an exception, the Inuit associate the sun with a female character and the moon with a male character in myth. See: Oosten, J. G. "The Incest of Sun and Moon: An Examination of the Symbolism of Time and Space in Two Iglulik Myths." *Études/Inuit/Studies* 7, no. 1 (1983): 143–51

322 Bohannon, *Eve: How the Female Body Drove 200 Million Years of Human Evolution,* 104.

323 Sjöö and Mor, *The Great Cosmic Mother: Rediscovering The Religion of The Earth,* 2.

324 Joyce R. Bull, et al. "Real-World Menstrual Cycle Characteristics of More Than 600,000 Menstrual Cycles." *npj Digital Medicine* 2 (2019): 83.

exactly with the lunar synodic cycle of 29.5 days.[325] A study completed in 2021 suggested that women's menstrual cycles are more likely to sync with the moon's synodic cycle if the moon, whose orbit is elliptical, was closer to the earth.[326] This study found that instances of synchronization occurred less as participants aged and with exposure to artificial light,[327] which suggests that in the Neolithic era when light-polluted cities did not exist and life spans were shorter, a higher level of synchronization could have been observed. This study has a small number of participants and further studies should be conducted before conclusions can be drawn. While it is possible that there is a causation, it is possibly a beautiful coincidence. Regardless, the close similarity between the lunar cycles and human menstrual cycles has been observed since the Paleolithic Era.

The moon is forever in a cycle of death and rebirth. The synodic cycle starts with a small sliver of light which continues to grow until the moon is fully lit up. The light then starts to diminish until the moon disappears in darkness. The cycle then repeats. Observing the moon taught humans that death is not final.[328] The moon is a powerful symbol in early religions: "In fact, it may be a defining feature of religion to work with the moon – the source of magic, transformation, and the other world, the fundamental metaphor of life, death, and resurrection."[329]

MAJOR LUNAR STANDSTILL

Just as the sun was central to Neolithic timekeeping, the moon—intimately linked to menstruation—also played a crucial role, as seen in Stonehenge's lunar alignments. Four stones at Stonehenge, named the station stones, are placed in a square formation outside of the stone circle, but still within the bounds on the circular henge. These four stones form a rectangle; if an observer were to stand at the northern stones, and look down the long edge of the rectangle to the next stone, their gaze would be aligned to the rising of the moon on the evenings of a special event called the major lunar standstill. The major lunar standstill marks the highest position or orbit the moon will ever reach in the sky, whereas the minor lunar standstill marks the lowest path the moon will travel in the sky. During any given year of a lunar standstill, the moon will have a most northerly and southerly sunset and sunrise. During a major lunar standstill the difference between the northern and southern positions will be at its greatest, whereas during a minor lunar standstill, the difference will be at its most minimal. This cycle is 18.6 years long, and is caused by the moon's orbit being roughly at a 5

325 Power, "How to Breathe."

326 Charlotte Helfrich-Förster, et al. "Women Temporarily Synchronize Their Menstrual Cycles with the Luminance and Gravimetric Cycles of the Moon." *Science Advances* 7, no. 4 (2021): eabe1358.

327 Ibid.

328 Eliade, *The Sacred and the Profane*.

329 Power, "How to Breathe."

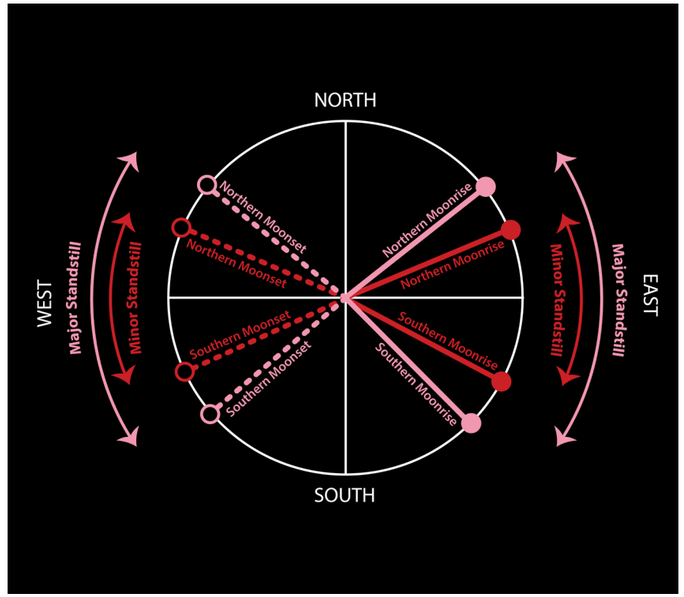


FIGURE.4.20 -Major and Minor Lunar Standstill Moonrise and Moonset

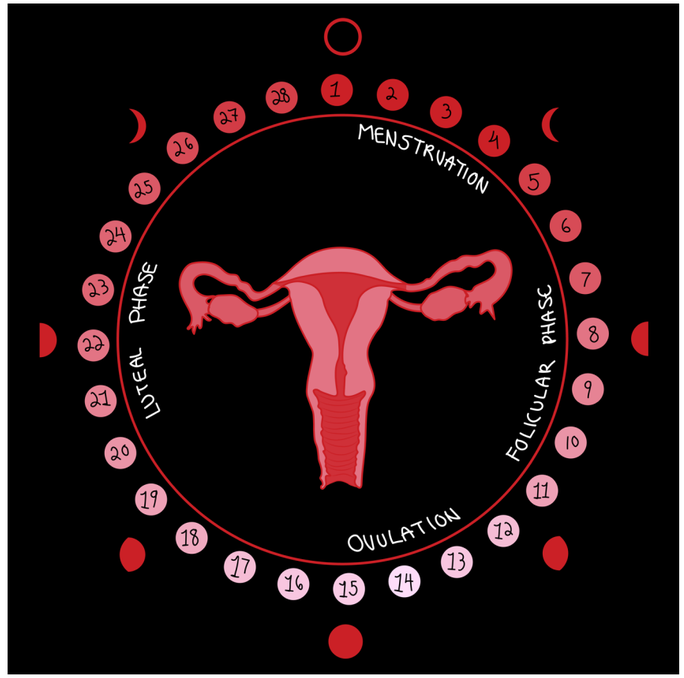


FIGURE.4.21 - Menstruation Cycle



FIGURE.4.22 - Station Stone, Stonehenge



FIGURE.4.23 - Calanais Standing Stones

degree difference from the earth's orbit.[330] This cycle is very similar in length to the Metonic cycle, just shy of 19 years.

The Calanais stones, also known as Callanish Stones, in Scotland are also aligned to the major lunar standstill. The Calanais stones are a stone circle with a burial mound at its center. An avenue path which leads to the circle, lined with stones on either side, is aligned to the major lunar standstill's southernmost moon set. It is clear, the Neolithic people were extremely attentive to rhythmic cycles that often go by unnoticed today. It is unclear why Neolithic people tracked this specific lunar cycle. The major and minor lunar standstill do not mark any cycle which directly impacts humans. Like the solar solstices, it could be a celebration of the moon's most extreme positions. While the sun's extreme positions have very observable effects, such as the contrast in weather between summer months and winter months, the moon's extreme position offers no secondary observable effects. It is likely that Neolithic people saw the moon as a celestial orb of special importance, and had stories and myths which have been lost to time. I, however, propose that perhaps the significance of the major and minor lunar standstills were significant due to the moon's association with the female body, and perhaps had a female divinity in the Neolithic Era.

Just as the moon may have been associated to the female body with the noticeable similarity between the lunar cycles and the menstrual cycle, the Calanais stones have associations to the Cailleach, the same female mythological figure from Loughcrew. The stone circle has a view of a mountain named 'Cailleach na Mòintich', which translates to 'old woman of the moors' in English.[331] It is said that the mountain resembles a reclining woman, and its name directly connects it to the personage of the Cailleach. It is along the profile of this mountain that the major lunar standstill can be observed: the moon rises at the 'feet' of the mountain and appears to be following its profile as it rises.[332] It is very likely that the moon was seen as another manifestation of the Mother Earth deity whose body was reflected in the form of the mountains by the Calanais stones. The major and minor lunar standstills were the extreme positions of the moon and these cycles may have been marked with rituals and celebrations; it is possible that they saw this 18.6 year cycle reflected in human life for reasons that have been lost to time.

330 Erica Ellingson and Fabio Silva, "The Major Lunar Standstill Season Is Here!," *Journal of Skyscape Archaeology* 9, no. 2 (2024): 281.

331 Stuart McHardy, *On the Trail of Scotland's Myths and Legends* (Edinburgh: Luath Press Ltd, 2019), 27.

332 Colin Richards and Vicki Cummings, *Stone circles: A field guide* (New Haven: Yale University Press, 2024).

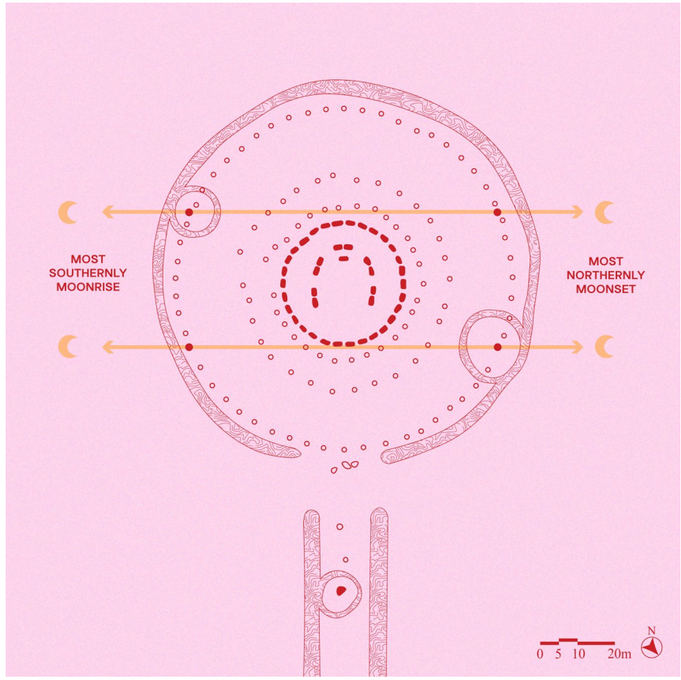


FIGURE.4.24 - Stonehenge Plan

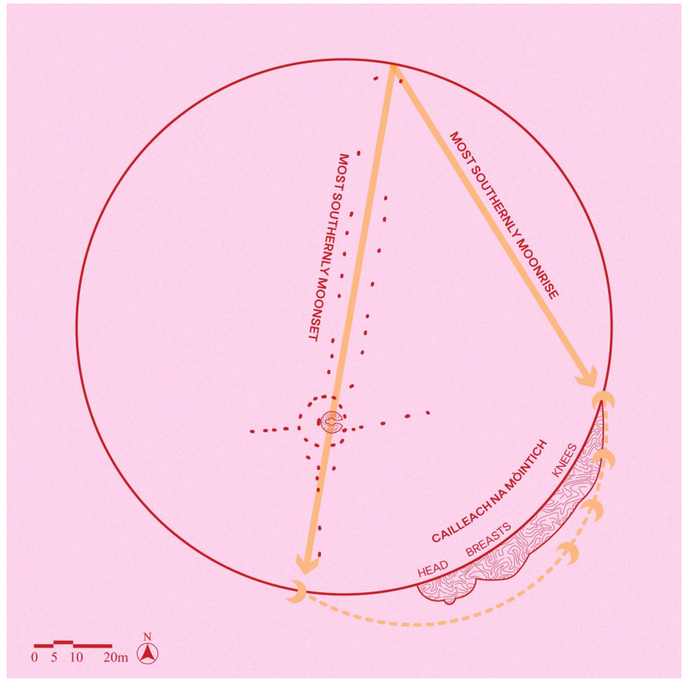


FIGURE.4.25 - Calanais Standing Stones Plan

LUNAR CARVINGS

Another notable monument which is believed to have a lunar alignment, and artwork which alludes to lunar cycles, is the passage tomb of Knowth at Brú na Bóinne. The Brú na Bóinne monuments have the largest collection of megalithic art in the world. Knowth has 124 kerbstones around the perimeter of the mound, many of which are decorated with abstract carvings; in total Knowth has 292 carved stones The art is primarily abstract shapes, triangles, concentric circles, undulating lines, and more. The perimeter of Knowth is lined with stones called kerb stones. One of the kerb stones, named number 52, is believed to have a lunar calendar carved on it.[333] The stone features seven circles drawn in an arc above a squiggly line. This arc continues around and underneath the squiggly line with twenty two crescent shapes. The total number of circles and crescents equates to 29, the length of the moon's synodic cycle. The archaeoastronomer Anthony Murphy suggest that although the image may have been used to count one lunar month, the image depicts the motion of the moon over the period of one night: the moon rises in an arc in the sky above the river boyne, depicted as a squiggly line, then continues its journey under the river during the day, to then reappears the following night.[334] Assuming this interpretation is correct, both the moon's movement and the river appear to originate from the same spot, revealing a believed connection between the Boyne river and the moon. As the moon controls the tide, Neolithic societies may have observed this phenomenon and associated the moon with water.

The other calendar stone, which is believed to show Alexander Thom's 16 month solar calendar, may also make reference to the lunar cycle. In the calendrical semi-circle, there are 19 thin triangles. The number 19 may make reference to the Metonic cycle, the harmony of the lunar and solar calendar, or the major and minor lunar standstill, by rounding 18.6 up to 19.

The passageways at Knowth, although generally believed to be aligned to the equinox sunrise and sunset, may have an orientation influenced by the lunar calendar. Knowth has two internal passageways, one facing west, while the other faces east. The eastern chamber is similar in its design to Newgrange, with three apses coming off of the main chamber. The western chamber however has no apses, just a singular chamber which housed a single basin. Knowth's two entrances are commonly believed to line up to the equinoxes; one entrance aligned to the sunrise, while the other is aligned to its sunset. The monument of Newgrange is precisely lined up to the winter solstice with amazing accuracy, however recent studies found that Knowth's alignments had a discrepancy of roughly one week in the

333 Heritage Ireland OPW, *Brú na Bóinne Tour + Newgrange Chamber Guided Tour*, Brú na Bóinne Monument Complex. Donore, Ireland, visited August 30, 2024.

334 Anthony Murphy, "How the Moon's 19-Year Metonic Cycle Could Have Been Observed in Neolithic Ireland." Mythical Ireland, March 2023.

eastern chamber, and two weeks in the western chamber.[335] It has thus been suggested that Knowth's alignment may be intended to reconcile the lunar and solar years; Knowth's eastern chamber alignment in March marks exactly three lunar months before the summer solstice, 6 lunar months before the fall equinox, and nine lunar months before the winter solstice. The western chamber in March marks 13 lunar months before the following spring equinox.[336] It is very likely that the Neolithic Irish tracked the movement of both the sun and the moon, and used both calendars to decide the days of ritual and celebrations. Although this interpretation requires further study, it would explain the lunar inspired marking which decorate the mound and the inaccuracy of Kowth's equinoxial alignment.



