

At the Intersection of Earth and Sky:
Archaeoastronomy and Experimental Archaeology,
an Autoethnographic Perspective
of Sacred Landscapes

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DEDICATION

First and foremost, this work is dedicated to my wife, Brooke Harris, and to my two children, Fionn and Felicity Miller; without their love, support, and patience this project would have never begun.

This work is also dedicated to all of those who had big dreams that were put on the shelf because life had something else in store. Let this serve as a testament that if you invest in yourself, work hard, and reach for your dreams, it is possible to achieve great things.

ACKNOWLEDGEMENTS

First, I would like to thank my thesis committee, Dr. John Vile, Chair, Dr. Shannon Hodge, Advisor, and Dr. Brad Bartel. My thesis was improved through your guidance, comments, and support, and I could not have completed it without your contributions and involvement.

When I began my academic journey, I never would have expected how very many people would become invested in my success. I would like to thank the faculty and staff in the Anthropology and History Departments who welcomed me into the university, and gave me an academic home. I am thankful particularly for Kathy Davis, who pointed me in the direction of the Honors College, Laura Clippard who has guided me through my classes and the thesis process, and to Judy Albarky who has helped me see its completion. Pansey Carter, Tara Hayes, and Billie Jean Brown have all helped me find the right people and make the right connections in my times of need. To my professors in the History Department, but especially Dr. Robert Hunt, Dr. Susan Myers-Shirk, and Dr. Mark Doyle, your advice and conversation has helped more than I can say. To all of my professors in the Anthropology Department, I want to express my gratitude; to Dr. Ida Fadzillah, and Kevin Smith, I thank you for the many conversations, suggestions, and last-minute guidance. To Dr. Kathryn Sikes, thank you for the loan of your equipment and your constant willingness to help. To Dr. John Wallin; you took me in when I appeared randomly at your office door, and gave me the tools I needed to bring shape to my project; thank you.

I would also like to thank the individuals and institutions who lent financial support for my research trip to Ireland, without whom my project would never have been possible, including; Renee Chadwick, Jeff Berman, Danelle & Sondra McDermott, Amy Tran, Anne Flaharty, Michael Green, Brandon Burnette, The Honors College, The International Affairs Department, and The College of Liberal Arts.

It is not easy to conduct research on foreign soil, and I want to thank those who gave of their time and their knowledge while I was in Ireland; Dr. Frank Prendergast, Dr. Neil Carlin, Dr. Carleton Jones, Thor McVeigh, Dr. Robert Hensey, and all of The Prehistoric Society Members who welcomed me as one of their own.

When I called upon my social network to help with the construction, I was fortunate that so many responded. I am grateful for the cheerful and willing work of these friends; Bonnie McCabe, Wesley Vanosdall, Tom Hickman, Zackary Whitehead, Sophie and Mike Moran, Jason and Tristan Hobbs, Dr. Ashley Riley Sousa, John Sousa, Dr. Jette Halliday, Amanda Seeley, with a special thanks to my artist, Todd, and his wife Sarah Wilson, and to my photographer, Shawna and her husband, the boulder-lifter, Emmanuel, and their children Elijah & Madeline Jackson.

For their commiseration, support, and thoughtful readings of drafts and pre-drafts, for many conversations about theory, ideas, and the nature of things, I extend my thanks to; Phillip Hodge, Jane Lewis, Adam Forgang, Wesley Vanosdall, Andrea Hebert, and Joan Corinne Crenshaw.

To my friend and mentor in Ireland, Sam Moore, and his partner Sarah Levick, I would like to extend my deep appreciation. For inviting me into your home, for driving me to the ends of the island and back, and for trekking up and down mountains with me,

for late-night discussions and early morning coffee, and for a pile of literature I don't know how else I could have found. I wish I could have stayed longer. Your support, advice, and guidance are invaluable to me; I could not have completed this project without you both.

No student can achieve all that I have without a good mentor to help show the way; I have been fortunate enough to have two. Dr. Dawn McCormack has been with me since before my first semester at MTSU began. She has given me advice, taken me halfway around the world and back, and helped me find my way. She pushes me to be more than I think myself capable of being, and when I falter, she shows me how to press on. She has been an irreplaceable part of my experience and shown me how to achieve my dreams. Dr. Shannon Hodge has been with me since I bounced through her doorway in my freshman year. This project was instigated by her, and made possible by her continued support. She has helped me understand the complexities of anthropology and shown me how to navigate its sometimes-choppy waters. She has helped me through laughter and tears, serving as my advisor and mentor for this project from its inception.

My family have been my sanity and my solace through this process, supporting me and putting up with me, making dinner and making do when I was off exploring the world or madly glued to the keyboard. For all that they have endured, and all the love and support they have given, I give my deepest thanks to my wife, Brooke Harris, and my two amazing kids, Fionn & Felicity Miller.

ABSTRACT

This project was designed to use the methods of phenomenology and experimental archaeology to explore the mind and practices of the Neolithic Passage Tomb builders of Ireland, connecting first with the monuments within their original landscape, then attempting to understand their construction through the design and execution of a solar-centered sacred space. The intent was to understand the process: its difficulty and logic, the amount of knowledge of the movement of heavenly bodies needed to create the famous solar alignments and the incorporation of symbolism and function into a single meaningful space. By doing so, the author examined the use of the method of phenomenology for its place within the ideological and methodological toolkit of archaeology.

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INTRODUCTION AND BACKGROUND

This project was designed to use the methods of phenomenology and experimental archaeology to explore the mind and practices of the Neolithic Passage Tomb builders of Ireland, connecting first with the monuments within their original landscape, then attempting to understand their construction through the design and execution of a solar-centered sacred space. The intent was to understand the process: its difficulty and logic, the amount of knowledge of the movement of heavenly bodies needed to create the famous solar alignments, and the incorporation of symbolism and function into a single meaningful space.

Background and Context

Anthropological archaeologists often focus their studies on broad, sweeping understandings of people. For example, the appearance of entoptic forms in megalithic architecture becomes a marker of sweeping social control (Lewis-Williams and Dowson 1993), the disposition of human bodies after death is analyzed in terms of their relation to distant, personally disconnected others (Fowler 2010; Dowd 2007; Guillaume 2010), and their portable art and grave goods are compared and contrasted to those found in other areas, culture groups, and times. Anthropologists often work to move their research from the specific to the general, taking what they have learned from an individual experience or site and inferring from it a broad generalization that is often disconnected from the actual people being studied. Though there has been a shift in ethnography away from this method, archaeology still holds to this pattern. In contrast, this project specifically

focuses on the individual within an archaeological framework, attempting to understand what we know from the existing body of archaeological inference from within mind and body of the individual. As seen from this vantage point, this project makes anthropology human again.

Experimental Archaeology and Phenomenology

Lewis R. Binford states “Experimental archaeology represents another area of research... It involves the experimental re-creation of happenings or processes...such work can offer genuine insights into the archaeological record...merely finding something does little good unless they can give meaning to it” (Binford 2004 24).

Experimental archaeologists use scientific experimentation to reproduce, analyze, and observe material remains. These experiments draw on a variety of theoretical models and methods, resulting in a wide array of approaches, each of which attempt to examine the archaeological record from a different perspective.

One such method draws on the philosophical study of phenomena, known as phenomenology. Phenomenology is defined by Merriam-Webster.com as “the study of the development of human consciousness and self-awareness.” When combined with Dictionary.com’s definition of phenomenal, “cognizable by the senses,” this two-part definition gets to the core of how phenomenology is used by experimental archaeologists to understand past peoples and cultures. Clarke and Renwick (2013) describe the use of this method within archaeology as the “...use of the human body as a method in its own right. Adopting an embodied approach...advocates the attempt to express the sensuous nature of the human experience to create a more meaningful encounter and insight into

past behavior.” Using the human body as a “method” is possible because of the continuity of the human mind and body; the scientific community asserts that from the time that fully modern humans arrived until now, little in our physical makeup has changed. We have the same senses and physical attributes as our early *Homo sapiens sapiens* ancestors, thus we are able to have the same sensory experiences they did. Though separated from them by differences in culture and technology, it is possible to connect with prehistoric peoples by placing oneself in the extant prehistoric landscape, and gain a sensory understanding of it from that experience.

Sacred Landscapes

My research also refers to “sacred landscapes” in their archaeological and cultural context. The concept of “landscape” may be centered on a physical place, or “expanse of rural scenery,” as defined by Dictionary.com, or the idea of “a particular area of activity,” such as the “political landscape,” as defined by Merriam-Webster.com. When archaeologists speak of “landscapes,” they often use the term to encompass both a physical and a mental area of activity, which may or may not have logical physical boundaries. The term “sacred landscape” is typically used in archaeology to describe a physical area of land that has some cultural importance beyond the physical space, incorporating both concepts of the word “landscape.” Similarly, the concept of “sacred” may be used to denote either “dedicated or set apart for the service or worship of a deity” or “devoted exclusively to one service or use,” as defined by Merriam-Webster.com. Though religious significance may be inferred by the context surrounding an item in the archaeological record, often an item or area is considered “sacred” because it has been

“devoted exclusively” to one purpose. Such a place or item has been set apart, but not necessarily in a way that would be recognized as “religious” to our modern sensibilities. Thus, are “sacred landscapes” perceived: they are areas within a physical landscape that appear to have been set apart from the mundane world in some way.

Alignments and Archaeoastronomy

Many megalithic monuments constructed during the Irish Neolithic, roughly c.4000-2500 BC (Twohig 2004), have alignments; one with the other, with objects within the landscape, and with heavenly bodies at specific times of the solar year. Such alignments with heavenly bodies are known as astronomical alignments, and are created when the opening or face of a megalith is oriented toward a heavenly body, such as the sun or moon. Archaeoastronomy is a discipline that researches such alignments, amongst other things, in order to understand cultural uses of heavenly bodies of the past (Carlson 2012). The alignments found within many megalithic monuments in Ireland seem to indicate that these ancient peoples were consciously following the movement of the sun across the horizon throughout the seasons.

Passage Tombs of Ireland

The landscape of Ireland is dotted with a variety of megalithic monument types that were erected throughout the Neolithic Era. As the name implies, these structures are composed of large-scale stones as their main building features; passage tombs are one such monument. Passage tombs serve as a kind of burial chamber, usually round or

rectangular, which is reached by means of a passageway made of shaped stones or cleft boulders, covered by a mound of turf or stone, and often surrounded by huge lozenge-shaped stones called kerbstones. Though there are variations in building methods and burial chamber shape, length of passage, and style of roofing, all together they make up a solid typology of burial chambers with a presumably related function. There are over 200 known passage tombs in Ireland, with a high concentration of tombs located in four mortuary complexes; two in the West in County Sligo, known as Carrowkeel and Carrowmore, and two in the East in County Meath, known as Loughcrew and Brú na Bóinne (Jones 2007; Waddell 1998).

Though much has been done to explore these passage tombs and their alignments archaeologically, less has been done to draw these megaliths into the mental landscape of the people who built them, to discover the internal reasoning behind their construction, or to find out about the mindset of the builders and the mental process that is experienced when attempting to construct a solar-oriented sacred space.

Thesis Statement and Hypothesis

“Seen from the point of view of man’s need to create a final resting place for the remains of the dead, the erecting of a megalithic tomb seems an extremely complicated and extravagant undertaking” (Bergh 1995:141).

Looking at passage tombs from this perspective, I found myself wondering: What went into the construction of these monuments? How difficult was it? What would the builders have to know about the movement of the sun, moon, and stars to properly align them to solar events? What purpose did the alignment serve? Why did these people go to so much effort for these monuments? In order to try to explore these questions, I

developed this project to investigate these architectural phenomena in their physical and cultural landscape. In particular, I set out to answer the question, “Can these megalithic monuments be better understood through a phenomenological process that experiences them firsthand in their own physical landscape, and then experiences the process of building an analogous structure within my cultural landscape?” This project intended to go beyond empirical analysis of existing monuments, to examine them experientially; first through traveling to Carrowkeel, Carrowmore, Loughcrew, and Brú na Bóinne in Ireland in order to phenomenologically explore these existing physical landscapes, and then through the personal construction of a sun-centered sacred space.