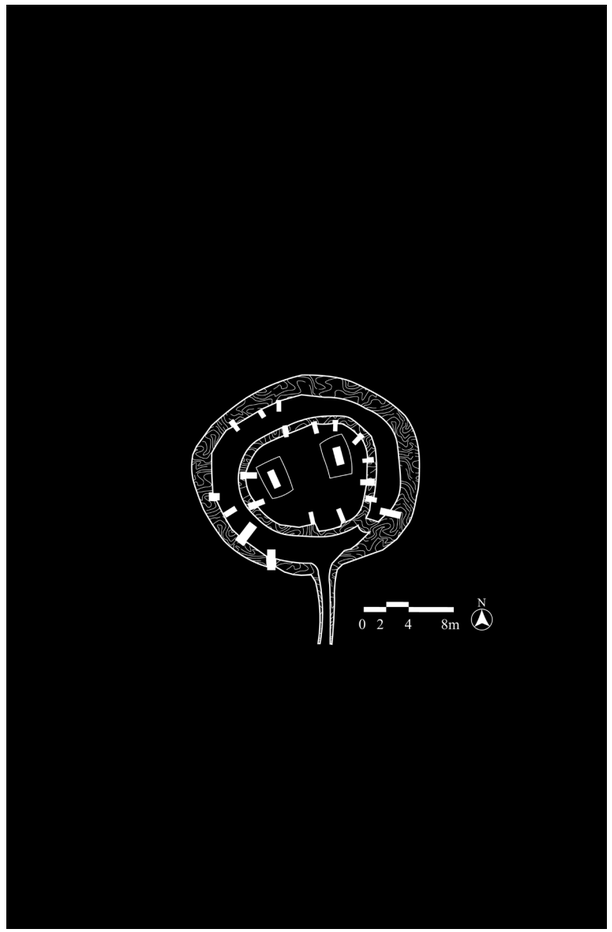
FIGURE.4.26 - Knowth Moon Stone



FIGURE.4.27 - Knowth Calendar Stone

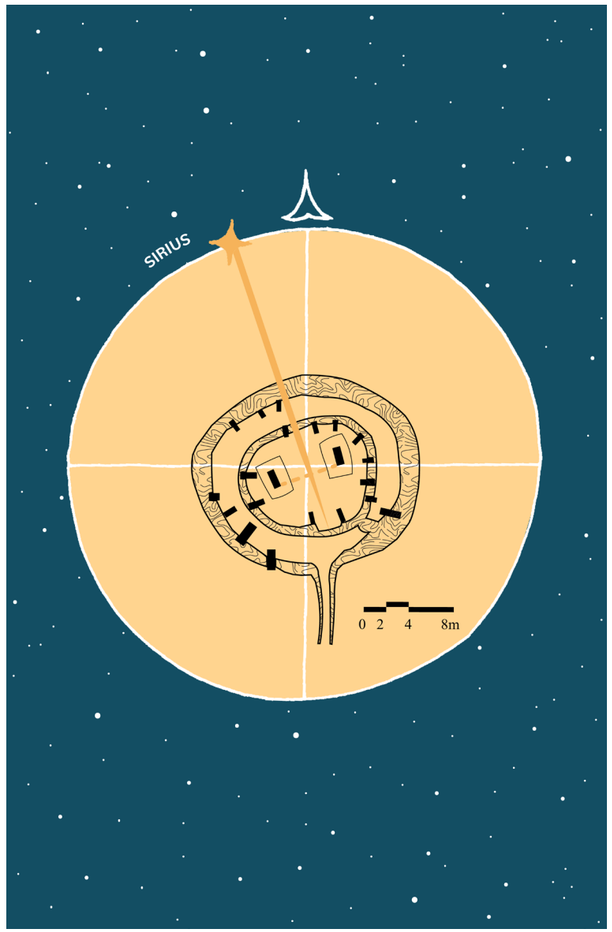
335 Kate Prendergast, "Knowth Passage-Grave in Ireland: An Instrument of Precision Astronomy?" *Journal of Lithic Studies* 4, no. 4 (2017): 67–76.

336 Ibid.



III.III - STELLAR CYCLES

GÖBEKLI TEPE



III.III - STELLAR CYCLES

GÖBEKLI TEPE

FIGURE.4.28 - Stellar Cycles Card

STELLAR CYCLES

While lunar and solar cycles were integral to the formation of Neolithic sites, so were star cycles.[337] Just as lunar cycles were observed and recorded as early as the Paleolithic Era, so too were star constellations observed. In the El Castillo Cave in Spain, a Paleolithic Cave which dates to roughly 40,000 BP, a particular painting depicts seven dots in a U shape which has been likened to the Corona Borealis constellation.[338] The archaeoastronomer Michael Rappenglück has drawn many other comparisons between cave paintings found at the Lascaux Cave in France and constellations which are visible to the naked eye.[339] Paleolithic societies, which were believed to be nomadic, would have needed to develop systems for travelling and situating themselves in time and place, for which constellations appear to be an obvious solution. The rising and setting times of stars and constellations changes greatly based on the time of year and latitude on the planet. The stars and constellations are crucial for situating ourselves in time and place without modern technology. They allow for navigation, and the appearance of certain constellations help as a reference for specific times of the year.

SIRIUS

The oldest site from this thesis, the temple of Göbekli Tepe is widely accepted to have been built in alignment to the stars, although debates are still ongoing as to which constellations the site aligns to. The site consists of circular enclosures with two large 'T' shaped columns in the middle. Archaeologists have calculated alignments by drawing a line through the space between the columns and parallel to both columns. These alignments run roughly north/south. A common interpretation is that this alignment faces the setting of the star Deneb in the Northern sky, which is the brightest star of the constellation Cygnus.[340] Another hypothesis is that the enclosures align to the star Sirius.[341] This star would have first appeared in the nighttime skies of Türkiye around 9500 BCE, and would have appeared low in the horizon. Previous to this date, Sirius sat below the horizon and was not visible from the position of Göbekli Tepe. This hypothesis proposes that the birth of this new star could have inspired the builders of Göbekli Tepe to build a large temple in its honour.

337 Today, many constellations are associated with the shapes of people and animals, and their English names stem from stories from Greek and Roman mythology. Stars also appear in mythologies and religions to signal an important and precise time. For example, the birth of Jesus was marked by the star of Bethlehem, and the rising of Sirius marked the flooding of the Nile river for ancient egyptians. It is probable that Neolithic peoples also recognized shapes, animals or people in the night sky and told stories of the constellations which shaped their mythology and religion.

338 Rappenglück, "Palaeolithic Stargazers and Today's Astro Maniacs: Methodological Concepts of Cultural Astronomy Focused on Case Studies of Earlier Prehistory."

339 Ibid.

340 Dolan. *Decoding Astronomy in Art and Architecture*, 44.

341 Giulio Magli, "Sirius and the Project of the Megalithic Enclosures at Gobekli Tepe." *Nexus Network Journal* 18, no. 2 (2016): 337–46.

We know Sirius was important to other cultures, such as the Egyptians, Polynesians, and the Greeks. Sirius is the brightest star in the sky due to its proximity to our solar system. Although when Sirius first appeared in the sky in Türkiye twelve thousand years ago, it would not have been as bright as it is today. However the star would have been visible around the time of the summer solstice. Sirius, around the year 9000 BCE in Türkiye, would have risen in the early morning right before the summer solstice sunrise. It is possible that the birth of this new star, around an important solar cycle, was seen as an exceptionally awe striking event.

The enclosure's alignments are all slightly different, however Magli argues that this is due to the procession of the night sky: the gradual shift in the Earth's axis which slowly shifts which stars are visible in the night sky at a given location. With his calculations, he found that the dating of the enclosures matches the dating of when Sirius falls in alignment to the specific enclosures.

CRUX AND PLEIADES CONSTELLATION

After recognizing Mnajdra's equinoxial alignments, archaeologists have been searching for other astronomical alignments amongst the Maltese temples. Lenie Reedijk proposed the temples were all aligned to the star Sirius, and similar to Göbekli Tepe. She also proposed that the slight change in orientation of the temples was a result of procession and the shift of Sirius' position in the sky.[342] The dating for these alignments however, dates the temples much further back than the dating currently accepted amongst archaeologists, dating the Maltese temples to the time of Göbekli Tepe. Due to the discrepancy in dates, the hypothesis of alignments to Sirius has been discredited.[343]

A more recent study on stellar alignments, found many alignments to the Crux constellations, which fits within the accepted dating of the sites.[344] Crux is a constellation in the southern sky in the shape of a diamond. Archaeologist Robert Barratt suggests that Crux may have been an important constellation to signal rituals, or used in navigation[345]. Maltese artwork indicates that they were greatly interested in the stars. The Tal-Qadi stone depicts star shape organized into sections divided by lives and a crescent moon. A carving was also found at Mnajdra's northern chamber which consists of tally marks, which follows the Pleiades rising cycle. The



FIGURE.4.29 -Mnajdra Pleiades Stone

342 Lenie Reedijk, *Sirius, the Star of the Maltese Temples* (Eibergen, Netherlands: Malet Books, 2018).

343 Robert Peter Barratt, "The Crux of Astronomical Alignment in Neolithic Malta: Using 3D Simulation to Produce New Data." *Digital Applications in Archaeology and Cultural Heritage* 26 (2022): e00229-.

344 Ibid.

345 Ibid.

Pleiades is a very small cluster of seven stars, often appearing in myths from around the world. In Greek and Roman myth, the Pleiades was associated with stories of seven sisters, and their rising signaled the beginning of harvest season.[346] This chamber of Mnajdra was also recently discovered to align to the Pleiades constellation,[347] confirming the correlation between the tally marks and the Pleiades. Their rising in Malta may have also signaled the beginning of an important moment in the year, such as an important religious holiday or phase in the farming year.

DENEB

Alexander Thom found many stone circles in the British Isles to also have alignments to some of the brightest stars in the night sky. For example, Avebury circle has alignments to the star Deneb. Avebury circle is the largest stone circle in the world, and it is so large that presently a small village sits at the center of the stone circle. Within the circle are two smaller stone circles If a line is drawn between these two inner circles, it would align with Deneb's setting in the sky.[348] Stars were often used as time keepers, as they have very specific rising and setting times, which then change throughout the year.[349]

It is uncertain what the rising and setting of these stars meant for Neolithic societies and what event or ritual they signaled. It is likely that they had rich stories related to the stars which were passed down orally throughout generations. Stellar alignments are more debated than solar alignments, as they do not create a dramatic light effect within the buildings. With the procession of the night sky, the slow shift over time, they are also not observable today and may only be calculated with technological tools. As the excavations and research at Göbekli Tepe have been quite recent, ongoing research must be conducted to draw definitive conclusions regarding the site's stellar alignments. Similar debates are present at all the sites, however evidence shows that Neolithic interest in the stars is undeniable.

346 Dolan. Decoding Astronomy in Art and Architecture, 151

347 Barratt, "The Crux of Astronomical Alignment in Neolithic Malta: Using 3D Simulation to Produce New Data."

348 Thom, *Megalithic Sites in Britain.*

349 Ibid.

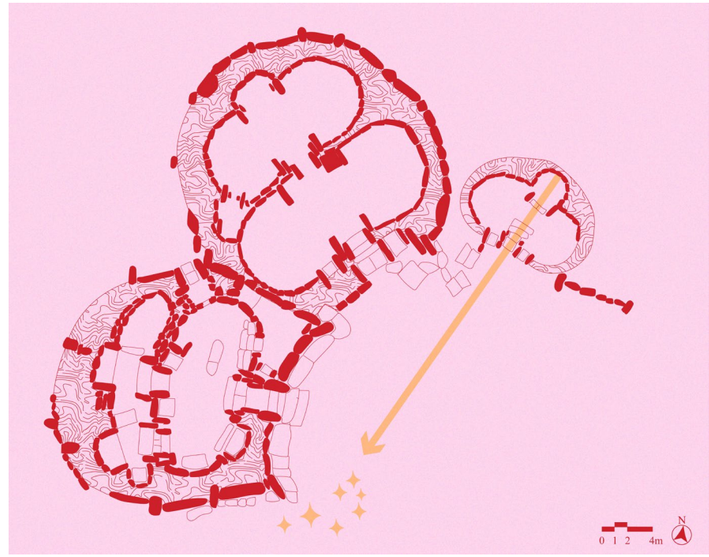


FIGURE.4.30 -Mnajdra Plan, Pleiades Alignment

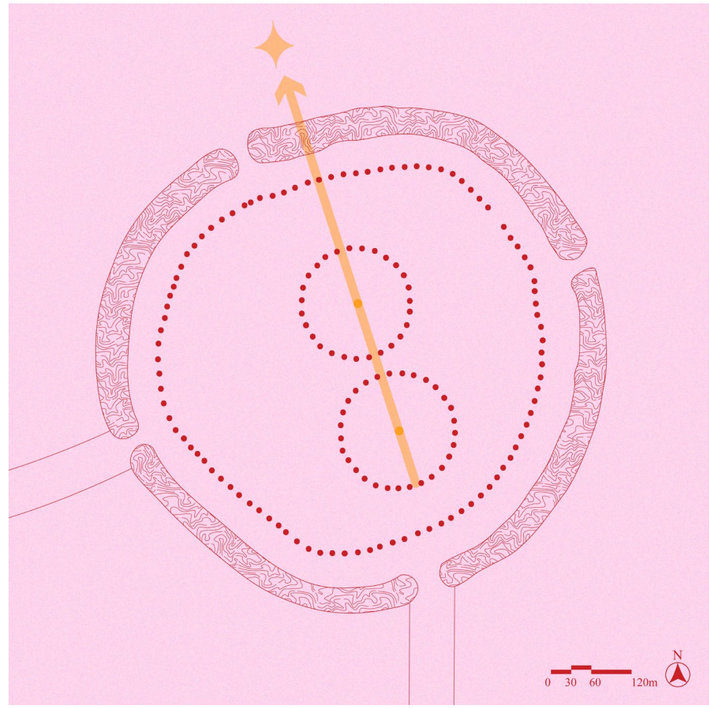


FIGURE.4.31 -Avebury Plan, Deneb Alignment

CONCLUSION

Neolithic societies choose to build their sacred architecture in particular locations due to the inherent sacredness of the site. This sacredness was determined by what Mircea Eliade called hierophanies, which he has defined as manifestations of the divine,[350] which in the Neolithic era was striking landscape elements, sometimes anthropomorphic and resembling the female body, and astronomical alignment. The hierophanies determined where the divine was in space, but also in time. In the words of Doreen Massey, a social geographer who writes on this interconnection between space and time: "Space is not static, nor is time spaceless. Of course spatiality and temporality are different from each other but neither can be conceptualized as the absence of the other."[351] Architecture was used to accentuate these hierophanies in space and time. By making a physical building, space is marked, and astronomical alignments allow time to be marked as well. Architecture played a secondary supportive role, as these particular spaces and times were sacred prior to the buildings being erected.