Project Plan

The first element in my creative thesis process was an experiential visit to four megalithic monuments in Ireland, to experience firsthand the solar alignments and ritual/mortuary complexes constructed during the Neolithic period. I used a phenomenological approach to my experience of these four mortuary complexes, so that I might experience their place in the landscape, their balance and composition, and their effect on the individual, not only as places to house the dead, but also as sacred spaces and individual stages for sacred practices.

When I returned from Ireland, the data I collected through firsthand experience informed the design and construction of a solar-centered sacred space on my own property. These data influenced the design of the space, what materials were chosen for construction, and how they were installed. I had to decide how to move these materials to my property, how to work them so that they suited my purpose, and how to install them

in a meaningful way, reflecting the cycles of the sun. In the course of this project, I faced many of the same issues that the tomb builders themselves may have confronted.

This is the heart of this project: to use the theories of phenomenology and experimental archaeology to understand, through the medium of the human body, the experience of creating a sun-centered sacred space.

Autoethnography

“Autoethnography is an approach to research and writing that seeks to describe and systematically analyze personal experience in order to understand cultural experience...as a method, autoethnography is both process and product... When researchers write autoethnographies, they seek to produce... evocative thick descriptions of...experience. They accomplish this by... using facets of storytelling... the autoethnographer... tries to make personal experience meaningful...to reach wider and more diverse mass audiences...” (Ellis et. al 2011 p.3,4).

My personal experiences, both during my research in Ireland and construction at home, were recorded through note-taking, journaling, and photography, enabling me to use this method to reflectively analyze, assess, and report my experiences. These data, combined with my background research, serve as the backbone for this paper, and are presented in the form of a relatively linear story that reflects my personal journey through this experience. I have attempted to use “thick descriptions” to bring to life my experiments and experiences for the reader, and to thus illuminate the internal processes that might have taken place in the mind of the individual tomb builder. I have grounded my experiences and my understanding of them within the research and literature. In the end, I bring both my experience and research together into a cohesive whole that helps to

answer the question of whether or not phenomenology can be a useful tool in exploring the prehistoric design and use of sacred landscapes.

PERSONAL BACKGROUND AND PRE-PROJECT SPACE PREPARATION

Personal Background

As a child of the 1980s, raised by a hippie mother in Northern California, my beliefs are understandably eclectic. She taught me an odd mix of Christianity, astrology, and open-minded New Age spiritualism, blended with evolution, skepticism, and a warning not to have “your mind so open that everything falls out.” Needless to say, the idea of creating some kind of outdoor space of my own, away from the hustle and bustle of kids and house and work and everyday life, was with me from the moment we bought our home in 2009.

Pre-Project

We set aside roughly 1200 square feet for my wife to create her own paradise of tomatoes, squash, and beans in one corner of our half-acre lot, and an equal amount of land for me in the other. We began preparing our respective plots, her by killing every living thing, me by planting trees and building garden beds. Three trees serve as the foundation for my space, planted in the spring of 2010 following the great Nashville flood, purchased at a great discount because, in spite of the vast quantities of the stuff flowing down the streets of Nashville, there were shortages of water for drinking and watering plants. I planted them carefully, amended the soil, fertilized, and faithfully

watered and weeded them. I debated staking them upright, worried about them shearing off in summer storms, and invested myself in the land and a *place of my own* for the first time.

More than five years later, these saplings of birch and willow which were once no taller than my 5'3" frame, are the bedrock for my space, towering over me at heights I have yet to measure. I now have to trim lower branches up to a height I can safely walk under, and had to wait when choosing my alignment point for the rising sun to move southward on the horizon because the crown of the willow tree blocked it out.

This project as it is outlined here truly began in the fall of 2013, during a casual conversation with my advisor about my recent study abroad in Ireland and how I could use my honors thesis to deepen my understanding and reflect my interest in Irish Neolithic passage tombs. "How cool would it be if you could build a solar alignment in your back yard and use that as your thesis project?" Those couple dozen words set me on a journey that would take me back to Ireland, deep into the recesses of astronomy, art, and early human religious practices, and back to this odd little space, set aside just for me, waking up before dawn morning after morning watching the sun rise.

The experiences of my childhood, combined with a life-long interest in Ireland and Irish mythology, provided a fundamental framework for my interpretation what was needed to create my own concept of "sacred space." I paired this framework with my experiences abroad to produce a space that is both reflective of my understanding of the sacred as expressed by passage tomb builders in Neolithic Ireland, and of my own interpretation of the idea of the sacred. As I choose the shape and orientation of the space, my foundational deposits, and the symbolism invoked by its visual elements, I drew on

some of the ideas presented in Irish mythology- their calendar of holidays and its symbolism, and their reverence for both the earth and sun (McCoy 1995). Their solar calendar system takes as its holy days the Solstices and Equinoxes, as well as what are called “cross-quarter” days, the mid-point days between solstices and equinoxes. This cycle of holidays is essentially a cyclical calendar that marks the passage of the sun around the earth, with celebratory associations with the cycles of planting and harvesting, the seasons, and the concept of death and rebirth (hÓgáin 1999). Celebrations such as these are found in many agricultural societies across Western Europe, due to similar climatic and agricultural patterns.

Creating Sacred Space

When I officially began this project, the edges of my space were well defined, the points of the compass known and marked. I made foundational deposits each of the cardinal directions of the circle. As I have no interest in ritual sacrifice or hunting, I allowed the offerings to come to me. When we populated our garden pond with a dozen feeder goldfish, some died and were buried under the western stone marker. When a sparrow downed itself in the same pond following a failed hunting trip by my cat, its body was buried under the eastern stone marker. A succession of rodents, including mice, voles, and gophers, presented to me by the same great hunter who failed with the bird, along with a donated deer skull, were interred under the northern stone marker. A dead snake, found in our woodpile, was laid to rest under the southern stone marker.

PHASE I - Tracking the Sun

Tracking the Sun

The earth follows a set path around the sun that varies from season to season due to its axial tilt (Figure 1).

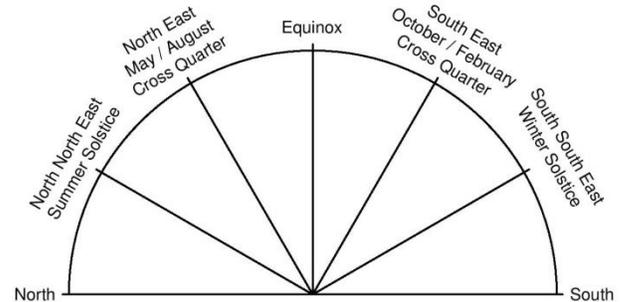


Figure 1 Movement of the Sun Across the Horizon at Sunrise

Thus, though the sun always rises in the east, it will shift along the horizon, rising farther north or farther south than due east, depending on the season. The sun rises due east on the Spring Equinox, appearing to move northward across the horizon until it reaches its northernmost sunrise on the Summer Solstice. It then progresses southward, reaching due east again on the Fall Equinox. The sun continues south as the year progresses until it reaches its southernmost rise on the Winter Solstice.

I began tracking the movement of the sun (or at least writing about it) across the horizon of my back yard in April of 2014, following numerous conversations with Drs. Wallin, Hodge, and McCormack. I began with the rising of the sun around the Equinox. I used bamboo sticks, 4' tall, and 1" in diameter, stuck firmly into the ground to mark the sunrise on both sides of the circle at the equinox. By marking the sunrise in this way and walking directly across the circle, over the known center, to the other side with a length of string, I was able to mark the east-west axis of the space.

Months of waking in the dark and standing in my space in order to capture and record the light in some tangible way has imbedded within me an almost tactile memory

of the quality of light as the sun crests the horizon. Morning after morning, I watched the sky shift from an inky dark blue to a pale, almost white-blue. Just before the disk of the sun popped above the distant, hill-humped horizon, a golden glow of light would gently pour across the sky. Then, the sun would pop above the trees, and the landscape would be flooded with that warm, honey-colored light. There is something special in the liminal time of sunrise and sunset, recognizable today it is known as “the golden hour” for its light quality.

There is a sense of peace in the early hours of the morning, before the world is awake. It seems to be a time set apart, when anything is possible. In our modern world, where we are surrounded by sound and people, constantly bombarded with images and ideas, and overloaded with experience, the time before the dawn feels almost magical in its stillness, as if the world is holding its breath before the day starts. Sunrise feels clean and fresh, full of new beginnings and opportunities.

I would stand, often shivering in my pajamas, feet clad in pale blue rubber boots, my body wrapped in a cardigan or a hooded sweatshirt, and wonder about the people who spent days and years creating a stone monument that was made for this sunlight to be captured and contained. I would think about Newgrange, and the hope it might offer in the middle of winter. About Knowth and the balance achieved at the equinox sunrise and sunset, and about the people who invested themselves and their time into the creation of such monuments, and that many remain standing thousands of years after they were gone. I would contemplate my own project, and how *I* could add to our understanding of these people.

2014 progressed, and I traveled to Egypt, watching the sun rise over the desert with a cup of tea in my hand and a team of Egyptians digging under my supervision in the sand at my feet, and the size of my space shrank. My mind reached out to the problem of an obscured horizon, of marking the sun in my small space, and the difficulties of trees and houses associated with creating this space at the edges of a suburban neighborhood. When I returned, I began to watch the sun through a new set of lenses, ones that assessed the location and duration of the sunrise as it moved across the sky for the ideal day to create an alignment.

In early February of 2015, nearly a year of waiting had paid off and the conditions were right; it was a clear day and I had found a relatively unobscured view of the horizon at sunrise on a significant day in the Celtic calendar. I used a metal shepherds' hook and a metal fork to mark the orientation of the sunrise. I stuck the hook in the east side of the circle and wrapped a length of string around the hook. I then took the string to the west side of the circle and, pulling the string across the marked center of the circle, stuck the fork in the ground where the string crossed the western edge of the circle. This alignment, combined with the marking of the east-west axis of the circle for the equinoxes, offered two opportunities for a possible solar alignment for my project.

Orientation of the Sacred Space

I chose to focus on the October and February cross-quarter alignment for the orientation of the sacred space. In Irish mythology, these holidays are known as Samhain and Imbolc respectively, and there is much tradition associated with them. These two

holidays share a location on the horizon, and they may be seen as symbolic mirror images of each other. Imbolc was the time of the spring lambing season, when the ewes would first get their milk. This holiday marked the earliest signs of spring, and the beginning of the light half of the year as the sun begins to bring fertility to the land. The lighting of fires, as symbols of the waxing sun, is also associated (hÓgáin 1999, O’Gaea 2004, McCoy 1995).

In contrast, the festival of Samhain was known as the beginning of the dark half of the year and the beginning of winter (Terry 1983). This was considered the final harvest, and the time for slaughtering the livestock in preparation for winter. By this time, the leaves had fallen, the harvest was complete, and wild animals began to enter their hibernation. It was believed that on this night the veil between the living and the dead grew thin. Ancestors were honored through feasting and firelight, and spiritual leaders would communicate with the dead for the people. Food was left out for the spirits of the ancestors, and fires were lit to guide them home. (hÓgáin 1999, O’Gaea 2004, McCoy 1995).

There is evidence that some passage tombs may have alignments or associations with Imbolc and Samhain. Cairn L at Loughcrew is a large passage tomb that is aligned to the sunrise on these days, and as it illuminates the chamber, it highlights a limestone monolith that stand within (Waddell 1998, Jones 2007). It is also suggested that the small passage tomb called the Mound of Hostages, located on the mythic seat of the Kings of Ireland known as the Hill of Tara, is aligned with the sunrise at Samhain and Imbolc

(Knowth.com). Listoghil, the central tomb at the Carrowmore mortuary complex, may also have a Samhain/Imbolc alignment (Meehan 2013).

PHASE II - Literature Review

This section offers a brief overview of my ongoing research into the subjects associated with this thesis. I begin with a summary of the cultural context of the Neolithic, starting with the arrival of farming in Ireland, and a discussion of the chronology, morphology, and general development of the passage tomb. I also present some of the current research in the subject of archaeoastronomy and how new approaches are influencing the interpretation of the intentionality of passage tomb alignments. Additionally, I take a critical look at the rise of phenomenology in the discipline of archaeology and try to define its place in modern archaeological practice. Finally, I put into context the ideas of the sacred and the profane, and how these are negotiated in the creation of sacred space.

Cultural Context of the Neolithic

“There was a decisive change in the economy of prehistoric Ireland shortly after 4000 BC, a change that has been traditionally considered one of the characteristic features of the Neolithic period.”
(Waddell 2010:25)

The arrival of farming practices in the form of domesticated plants and/or animals, sometimes called “The Neolithic Revolution,” first appeared in the archaeological record in Ireland around 4000 BC in the form of cultivated grains. The transition from a hunter-gather subsistence pattern to a farming pattern was slow in Ireland, but as it spread, it served to tie the people to the earth, to specific plots of land, in new ways (Hensey 2015). This change brought with it significant clearance of forests, the beginning of territorial ownership of land, and the construction of monumental

architecture. It appears that incoming peoples brought with them wheat, barley, cattle, and sheep, as well as new artifact types and building methods (Waddell 2010).

These changes in subsistence patterns also coincided with the development of settlements; a new type of houses began to appear on the landscape, mostly rectangular in shape, and made primarily of timber. There is some evidence for stone foundations along the walls, as well as floors made of a mixture of stone and beaten clay. A variety of materials have been found in or around these houses, including pottery, basketry, a variety of stone tools, and flint arrowheads. Researchers suggest that there may have been division or separation within the building for different areas of activity, different family groups, or to divide the sexes. Scattered groups of domestic buildings suggest that there may have been cooperative living, either among kin groups or within communities. In spite of these new developments, the light roundhouses that had been the norm in the Mesolithic did not disappear entirely from the landscape; round dwellings, both of an ephemeral and a more permanent sort, are found in context with Neolithic materials. There is evidence for the construction of field walls in some parts of the country, while hilltop settlements and enclosures appear in others (Waddell 2010).

With all of these changes in domestic architecture and subsistence practices, changes also began to appear in mortuary practices. Prior to the arrival of farming to Ireland, there is little to no record of the disposal of the dead. Following the arrival of the first farmers, megalithic monuments begin to appear. These tombs dot the landscape of Ireland today, and archaeologists have grouped them into four distinct types based on their style of composition and the grave goods found within; the passage tomb, the court tomb, the portal tomb, and the Linkardstown cist. Though these monuments certainly

served as repositories for the dead, it is evident that they may also have served as territorial markers, places of reverence or worship of the ancestors, and symbols of power (Sheridan 1994).

As farming spread and previously mobile people began to settle into the landscape, populations began to rise. With this rise in populations, archaeologists also see a gradual shift in social structure, from an egalitarian model, where each member of society has equal access to positions of authority, to a more stratified model, where authority or power within the society is limited to a specific group (Sheridan 1994). Social organization appears to have shifted towards small-scale tribal societies, possibly gaining in size and complexity as populations continued to rise (Jones 2007). The appearance of associated fortified hilltop structures in parts of the country suggests that unrest in the area may be the first signs of such a societal shift.

The Development of the Passage Tomb

There are possible links between tomb-types and shifts in the Neolithic power structure; such shifts are particularly apparent in the progression of changes found in the chronology of passage tombs (Lewis-Williams and Dowson 1993). Hensey (2015) outlines a time-linked progression of change found in passage tomb construction, linked to styles of construction, presence and styles of iconographic art, and overall tomb or cairn size. His typology is broken down into three types: Type 1, Type 2, and Type 3. Type 1 passage tombs are generally the earliest and simplest of the tomb types, typified

by those found in the Carrowmore Megalithic Cemetery (Figure 2), located in the Cúil Irra region in County Sligo in the west of Ireland.



Figure 2 Phase 1 Passage Tomb at Carrowmore

These tombs date to not before 3750 BC, and most consist of five or more small stones, with a rudimentary passage and little or no covering cairn (Hensey 2015, Bergh 1995).

Hensey's Type 2 passage tombs are the most common type of Irish passage tomb, making up nearly two-thirds of the known passage tombs in Ireland. These tombs are typified for our purposes by those found in the Carrowkeel Megalithic Cemetery, located

in the west of Ireland in the Bricklieve Mountains in County Sligo (Figure 3).



Figure 3 Type 2 Passage Tomb at Carrowkeel

The dates for these tombs are difficult to determine due to the limited amount of modern excavation that has taken place within them, but they have rough dates for the commencement of construction at 3600-3500 BC. These tombs are much larger in scale than their predecessors, with covering cairns of up to 40 meters in diameter. The size of the individual stones and the scope of the monuments likely necessitated the mobilizing of larger groups of people in order to construct them. The use of larger kerbstones, laid horizontally on the ground, became the norm, as did longer enclosed passages that led to an enclosed internal place of deposition and worship. More complex chamber types began to be created, with undifferentiated, cruciform, and other multi-chamber types appearing. Corbelled roofs appeared, sometimes in both the central and lateral chambers. Passage grave art began to appear, primarily on the interior of tombs of this type. Purposeful orientation of the passage and opening of the tomb toward heavenly bodies or other objects on the horizon is also incorporated into this tomb type (Hensey 2015).

Hensey's Type 3 passage tombs are some of the largest in size and scope, likely requiring the largest numbers of people, the greatest amount of engineering, and the widest source area of materials to construct. These tombs are typified by those found at

the Brú na Bóinne Mortuary complex, found in the East of Ireland in County Mayo within a bend of the Boyne river (Figure 4).

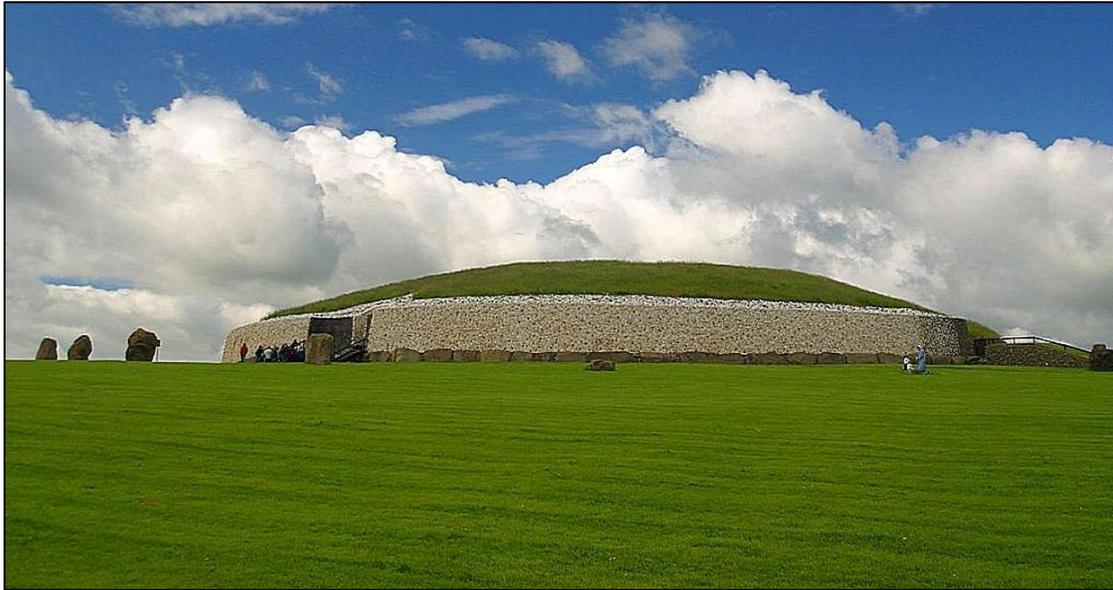


Figure 4 Newgrange Type 3 Passage Tomb

The great mound of Newgrange is enormous, covering an area just shy of one acre, with an internally corbeled roof that rises six meters above the interior floor (O’Kelly 1982). The tombs that make up this type are richly decorated, both inside and out, with many different forms of art and iconography; over two-thirds of the known megalithic art is found on their stones. Though the interior chambers of these monuments expanded with the size of the overall monument, the passage itself remained only wide enough for a single individual to pass through at a time. The construction of these Type 3 tombs appears to terminate in the east with the complex at Brú na Bóinne in 2900 BC (Hensey 2015).

One part of the passage tomb tradition that seems to capture the attention of so many is the sometimes stunningly accurate astronomical alignments. While only a

portion of the existing passage tombs in Ireland have known alignments, this feature of their construction appears to grow in importance over time, culminating in the famous alignments achieved at Newgrange, Knowth, and Dowth in the Brú na Bóinne complex. This facet of their construction is one that continually sparks the interest of the public and raises questions about both the meanings of the alignments and if or to what degree they were created intentionally by the monument builders.

Archaeoastronomy

“The intent of the people should be more interesting than tests for intentionality of a particular astronomical orientation” (Malville 2015:xiii).

There is a spectrum of opinion among those who study Neolithic prehistoric monuments in Western Europe regarding the methods used to demonstrate the intentionality of proposed alignments for individual monuments. When observed phenomenologically or on a plan view map, without the aid of astronomical measurements, many passage tombs appear to align with a variety of heavenly bodies and earthly structures on the horizon. In contrast, when the central axis of a tomb is measured for mathematic precision against the position of the suggested point on the horizon, some tombs fail to achieve mathematical precision for their suggested alignments. These two divergent means of supporting the claim that an individual monument might have an alignment serve as the polar opposites on a spectrum of opinion on the topic.

While it could be argued that any structure on a hillside will command a view of the horizon, and thus that any narrow opening that faces either east or west will eventually “align” with a horizon event such as the rising of the sun, moon, or a

constellation, there is ample evidence that at least some astronomical events were intentionally “captured” in the openings of extant passage tombs (O’Kelly 1982, Jones 2007, Hensey 2015). The key to making such claims about an alignment at any given monument is to be certain that the analysis of the observational data reflects a well-grounded cultural understanding of the significance of such an alignment. As scientists, archaeologists should have a foundational cause for claiming intentionality of such alignments, and the answer to this question of foundational cause is what seems to pull researchers toward one end of the spectrum or the other.

An example of a more mathematical approach to this question is found in Frank Prendergast’s work (2006) in examining the entire known corpus of passage tombs in Ireland using astronomical methods to measure the axis of the passages of each of these monuments. Prendergast argues from an empirical, scientific approach to the alignments, centered on understanding the tombs by gathering empirical evidence of perfect or near perfect alignments with both earthly and heavenly objects at the time of the construction of these central axes. This approach focuses on the tombs’ visual interaction with heavenly bodies or each other, and the ability to posit and empirically support hypotheses about the intentions of the builders.

In contrast, Robert Hensey, his 2008 article, “The Observance of Light: A Ritualistic Perspective on ‘Imperfectly’ Aligned Passage Tombs”, argues for a more cultural and ritualistic vantage point for observing the intentionality of these alignments. Hensey suggests that astronomical precision may have not been as important as the study of the quality of light at a certain time of year, the “capturing” of the light within the tomb, or some other symbolic or ritualistic connection between the observer and the light

or between the ancestors and the light event. This argument suggests that intentionality can be observationally derived, based on a depth and breadth of an understanding of cultural patterning.

An example of these two ideas blending to produce new ideas about the progression and use of passage tombs might be the work of Meehan in “*Listoghil: A Seasonal Alignment?*”, where he explores the possible alignment at Carrowmore, the earliest of the mortuary complexes. Meehan argues that Listoghil, the central monument, seems to be oriented so that it might connect with a more seasonal event, the arrival and departure of winter at the cross-quarter days in October and February, rather than a single day or cluster of days of the year. He further draws comparisons between this possible alignment and the suggested alignment at Mound of the Hostages on the Hill of Tara, which dates to 3350-3100 BC (O’Sullivan 2005), 150 years later than the earliest dates for Listoghil (Meehan 2013).

Clearly, there is room across the spectrum for a variety of approaches in the continued study of the alignments of passage tombs and the intentionality of their builders, especially when blended to create a more complete picture of the actions and activities within the landscape of the monuments. Imperfect alignments of heavenly bodies and intervisibility between monuments, even if not mathematically justifiable, may yet suggest ideas about connected cultural groups, reflecting back to a central ancestral repository, broad connections to pre-existing sacred places on the landscape, or other forms of interconnected ideas and identity. As these ideas of ‘perfect’ and ‘imperfect’ alignments come together, patterns may emerge of increasing precision throughout the construction of these monuments, increased attention to specific solar

events or portions of the solar cycle, or other important cultural or technological developments within the passage tomb tradition.

The method often employed by modern archaeologists to support the intentionality of these ‘imperfect’ alignments is through experiential exploration, visiting the monuments on the suggested alignment dates, and viewing the event from within the tomb. This method of using lived experience to help understand archaeological phenomena is known as phenomenology.