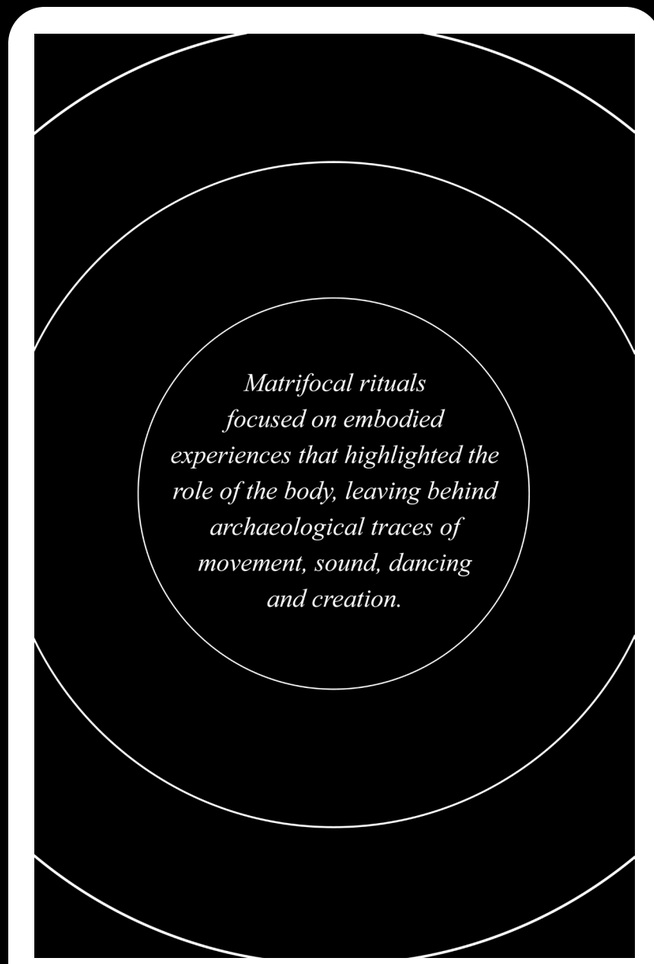
While this chapter focused on astronomical cycles, many earth cycles would have also been observed. For example, Neolithic societies would have observed cyclical flooding, changes in tides, blooming of particular plants, animal migration and hibernation, all of which could have been used in tandem to solar cycles to mark the seasons. Plants and animals are common motifs in both Minoan and Maltese decoration. Some Maltese temples, such as Ħaġar Qim and Tarxien, are ornamented with carvings of plants, larger mammals (resembling a pig), and horned animals. Similarly at Göbekli Tepe, animal carvings are abundant on their T shaped columns.

All the cycles observed by the Neolithic people would have followed a cycle of birth growth, death which was always followed by rebirth. Neolithic people saw that the natural world around them was cyclical: the earth dies every year with fall and is reborn with spring; the sun dies every day at sunset and is reborn with sunrise. Cyclical time is all Neolithic people knew, so the obvious conclusion is that humans must also be cyclical beings.

350 Eliade, *The Sacred and the Profane.*

351 Doreen Massey, *Space, Place and Gender* (Minneapolis: University of Minnesota Press, 1994), 264.

EMBODIED RITUALS



IV - EMBODIED RITUALS

INTRODUCTION

As established in the previous chapters of this thesis, Neolithic Architecture was shaped by female anthropomorphism, valued placement near or on important landscape elements and was oriented towards celestial events. Additionally, rituals were another important factor shaping matrifocal architecture. Neolithic buildings were not static visual artefacts, but rather places of activity, movement and cyclical rituals. While most discussions of Neolithic rituals are indeed speculative in nature, we can see clues in both architectural forms and ornamentation of how these societies engaged in religious rites; rituals and architecture mutually shaped the other. From these clues, we observe that the body was an active participant in rituals, often in motion. These communities used embodied art as a form of ritual through dance, music, procession and the creation of monuments and carvings. Matrifocal rituals were aligned to the different phases of the human life cycle: birth, life, decay, and rebirth.

RITUAL & THE BODY

Embodied rituals were an important aspect of Neolithic life. Sacred Neolithic rituals are actions imbued with meaning and metaphor, which were carried out to communicate with non-human entities, such as a deity, deceased loved one, or the natural world. In the words of Catherine Bell, while beliefs are "representations of the sacred", rituals are "modes of action".[352] Although Bell explains that belief and ritual are often described as two separate, but paired, aspects of faith, "ritual is both activity and the fusion of thought and activity".[353] Ritual is situational; in animistic societies, these ritualized settings, apart from architectural sites, may have been a forest, mountain, cave or other natural landmark deemed sacred. Ritual has the ability not only to shape individual identity, but also collective identity and social organization.[354]

While the body was an important instrument in matrifocal rituals, in patriarchal societies, it is often given a subordinate status. The human body has played an important role in the socially constructed binaries of nature and culture, impure and pure, female and male, and is often contrasted to the loftier notion of the mind or the soul. Dualism was proposed by the French philosopher René Descartes who wrote about the separation and distinction of the mind and body.[355] The concept of dualism has been reinforced by many religions to demote the body and depict its needs and desires as sinful. Overindulgence in food, sleep

352 Catherine Bell, *Ritual Theory, Ritual Practice* (New York: Oxford University Press, 1992), 20.

353 Bell, *Ritual Theory, Ritual Practice*, 31.

354 Catherine Bell, "The Ritual Body and The Dynamics of Ritual Power." *Journal of Ritual Studies* 4, no. 2 (1990): 299–313.

355 René Descartes, Meditations on First Philosophy, trans. John Cottingham (Cambridge: Cambridge University Press, 1996; originally published 1641)

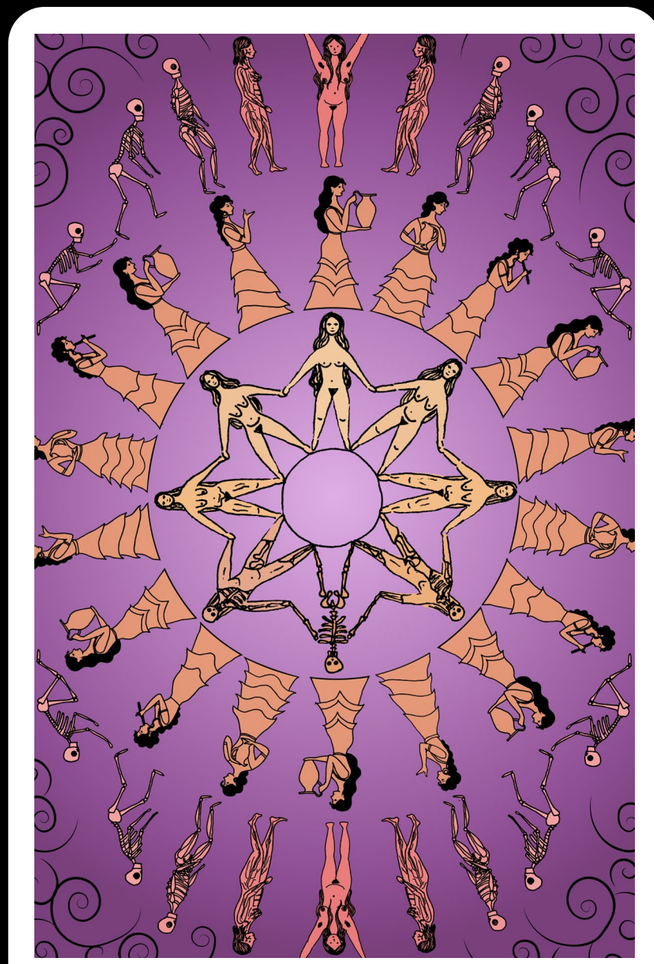


FIGURE.5.1 -Embodied Rituals Card

or sex have also been considered ungodly, and in penitent practices, denouncing the body is believed to bring the religious devotee closer to the divine or enlightenment. The body has been cast as inherently impure, which is contrasted by the purity of the soul. The female body is particularly ostracized; it is sexualized, objectified and is blamed for society's immorality. Female bodies are often excluded from performing or participating in religious rituals,[356] and rituals regarding the female body are absent: "processes such as menstruation, childbirth and menopause are bereft of any spiritual interpretation."[357] The absence of empowering rituals regarding the female body is primarily seen in patriarchal cultures, notably mainstream North American culture. Rather, in this context the body has become medicalized[358], and in the western medical system the body is viewed and treated as a machine. Many natural processes, such as childbirth and death[359], have become highly medicalized, alienating individuals from their own bodies; thus reinforcing a disembodied culture.

Numerous philosophers and academics have rejected Descartes' dualism. Notably, the French philosopher Maurice Merleau-Ponty wrote of the interconnection between the mind and body, and that the body is not a passive object subordinate to the mind.[360] He discusses the concept of embodied perception, arguing that it is not solely through our mind that humans perceive the world, but rather through our body and senses; it is through the body that humans are actively engaged with their environment allowing them to orient themselves in time and space.[361] Merleau-Ponty's writings align with the matrifocal understanding of the mind and body as a whole unit. Contrary to patriarchal perspectives, matrifocal religions did not view the body as sinful or distinct from the mind. Much of the iconography from the Neolithic era depicted the human body as a religious symbol, in particular the female form. For example, the nude female body was depicted in Goddess figurines in regions such as Anatolia and Malta, and in Minoan frescoes women are depicted in scenes engaged with society and religious activities while their breasts are exposed. The naked female body was sacred, not sexualized. These depictions of the nude or semi-nude female bodies were not to be gazed upon by the male observer, nor objectified.

356 Sabina Magliocco. "Introduction: Ritual Creativity, Emotions and the Body." *Journal of Ritual Studies* 28, no. 2 (2014): 1–8.

357 Magliocco. "Introduction: Ritual Creativity, Emotions and the Body.", 1.

358 Christophe Clesse et al., "The Evolution of Birth Medicalisation: A Systematic Review," *Midwifery* 66 (November 2018): 161–67, https://doi.org/10.1016/j.midw.2018.08.003.

359 Richard Johanson, et al. "Has the Medicalisation of Childbirth Gone Too Far?" *BMJ* 324, no. 7342 (April 13, 2002): 892–95.

360 Marice Merleau-Ponty, *Phenomenology of Perception.* trans.y Donald A. Landes (New York: Routledge, 2012; originally published 1945).

361 Ibid.

OCULARCENTRISM

Neolithic architecture prioritized the human body's experience through space. The buildings were designed to facilitate rituals which centralized the human body in the creation of art, music, dance and movement. Neolithic buildings were not designed to be visual artifacts, but rather the result of religious and cultural processes. The discipline of architecture, however, praises architecture as an artifact, convincing us that architecture is something we gaze upon from the outside, rather than a physical space we experience with our bodies. While there has been discourse around the health and wellness of the human body in architecture, such as 'healthy architecture'[362] or the WELL rating systems, the rise in this discourse is a result of the many buildings that lack a body-centered approach. Architecture has become a visual artifact, with a high degree of focus placed on exterior visuals rather than human bodies. This phenomenon has been described as 'ocularcentrism' by the architect Juhani Pallasmaa, where emphasis is placed on the sense of sight.[363] The sense of sight has been historically associated with knowledge and understanding in European philosophy; in the Renaissance, the human senses were viewed hierarchically with the sense of sight seen as most superior, while the sense of touch was the lowest.[364]

Many architectural styles, such as Brutalism from the 1950s, were designed with exterior aesthetics in mind. Facades can only be experienced with our sense of sight, meanwhile our body engages more highly with interior spaces using all senses. In contrast, many Neolithic buildings have no facades at all, focusing primarily on the interior spaces of buildings. For example, in the rectilinear city of Çatalhöyük, the buildings are built right next to each other, like a city without streets. The rooms had openings in the ceiling with a ladder, allowing people to move around on the roof of the buildings. Thus the buildings have no facade at all; Çatalhöyük was a city of rooms. The city did have a few courtyard interspersed, and similarly the Minoan palaces were centered around a central courtyard. The courtyard acted as a focal point, drawing communities inward towards an outdoor, yet enclosed space. Additionally, in the Ħal Saflieni Hypogeum, rooms flow into each other, and as the structure is completely underground, it has no facades. The bias toward interiority is a result of a non-hierarchical view of the senses; sight, touch, hearing were engaged.

Matrifocal architecture cannot be understood through the lens of ocularcentrism, and should not be studied as mere visual artifacts. The web of interconnected relationships, which is apparent in animistic societies, results in architecture which is a direct reflection of cultural and spiritual processes. The buildings became animated when all conditions were met:

362 Louis Rice, and Mark Drane, "Indicators of Healthy Architecture—a Systematic Literature Review." Journal of Urban Health 97, no. 6 (2020): 899–911.

363 Juhani Pallasmaa, *The Eyes of the Skin: Architecture and the Senses* (Hoboken, New Jersey: Wiley, 2024).

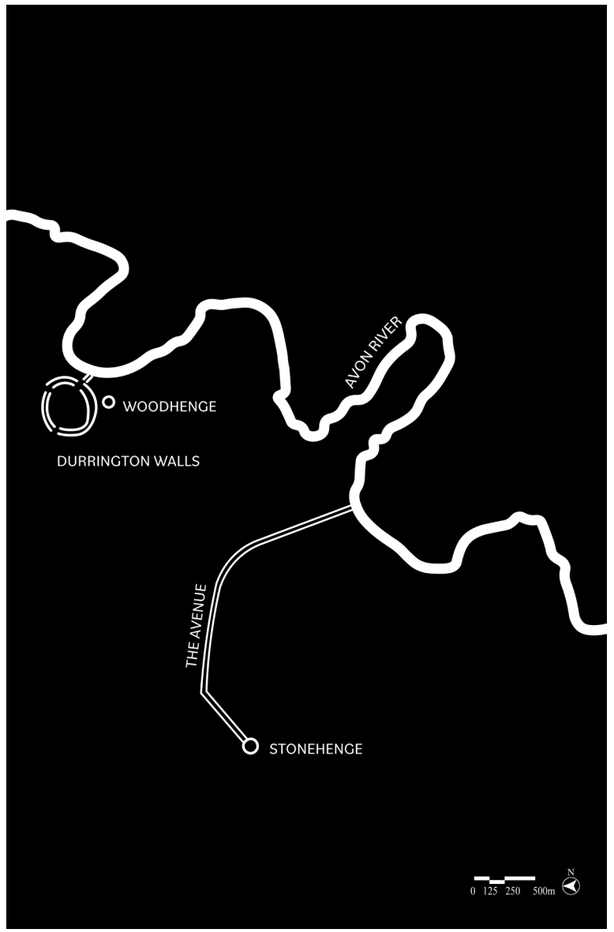
364 Ibid.

particular symbolism in its forms relating to the Mother-Goddess; specific location, often sacred due to particular landscape phenomenon; particular time relating to celestial alignments which would have also dictated the nature of light entering the building; and finally specific acts and rituals conducted by the living. If we divorce Neolithic buildings from this context, we will be unable to fully understand them. In the words of Mark Jarzombek:

> "The importance of these structures was not their permanence as such, but that they were part of a process-in which even construction played a part-that defined the interaction zone between the living spirits and the living human"[365] (Jarzombek 2013, 338).

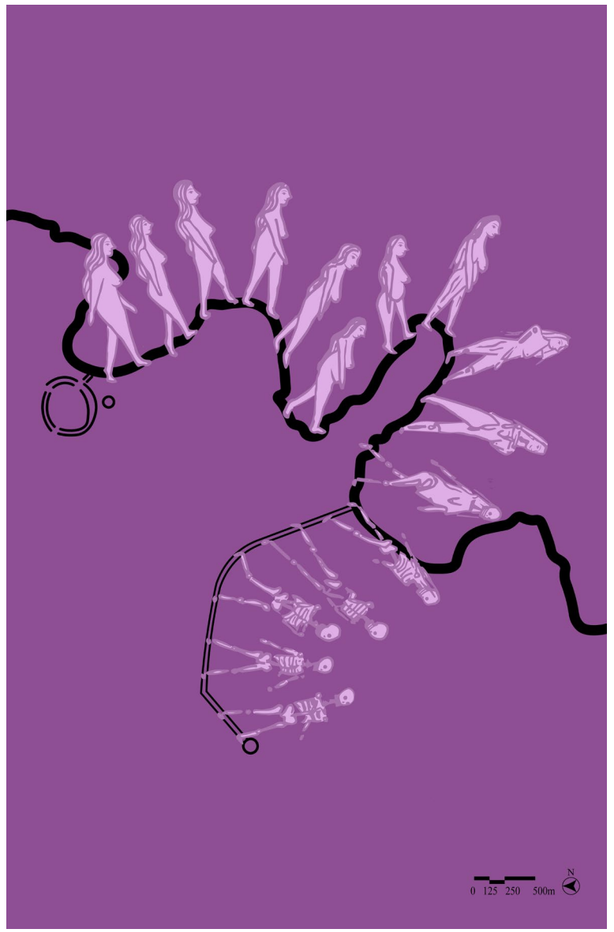
The cyclical nature of human life, which was reflected in the cyclicity of nature and the cosmos, was fundamental to matrifocal religion; as such, rituals were related to particular stages of human life. The following sections will explore rituals which correlate to different phases of the human life cycle and how these processes and events shaped the architecture from this period. What follows will explore decay and excarnation, rituals of rebirth, customs of birth, and embodied rituals of the living.

365 Jarzombek, *Architecture of First Societies*, 338.



IV.I - DECAY

STONEHENGE



IV.I - DECAY

STONEHENGE

FIGURE.5.2 -Decay Card

DECAY

The beginning of the human life cycle is typically signaled by birth, however this chapter will begin with death. The rituals surrounding death were clearly of great concern to Neolithic people, as over half of the sites in this thesis were, partially, funerary in purpose. While modern burials occur shortly after death to avoid confronting the decay of our loved ones, the burial process is much more drawn out during the Neolithic Era, possibly occurring over a period of months or years.[366] The prolonged nature of Neolithic burials indicates a cultural comfort with the process of decay. Decay begins prior to death, appearing first with the aging of the body: limbs lose mobility, skin begins to sag and wrinkle, hair becomes finer and whiter, and the organs begin to slow down or malfunction. Although life spans were shorter in the Neolithic Era, aging and the notion of old age may have been perceived relative to their total life span. It is not until the Neolithic Era, with the rise of agriculture and steady access to food, did people begin to live longer, up to sixty years of age.[367] Interestingly, when people began living longer, female bodies began to have menopause; which is essentially a 'death' of the menstrual cycle.[368] The decline of the body happens slowly, yet after the moment of death, the body rapidly decays.

EXCARNATION

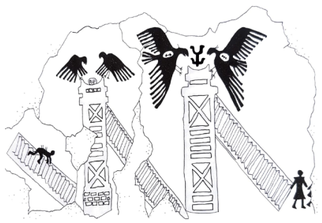


FIGURE.5.3 - Excarnation Mural at Çatalhöyük

The very first event after someone's passing was the excarnation of the body, which is evidenced in nearly all Neolithic burials. Excarnation is a practice where the flesh was removed from bones, by leaving the body of the deceased out in the open for animals to eat away, or to decompose. Then, the bones were collected and placed in the site of burial; this two-stage burial may have taken over a year in time.[369] The prime evidence for the practice of excarnation is a study of the bones themselves, yet at Çatalhöyük a wall painting depicts this very process in detail. The painting depicts a large three-storey tower with a staircase leading to the top. On one tower is a headless body with two vultures. The other tower depicts a skull with two additional vultures. This painting depicts the Anatolian process of excarnation where the bodies were left for vultures to feast on top of towers. Afterwards, the bones would have then been collected to be placed in individual burials. The vulture is a recurring motif in imagery at Çatalhöyük, and was likely believed to be a facilitator between the world of the living and that of the dead.[370]

Practices of excarnation are similarly seen in Malta and the British Isles.

366 Cooney and McHale, *Death in Irish prehistory*, 26.

367 Bohannon, *Eve: How the Female Body Drove 200 Million Years of Human Evolution,* 352.

368 Bohannon, *Eve: How the Female Body Drove 200 Million Years of Human Evolution,* 339-368.

369 Jarzombek, *Architecture of First Societies*, 271.

370 Ibid.

In Ireland, the study of 24 caves across the country found the remains of human bones from the Mesolithic era into the Bronze Age,[371] showing clear evidence that the bodies underwent a process of excarnation. The bones at burial mounds in the British Isles also show evidence of excarnation prior to being placed inside the internal chamber.[372] In fact, the remains inside of Irish burial mounds actually show a combination of both excarnation and cremation, revealing the complexity of funerary practices.[373] We cannot assume that those cremated and excarnated were different individuals, as it is equally likely that different parts of one individual's body were treated with different mortuary practices.[374] Contrary to practices at Çatalhöyük or contemporary graveyards, where each body received its own burial, the bones in burial mounds were all intermingled, and one individual's bones may not have been kept all together.[375] This same practice is seen at the Hypogeum, where over 7000 bones were intermingled in the burial site.[376] Thus funerary architecture does not feature individual compartments or sites, and the number chambers in burial mounds or the Hypogeum equates to far fewer than the number of burials. For example inside Knowth's two chambers, in addition to its 18 satellite mounds which have one chamber each, were the remains of 270 individuals.[377] This perhaps shows evidence for a non-hierarchical society.

Some bones were used as artifacts in Neolithic rituals, and there was clearly a level of comfort in handling human bones. At Çatalhöyük, bodies were buried mostly intact, however certain skeletons were missing the skull,[378] which were likely used in rituals. The body played an active role in religious life, even in death, and may have been believed to hold a certain power, or retain the personhood of the individual.[379] As the bones of the body were not kept together, power or personhood was not assigned to the collective body, but rather to each of its parts. In the words of the archaeologist Julian Tomas: "The fleshed body of a living person might not have been perceived as the 'normal' state of affairs, or even as the only configuration of the body which had a social presence."[380]

Due to the prolonged rituals relating to death, beginning first with the

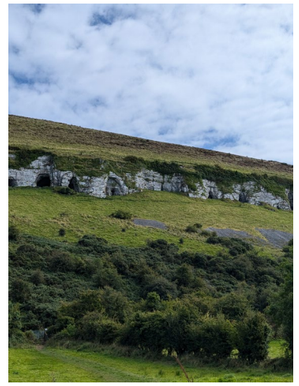


FIGURE.5.4 - Keshcorran Caves, Ireland

These caves, located on the Western coast of Ireland, were used for burials and excarnation during the Neolithic period. The caves retained an association with the underworld in contemporary Irish mythology

Ronan O'Connell, "Inside the Irish 'hell Caves' Where Halloween Was Born," *National Geographic*, September 26, 2023.

371 Linda Fibiger, "Osteoarchaeological analysis of human skeletal remains from 23 Irish caves" In *Underground Archaeology: Studies on Human Bones and Artefacts from Ireland's Caves*. ed. by Marion Dowd (Oxford: Oxbow Books, 2016).

372 O'Kelly, *Newgrange Archaeology, Art and Legend*; Piggott, *The West Kennet Long Barrow Excavations 1955-56*; Cooney and McHale, *Death in Irish prehistory*.

373 Kerri Cleary, "Life at Knowth in the Neolithic." Essay. In *Knowth*, 27–52 (Dublin: Royal Irish Academy, 2024).

374 Ibid.

375 Thomas, Julian. "Archaeology's Humanism and the Materiality of the Body." Essay. In *The Archaeology of Identities: A Reader*, 1st ed., 211–24. London: Routledge, 2007.

376 Heritage Malta. *Ħal Saflieni Hypogeum Guided Tour*, Ħal Saflieni Hypogeum Museum and Archaeological Remains. Paola, Malta, visited September 27 2024.

377 Cleary, "Life at Knowth in the Neolithic."

378 Hodder,"Women and Men at Çatalhöyük."

379 Thomas, "Archaeology's Humanism and the Materiality of the Body."

380 Thomas, "Archaeology's Humanism and the Materiality of the Body," 221.

process of excarnation, funerary architecture was given much importance. In the case of Çatalhöyük, specific structures were created for the process of excarnation, whereas in other regions, such as the British Isles, caves were commonly used. The perception of the body greatly differs from modern western views which generally shy away from any evidence of decay. Due to the cyclical view of human life, decay was likely seen as another phase which would be soon followed by regeneration.

DECAY OF THE CITY

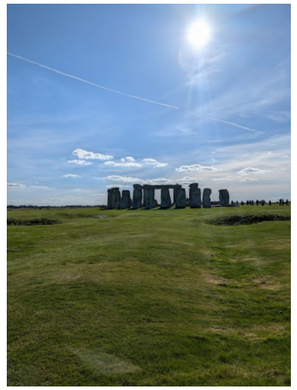


FIGURE.5.5 - The Avenue approaching Stonehenge

The decay of the body, in matrifocal contexts, is mirrored in the decay of their buildings built from biodegradable materials. The archaeologists Mike Parker Pearson and Ramilisonina draw this parallel in the complex of sites around Stonehenge; the wood buildings were created for the living and eventually decayed as did the human body, meanwhile the stone buildings were built for the dead as they were built with a seemingly everlasting material. Parker Pearson, one of the leading scholars of the research of Stonehenge, proposes that the stone circle, evidently built from stone, was thus a monument built for the ancestors.[381] While Stonehenge has amassed international fame as a singular monument, it is linked to a wider landscape of monuments including Durrington Walls. Durrington Walls was a large circular henge which would have encircled wooden houses, forming a village. It is believed that this is where the living resided during times of rituals conducted at Stonehenge. There, they would have slept, held a great feast, and welcomed pilgrims from far away. Pearson discovered, through the analysis of animal bones left behind, that the villagers of Durrington Walls did not reside there throughout the year, and came from far distances.[382] The village was likely set up purely for those partaking in the rituals of Stonehenge.

The rituals of Stonehenge would have begun at Durrington Walls. A wood circle, called Woodhenge, is located directly outside the village. This wood circle faces the winter solstice sunrise which would have marked the beginning of the ritual. The living would have departed Woodhenge, the circle made for the living, and started a journey towards Stonehenge, the circle for the dead. A procession would have begun on a path which leads to the Avon river. The procession would have then continued by boats on the water or walking alongside the river until the beginning of the Avenue was reached. The Avenue is a three kilometer path which connects the Avon river to Stonehenge. The procession would have continued up this path which heads north west, before turning south west, facing the winter solstice sunset. The procession would have continued up the Avenue until the stone circle was reached. While the exact rituals which occurred at the stone circle are a mystery, Pearson believes they were conducted in honour

381 Parker Pearson, Mike, and Ramilisonina. "Stonehenge for the Ancestors: The Stones Pass on the Message." *Antiquity* 72, no. 276 (1998): 308–26.

382 Ibid.

of the dead.[383]
Wood was used to build monuments for the living, while stone was reserved for the dead; this argument was developed by drawing comparisons to practices of indigenous cultures from Madagascar.[384] These indigenous cultures reserve the use of stone for monuments dedicated to the ancestors while stone is used for the living, Ramilisonina and Parker Pearson propose perhaps this same division of materials was used in Neolithic England. Pearson and Ramilisonina make clear that this comparison is not to state some universal truth of all human constructions, but rather provide a possible interpretation for Stonehenge. In Neolithic cultures, the home was an extension of the body, and just as the body would eventually decay in death, so too would wood building eventually decay; meanwhile, stone and bones last seemingly forever. We see this similar acceptance of the decay of the building in the Haudenosaunee Longhouse.[385] Haudenosaunee culture would build a community of longhouses made from wood and tree bark, and would farm the surrounding land. However, they would only live in that community for about thirty years, after which they would move to a new location and rebuild.[386] Their longhouse, made entirely of plant material, would be left to decay and return to the earth.[387] Similarly at Stonehenge, the wood buildings were allowed to decay after its time had come to end, just as the body decays after birth. Stones are the bones of the earth, a material which will not decay and is seemingly everlasting. After the process of decay has taken place, the bones are all that is left behind. As with the earth, trees, plants and animals may die and decay, but stone is everlasting. I believe this concept can be extended to the Neolithic cultures of Ireland and Malta, where we find no evidence of domestic building, which they likely built with plant materials which left no archeological remains except for post holes which have yet to be discovered.

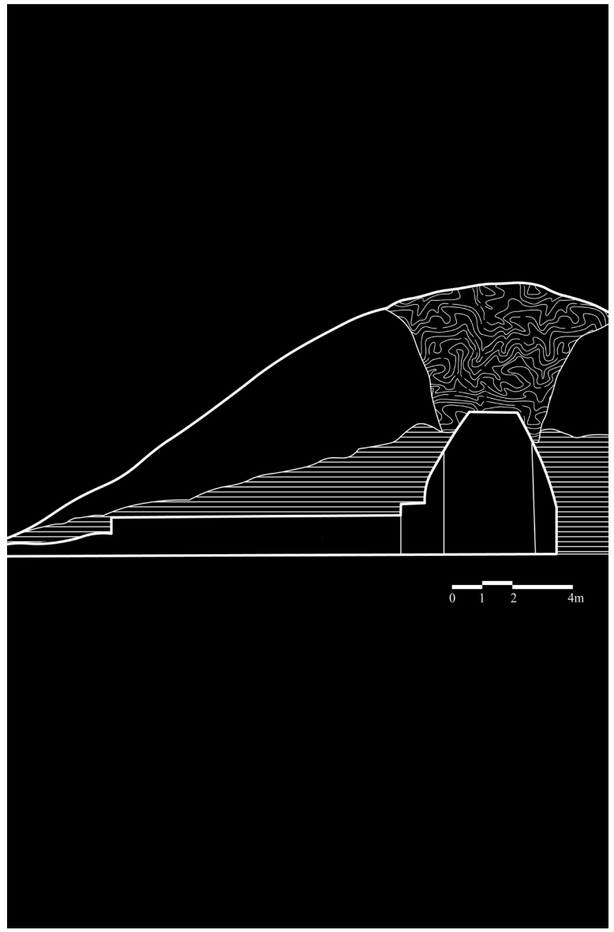
383 Ibid.

384 Ibid.

385 Woodworth, William. *Twelve Architectures.* Course, University of Waterloo, Waterloo, ON, 2020.

386 Ibid.

387 Ibid.



IV.II - REBIRTH

MAESHOWE



IV.II - REBIRTH

MAESHOWE

FIGURE.5.6 - Rebirth Card

REBIRTH

Within matrifocal funerary customs, the process of decay and excarnation was then followed by rituals of rebirth. The evidence for the belief in rebirth is in the plethora of womb symbolism in burials, which is seen in the shape of the architecture, the painting of red ochre or the placement of bodies in fetal position. The term "womb tombs" is used to describe funerary architecture that spatially resembles a womb.[388] The concept of the womb tomb dates 200,000 years ago with the very first burials. The Neanderthals buried their dead in fetal position with the bones painted in red ochre.[389] This return to the same position of a fetus in the womb likely implies the belief that death is a birth of an afterlife or reincarnation.[390] We see this same practice in the ancient Palestinian city of Jericho.[391] The symbolism of the womb is also present in Neolithic burials, which was likely passed down from the Stone Age ancestors. The construction of 'womb tombs' are closely tied to cultures that engaged in Goddess worship,[392] as these architectural wombs were symbolic of the womb of their deity. The Neolithic Goddesses reigned over the universal forces of both birth and of death. While the human womb is a portal into this world, from the intangible to the tangible, the architectural or cave womb, a symbol of the female deity, was a portal into the intangible world of the spirit after death, from the tangible to the intangible. In both cases, the womb is a threshold between worlds.