Phenomenology

“... in ... a phenomenological perspective ... the past is understood and interpreted from a sensuous human scale, as opposed to an abstracted analytical gaze ...” (Tilley 2004:xiii)

Phenomenology began as an idea in psychology that claimed that there was no separation between the physical and the mental; we are not disembodied minds, able to experience and explore the world without our physical bodies. The psychological phenomenologists make no mind/body distinction, declaring that without a body the mind has no way to experience the world; it is through our senses that we make sense of the world around us. We cannot touch one hand with the other without being both the thing touching and the thing that is touched; we cannot experience the world around us without interacting with it physically; all of our experiences are embodied experiences. As Tilley said, “An embodied mind is a corporeal, bodily mind, part of culture and part of the world rather than something separate from it.” (Tilley 2004:22).

Archaeologists such as Ian Hodder and Christopher Tilley took this idea of phenomenology, of embodied experiences of the world, and applied it to archaeology.

They paired this idea with the evolutionary understanding that as our bodies are today, so they have always been; the mind of *Homo sapiens sapiens* has not significantly altered since we arrived as a species, thus modern bodies can have the same embodied experiences that our *Homo sapiens sapiens* ancestors had (Tilley 2004, Hodder 1986). However, Tilley, Cummings, and Hodder took the idea of phenomenology out to its furthest reaches in the 1980's and '90's, making claims about the intentions and motivations of the monument builders that they had no way to validate through traditional academic models, and pushing the edges of the ideas presented by their philosophical predecessors (Barrett and Ko 2009). These claims early in the introduction of the method, combined with the backlash against them, sometimes cause phenomenology to be viewed with a certain amount of skepticism amongst more traditional archaeologists (Barrett and Ko 2009).

Those who use this method of exploration today recognize the limitations of the model. In spite of our equitable ability to experience the world around us, modern archaeologists have cultural, ideological, and technological barriers to having the exact experience of our ancestors. Changes in cultural and natural environments can change the perceived experience and individual experience may not produce universal results. Despite these limitations, aspects of the method have come to penetrate archaeological thinking, and phenomenology has become a recognized way to approach archaeological problems (Hurcombe 2007, Prendergast 2006).

Phenomenological thinking has crept into even the most conservative modern modes of exploring archaeological sites as seen in the ways that modern archaeologists view an embodied approach to the landscape, monuments, and material culture. Hensey

(2015) states “There is, I believe, a kind of knowledge that can be acquired ... One can slowly take in subtle details of a monument or place ... This ‘soft knowledge’ compliments and informs the hard knowledge that is the conventional goal ... of archaeological work.” (Hensey 2015:vii). This highlights the current use of phenomenological ideas in archaeology; the grounding of personal experiential data in the existing literature in order to create a more complete picture of the archaeological world. Other practices, such as the intentional walking of the landscape in order to understand it both physically and culturally, founded in ideas of embodied experience, have become prevalent practices among modern archaeologists (Personal communication Moore 2015, Jones 2015). Similarly recognized is the experience of forced body positioning that is present at many passage tomb sites, as visitors are forced to bend beneath, climb over, and crawl through a variety of stone lintels, sills, and narrow passages in order to get to the central chamber of the tomb (Hensey 2015:35). The evaluation of material culture may also be affected, as archaeologists are moving beyond traditional seriation and typology, and are now looking at both the sensory perception and the materiality of the object, which has direct ties to phenomenology and the embodied experience (Hurcombe 2007). Each of these examples demonstrates ways in which phenomenology is used in the exploration and examination of megalithic sites and their associated material culture.

The phenomenological experience of visiting an intact or reconstructed passage tomb is one that is not easily forgotten, from the act of moving through the landscape to your arrival at the entrance, the monument rising before you, a looming reminder of the fleeting nature of human life and the permanence of human creation. The physical act of

entering the tomb, crossing the kerbstone perimeter, under the great covering cairn, down the narrow passage, climbing over and ducking under sills and lintels, to emerge in the central chamber is a journey in and of itself. It is believed that this journey was intentionally created by the megalithic builders to separate the sacred interior of the chamber from the profane world without.

Separation between the Sacred and the Profane

“The architecture at many passage tombs in Ireland wrap the monument in a multiplication of bounded spaces, which must be crossed to gain access to the central chamber. Passing stone settings outside the entrance ... the crossing of a kerbstone ...and the various thresholds along the passage ... can all be linked to ... journeying to the ‘Otherworld’ or another ... narrative associated with ancestor worship.” (Moore 2016).

The name passage tomb may be somewhat of a misnomer. In spite of the presence of human remains within the confines of the structure, these imposing monuments clearly served as more than a simple resting place for the dead (Dowling 2006). The passage tomb might be seen as a form of social and religious architecture, created to serve multiple functions within the society that built them (Bergh 1995). The nature of the deposits within the tombs suggests that they were repositories for the ancestors, who were likely revered and possibly feared, and who could have served as intermediaries with the ‘Otherworldly’ forces of nature or the gods (Jones 2007, hÓgáin 1999, Moore 2016). The people who constructed these monuments used a variety of landscape, architectural, and symbolic features to create a separation between the profane world outside and the sacred world within.

The landscape in which the monuments are situated may have served as a visual or physical boundary between the ancestors and the population. Hensey (2015) describes the complex of Brú na Bóinne as ‘island-like’, as it is surrounded by the Boyne and Matlock rivers, and Moore (2016) suggests that “... rivers and fords ... acted as potential thresholds into a scared landscape”. Similarly, the locations of Karrowkeel and Loughcrew, situated on the tops of their respective mountain ranges, do not facilitate easy access by a casual traversing of the landscape. Even the relatively accessible lowland location of Carrowmore is bounded on three sides by a series of lakes, rivers, and bays, and by a nearly uninterrupted ridge of mountain ranges that topographically define the area of the Cúil Irra Peninsula on which it is centered (Bergh 1995, Meehan 2013).

Guillaume Robin (2010), in his article “*Spatial Structures and Symbolic Systems in Irish and British Passage Tombs*”, compares the entire monument itself to a system of symbolic layers that enclose and encircle the inner chamber. These layers are made up of elements that may vary from monument to monument, but include: pre-cairn or subterranean foundational deposits of human or animal bone, pre-cairn concentric circles of boulders and/or ditches found between the outer kerb and the inner chamber, interspersed layers of clay, soil, or turf in the covering cairn, the covering cairn itself, the finished kerb, the sills, orthostats, and lintels that bisect the passage and define the inner chambers, and even the placement of specific art motifs around and within the chamber itself. While some of the structural elements of this list may be explained by their function within the architecture of the mound, others have no functional explanation, and must therefore serve some kind of symbolic purpose (Robin 2010).

These layers of materials, iconography, and landscape features all serve as boundaries and barriers between the sacred and the profane, emphasizing the intentional separation that was made between the two. This separation might have been created to contain the spirits of the ancestors (Tilley 2007), to distinguish the elite who were able to enter the chamber from the masses (Lewis-Williams and Dowson 1993), or to signal to the people that this was a place of transformation (Fowler and Cummings 2003).

Though we can only speculate about the intentions of the designers of these tombs, the nature of these structures do make a few things clear. First, that "...there is an evident preoccupation with the ordering and control of access to parts of the tomb interior." (Waddell 1998:110). Second, that "Elements of architectural design and landscape setting at these passage tomb clusters contain concepts of crossing physical and symbolic thresholds." (Moore 2016). Finally, that each of these elements of design and construction served to invest these "... enclosures ... with profound symbolic and ritual significance ..." (Dowling 2006:16).

PHASE III - Going Abroad

For the experiential research portion of my project, I traveled to Ireland, using the methods of phenomenology to collect data about the major passage tomb complexes. At first blush, these experiences may seem to be single-sided, individual accounts of these sacred places; however, when grounded in the existing literature and understood within a phenomenological framework, these experiences helped to shape my design and creation of a sacred space. While in Ireland, I made use of a mix of note taking, journaling, photography, and voice recording to capture my experiential data. I traveled to Ireland for a total of 14 days, from May 20 – June 1, 2015 (Figure 5).

I arrived in Dublin in the afternoon of May 21, and took my first few days in country to adjust to the time difference, confirm my appointments, visit the National Museum of Ireland- Museum of Archaeology, and attempt to meet with archaeoastronomer Dr. Frank Prendergast. When I was done in Dublin, I returned to the airport to rent a car and ventured out alone into the Irish countryside. My first stop was the Loughcrew Megalithic Passage Tomb Complex, and I spent half the day on a self-guided tour of this site. When I was done, I departed County

Research Trip Itinerary

May 20 - June 1, 2015

Day 1- 2: Flight to Dublin

Day 3-5: Meet with Dr. Frank Prendergast, visit National Museum of Archaeology

Day 6: Rent Car

Tour of Loughcrew

Take car to Sligo & meet with Sam

Day 7: Guided tour of Carrowkeel w/ Sam

Day 8: Meet Dr. Robert Hensey

Guided tour of Carrowmore w/Sam

Take Car to Galway

Day 9: Meet with Dr. Carleton Jones and Thor McVeigh, NUIG
Visit Charlie Byrnes

Day 10: Drive back to Dublin

Day 11-12: Prehistoric Society Europa Conference 2015

The Origins of Monumentality,

Day 13: Tour of Brú na Bóinne

Day 4: Flight Home

Figure 5 Research Trip Itinerary

Meath and drove west toward County Sligo to meet my friend and host, archaeologist Sam Moore. I spent two days with Sam, and he gave me a guided tour of the Carrowkeel and Carrowmore Megalithic Passage Tomb Complexes, as well as introducing me to archaeologist Dr. Robert Hensey and showing me a myriad of other archaeological wonders in that part of the country. On May 26, I departed County Sligo and traveled south to Galway, where I had studied abroad at National University of Ireland, Galway in 2013. While in Galway, I met with Dr. Carleton Jones, an archaeologist and professor at NUIG, and Thor McVeigh, a doctoral candidate. I also visited Charlie Byrne's, a used bookstore in Galway with an extensive selection of new and used books on Irish archaeology. On May 28, I returned to Dublin to attend the Prehistoric Society's 2015 Europa Conference, whose topic was "The Origins of Monumentality." This conference brought together some of the biggest and brightest stars of Irish archaeology, and I spent two days listening to papers and presentations about the subjects of monumentality and megalithic architecture. The conference itinerary included a tour of the Brú na Bóinne Megalithic Passage Tomb Complex, complete with guided tour by the curate of the site of Newgrange, a tour of Knowth with its lead excavator, Dr. George Eogan, and a unique visit to the site of Dowth, all with two busloads of archaeologist and prehistoric enthusiasts. On June 1, I returned to Nashville with a full brain and a very tired body.

Going abroad for the primary purpose of conducting research was a very different experience. I struggled with finding time to write while abroad. I stayed in a hostel in Dublin, with friends in Sligo, and in hotels in both Galway and during the conference in Dublin. Finding a balance between connecting with my hosts and writing about my experiences was difficult. I recorded my experiences using voice recording on my phone,

in my journal, and in a small notebook that went everywhere with me. Now as I am writing, I am struggling still to put into intelligent words all that I experienced.

Expectations based on reading

Archaeological plan-view drawings and flat, technical descriptions do little to bring to life the sweeping, dramatic landscape of Ireland. My previous experience at Newgrange and my reading about the individual complexes left me unprepared for the sheer physicality of some portions of my trip. I had seen a few aerial pictures of Carrowkeel and Loughcrew, and a number of pictures of individual tombs, but I had never understood their commanding place in the landscape.

As a World Heritage site, Newgrange is a highly manicured site that is accessible to all; the interior might be difficult to navigate, but nearly anyone who can afford a ticket can go and see the monument. My previous experience at Newgrange influenced my expectations for the accessibility of the other sites, and thus my choices for footwear and clothing when I packed; I did not expect to be climbing up steep slopes or tramping through bogs to visit these sites. My very American understanding of how such sites would be treated, protected, and used certainly influenced my expectations; I expected that the other three complexes, as well as the rest of the complex at Brú na Bóinne, would be similar to what I had experienced at Newgrange. I knew that Carrowkeel might be a bit wilder, as my reading noted that it was mostly located on private farmland, but I assumed it would be similar to my trip to the Burren: a long walk, certainly, but nothing too difficult.