ANCESTORS

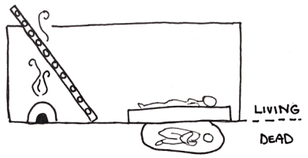


FIGURE.5.7 - Çatalhöyük Burials

At Çatalhöyük, following the process of excarnation, the bones were then collected and placed in the fetal position inside the familial home, under the floor.[393] A few of the burials were painted with red ochre, which were primarily women, likely denoting an elevated status or religious role within society.[394] Placing burials within the familial home implied that the dead were still part of everyday life. Similarly, in the Paleolithic era there is evidence that "continued habitation" occurred on top of Neanderthal burials, meaning domestic life and the burial of the dead occurred in one space.[395] These practices greatly contrast contemporary western graveyards, or cemeteries which are a separate space which exists outside of daily domestic life.

The fetal position used in burial, also shows a return to the position we hold inside the womb. This symbolism may signal a belief in the rebirth

388 Gimbutas, *The Living Goddesses*, 55.
389 Levy, *The Gate of Horn.*
390 Ibid.
391 Bohannon,*Eve: How the Female Body Drove 200 Million Years of Human Evolution*, 367.
392 Dames, *The Avebury Cycle.*
393 Hodder,"Women and Men at Çatalhöyük."
394 Mellaart, *Çatal Hüyük: A Neolithic Town in Anatolia,* 207.
395 Levy, *The Gate of Horn.*

which occurs in death. With the notion of rebirth, an obvious question is what did Neolithic people believe they would be reborn as? Perhaps as human in a reincarnated state, or a non-human entity whether on earth or in a spiritual realm. Unfortunately we can have no conclusive answer for this question. But we see this idea of rebirth into the role of an ancestor at Çatalhöyük. The term ancestor may refer to a specific individual from our lineage who has passed rather than an amalgamation of all who have passed from our family line.[396] At Çatalhöyük the burial of the dead occurred directly under the sleeping platform, which could reflect a practice of connecting or speaking to ancestors in dreams while sleeping. Veneration for ancestors implies a continuity after death where ancestors can continue to provide guidance. The architecture allowed for facilitation between worlds with a blend of domestic and funerary within one space.

WOMB TOMB

The burial mounds of the British Isles have clear spatial similarities to the female body, in particular the womb. The womb symbolism of the Irish passage tombs likely allude to a ritual relating to birth or rebirth. At Newgrange, the Celtic story of Boann and the Dagda tells the story of the birth of a new child. It is possible that this story of the Dagda and Boann represents the solar alignment on the winter solstice; while the sun's rays are personified as the Dagda, Newgrange is the womb of the Goddess Boann. The winter solstice is the shortest day of the year, from that point onwards the days become longer and warmer. This solar alignment would have represented the sun and the earth mating, which would have likely been a celebration of fertility, prosperity, and childbirth. The theme of rebirth was very important from an agricultural perspective, as the rebirth of the earth every year allowed for a plentiful harvest in the summer.



FIGURE.5.8 - The Goddess Boann

A spiritual or metaphorical rebirth in the ritual participants was likely included in religious ritual. Just as the Eleusinian Mysteries from Greece were tied to the harvest cycles and seasons, the element of spiritual rebirth was equally important.[397] Similarly, the Sweat Lodge of North American Indigenous peoples spatially resembles a womb while its rituals relate to a spiritual rebirth.[398] Participants in Newgrange ritual, as well, may have sought personal transformation and a deeper connection to the divine. While Newgrange's central chamber can only hold a few people, comfortably no more than five, perhaps select individuals each year were invited to partake in rituals inside the mound and witness the solar alignment, or this role was reserved for those with religious or social power. Other religious devotees may have gathered outside the mound,

396 Graham Harvey, *Animism: Respecting the Living World* (New York: Columbia University Press, 2006).
397 Mara Lynn Keller, "The Eleusinian Mysteries of Demeter and Persephone: Fertility, Sexuality, and Rebirth." *Journal of Feminist Studies in Religion* 4, no. 1 (Spring, 1988): 27-54.
398 Asikinack, "Sweat-Lodge Ceremony."

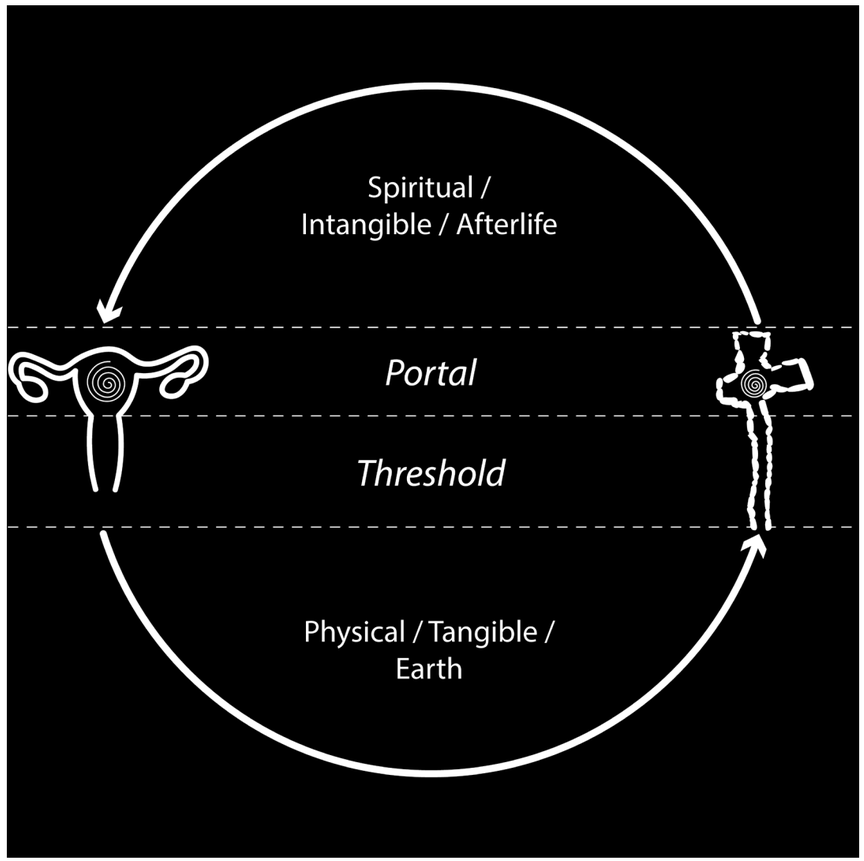


FIGURE.5.9 - The Womb as a Portal

participating in their own rituals, or circumambulating the tomb.
The act of circumambulation feels instinctual for any circular monument. The archaeologist Kate Pendergrast suggests that Newgrange may have been a site of initiation; rituals would have been conducted in the dark awaiting the beam of light, and leaving the tomb through the passageway was to be reborn.[399]

Newgrange was equally a place for the dead as it was for the living. Newgrange's rituals allowed for various forms of rebirth to occur for the dead, the earth, and ritual participants. Viewing the builders of Newgrange and other burial mounds as purely a death cult, as described by O'Kelly, seems to be limiting our understanding of what other events could have taken place at Newgrange.

BIRTH

The rebirth of the dead is mirrored by the arrival of new life: birth. Despite the importance of the cyclical nature or life and women's life-giving capacity, seemingly very few scholars have studied or searched for evidence of Neolithic practices relating to birth. Matrifocal religion was clearly connected to the cyclical nature of the cosmos, and death is abundant in symbolism of the womb; it is not hard to imagine how important birth would have been in Neolithic times.

Marija Gimbutas has suggested that certain temples and sacred sites, whose rituals remain mostly a mystery, may have been sites of ritualized birth.[400] She references both the temples of Malta and temples within the settlement of Çatalhöyük, although she does not provide much evidence to support her argument. Despite the lack of current evidence, Gimbutas is the only scholar to propose any hypothesis for the cultures discussed in this thesis, and I believe this idea of ritualized birth in the Neolithic era is worthy of further study. While it may be difficult to retrieve archaeological evidence of birth, this lack of documentation may also be a result of bias formed by the unritualized nature of birth in the Western world. Birth is interpreted as a medical event which most often occurs in a medicalized context[401]. Western bias may be preventing scholars from seeing birth as not only a ritualized event, but a social one as well within matrifocal contexts.[402]

Although our species has had millions of years worth of practice giving birth, the process is difficult and complications often arise, some of which can cost the life of the mother or the infant. As much today and in prehistory, a great deal of care must go into preparing prior to birth, the

399 Prendergast, "The Neolithic Monument of Newgrange in Ireland: A Cosmic Womb?"

400 Gimbutas, *The Living Goddesses*, 11.

401 Richard Johanson, et al. "Has the Medicalisation of Childbirth Gone Too Far?" *BMJ* 324, no. 7342 (April 13, 2002): 892–95.

402 Elisabeth Beausang. "Childbirth in Prehistory: An Introduction." *European Journal of Archaeology* 3, no. 1 (2000): 69–87.

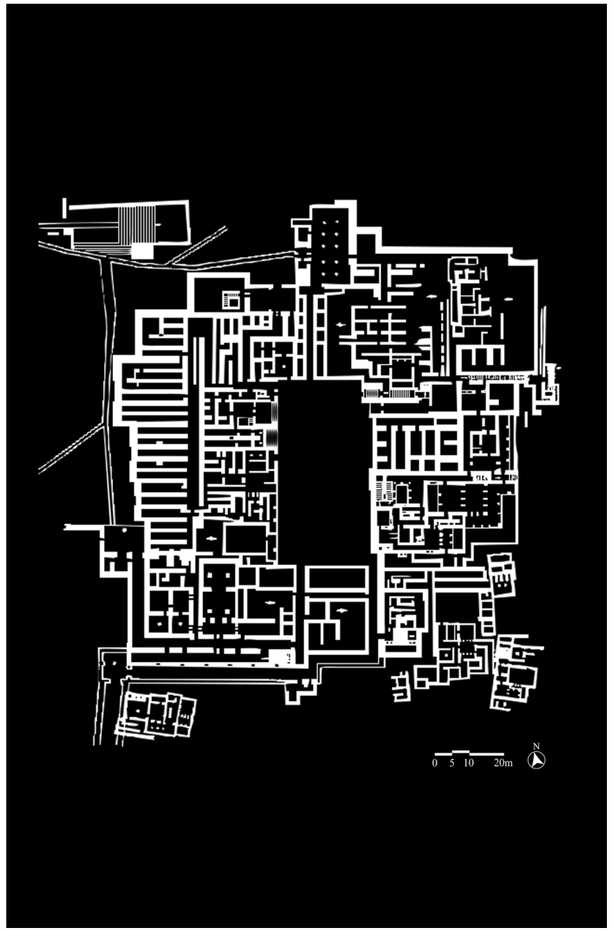
birth itself, and postnatal-care: "[i]f we allow Upper Palaeolithic groups the same range of emotions that we are capable of, the ramifications of even one such death in a season may have had far reaching consequences."[403] In their paper titled *Birthing in Prehistory*, Emer O' Donnell outlines key conditions our prehistoric ancestors would have needed to understand in order to have successful births:

> "thermal regulation to ensure the viability of the newborn infant, a defined spatial location, support and companionship, mobility in order for the birthing woman to negotiate the process, attention to the pre and post-natal environment, and lastly ritual and symbolism in the psychological negotiation of the process."[404]

Much care would have been given to the rituals of birth to ensure the health of both the mother and infant. O'Donnell's research confirms that the spatial element of birth is very much an important facet as thermal regulation, which architecture can provide, is vital for the health of a newborn infant. Variations in the spatial dimension of delivery rooms may reveal cultural beliefs of birth; Neolithic cultures may have chosen to give birth in their homes, in birthing huts, or birthing rooms. For example, we see that the predominant use of hospital delivery rooms in contemporary western society reveals the medicalized approach to the biological processes of the female body. Further study in the architectural dimension of birthing rituals of Neolithic matrifocal societies may reveal fascinating new insights.

403 Emer O'Donnell, "Birthing in Prehistory.", *Journal of Midwifery & Women's Health* 49, no. 3 (February 27, 2004): 164.

404 O'Donnell, "Birthing in Prehistory," 165.



IV.III - LIFE

KNOSSOS



IV.III - LIFE

KNOSSOS

FIGURE.5.10 - Life Card

LIFE

Following birth, Neolithic life was filled with cyclical rituals. Neolithic societies may have had no concept or word for ritual, as it was so embedded in their everyday lives. The rituals explained in this chapter would have been carried out by the living regularly and cyclically, and would have involved music, movement, dancing, art and processions. The archaeologist Jean Clottes describes this same idea with regards to Paleolithic societies:

> "We must therefore be aware of the fact that the concept of "ritual" may well have been alien to the societies we are dealing with. It is the same with the concept of "art" and "artist" for which many traditional peoples did not even have a word."[405]

The rituals carried out by the living were done in reverence to other phases of human life, particularly decay and rebirth, as it was the living who enacted the rituals on behalf of the deceased. For example, the rituals of Stonehenge, which occurred every winter solstice, would have occupied a full day beginning with sunrise and ending beyond sunset. The ritual would have been an act of labour, and the journey from Durrington Walls to Stonehenge may have been physically taxing. The rituals were acts of care, which can be described as "physical and emotional labour on behalf of some other/s."[406] The non-human and human were interconnected and formed reciprocal relationships, which are characteristic of care relationships as defined by the scholar Sophie Bowlby.[407] While we can understand and study the action carried out by the living, it is left to speculation how the non-human reciprocated said actions. Perhaps, such as at Çatalhöyük, the ancestors communicated with the living in dreams, or were believed to interact with the living in some other meaningful way. Non-human actors were active players in Neolithic life, and these forces included the land and sky in addition to the dead. Matrifocal architecture is a reflection of these webs of interconnected relationships between the living, nature, dead and all other non-human actors.

PROCESS

Many Neolithic rituals included the creation of artefacts, such as the construction of monuments. The very act of creation art and architecture was a religious ritual, embedded with spiritual meaning. These artistic endeavours favoured the process of creating over the final form. Just as in Action Painting from the 1960's, which drew out the process of creation, many Neolithic rituals adopt a similar process of art making, where the act of creation was ritualized and more important than the physicality of the art product.

405 Clottes, "Ritual Cave Use in European Paleolithic Caves," 16.

406 Sophie Bowlby, "Recognising the Time—Space Dimensions of Care: Caringscapes and Carescapes." E*nvironment and Planning A: Economy and Space* 44, no. 9 (September 5, 2012): 2101.