Newgrange and Carrowmore, with their lowland locations and easy walking paths over relatively smooth terrain, were both accessible and familiar to me in terms of the layout and composition of the interpretative museum and grounds. Loughcrew and Carrowkeel are an entirely different matter. Though portions of Loughcrew are maintained, with manicured stairs for the initial climb from the carpark, a delineated path, and a fence around the cairns themselves, anyone not up to a long uphill walk would have difficulty visiting the tomb. Carrowkeel is not for the faint of heart, and I was completely unprepared for the terrain, the size of the complex, or the beauty of the landscape.

Loughcrew

I landed in Dublin and spent my first couple of days in Ireland adjusting to the time difference, connecting with friends, confirming my appointments, searching through used bookstores for sources, and visiting the archaeological museum. Once I had picked up my rental car and adjusted to driving on the other side of the road, my first stop was the Loughcrew passage tomb complex, also known as Slieve na Cailleige. This megalithic cemetery is found in the west of Ireland in County Meath and is situated on the tops of a collection of hills covering a 3km area, and containing at least 25 passage tombs, grouped into three primary areas of activity (McMann 1994). Due to the constraints of time, logistic considerations, and accessibility issues, I was able to visit only one of these three centers, what is now known as Carnbane East, which has Cairn T as its' focal monument. Cairn T has a corbelled roof that is mostly intact, as well as extensive carving on the interior and the exterior of the tomb. There are bars fitted across

the entrance, and it is only by going to the Loughcrew Garden Café and obtaining the key that I was able to gain entrance.

I had lunch at the Café, collected the key, and drove back up the road to the gravel carpark. When I got out of the car, I was struck simultaneously by the remoteness of the location and the manicured nature of the entrance. Concrete steps, bordered on either side by dry-stacked stone walls, lead from the car park to a well-worn path up the hill. From this direction, the monument was completely hidden from view and I wondered what the original approach to the cairn would have been.

As I began my ascent up the path, I noticed large rocks and boulders scattered across the slopes, and bucolic white sheep quietly munched on grass, unaffected by my presence. As I crested the top of the hill, I stopped to take in the view. There were few clouds in the sky, and I felt as if the whole of Ireland were stretching out around me. I recalled that someone once said that one could see Newgrange and Tara from Loughcrew, if one knew where to look, and I wished that I did.

Cairn T and its surrounding satellite tombs are enclosed by a short fence, likely there to keep the sheep out, and accompanied by a small informational board that explains briefly in both English and Irish the origins of the monument. The number of visitors surprised me; this place seemed remote enough to prevent most people from even knowing it exists, let alone how to get here. Two or three families with pre-teens, a few twenty-somethings, and a woman in her late fifties were all on the hilltop when I arrived. The woman and I stood and read the information board together, and she told me that she lived nearby when she was young. Her eyes picked out a house on the landscape below, and she pointed toward her childhood home. She recalled how she used to play around

the monuments as a child, and how different attitudes had been about their preservation and care.

Some of the families were peering into the tomb, and I felt the weight of the key around my neck. I knew that I would be held accountable for any damage to the inside of the tomb while I held the key, and I was hesitant to take a chance on letting anyone in. At the same time, I wanted the kids swarming the entrance to be able to connect to this place. My sense of personal preservation won out for the moment, and I waited for them to move away to another portion of the complex before I opened the door and entered.

I locked myself in and took my first breath inside the monuments at Loughcrew. I tried to let go of my worries about the kids and the key, and focus on my time in the monument. I was aware of the need for preservation, and was careful not to touch the artwork as I moved over the sills and ducked under the lintels that serve as the guardians to the heart of the tomb. Some of the water-worn stones along the passage are deeply carved with classic iconography and something inside me stirred, raising goosebumps on my skin. I felt the weight of the stone above me, the heaviness of the years around me, and I realized that this was the first time I had ever entered a place like this alone. I was able to explore at my own pace, to connect to the monument in my own way, unfettered by a guide or an audience. It was both freeing and frightening, and the reality of the true beginnings of my phenomenological research settled over me as I stepped into the central chamber.

I stood up in the chamber and the corbeled roof soared high above my head. Light from the damaged roof above and open doorway behind filtered in. At first it was hard to contemplate the tomb, to take it in as noises from outside drifted in from the passage and

down from the grated repair to the capstone. Children were running and jumping on the top of the cairn, their happy voices ringing, and their feet creating a dull pounding sound inside. I assured myself that the reconstruction would be sound, that this tomb had stood for thousands of years and that I would not be crushed as the roof collapsed under the pressures of those standing above, or they never would have let me in.

When my eyes had adjusted to the dim interior and I began to examine the central chamber, I was surprised and a bit horrified to find large, black spiders above my head and on the orthostats and sillstones that guarded the left and right chambers. My fight or flight response caused my adrenaline to spike as my arachnophobia took over. I froze in place, and tried to contain myself. They had hard, spindly bodies like black widows, and I feared that they were poisonous. I took a couple of steps into the center of the chamber to remove myself from the possibility of having one of them drop on my head. I shined the flashlight on my phone into the darkness-filled right recess and saw at least a half-dozen spiders. The left recess was similarly guarded and dark. I debated with myself about crossing the sill and going in anyway, but fear kept me back. I found the central recess to be free of the creatures, and took a deep breath. I could not allow fear to prevent me from accomplishing my work, and if spiders were the price for working in these monuments, I would have to adapt. I put on my raincoat, zipped it, and pulled up the hood. Checking my fear and gathering up my courage, I climbed over the sill and entered the central recess.

Once I passed over the sillstone, the space felt quite large. I fit comfortably inside, with the slightly corbelled roof rising above me, and the decorated orthostats surrounding me. I sat cross-legged on the floor with my back straight and took a breath. The voices

outside faded and I closed my eyes. I felt connected to the place; as if in sitting there, part of me had become fitted into the monument, as if I were somehow communing with my own Irish ancestors. As I sat there, my eyes closed, my breathing quieted, my senses filled with the sense of the place- the smell of earth and damp, the feel of the cold stones beneath my body, and the simultaneous muffling and echoing nature of the corbelled chamber. My mind moved to living rites of passage, envisioning what it must have been like to be surrounded by the remains of the ancestors, spending the night in the chamber. Lying in the dark in an altered state, waiting for the sun to rise. Feeling the slow glow of the sun on my face...

I was just realizing that I had limited time at the site, that I can't spend enough time alone and quiet to soak it in, when a small voice called out "Mom, there's someone in there!". A disagreement ensued about my presence, as I stayed quiet and attempted to regain my moment of peace. I acknowledged that my moment of experience was past, that I had miles to drive before I reached my lodgings, and I began to take a critical look at my surroundings. I examined and photographed the artwork, chambers, and passage, unsure about what would become important later.

Emerging from the tomb, the light seemed brighter, and the day warmer, than it had when I had entered it. I locked the door behind me, and explored the other tombs on the hillside. Cairn T is surrounded by six mostly ruined satellite tombs of a similar age and design. As I walked among them, I wondered about them; some were small, with similar cruciform chambers, while others may have been undifferentiated, but they were too ruined to tell. I began to wonder if the larger, central tomb might be more for the

ancestors and for transformational rituals for the living, and perhaps the smaller more for the more recently deceased.

I made my way back down the hill toward the carpark, my mind reaching out to the next stage of my journey. I would be leaving the east of Ireland and heading west across the country to County Roscommon and County Sligo, to meet with friends and researchers, and to see the complexes of Carrowkeel and Carrowmore.

Carrowkeel

“... located in the Bricklieve Mountains in south-east County Sligo, Ireland ... are arguably the most dramatically located ... due primarily to the physical and geo-chemical processes over immense time periods that have given this karst landscape its highly distinctive ... form” (Moore 2016).

Sam Moore, an archaeologist and lecturer at Institute of Technology, Sligo, served as my host and guide during my stay in the northwest, and he took me all over County Sligo, showing me not only passage tombs, but also other Neolithic monuments and areas of local interest. The bog covering much of the site of Carrowkeel is difficult to slog through, and I was not truly prepared for my journey into the past. I had to borrow socks, a fleece, short rubbers, and hat from my host.

The Carrowkeel Megalithic Complex is spread across the tops of the Bricklieve Mountains. These tombs are difficult to get to; blanket bog covers much of the terrain, and hiking up and down bog-covered hills is a physically challenging experience for

those unused to the task. The views from the tops of the mountains are spectacular, and a careful observer can pick out the small humps of cairns on the surrounding hills, typically located on the north end of the summit (Moore 2016).

Sam and I drove down a windy narrow road, typical of the Irish countryside, to the foot of the Bricklieve Mountains. A single sign marked the entrance to the complex, and I had to hop out of the car to open the metal cattle fence to let Sam into the property. I closed the gate behind him and hopped back in his little sedan. Sam began telling me about the history of the area as we climbed up the gravel road, and I furiously scribbled notes into my little notebook. We arrived at the end of the road and parked at the base of the mountains. We both got out and Sam led the climb.

I had never tramped through a bog before, and I was fascinated at the unfamiliar texture of the ground. The undulating nature of the bog compared to the rocky outcroppings made for uneven footing, and I took some time simply learning to walk on this new terrain. I spent most of the climb to Cairn E studying my feet and the ground, trying not to fall on my face. There were understandably few tourists here, as the sheer physicality of getting to the tombs would keep the casual visitor away.

When we reached the top of the mountain, I caught my breath and, as I looked around, the sheer beauty of the surrounding landscape struck me. I felt as if the whole of Ireland stretched out in every direction around me, as if I could see the blue of the ocean in the distance. I felt like I was touching the sky. I imagined that, on a cloudy day that feeling would be multiplied.

We approached the first tomb, Cairn E, and I began taking pictures like a maniac. I examined the tomb from every angle, and Sam described the features of the tomb, the

grave goods that were found within it, and its connections to other tombs. His encyclopedic knowledge and engaging style of presenting allowed me plenty of space to listen while still taking in the monument. He paused in his narrative to ask me if I could see what the tomb pointed toward and, as I looked down the passage and out across the landscape, I saw in the distance a flat-topped mountain with a small grey hump at its summit. I asked Sam what it was, and he told me it was Queen Maeve's Cairn, standing sentinel on the horizon above Carrowmore on the mountain known as Knocknarea.

This pattern repeated itself again and again, with Sam asking me as we approached some apparently random pile of stones or a half-ruined tomb, "What do you see?". He and I spent hours scrambling up and down the mountains, he imparting his knowledge of the place in small, digestible pieces, as I scampered to keep up with his wiry frame. Many of the tombs had been inexpertly "excavated" by R.A. McAllister at the turn of the century, and his digging of the tombs left little behind for modern archaeologists to salvage.

At one of the cairns, Cairn K, Sam squatted down, picked up a hunk of quartz larger than his hand, and showed it to me, telling me that there used to be many more, about the size of a closed fist, but that they were just the right size for carrying away, which people often did. He put the piece back and set a bit of limestone rubble over the top of it to hide it from view. We talked about the prevalence of quartz at the entrances to the passage tombs, and the possible reasons for these deposits, about the liminal nature of the entrances and passages, and the idea of the layers of stone "wrapping the monuments" in layers of transition and protection.

One unique feature of the Carrowkeel complex is the presence of one of the earliest known Neolithic habitation sites in Ireland. Sam led me down one mountain and up another to the plateau that contains the remains of these houses. I was privileged to meet Stephen Berg and Dag Hammer, two well-known archaeologists who were engaged in the final stages of recording these structures. After making introductions and catching up with his mentor, Sam led me around the area, challenging me to find patterns of houses in the chaos of the exposed bedrock, and pointing out features in others.

Few of the tombs have open passages that one could enter, and most were ruined, their passages and chambers open to the air. By stepping inside their bones, I could get a feel for the space that they occupied, their layout and rough orientation, and their situation in the landscape. Of the three tombs we were able to enter, Cairns K, G, and B, each had tiny entrances, barely large enough for me to fit through. The passages were usually filled to the tops of their sill stones with rubble, leaving Sam and I crawling on the hands and knees to enter.

Cairn B was the last tomb we entered, situated on the steepest easternmost hill. As Sam led the way up the steep side of the hill, I wondered if I would be able to get back down on my feet, or if I would have to settle sliding down on my seat. I spent much of the climb pulling myself up the slope using trees, grass, and rocks. After hours of walking in borrowed boots on uneven ground, I hoped that the climb would be worth it. The view from the top was breathtaking, and the tomb impressive. Sam entered first, and I followed, sliding past the stinging nettle and scooting along, feet first, down the short, narrow passage. The space inside this smaller monument was more confined, and the low, corbelled ceiling and small recesses felt more intimate. Sam and I used the flashlight

on my phone to find the reason we were there, the prize for the climb, the only known piece of passage tomb art in the complex, nearly worn away in the back recess.

I wiggled my way out of the tomb and returned to the world outside. As we made our way down the gentler side of the hill, I felt somehow reborn. These mountaintop monuments had made their mark on me. I was intrigued by these relatively unexplored tombs, by their situation in the landscape of the area, and in their position in the progression of the passage tomb story.

Carrowmore

Sam and I traveled to the Carrowmore complex the following day. Carrowmore is located in the west of Ireland in County Sligo, at the geographic center of the Cúil Irra peninsula. This peninsula is bound on three sides by a series of lakes, rivers, and bays, as well as a nearly uninterrupted ridge of mountains, many containing later passage tombs, and all of which help to define and separate the area. Carrowmore is the earliest of the passage tomb complexes, dating to not before 3750 BC, and encompasses close to 60 tombs. The complex has experienced multiple excavations dating back to the early nineteenth century. Göran Burnholdt conducted the first modern excavations between 1977 and 1981. Dr. Stefan Bergh, a current researcher and professor at NUIG, revisited the findings from these excavations for his doctoral dissertation completed in 1995. With so much history and attention attached to this site, I was eager to visit.

There is a small carpark that sits just off a quiet country road, attached to a small visitors' center and museum, which offer an overview of the history and mythology of the area. The complex is well maintained, with markers set into the grassy ground at each

of the satellite tombs. In spite of its lowland location, the landscape setting of this site is awesome, with 360° views of the surrounding hills, and a wide-open expanse of sky. I could imagine that looking up at the night sky would feel like staring into the depths of time.

The building that houses the visitors' center and museum is located at the rear of the central cairn of Listoghil, and the paths leading from it wind circuitously around the monument to its' opening in the southeast. Listoghil was impressive. The sheer size of the cairn was overwhelming, growing ever larger as I approached it. The mound is 34 meters in diameter, rising 4 meters above the ground, and it seemed to take forever to move around it.

The tomb originally lacked a passage, so in order to allow visitors to see both the scale of the covering cairn and the interior tomb, it was reconstructed with the cairn on the outside, and the area around the tomb at the center of the mound left open. In order to achieve this, a series of gabions, what appears to be a retaining wall of chain-link fences three stories high, was erected to contain the cairn and keep in from falling inward. This unique design enables the appearance that the cairn is intact from the outside, offering an experiential understanding of the size and grandeur of the cairn, while allowing visitor interaction with the tomb contained within. Unfortunately, the resulting effect is that the interior looks like a scene from a maximum-security prison, which dramatically reduces the experiential impact of the tomb.

The surrounding manicured lawns and minimalist satellite tombs, while elegant in their simplicity and stunning in their landscape setting, left me experientially bereft. Although I wished that I could pick one of the five-boulder chambers up and put in my

pocket to take home with me, and my mind was on fire with the idea that *this* was the sort of passage tomb that I could make myself at home, overall I felt little sense of the sacred there.

Brú na Bóinne

The Brú na Bóinne complex is the final, penultimate expression of the passage tomb tradition. Built around 3000 BC, this impressive complex consists of three central mounds, Newgrange, Knowth, and Dowth, as well as a host of satellite tombs, and each of these central mounds cover over an acre of land. Each of these three great tombs also have their own solar alignments; Newgrange and Knowth capture the rays of the sunrise and sunset on the Winter Solstice respectively, and Dowth, with its back to back passages, captures the light of both the sunrise and the sunset on the equinoxes. This area has been declared a World Heritage Site by United Nations Educational, Scientific, and Cultural Organization (UNESCO), and thousands of visitors flock to there each day.

By this point in my trip, I had not slept for more than six hours a night for the better part of two weeks, all of which had been filled with peak experiences and the constant pressure to *perform*, to impress, to meet the expectations of my committee, my financial supporters, my mentors, my family, and myself. I had met with researchers who had scoffed at my project, and had been told that phenomenology was not worth my time. I had just finished two days of an amazing conference that was for me akin to a mental boot camp, packing my brain full of the latest research and developments in the field, while I attempted to lay the foundations for my PhD and future career. I was mentally

and emotionally exhausted. It was this exhausted, mentally overstimulated, and nerve-wracked state that served as the backdrop for my experiences at Brú na Bóinne.

Newgrange

Newgrange is a world-renowned monument that has thousands of people pass through it every day. Tours are typically limited to groups of twelve, and each group has only 15 minutes inside the monument. As visitors stand outside waiting for their turn to enter, an experienced tour guide explains briefly the history of the monument and the rules that have to be followed to pass within. Once inside, the guide explains some of the key elements of the chamber, highlighting the sophistication of construction and artistic design. Then the guide has everyone clear the center of the chamber and the passage entrance, and turns out the lights in order to recreate the sunrise alignment on the winter solstice via a series of artificial lights. Visitors are able to watch as the light creeps up the passage and illuminates the triple spiral carved in the central recess of the cruciform chamber. When this is over, visitors are given a few more minutes inside the tomb before being gently ushered back down the passage and out of the monument.

My first experience with Newgrange was during a summer Study Abroad program to Ireland that I participated in during June and July 2013. Though a visit to Newgrange was not part of the excursion schedule for the program, I made arrangements to leave the group and make the trip from Galway to Newgrange on my own. It was a defining moment for me. When I left the confines of Newgrange that day, my mind was

afire with the knowledge that this is what I wanted to study: these people, this time, this kind of place. I finally had a definite path for my future, and I was ready to start upon it.

I was excited to have the opportunity to repeat this amazing experience as part of this project. Two busloads of archaeologists and prehistoric enthusiasts descended on the visitors' center en masse, where we were shepherded through the line and out the door and directed to quickly make our way to the smaller busses that would take us up to the foot of the monument. Disappointed that I would not be actually visiting the visitors' center and the tantalizing gift shop, I stayed with the group. We crossed over the River Boyne, talking and laughing as we went.

Once we had all arrived at the foot of the hill, the monument rose above us. It was just as I had remembered it; an enormous man-made hill with kerb stones the size of small cars surrounding it. The façade of the tomb rises high above, covered in gleaming quartz and ocean-rolled granite rocks. The kerbstone in front of the passage is highly decorated, with undulating curves, concentric lozenges, and an enormous triple spiral. The group split in to two groups of twenty or so, and as luck would have it, I was in the first group to enter the monument.

Our time was not limited as it is in a typical tour, and I was able to go more slowly down the passage, taking in the art as I moved. I noticed that all the carving is on the right hand side, both as you enter and exit, and that it is positioned to only be seen that way. We were all able to take pictures of our own, and I felt exhilarated to be able to do so. Unfortunately, the chamber was clearly designed for smaller groups of people and, once we were all inside it was difficult to take the photos I would have liked.

The guide did an excellent job of highlighting aspects of the tomb, and the questions from the gathered brilliant minds around me were engaging. When she asked us to clear the floor for the recreation of the solar alignment, I was at the back of a group of much taller people, and we packed ourselves in to clear the space. I was unable to see any of the recreation, and I was glad that I had been to the monument before and that I had my previous experience to draw on, both personally and for my project.

When we emerged from the tomb, small groups gathered to discuss their experiences and the meaning of it all. I stayed at the edges of the group, listening and participating at intervals. We moved around the monument in a small mass, continuing our discussions and pausing at will to examine some part of the landscape or kerb. When the second group had finished their time inside the monument, we made our way back to the busses to continue on to the nearby site of Knowth.

Knowth

The mound at Knowth has two back-to-back passages contained within. One faces due east, and the other due west, so that the light of the sunrise and sunset on the equinoxes penetrate their inner chambers. The site contains the large central mound and 18 satellite tombs that surround it. The internal structure of the mound was damaged by a succession of settlements on its summit from the 7th century AD through at least the 1600's, which prohibits visitors from entering the passages and chambers. However, Dr. George Eogan excavated Knowth from 1962 through the late 1980's, and a small section of the mound remains open for visitors to enter and see a section of one of the passages, as well as some of the internal structure of the mound. One hundred twenty-six heavily

decorated kerbstones surround the mound. These stones, when combined with the decorated orthostats on the interiors of the monument, represent the highest concentration of megalithic art in the world.

We were fortunate to have Dr. George Eogan with us, and he led the group in a tour around the mound, discussing the excavations and artwork as he walked. The unfortunate combination of my impaired hearing, Dr. Eogan's quiet voice, and the windy conditions of the day prevented me from hearing him. I felt saturated with information and chose instead to wander around the monument on my own. I was not the only conference member to choose this route, and we ambled along amiably, occasionally stopping to discuss the art, our ideas, and our experiences of the day.

The art was incomparable to anything I had seen before, and I struggled to take it in. I took picture after picture of the kerbstones, hoping to somehow capture their beauty. The kerbstones are highly decorated, except at mound 13 and 14, which are so close that a single individual would struggle to pass between them and the central mound, and at mound 16, which great mound actually overlaps. Unlike at Newgrange or Carrowmore, the satellite tombs at Knowth cluster tightly around the central tomb, like ducklings around their mother.

I completed my tour of the mound with a climb up the staircase at the side of the mound in order to see the panoramic view from the top. The wind whipped in my hair, and the sun warmed my face, and I felt a momentary respite from the inundation of information and experience I had received so far. Someone came and pointed out to me where, in the distance, we could see our last stop; the mound of Dowth.

Dowth

Dowth is the last of the great mounds in the Brú na Bóinne complex, and the one I was least able to experience. The tomb was inexpertly excavated in the mid-nineteenth century, damaging it and preventing access to visitors today. No modern excavations have been undertaken, and therefore little is known about this monument. Our visit to the mound was brief; we were able to stand outside one small portion of the mound and get some idea about the scale of it, but even limited exploration of the exterior was not permitted.

PHASE IV – Construction

Introduction

My phenomenological experience with the ancient passage tombs of Ireland left me with greater determination to engage with the earth and sky in a meaningful way. I left Ireland and the sacred spaces abroad with renewed spirit to create a sacred space at home that reflected my own sense of the sacred. Upon my return to Tennessee, I began to mentally and emotionally process my experiences, and to develop and execute my plan for constructing this astronomically-aligned space while deepening my understanding of the literature.

Site Plan and Materials

The site for the construction of my sacred space consists of a roughly circular cleared area, 9.8 m in diameter, with sparse plantings of trees and bushes around its perimeter, a grassy central open space, and surrounded by a bed of mulch that ranges from 1.4 m to 7 m wide. I created a solar alignment made of stone that is oriented toward the sunrise on the February and November cross-quarter days. I collected or purchased my supplies, and used only modern equivalents of the tools available to the original builders to move the stones into place and to work them. I leveraged my social network to raise the human-power needed for construction, much as the builders in prehistory must have done. I used a large recumbent stone and a large upright stone to mark the alignment points, akin to the kerb -and orthostat stones found at many passage tombs, but

on a much smaller scale. I decorated them with iconography reminiscent of that which appears in these tombs, but which connects to my own concept of the sacred.

My aim was to use primarily local materials, with a focus on obtaining them at little or no cost from private sources, but in the end, I had to purchase some of my supplies locally due to the scarcity of such materials in the area. Limestone, the primary building material for the stone circle, was obtained from local resources, with the largest of the stones obtained from the construction spoil heaps at the rear of my neighborhood; the builder granted permission to remove stone from this area. The cedar tree that is used to delineate the entrance in the west was obtained from a farm in Lebanon, Tennessee.

The various landscaping materials used, including the 4x4 posts, concrete, mulch, birdbath, and stone bench were all obtained through the use of my personal household budget, and no funding from the university or other outside sources was used. The primary purpose of the construction of this site was the actual experience of constructing it. As such, there was a tension between the required level of permanence of the elements of the construction for the project and the desired level of permanence for my continued use of the space. There is a constant juxtaposition within this project between the current understanding of ancient practices and my translations of those practices into something with meaning and continued use for me personally. These tensions and juxtapositions are part of what gives this project depth beyond a research project, a trip abroad, and a landscaping project; when taken together, the foundations of the literature, informed by an intentional experience, culminating in an experimental project, push these individual actions into the realm of thesis.