407 Ibid.

Considering Neolithic monuments as rituals instead of artifacts may help us understand the relationship between inhabitants and buildings in that era. An example of a monument which was born out of a ritual of creation is Silbury Hill, the largest human-made hill in Europe, which is part of the Avebury monuments in Southern England. Local folklore in the 17th and 18th century claimed that the hill contained a large gold statue of a man riding a horse, however, when the hill was finally excavated, not a single artefact or burial was found inside, perplexing archaeologists.[408] Jim Leary, who conducted the most recent archaeological dig at Silbury in 2007, discovered that the hill was constructed over a period of 150 years around 2500 BCE, Leary proposed that Silbury Hill was constructed through a continuous ritual which eventually culminated into a large mound.[409] This suggests that the act of constructing the hill was embedded in ritualistic practices. Leary's discovery also disproved the previous assumption that the hill was built in three stages, arguing instead that pilgrims came to Avebury and brought with them a pail of soil to add to Silbury Hill as an offering to the Earth or deity. At Silbury Hill, the act of depositing soil was more important than the shape of the mound.



FIGURE.5.11 - Silbury Hill, England

Leary explains that previous interpretation of Silbury Hill, which only regards its final form, cannot accurately describe the mound.[410] The mound's purpose was not only fulfilled after the construction was completed, but rather the construction process itself was part of the monument's purpose.[411] Silbury Hill was not designed by an individual architect but rather emerged from broader cultural processes. In contrast, in contemporary western contexts, architects conceptualize the design of a building,and a separate labour force then executes the construction of their design. Due to the high complexity of modern buildings, labour is even further divided, with engineers designing mechanical and electrical systems and each material (such as concrete, steel, etc.) requiring its own labour force. This process has been critiqued for being hierarchical, with the architect's vision dominating, second only to the client.[412] Our familiarity with these contemporary relationships in the field of architecture might cloud our understanding of the radically different approach matrifocal societies took to the design and building of monuments. Silbury Hill, rather than being designed by an architect, was a result of various relationships: social, spiritual, cultural and land-based. The ritualization of architecture, removed the focus on what was produced, and returned the focus on the act of creating.

408 Dames, *The Silbury Treasure*, 11-38.

409 Leary and Field,"Ways of Understanding Prehistoric Silbury Hill," 203.

410 Leary and Field,"Ways of Understanding Prehistoric Silbury Hill," 204-205.

411 Ibid.

412 New construction models are being implemented today, such as the 'Integrated Project Delivery'. These models promote collaboration relationships, however, they have arisen as a criticism to the hierarchical model which dominated the field of architecture.



FIGURE.5.12 - Minoan Dancers, Kamilari Tholos Tomb (1600 - 1500 BCE)



FIGURE.5.13 - The Sleeping Lady of Ħal Saflieni

DANCE

Within the embodied rituals of matrifocal cultures, dance was a key component. The nature of these rituals shaped the buildings and favoured process over form. Although dancing leaves no archaeological trace, Minoan clay artifacts depicting dancers in a circular form were discovered in Cretan tholos tombs.[413] Dance, particularly performed by women holding hands forming a circle, is recognized by scholars to have been an important aspect of Minoan rituals.[414] Dance as a physical vehicle to ecstasy is common in forms of Middle Eastern dance forms, such as traditional Egyptian 'Zar' rituals or Sufi dance, where a performance involving spinning and turning allows the dancer to achieve a trance-like state. In these rituals the body is the means for the mind to enter an altered state through movement and music. Circle dancing in particular creates social cohesion amongst the dancers; the holding of hands and moving in a uniform manner unites the dancers into one moving body.[415]

Jarzombek describes ceremonial dance as a fundamental aspect of rituals of first human societies. In his words "[dance] served to affirm the identity of the group and establish the link between the humans and the non-humans."[416] In Neolithic societies, dance may have been used, in addition to creating social cohesion, to connect with their deity, nature, ancestors or other non-human forces.

The circular plan of the tholos tombs mirrors the circularity of the dance, as if the building was perfectly designed for this dance form. The circle also invites movement around the site, as the act of circumambulation is a natural response to monuments which are circular in form. While there is no archaeological evidence for dancing at other circle monuments, such as stone circles or henges and circular burial mounds, it is possible that the shape of these sites also inspired dancing or movement in a circle.

SOUND

In addition to engaging the body through movement, matrifocal rituals also regularly used music and sounds. The exhibition at the Brú na Bóinne visitor center proposed that rituals at the monuments of Newgrange, Knowth and Dowth used music and sound as a key part of the rituals[417]. As the interior of the monuments would have been completely dark, waiting

413 Peter Warren, *Minoan Religion as Ritual Action* (Gotëborg: E. Lindgrens, 1988).

414 Ibid.

415 Soar, Katy. "Circular Dance Performances in the Prehistoric Aegean." In *Ritual Dynamics and the Science of Ritual, Vol. 2: Body, Performance, Agency and Experience*, edited by Axel Michaels et al., 137–156. Wiesbaden, Germany: Harrassowitz, 2010.

416 Jarzombek, *Architecture of First Societies*, 39.

417 Heritage Ireland OPW, *Welcome Exhibition*, Brú na Bóinne Visitor Centre, Donore, Ireland, visited August 30, 2024.

for the sun to enter the tombs on the days of their specific alignment, vision would have been impaired. The exhibition then played a soundtrack of chanting and drumming, which although completely speculative, may have resembled some rituals practiced in ancient Ireland. Many of the sites would have been experienced in darkness with little light, and evidence shows that the chambers were built to resonate sound.

An English musician native to the Avebury region, Steve Marshall, observed that the West Kennet long barrow's chamber uses the principle of Helmholtz resonance.[418] This effect is when the air inside a cavity or chamber resonates at a specific frequency because air is being forced in and out of the cavity or chamber. This effect can be easily observed by blowing over a bottle to create a sound. Using an electronic keyboard, Marshall observed that each chamber of the barrow resonated at a different notes from an A major chord. He found that the entire barrow was tuned to resonate at 110 Hz.[419] It is extremely likely that rituals at the West Kennet long barrow included music, whether by singing or the playing of instruments. The chamber at Newgrange was also found to resonate at this exact same frequency.[420]

Similarly, the Ħal Saflieni Hypogeum appears to be carefully constructed to resonate at specific frequencies. The Ħal Saflieni Hypogeum is another site related to the burial of the dead. Most of the rooms and chambers of the Ħal Saflieni Hypogeum are ossuaries; places for the bones of the dead.[421] While today the bones have been removed from the Hypogeum, the presence of bones, and groups of living humans attending rituals, may have changed how the sound resonated in the space. Inside the Hypogeum, the oracle chamber, decorated in swirls, spirals and circles, painted in red ochre, resonates and amplifies sound when noise is made while facing its back wall.[422] It has been speculated that this was where a sibyl or oracle resided, hence the name given to the room.[423] Oracles are mediums that can tell prophecies or knowledge of the future. If the oracle spoke her prophecies or readings facing the back wall of the chamber, her voice would have resonated profoundly throughout the Hypogeum, establishing her eerie and powerful presence. A figurine was found in the Hypogeum of a woman sleeping. One theory is that people came to the Hypogeum to sleep and

418 Marshall, Steve. "Musical Resonances of the West Kennet Long Barrow." *Time and Mind* 4, no. 3 (2011): 297–300.

419 Ibid.

420 Cook, Ian A, Sarah K Pajot, and Andrew F Leuchter. "Ancient Architectural Acoustic Resonance Patterns and Regional Brain Activity." *Time and Mind* 1, no. 1 (2008): 95–104.

421 Ridley, Michael. *The Megalithic Art of The Maltese Islands*. Dorset: Dolphin Press, 1976.

422 Heritage Malta. *Ħal Saflieni Hypogeum Guided Tour*, Ħal Saflieni Hypogeum Museum and Archaeological Remains. Paola, Malta, visited September 27 2024.

423 Ian Ferguson, "New Views on the Hypogeum and Tarxien." In *Archaeology and Fertility Cult in the Ancient Mediterranean: First International Conference on Archaeology of the Ancient Mediterranean*, ed. Anthony Bonanno, 123-145. (Amsterdam: John Benjamins Publishing, 1986).

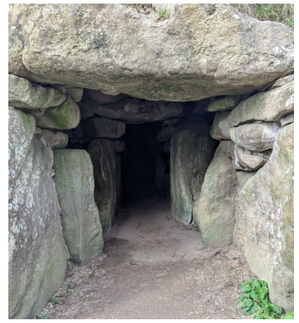


FIGURE.5.14 - West Kennet Long Barrow Entrance



FIGURE.5.15 - West Kennet Long Barrow Apse

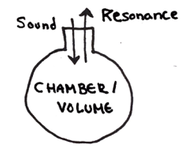


FIGURE.5.16 - Helmholtz Resonance Diagram

have their dreams interpreted by oracles.[424]



FIGURE.5.17 - Belas Knap Long Barrow Eastern Chamber, England

A recent study found that the different chambers with the Hypogeum resonated at particular frequencies of 37.2, 41.0, 46.1, 50.4, 57.1, 64.3, 72.7, 81.8, and 92.5 Hz, which resembles a whole-tone musical scale.[425] In simple terms this means the chambers within the Hypogeum were intentionally designed to create an immersive acoustic environment. This study was conducted specifically on the middle floor of the Hypogeum, and found that the perfected frequencies were likely not accidental. Even a slight change in the position of the wall of 10 to 15 cm would have changed the resonance of the chamber and been noticeable to the human ear, as Kristina Wolfe has written: "[i]ndeed, the Hypogeum looks spectrally more similar to an instrument like a bell, gong, or lithophone than to a room or theater, and the process of shaping the Hypogeum was similar to the process of tuning a bell or gong."[426]

Belas Knap is another site with interesting, and likely intentional, acoustics. This long barrow is located in the Cotswold region of England and is atypical in that it does not have an entrance on the short end of the barrow. It does, however, have a 'fake entrance' mimicking the style of other long barrows in England. Two small chambers are located on either side, across from one another. When sound is made in one chamber (talking, music, etc.), it is amplified in the other chamber, which I noticed by chance while visiting the barrow. As I was sitting in one of the chambers, other visitors were talking amongst themselves in the other chamber and their voices were amplified in the chamber where I sat, as if they were right next to me. This may have been an intentional design decision to support rituals which involved the creation of sound.



FIGURE.5.18 - Belas Knap Long Barrow Eastern Chamber Entrance, England

These cave-like buildings had the ability to act as instruments or amplifiers which were activated by the human voice or hand held instruments. These spaces lend themselves to creating music, engaging the sense of hearing and the voice in rituals. The comparison of these sites to instruments is a beautiful metaphor, as made by Woolfe et al. in their paper on the Ħal Saflieni Hypogeum.[427] These buildings indeed were instruments, which needed a musician to be played. The musician, or ritual participants, used the building as a tool to conduct their rituals. Sound, light, touch and movement were all important components. Just as the buildings came alive during the particular celestial alignment, the rituals specific to the site would have brought them alive.

424 Ferguson, "New Views on the Hypogeum and Tarxien."

425 Kristina Wolfe, et al. "The Frequency Spectrum and Geometry of the Ħal Saflieni Hypogeum Appear Tuned." *Journal of Archaeological Science, Reports* 34 (2020): 102623-.

426 Wolfe et al. "The Frequency Spectrum and Geometry of the Ħal Saflieni Hypogeum Appear Tuned," 5.

427 Ibid.

LABYRINTHINE MOVEMENT

Another aspect of Neolithic rituals was how bodies moved through space. The movement or procession in rituals often began before they reached the site and the approach to the site was of great importance. For example, many stone circles have the path leading to the circle clearly marked with stones on either side, as seen at Stonehenge, the Calanais Standing Stones and Avebury. The procession, movement, or perhaps even dance would then continue with the arrival to the site.



FIGURE.5.19 - Procession Fresco from Knossos

The Minoan palaces, such as Knossos, Phaistos and Malia, can be read as one large ritual of movement, which began with the approach to the palace. The archaeologist Peter Warren described Minoan religion as 'ritual action'.[428] Although the palaces share key ritual spaces, I will consider the palace of Knossos where the approach or procession to the palace was highly important.[429] Despite having multiple entrances, the most important entrance at Knossos was in the north, which connected the palace to the harbour at the sea, now in the city of Heraklion. As the northern path approaches the palace, it is extremely narrow and had to be walked in a single file line. It reaches the palaces at the North West corner where the path suddenly widens to a square with steps on two of its sides. Sir Arthur Evans, the first archaeologist to study Knossos, named this area the 'theatre' because the steps might have housed observers to watch the procession arriving at the palace, or to greet travellers. The other palaces also have a principal entrance which opens up to a theatre area. This entrance at Malia (which similar to Knossos is on the Northern coast of the island) is also approached by the palace from the north western corner, whereas this path at Phaistos (which is on the southern end of the island) is located on the south western corner. It appears that this principal path was always connected to the sea.

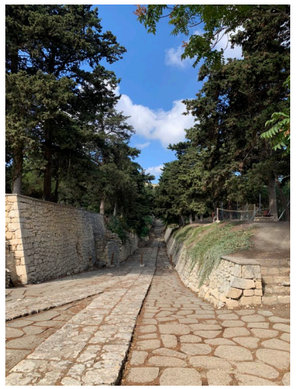


FIGURE.5.20 - Knossos Northern Entrance, Crete

Beyond the theatre, visitors would have visited a very small room in the northwest corner of the palace. The entire room features a small switchback stair going down into the ground which leads to a dead-end. Evans named this area the lustral basin, a room which would have been filled with water to cleanse the visitors or ritual participants before entering the palace. Similar to the lustral basin in the throne room, the small switchback stairs would facilitate movement through the water. The user would descend into the water and immediately turn around to go back up. The movement through the lustral basin was likely intended for cleansing and purification.[430]

After the lustral basin, the procession was able to access the principal space of the courtyard, which is the central focus of the palaces, through a few different paths. None of these paths are direct, and they involve narrow

428 Warren, *Minoan Religion as Ritual Action.*

429 Scully, *The Earth, The Temple, And The Gods.*

430 Evans, *The Palace of Minos: Volume I, The Neolithic and Early and Middle Minoan Ages.*

twisting and turning labyrinthine hallways. As the geographical center, the courtyard would have hosted large celebrations and events as the pinnacle of the ritual procession: the climax. This large space provides a stage for rituals which involve a lot of movement. Peter Warren has written about the importance of physical action in Minoan rituals. Minoan art, primarily pottery, seal engravings and frescoes, gives us a sense of what rituals would have taken place.