Elements of modern landscaping were needed due to the reality that this project is an attempt to create a sacred landscape within a modern context of a backyard within a small neighborhood. As such, I took steps necessary to draw in to my project space what I felt were the key elements of sacred space from my experiences, with an understanding that they had to fit into my own personal landscape with an eye to safety and symbolism, rather than literal translation and one-to-one relationships. Much of the landscaping portions of the project were achieved using traditional methods with modern tools to ensure the permanence and safety of the space. Although the arbor that serves as the southern divide between the circle and the yard could have been achieved through the use of dry-set posts and mortise and tenon joints, my spouse and I determined that these methods would be suboptimal for the extended use of the space. Dry-set posts are much more likely to give way under the stress of supporting a vigorous climbing plant such as the wisteria that is planted there. Similarly, mortise and tenon joints, unsupported with screws or nails, can be unstable when executed by carpenters unfamiliar or unpracticed in their creation and execution such as ourselves. Given my desire for a lasting space, we decided that these elements of construction would be executed using power tools, a level, a manual post-hole digger, and pressure treated lumber. Many of the plants that help to serve as a screen for the area had been slowly planted in the years prior to the construction of the space, however they were chosen with an eye to the use of space in which they are placed, and additional plants were added to complete the desired plan. Landscaping river rock and local limestone were used in conjunction to define the dry creek bed in the west, and purchased cypress mulch and pine straw are used as not only a

weed barrier, water saver, and soil amender, but also to help define both the outer limits of the space and the paths and entrances.

Safety

I wish I could say that no one was hurt during the construction of this project, but I cannot. Following my return to the U.S., I was enamored with the idea of constructing a replica of a tomb found at Carrowmore; these small passage tombs seemed to me to be the perfect size for a back yard, well within the grasp of a few individuals working together to construct. I unfortunately underestimated how heavy rock is. I enlisted the help of a friend to assist in moving the three or four large stones I selected from the pile at the back of my neighborhood to my driveway. He had a truck, is rather intelligent, and as a former Navy Seal, a competitive natural body builder, and all-around tough-guy, so I assumed he would be ideal to help me assess the stones and determine the best way to move them. In true Navy Seal fashion, he dove right in on moving the stones. He tried to find a balance point for the first stone so he could pick it up and put it on a furniture dolly, but he was unable to do so. When setting the stone down, he “squished his finger a bit” under the stone. He shook his hand and walked away, so I thought nothing of it. It was not until after we had rocked, slid, and heaved the next stone into the truck and were returning for the third that I saw the blood dripping from his work glove. He insisted on “finishing the mission” of moving the last stone as his glove continued to drip large droplets of blood all over the stones, the 4x4 leveraging post, and the 2x12 lumber ramp we were using to move the stone from the pile into the bed of the truck.

When the two of us finally got the third stone into the driveway, I insisted that I look at his hand and clean his wound. His glove had to be soaked in water before it could be removed. When we removed it, I was horrified to discover that the bed of his fingernail had broken through the skin of his finger and his fingernail was now only attached to his finger by the cuticle. We soaked his hand in saltwater, and he began to go into shock. I had him lay down on my sofa while I applied an icepack to his chest and soaked his hand in an antibacterial solution. An hour later, the wound was still bleeding. He agreed to go to the doctor, so I bandaged his hand with the only absorbent sanitary item I had; a maxi pad cut in half & taped down with sport tape. Hours later, he called to tell me that he needed to go to an orthopedic surgeon to have his nail sewn back into place because they couldn't stop the bleeding at the family physicians office, and that his fingertip was broken.

Following this, the idea of asking my friends to help me move two more large rocks, with the possibility of additional injuries, lost all appeal, and I rethought my designs.

He was not alone as a casualty in this process. I wanted a cedar tree for part of the space, so I went to a friend's farm to choose one and cut it down from the forest on her property. There were a few bumps along the way...

I arrived at the farm and we rode down to the edge of the woods, taking both her kids and mine with us. We all got out of the car and dipped into the cool shade of the forest, exploring their wildlife as we went. We crossed under a barbed wire fence and headed into a small clearing, when suddenly there it was- a single, slender cedar, struggling to break through the deciduous canopy. We all took turns cutting it with a

handsaw. It seemed to speak to us of where it would fall, how to cut it, as it bled heartwood sawdust onto its roots. My son and I, along with my friend and her son, worked together to move the tree, lifting and pulling it through the woods. When we reached the edge, I worked to bend and weave the branches of the underbrush, along with some saplings, out of the way of our path. Unfortunately, I missed a dead tree amongst the living.

As we pulled and pivoted our tree out of the brush, we heard a loud crack and a large, dead tree broke from its base and came falling towards me. I luckily moved to get out of the way, taking the brunt of the blow on my left arm. It drove me to the ground, and I rolled out of the way, landing in a puddle and soaking my clothes.

Waves of pain, weakness, and tingling ran down my arm as nausea and darkness moved over my body. I sat for a while, stunned and shocked, fighting not to pass out, to stay upright in front of my son and friend. When I was able to stand, I worked to attach the tree to the car and drag it from the forest. Together, we were able to pull the tree free and get it into the trailer.

With the collecting of my materials complete, I headed home to finalize the design, gather my social network, and begin the construction of this sacred space.

Building the Arbor

A six-foot, dog-eared fence wraps around our property, and serves as a logical border for the northern and eastern sides of the project space, while two mature birch trees provide a natural screen that equally binds the west. The southern border of the space was the most exposed portion of the circle, with a wide-open view of the space for

my nearest neighbor due to the position of their raised deck. In order to mitigate this effect, an arbor was built in that portion of the circle. This arbor was constructed of 4x4 posts set in concrete, connected by lengths of 2x10 lumber set into, and attached to, metal joist hangers. This arbor also serves to further separate the inside of the space from the outside, and to provide a structure for the recently planted wisteria to grow on.

Construction Days

I called upon my own social network to help me with the final construction phase of the space, sending out invitations over social media and following up with individual text, email, and Facebook messages. I set the date for the construction event for August first and second, a Saturday and a Sunday, so that I would have the largest number of my social network able to attend and participate in the project. In the traditional Celtic calendar, these are dates of Lughnasa, the festival of the first harvest and of the God Lugh. Symbolically, this linked together the Celtic year and its symbolism with my own cycle of harvesting, as the construction phase of the space can easily be seen as the first-fruits of my research, as well as a harvest of time and energy expenditure from my friends.

We began the day Saturday by moving the large stones into place. The sled was built of two 9' 4" 2x4 runners with a small, 23 ½" x 36 ½" x 5", pallet screwed to it, and a 46" long 2x4 cross-bar. Two 75' lengths of rope were tied to the crossbar and runners, with loops knotted at regular 18" intervals along their length. The three largest stones, each weighing between 200 and 600 pounds, were stacked in my gravel driveway. We used two 8' 2x4's to lever the largest, approximately 600 pounds, onto the pallet portion

of the sled, which was reinforced against breaking with two 18” to 24” scraps of 2x10 lumber. The stone was strapped down with two ratchet straps, then the entire sled was heaved by the cross bar by three individuals, with a fourth levering from behind, until it rested on the mulch just inside the gate that separates the driveway from the back yard. Once the sled rested on the mulch, six individuals, three on each side, grabbed the ropes and began pulling on the sled in unison, while another guided the crossbar. The mulch was a better than the gravel of the driveway, but it was still difficult to move the sled. Once the sled hit the dew-dampened grass, it moved with surprising ease, given the size and weight of the stone (Figure 6).



Figure 6 Construction Team Moving the First Stone with a Sled

The individual at the crossbar moved to the back of the sled to help guide it across the lawn. The stone and sled were moved close to the expected final positions, and modern, rounded shovels were used to dig a socket slightly larger than the rounded end of the stone, centered on the alignment point in the East. Two 4’ 2x4s were used to create a bridge across the socket, so that the stone might be removed from the sled, turned in

place, and lowered in with the desired faces in the appropriate places. The same 2x4 levers were used to shift the stone off the sled and into position.



Figure 7 Placing the First Stone in the Circle

Small pieces of limestone were used as chinking stones to hold the stone upright while the soil that had been removed from the socket was put back in around the stone (Figure 7). Two by four scraps were used to pack the soil, removing any pockets of air that might eventually lead to the stone shifting or falling.

The second stone, approximately 400 pounds, was moved in a similar manner, with the stone placed in a recumbent position parallel to the axis of the intended alignment. A third stone, approximately 200 pounds, was small enough to be carried by just two strong men, and was set across the entrance of the path in the west, serving as a logical barrier between the sacred inside of the circle and the profane outside of the circle, much as the sill stones of the passage tombs. Similarly, at each access point to the

circle, a larger stone was set across the path to serve as a threshold that must be crossed to enter the sacred space. These entrances are situated on compass points around the circle at east, southeast, south, southwest, west, and northwest. Access would be difficult, if not impossible, at the northern and northeastern compass points. With the largest stones in place, the group split into smaller groups, working in tandem to set smaller stones upright around the perimeter of the circle, further separating the space within from the space without (Figure 8). Due to the heat of the day, we stopped work around noon and shared a meal before dispersing.



Figure 8 Setting the Perimeter Stones

On Sunday, a slightly different group of friends came to complete this phase of construction. Since the large stones were in place, we were able to dig the hole and set the final post for the arbor. A wide bed of mulch was spread in the garden beds, which help to create a further separation between the profane backyard and the internal sacred

space. The remaining paths were laid out radiating from the compass points at the edge of the circle to the edge of the mulch, creating access to the surrounding yard. The remaining perimeter stones were set upright, and a dry creek bed was made in the west. Additional plants were planted in the garden beds, and quartz was spread around the entrance stones, serving as spatial markers of transitional space as it does at passage tomb entrances (Twohig 2004, Hensey 2015, Jones 2007, O’Kelly 1982, Fowler and Cummings 2003). There was a designated photographer for both days of construction, and many members of the construction party brought their children to help and play.

Mulch Border and Pathways

The deep mulch border that surrounds the sacred space was designed to mimic the function of cairn, creating visual impact and physical separation between the mundane world outside and the sacred world within (Robin 2010). Similarly, the pathways were intentionally made narrow to allow only a single individual to enter at a time. This design element mimics the entrances to the passage tombs; in spite of the increase in mound size and passage length over time, the width of the passage remained relatively unchanging, allowing for only a single individual or a single-file line of individuals to enter at a time (Hensey 2015). Similarly, when I trimmed the lowest branches of the birch trees in the west, I left them lower than head-height so that the average person entering the space from the west would have to bow down under the branches. In many passage tombs, the lintels are low enough that one has to bow or even crawl to enter the passage (Hensey 2015). This type of body positioning and restricting of ingress is also evoked in my use of

larger upright stones at the end of each path, paired with plantings or stone piles that are intended to logically restrict movement into and out of the space. In order to enter or exit, one must change body position and allow a free-fall like movement in order to pass over these sill stones (Hensey 2015).

Decorating the Stones

This was the final construction phase of the project space. Visitors had come to see the progress of the space, and I added additional plantings to the mulch beds in order to further direct visitors to the paths, forcing them to step over the sill stones. I finished the mulching of the beds, and spread pine straw on the paths to further define them. I also added colored metal posts, fitted over rebar that was set into the ground, to help with the visual marking of the paths. I finally cut the cedar tree into two posts that were stripped of their bark, oiled, and then set into the ground to define the primary western entrance. The last step of this final phase was to decorate the two major stones in the circle.

The most heavily decorated stone is the stone in the east, over which the sun is intended to rise on the cross-quarter day. This stone, decorated with a spiral, concentric circles and rectangles, and a diamond pattern,

serves to draw the visitor entering from the west further into the space (Figure 9). A chevron motif was placed on the wide right-

hand side of the stone, demarcating the liminal position of this stone (Robin 2010).