While most of the artifacts depicting dance were found in tholos tombs,[431] dance may have occurred at the palaces. Although the rectangularity of the courtyard was designed to negotiate between landscape and solar alignments, this large space would have hosted large groups of people dancing and moving. The courtyard also hosted the important ritual of Bull jumping, which is characteristic of Minoan rituals and often illustrated in Minoan frescoes which depict participants leaping over bulls by grabbing onto the horns of the bull. Participating in these matrifocal rituals, in particular group dances, helped to forge a sense of collective and cultural identity.[432]

After the events in the courtyard, the ritual participants may have descended into the underground level of the palace, or exited through the southern part of the courtyard, which leads to another narrow path that exits the palace. This processual movement of north to south in the palace keeps the important double peaked mountain, Mount Juktas, in view. Many other rooms from the palace were also derived from and embedded in religious rituals. Notably Knossos' throne room, which was described in the previous chapter. Vincent Scully described the key components of the Minoan palaces to be the labyrinthine passage, open courtyard, columned pavillion, pillared cave. Although none of the palaces are identical, they follow this similar framework. The rooms are connected through narrow passages, hallways and staircases. The entire palace is a singular ritual, and thus its labyrinthine shape is highly intentional. The labyrinth is the spatial expression of a moving and dancing body: "Movement through the labyrinthine passages which led to the caverns seems also to have formed an essential part of the ritual...The path of the labyrinth became a dance."[433]

Minoan rituals' emphasis on movement and action, has resulted in labyrinthine plans. As Scully has written: "[t]he space, though organized by rectangles, is fluid and moving, like the bull dances themselves and the frescoes on the wall",[434] while the central courtyard acts as an anchor to the site, from which all other rooms surround it. The layout of the northern, eastern, western, and southern wings follow no easily understandable logic

431 Katy Soar, "Circular Dance Performances in the Prehistoric Aegean." In *Ritual Dynamics and the Science of Ritual, Vol. 2: Body, Performance, Agency and Experience*, edited by Axel Michaels et al., 137–156. Wiesbaden, Germany: Harrassowitz, 2010.

432 Ibid.

433 Scully, *The Earth, The Temple, And The Gods,* 11.

434 Scully, *The Earth, The Temple, And The Gods,* 13.

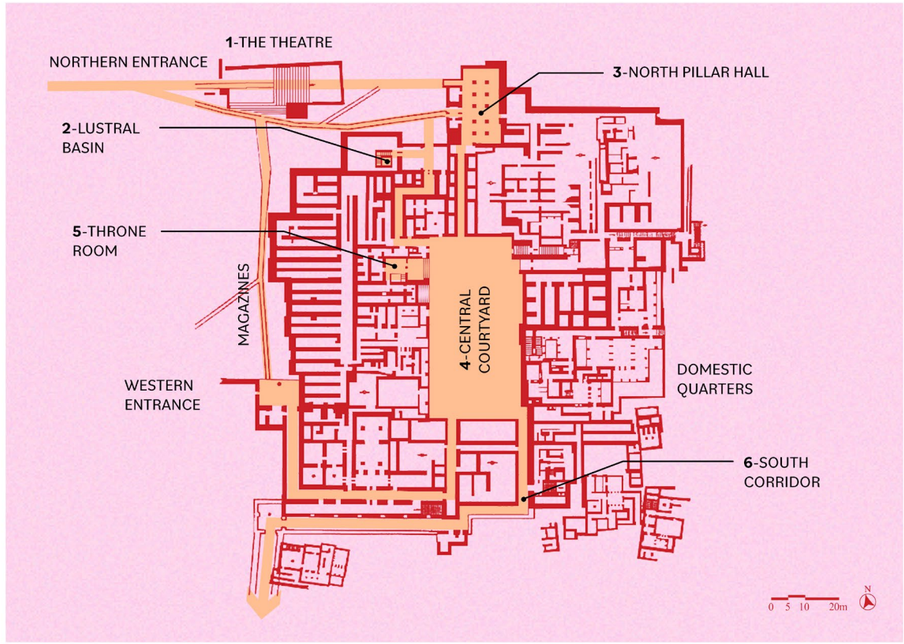


FIGURE.5.21 - Knossos Map and Photographs

to the outsider observer. The palace of Knossos is associated with the Greek myth of the labyrinth and the Minotaur, however many tourists who visit the palace are disappointed to find no labyrinth as depicted in media. The word 'labrys' is of pre-Greek origin and means double axe.[435] The double axe, or labrys, is an important Minoan symbol and is seen repeatedly through their arts and carvings on walls. When the Myceneans arrived in Crete and entered Knossos, they found the palace layout confusing and disorienting. Thus 'labrys', from which the word labyrinth derives, came to mean a complicated irregular network of passages.[436] There is no external labyrinth at Knossos, as described in Greek myth, but rather Knossos itself is the labyrinth.

PROCESSION



FIGURE.5.22 - Silbury Hill as seen from the West Kennet Long Barrow

When multiple Neolithic religious sites were located in a concentrated area, it suggests that processions likely took place between the sites. Micheal Dames has suggested that processions linked the Avebury monuments, where each site was used for a different portion of the year.[437] The Sanctuary, West Kennet long barrow and Silbury Hill are all visible from one another, and walking would take no more than 45 minutes between each monument. While there is no pathway connecting these monuments, the river flows right through them. Given that the river was sacred, it is possible that they used the river as a processional pathway between these monuments. The Kennet River would have been much larger in Neolithic times, and visitors could have travelled by walking alongside it or travelling on the river with the use of wooden boats. Silbury Hill is just north of the West Kennet long barrow, following the path of the river between the monuments would take the visitor to a hill where the long barrow is located. The entrance of the West Kennet long barrow faces east, lining up to the rising sun on the equinoxes. It also directly faces the Sanctuary. Since the Sanctuary was built after the long barrow, it is likely that the placement of the sanctuary was carefully chosen to be visible from the long barrow. Once descended from the hill, the river could be followed again to take the visitor to the Sanctuary.

The clearest evidence for a procession at the Avebury monuments is the path which connects the Sanctuary to the Avebury circle. The Sanctuary is a stone and wood circle much smaller in comparison to the Avebury circle, which is the largest monument in the Avebury cluster and the largest stone circle in the world. At the Sanctuary, stone holes in the form of a large circle and a smaller circle in the middle were discovered, as well as post holes for wooden posts filling the inside of the smaller circle and outlining its

435 Ajit Kumar, "Labyrinths in Rock Art: Morphology and Meaning with Special Reference to India," *Heritage: Journal of Multidisciplinary Studies in Archaeology* 3 (2015): 84;
Gregory Patrick Garvey, *Labyrinthos* (Master's thesis, Massachusetts Institute of Technology, 1982), 70.

436 Garvey, *Labyrinthos*, 70.

437 Dames, *The Avebury Cycle*, 15.

perimeter. The wooden post may have been used to direct the flow of people in the space between the two stone circles, preventing them from accessing the inner circle, except perhaps for a select few. The circular shape of the stone circles could have lent itself to circumambulation, walking or dancing along its circular shape. The northern side of the Sanctuary is connected to a path which leads North West to Avebury circle. This path, which has been named West Kennet Avenue, is lined with Sarsen stones on either side.



FIGURE.5.23 - The West Kennet Avenue

It is believed that another avenue connected the Avebury circle on its south eastern side lead eastward towards two other small long barrows and a cluster of standing stones called the Beckhampton Cove. Most of the stones from this avenue are missing, therefore the evidence is less clear than the West Kennet Avenue. Beckhampton Cove consists of a semi circle formed from three standing stones and a fourth stone facing the center of the semi circle. The center of the semi-circle to the fourth stone draws a line to the moon's southern major lunar standstill moonrise.[438] Although this monument is smaller and less often discussed in academic research on Avebury, it might have been part of the cyclical ritual of the Avebury monuments.

Due to the scale of the monuments, it is likely that pilgrims came to Avebury from all over Britain, which we can see also by the large size of the Avebury Stone Circle which could have accommodated large crowds. DNA testing on a burial at the sanctuary proved that not all burials were that of locals, but rather people who had travelled long distances. The Avebury monuments together as an ensemble connect to the cyclicity of life. If the monuments were each associated with a different time of the year, it is possible a procession took place from the previous monument associated with the previous season to the new monument to mark the change of the seasons. As stated by Michael Dames: "[t]he monuments were created as a coherent ensemble to stage a religious drama which took one year to perform, with earth edifice offering in turn a special setting for the celebration of a particular event in the farming year, matched to the corresponding event in the human life."[439]



FIGURE.5.24 - Avebury Circle

The procession between monuments may have involved the movement of large groups of pilgrims and religious devotees, with specific and unique rituals happening at the monuments. More monuments were added to this cluster of sites, such as round barrows in the Bronze Age, so it is possible that the procession and rituals were given added complexity throughout the ages. Brú na Bóinne is another cluster of Neolithic sites within a condensed area. The sites, similarly to Avebury, correspond to different times of the year, which is reinforced by their different solar alignments. While no paths are clearly marked at Brú na Bóinne in Ireland, it is possible that a similar procession took place between the sites, using the river Boyne as a guide.

438 G. Terence Meaden, "The Five Megaliths of the Avebury Cove" In *Archaeology of Mother Earth Sites and Sanctuaries through the Ages: Rethinking Symbols and Images, Art and Artefacts from History and Prehistory*, edited by G. Terence Meaden, 67-72. Oxford: Archaeopress, 2012.

439 Dames, *The Avebury Cycle*, 9.

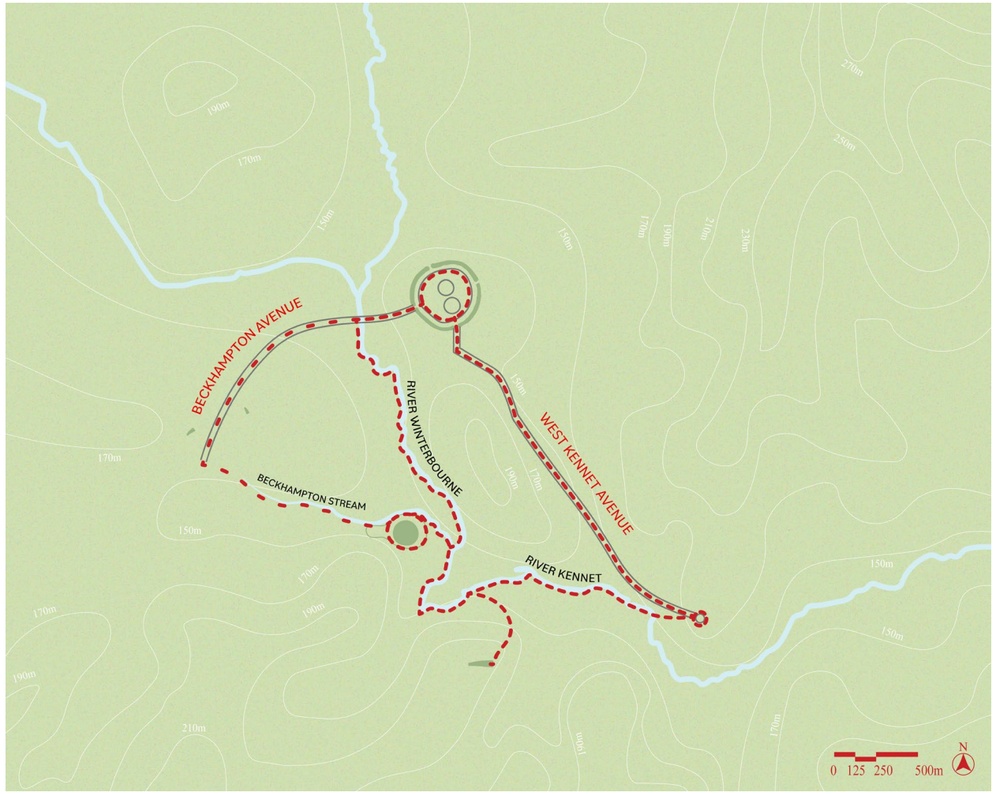


FIGURE.5.25 - Map of Processions at Avebury

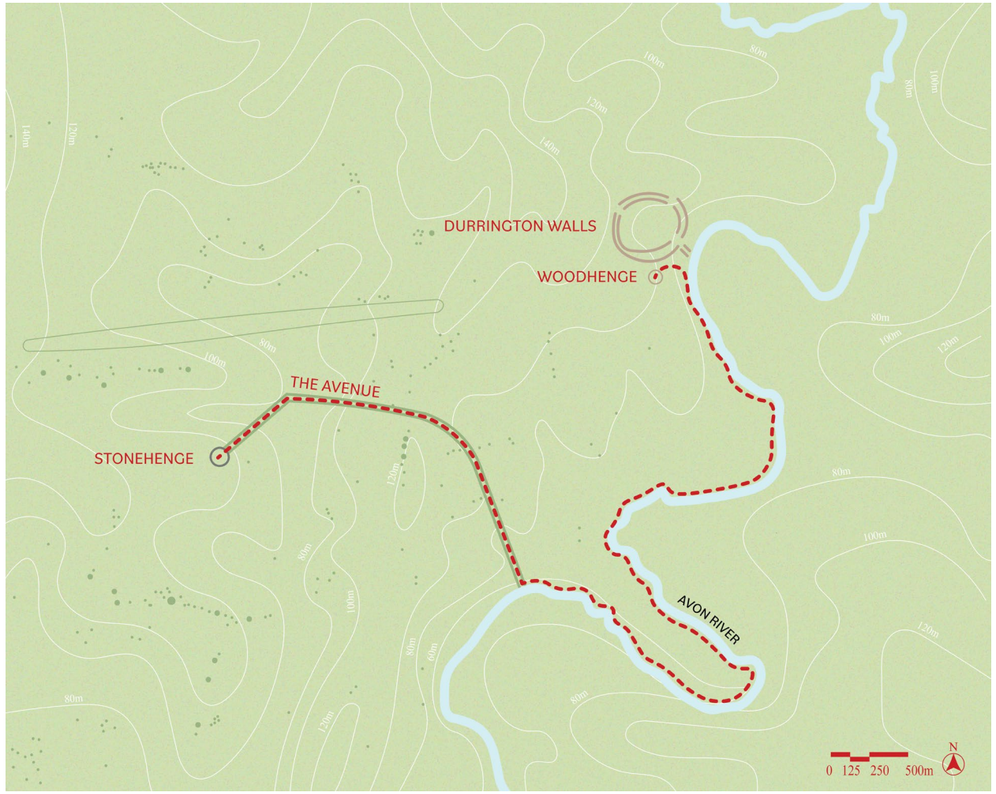


FIGURE.5.26 - Map of Processions at Stonehenge

CONCLUSION

The movement, dancing and sound created in matrifocal rituals is evident in the architectural remains. Just as an instrument is a tool used by the musician to create music, so too was architecture a Neolithic tool to perform rituals. Without these events and processes, architecture is just a hollow building; It is not the landscape that makes a spot sacred, nor is it the temples erected there, but rather the rituals conducted and stories told about that spot that make it sacred:

> "The Avebury henge was not sculpture in the sense of being a finite, completed object. Instead, it was brought to completion at the right time by human participation."[440]

Architecture was a medium which engaged the body and the cosmos, and space was an important dimension of matrifocal rituals. Neolithic architecture was an extension of the body, and the cosmos was an extension of architecture. Mircea Eliade captures this interconnectedness through his concept of the 'body-house-cosmos' structure, describing how humans align themselves with cosmic rhythms through architecture:

> "Man cosmicizes himself; in other words, he reproduces on the human scale the system of rhythmic and reciprocal conditioning influences that characterizes and constitutes a world, that, in short, defines any universe".[441]

Rituals were coordinated with the different phases of human life as well as the different cycles observed in nature. Both the cycles of the human body and those of the cosmos were cycles of death and regeneration; the human body was a microcosm of the universe reflecting the very same cycles and patterns observed in the land and the sky. In this way, architecture functioned as a mediator, transforming abstract cosmic principles into embodied experiences.

Despite the richness of matrifocal architecture, during my visit to Neolithic sites, particular sites felt sterile. Many sites of burials were empty, and the remains of the dead now sit in museums or laboratories. Although the study of bones allows us to better understand these ancient cultures, presenting them in museums displays them as visual artifacts. In Malta, the National Museum of Archaeology displayed skulls found in the Hypogeum in an eerie exhibit titled "Alien Headaches? The Hypogeum Skulls Enigma". Museums in recent years have been widely criticized for their colonialist practices.[442] Museums turn all artifacts into purely visual objects, divorced from their context and intended purpose. The display of human remains is even further disturbing. These displays dehumanize the body, and rob matrifocal people of their dignity. Although this objectification of human

440 Dames, *The Avebury Cycle*, 149.

441 Eliade, *The Sacred and the Profane,*173.

442 Hannah Turner, *Cataloguing Culture : Legacies of Colonialism in Museum Documentation*. Vancouver, British Columbia ; UBC Press, 2020.

remains may be due to the far distance in time between present day and the Neolithic Era, this same practice is done in the display of bones and skulls of Indigenous peoples at the Smithsonian Museum,[443] and I'm sure countless other examples are present. This is clearly a colonial act: the further the remains are from the identity of the Museum actors (owner, curators and civilians who visit) in both contexts of time and cultural identity, the less respect is offered to the human remains. As examined in this chapter Matrifocal cultures bones were important and sacred players in rituals; they may have symbolized their ancestors and retained personhood even after death. Removing bones for study but not returning them, also devalues architectural sites. These buildings' intended purposes of housing the dead are removed, and they become transformed into visual artifact. All cultures of study should be afforded the same level of respect irrespective of their period in time, or their similarities to those conducting the study.

443 Ibid.

CONCLUSION

SHIFT TO PATRIARCHY

Most of the cultures discussed in this thesis disappeared toward the end of the Neolithic era or Bronze Age and were replaced with patriarchal civilizations. The Minoans, for example, were invaded by the Mycenaeans in 1450 BCE, and suddenly disappeared for unknown reasons in 1100 BCE.[444] Overall, there are a few theories as to why we see a shift from matrifocal societies or matriarchies to patriarchies in Europe and the Middle East. Gimbutas theorized that these matrifocal cultures disappeared due to the invasion of Indo-European Kurgan culture, which she describes as both patriarchal and warlike, towards the end of the Neolithic era.[445] While Gimbutas' Kurgan theory was controversial upon first publication, new research provides evidence for a southeast migration of patriarchal cultures into Europe during the Bronze Age.[446]

With a shift towards patriarchal societies, religions also see a change towards the worship of male Gods. The mother loses her importance and is often written out of myths. In Greek mythology, for example, Athena is born out of Zeus' head, receiving a motherless birth. Women's unique power to create life, was given to men in myths:

> "From Eve, Minerva, Sophia, and Galatea onward, after all, patriarchal mythology defines women as created by, from, and for men, the children of male brains, ribs and ingenuity."[447]

Despite the historical shift towards patriarchy in Europe, Gimbutas argues that remnants of matrifocal cultures and Mother-Goddess worship can be traced throughout the mythology and religious symbolism of subsequent civilizations, such as Ancient Greece and the Celts.[448] Although the Neolithic era lies several millennia in the past, the study of matrifocal cultures reveals their relevance to contemporary architecture. Neolithic monuments offer alternative ways of understanding architecture through a gynocentric and spiritual lens, challenging conventional narratives. Moreover, their enduring presence continues to inspire modern visitors, evoking a profound sense of awe—an effect rarely achieved by contemporary buildings.

444 Cadogan, *Palaces of Minoan Crete*.

445 Gimbutas, *The Gods and Goddesses of Old Europe.*

446 Morten Allentoft, et al. "Population Genomics of Bronze Age Eurasia." *Nature (London)* 522, no. 7555 (2015): 167–72.

447 Gilbert and Gubar, *The Madwoman in the Attic*, 12.

448 Gimbutas, *The Living Goddesses.*



FIGURE.6.1 - Tea lights left behind at Fourknocks, Ireland



FIGURE.6.2 - Fruit, nuts and honey left at the Sanctuary in Avebury, England

MODERN INTERPRETATIONS

On my last day of my trip to Ireland, I visited a stone circle at Lough Gur: a Neolithic to Bronze Age archaeological park surrounding a lake, half an hour from Limerick. Upon arriving at the circle, three people were sitting quietly inside the circle, seemingly meditating. Witnessing these three people, I immediately felt the need to be reverent as I walked around to document the site. This experience was not uncommon as I continued to travel through England. At Avebury, many people were praying, meditating or performing rituals in the stone circle. At a few other sites, such as Fourknocks in Ireland, and The Sanctuary in the Avebury, people had left offerings such as tea light candles, dried herbs, flower petals and fruit.

Today, many of these sites hold special meaning to many people. The mystery that surrounds them intrigues many, while others feel inspired by the spiritual nature of these sites. Stonehenge's solar alignment is witnessed by 15,000 visitors every year, and Newgrange is visited by 2,000 people on the morning of the winter solstice sunrise every year, even though only less than 20 are allowed into the chamber. The monuments are aligned to the sky and nature, which will always be capable of moving the human spirit. These monuments will likely continue to captivate human attention as long as they stand erected.

During my visit to many sites, particularly in Ireland and England, it has become clear that many of the megalithic monuments have been readopted by neopagans; an umbrella term to describe a diversity of spiritual practices which seeks to return to pre-christian pagan and animistic traditions. This readoption of Neolithic monuments has also been documented by scholars,[449] who often criticize these practices for being rooted in an inaccurate understanding of history and archaeology.[450] Neo-pagan narratives blend together Celtic stories, folktales and modern witchcraft to understand the sites, even if they contradict archaeological research. While it is true that cultural knowledge and many myths have been lost to time, this is largely as a result of various invasions and the eventual Christianization of the continent. With the Christianization of the British Isles, there were intensive efforts to eradicate traditional pagan practices such as the witch hunts which occurred during the Renaissance. The witch hunts primarily targeted independent and outspoken women, elderly women, and midwives. This is one example, of many, where many traditional practices and knowledge were very likely lost due to the efforts to further Christianize Europe. Rather than criticize the readoption of megalithic monuments for modern pagan practices, we should seek to better understand Europe's persecutory history which led to a loss of

449 Ethan Doyle White, "Devil's Stones and Midnight Rites: Megaliths, Folklore, and Contemporary Pagan Witchcraft." *Folklore* 125, no. 1 (2014): 60–79; Ronald Hutton, *The Triumph of the Moon : A History of Modern Pagan Witchcraft*. (Oxford: Oxford University Press, 2019).

450 White, "Devil's Stones and Midnight Rites: Megaliths, Folklore, and Contemporary Pagan Witchcraft."

its own cultural knowledge. While we are confronted with conflicting frameworks for understanding megalithic sites, perhaps the two can co-exist to avoid furthering the erasure of pagan practices-yet this time under the guise of scientific inquiry. In the words of the archaeologist Ethan White:

> "Nevertheless, historical inaccuracy does not detract from the spiritual experiences that many Wiccans [a form of neopagan witchcraft] presumably had-and have-while performing rites within these ancient circles and tombs. Nor does it prevent them from feeling that there is something animistic and alive, and even divine and sacred, in these prehistoric stones."[451]

MATRIFOCAL ARCHITECTURE

The field of architecture today must expand how we discuss and approach the design of buildings. It is not enough to build visually appealing or cost-effective structures; we must think about how our designs relate to the earth, time, cultural processes, rituals, human senses, and gender. We must think about how we can give agency to non-human forces, such as the landscape or cosmic time. How can these forces play a part in the design of our buildings?

Contemporary architecture focuses highly on visual appeal, aided with technology to create new and interesting forms. What do these new forms communicate to the observer? The modern world is bombarded with means of visual and digital communication, we might forget that architecture also communicates with us. Although contemporary buildings, such as those of Zaha Hadid, also feature curvilinear forms, a principle used by the Neolithic temples, these modern forms are void of any meaningful symbolism. Despite a focus on the visual aesthetics, modern architecture adopts an empty formalism, contrasted by the highly intentional, culturally nuanced and sacred formalism of matrifocal cultures.

Neolithic Architecture was filled with symbolism, reflecting the cultures' religious ideas and values. In societies with no systems of writing, art and architecture was a means of communication. These sites were carefully designed to communicate ideas and beliefs: the anthropomorphic buildings, which were inspired by the female body, reflected their belief in a female mother deity; their alignment and position near specific landscape elements, revealed a belief in the sacredness of nature; their orientation towards astronomical events, and circular form, showed a belief in the cyclical nature of time and of the importance of celestial orbs in determining sacred time; their architecture not mere visual artifacts, but rather was a reflection of embodied rituals and cultural processes.

451 White, "Devil's Stones and Midnight Rites: Megaliths, Folklore, and Contemporary Pagan Witchcraft," 75.

As evidenced by the case studies included in this thesis, global Indigenous cultures parallel many of the themes found in Neolithic matrifocal architecture. Indigenous architecture, like the sites examined in this thesis, often embodies spiritual and ecological principles, prioritizing sustainability, community cohesion, and a deep sense of place. It is ironic that European history is rooted in very similar practices that they have tried to eradicate in Indigenous cultures through a history of colonization. Decolonization has been a rising discourse within the field of architecture, which is meant to be critical of standard methodologies in the industry, while also creating new ways of making architecture.[452] This process of decolonization calls for a reconceptualization of architecture beyond mere visual artifact, and considers the interconnected relationships to time, space, land, gender, the body, cultural practices and rituals, and spirituality. In efforts of reconciliation and decolonization, previously Eurocentric practices and methodology must confront their own ancient history. Much can be learned from animistic societies, whether they be contemporary Indigenous practices or Neolithic matrifocal cultures, which challenge patriarchal biases which have for too long dominated the field of architecture.

452 Alessandro Petti, "What Does It Mean 'to Decolonize'?" *End of the Year Discursive Exhibition*, 23-29 May 2019, DAAS Academy, accessed March 7, 2025, 9-13.

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APPENDIX A

THE DEFENSE

My thesis defense took place on March 28th 2025, in the Founder's Lounge at the University of Waterloo. At the front of the room, I used a table to display a series of artefacts. On one wall I printed four posters which featured multiple photographs from my site visits in September of 2024. One poster was dedicated to each coutry I visited: Ireland, England, Crete and Malta. The other wall displayed my thesis illustrations, using a 6x10 inch format.

I prepared four copies of the illustration cards which were displayed on the table. The cards were printed in a 3x5 inch format and featured the black and white drawing on one side, and the colourful illustration on the other. The table also featured three books which could be flipped through: my travel notebook with sketches and notes from my site visit; my sketchbook which was used to create the base of the thesis illustrations by hand; and the 'travel book' which was an album filled with ticket stubs, postcards and pamphlets from my site visits. Small figurines replicas of Maltese Neolithic Goddess figurines, which were acquired during my travels in Malta, were also displayed on the table. The table display was intended to add a tactile dimensions to the defense, where attendees and the committee could look, touch and explore the artefacts. The table was at the very front of the room, similar to the altar tables seen in the Maltese temples.

This appendix includes images from the defense room.



FIGURE.7.1 - The defense presentation, photograph by Vanessa Drmac



FIGURE.7.2 - The illustration cards



FIGURE.7.3 - The defense room (view 1)
The screen and table were placed at the very front. Images from my travels were on the right wall, while the enlarged illustration were on the left wall.



FIGURE.7.4 - The defense room (view 2), photograph by Riaz Ghafari
Images from my travels can be seen on the right wall.



FIGURE.7.5 - The table display (view 1)



FIGURE.7.6 - The table display (view 2)



FIGURE.7.7 - The defense room (view 3)



FIGURE.7.8 - Illustrations (6 x 10 inches)

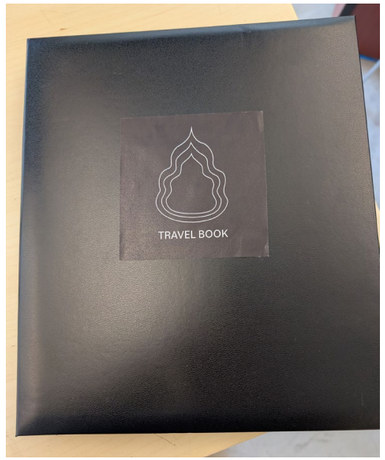


FIGURE.7.9 - Travel Book (exterior)

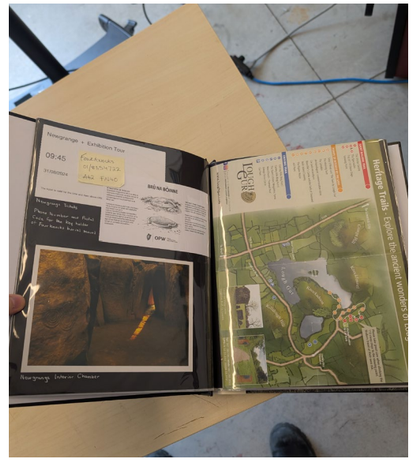


FIGURE.7.10 - Travel Book (interior)

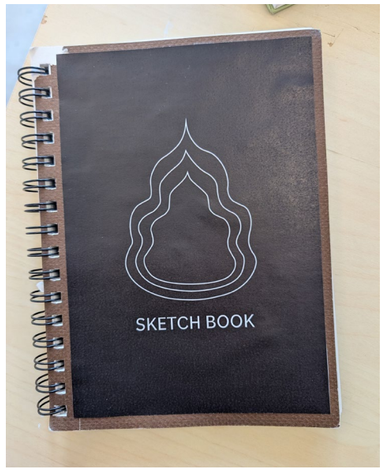


FIGURE.7.11 - Sketchbook (exterior)

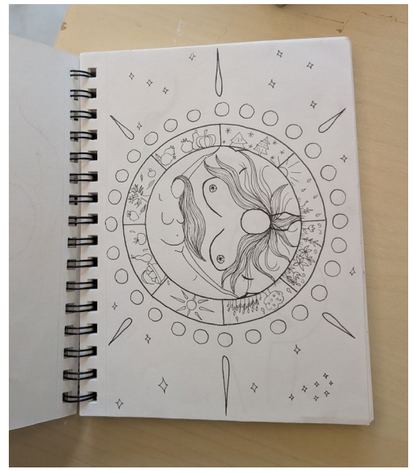


FIGURE.7.12 - Sketchbook (interior)

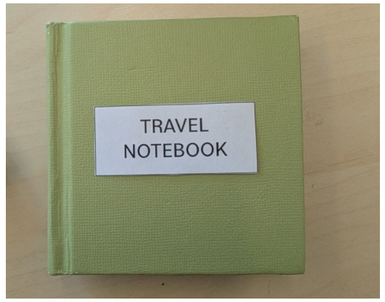


FIGURE.7.13 - Travel Notebook (exterior)

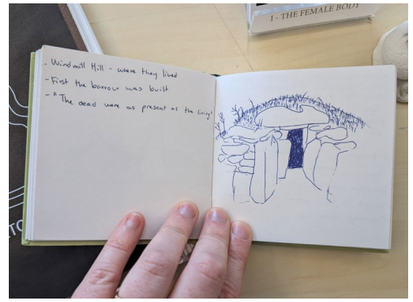


FIGURE.7.14 - Travel Notebook (interior)



FIGURE.7.15 - Travel Images (Ireland)



FIGURE.7.16 - Travel Images (England)



FIGURE.7.17 - Travel Images (Crete)



FIGURE.7.18 - Travel Images (Malta)