Figure 9 Eastern Decorated Stone

I worked with a local artist to design the elements of the decorations, with an eye to the art of the megaliths, the shape of the stone, and my own personal connection with the decorative motifs. Before he began carving, he drew the designs on the stone with a piece of natural chalk, recovered from one of the bags of landscape rock. The choices of placement and motif were made through a conversational process between the artist and me, with an emphasis placed on those

motifs that spoke to me. The artist wanted to keep the feeling of the art as close to that of the tomb builders, and I

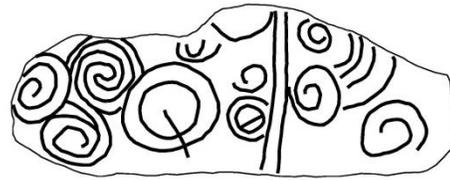


Figure 10 Western Decorated Stone

left him to work the stone himself,

carving the designs with a small flat-head screwdriver and a hammer. The limestone was very soft, and the cortex of the stone chipped away easily, revealing a starkly contrasting dark grey core. The finished product is one that recalls elements of passage grave art, while still evoking for me a sense of the sacred (Figure 10).

With the artwork complete, the alignment marked, and the basic elements of the space in their rightful places, this phase of this project is complete. This space will continue to change and develop, as I hope will I and my relationship with it. I cannot say even that the learning phase of this project is complete, only that this thesis stage is finished, as I hope to continue learning from this space and the experience of creating it, as I move forward into the next leg of my journey as a student and scholar.

PHASE V- Results and Meaning-Making

The accomplishments of this project are multifold. I have conducted a data collection and research trip abroad (as opposed to study abroad or recreational travel). I have experienced firsthand some of the passage tombs of Ireland, and have incorporated those experiences into my personal understanding of an individual human relationship with a solar-aligned sacred space. Finally, I have used those understandings to construct a modern American analog to an ancient practice of observing and marking the passage of the sun, investing the sacred space with symbolism and meaning.

Results

The sacred landscape covers a 196 square meter area in the northeastern corner of my property (Figure 11). The interior of the sacred space consists of a roughly circular grassy clearing averaging 9.8 meters in diameter. The edge of this circle is defined by a series of 116 stones, which have been set into the earth so that they stand upright. This circle varies in height between a scant 4cm to over 68cm, with the average height ranging between 15-26cm. Surrounding this stone circle is a wide bed of mulch, ranging in width from 1.4m in the east, 3.7m in the northeast, 50cm in the north, 7m in the northwest, 2.7m in the west, 1.9m in the southwest, 1.2m in the south, and 1.9m in the southwest.

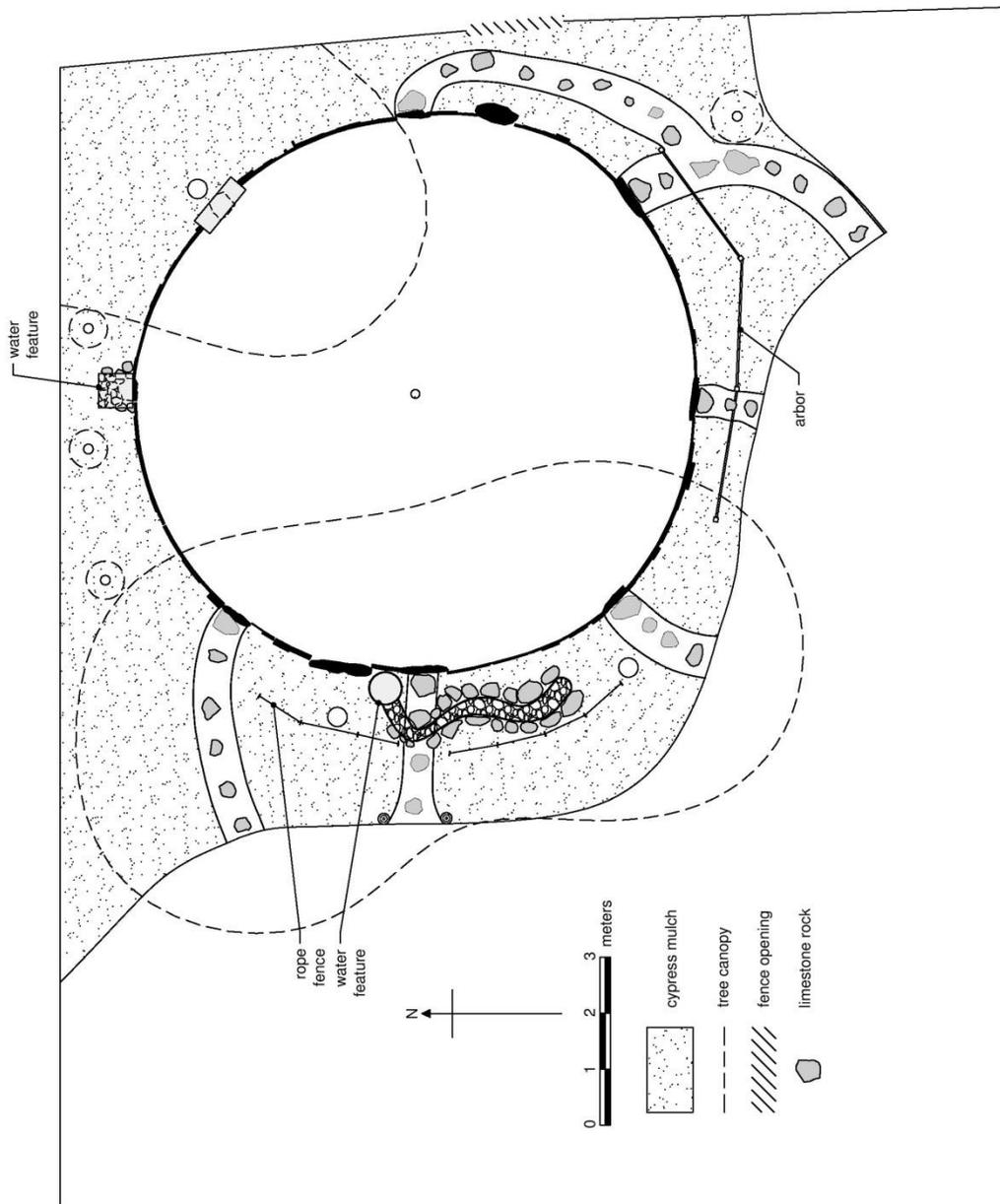


Figure 11 Plan view of the Sacred Space

The northern and eastern edges of this space are delineated by a 1.8m dog-eared privacy fence. A 3.4m tall, 7m long arbor stands in the mulch bed in the south. Two mature birch trees stand in the southwest and east-northeast, along with two post and rope fences, which curve 1-1.5m from the edge of the circle. A cement birdbath, 61cm square, stands at the northern compass point with its southern edge terminating just outside the circle's edge. A cement bench, 101cm wide and 35cm deep, stands at the northeastern compass point, with its southwestern edge resting inside the circle. A mature willow tree stands in the northeast, just behind this bench.

Six pathways, each between 50cm and 1m wide, cross the mulch bed, connecting the circle to the exterior of the space at the eastern, southeastern, southern, southwestern, western, and northwestern compass points. Two cedar posts define the outer edge of the western path. A large sill stone is set upright at the interior end of each of these pathways, with the individual stones ranging from 24cm- 53cm tall. A dry creek bed courses through the western mulch bed and crosses the western path 1m from its terminal end at the circle. Each of the cardinal and ordinal directions is marked with a large, flat stone, set in the mulch bed. Where this stone is incorporated into a path, it is surrounded by a band of quartz up to 5cm wide. A foundational deposit of faunal remains, which serves to sanctify the space and set it apart from the mundane landscape, has been made under each of these stones.

The central stone circle was created with two large stones set opposite each other in the east and west, creating a central axis for the circle that should align with the rising

sun on October 31 and February 1, known from the Celtic calendar as Samhain and Imbolc respectively. These stones are heavily decorated with passage tomb style art, and the western stone is marked with a wide vertical band of carving that should be illuminated with the sunrise.

The construction of this landscape has been an all-encompassing personal experience that spanned over two years, encompassed two trips abroad, required many hours spent tracking the sun, filled long days of shaping the landscape, and spread across months of research. I have sacrificed and struggled as an individual in the creation and execution of this project, and I have grown because of it.

Personal Relevance

As Van Gennep says in his *Rites of Passage*, “So great is the incompatibility between the profane and the sacred worlds that a man cannot pass from one to the other without going through an intermediate stage.” (Van Gennep 1960:313) Each student experiences this intermediate stage, in the form of finals, exit exams, purchasing regalia, and deciding what to do after graduation. The Honors College has codified this intermediate stage in the form of the honors thesis - a trial by fire that must be successfully passed in order to receive the accolades of graduating from the institution. I proposed that I was entering this process consciously, knowing it to be a transitional rite and one that would transform me from an unpublished undergraduate to an honored baccalaureate.

The task of creating an honors thesis is daunting, the process of writing it all consuming, and the completion of it extremely rewarding. Having completed the

research, design, execution, and write-up of the project, I would now boldly say that the purpose of the honors thesis is not to create data or add to the corpus of the discipline, as it is with a Masters' thesis or Doctoral dissertation, but rather to transform a student into a scholar. I can say that for me it was truly transformative. This project has shaped my understanding of the theoretical constructs that shape the field of archaeology today, deepened my appreciation of the thesis and dissertation process that I have committed myself to, and has sharpened my ideas about my own future within this discipline. I feel better prepared for the rigors of a Master's program, the intensity of an academic career, and a lifetime spent in the exploration of Neolithic Ireland.

Conclusions

There is something about the lived experience that cannot be replicated any other way. The experiences I gained in Ireland, walking the landscape and entering a wide variety of passage tombs, could not have been replaced through any amount of reading of books or watching of videos. The smell of the earth and stone, the movement of the body through the landscape and through the monument, and the interconnectedness of the monuments, these things can only be dimly understood through the study of maps and descriptions. The dangers of construction and the gravity of the undertaking to build in stone and wood can only be made real through the building process. The way the body gives under the weight of the stone and the recognition of individual and personal limitations cannot be reached unless one steps out of the library and into the field.

The experience of walking an unfamiliar landscape, not just to take in its beauty, but with a critical eye for the shape and composition of the world cannot be replaced.

There is no other way to gain a truly emic understanding of the landscape but to spend time in it and study it, creating a mental landscape from the physical one before you. Even those who are familiar with the area can gain new insights if they approach the familiar with new eyes and with a different perspective on the world around them, as can be offered by this method.

On one hand, it is only with the foundational knowledge gained by background research, grounded in an understanding of the surrounding archaeology, that academic conclusions about such personal experiences can be reached. It is the grounding of the experience in a corpus of knowledge, and in a body of shared experiences, that moves it beyond a personal, ephemeral one and into the realm of an academic or scientific process. On the other hand, it is the personal, first-hand knowledge that lends weight and credence to conclusions made about matters beyond the raw, categorized data offered by the remains of material culture. In that same vein, personal experience within the monuments and the surrounding landscape can lead to better and different questions being asked of both the site and the materials.

The experience of construction is equally illuminating. Standing on a wooden ramp precariously resting atop a pile of rocks, sloping to the bed of a truck, while pulling with all of my might on a strap-wrapped boulder, more than twice my weight, with a body builder wielding a 12-foot four-by-four post as a lever to push the rock towards me down the ramp as the rock remains still, puts the size and scope of the construction of a monument like Newgrange into perspective. In our highly mechanized, modern, culture, we do not typically work with stone or wood; we spend our lives many times removed from the process by which the materials that makeup the things around us are acquired.

The experience of having to find, acquire, and transport the necessary supplies from my own environment was an integral and invaluable part of this project. It is one thing to understand intellectually the construction methods of a pre-industrial society, is a rather different thing to undertake the construction yourself and to know first-hand the feeling of physically doing it. Such an experience pushes the researcher outside of their modern mindset and helps them to connect with and appreciate the process of construction.

Meaning making in a sacred space is difficult. While some parts came naturally, other parts were a struggle. I knew the process would change me personally, as I believe it has, but I also set out some specific questions to answer about the archaeological process and the utility of experimental archaeology and a phenomenological approach. “Can megalithic monuments be better understood through a phenomenological process that experiences them firsthand in their own physical landscape, and then experiences the process of building an analogous structure within my cultural landscape?”. The answer to this question is a qualified yes. There are limits to the approach, and the astute researcher will be cognizant of those limits when utilizing it to understand people of the past.

Two questions from my original plan remain unanswered: “What purpose did the alignment serve? Why did these people go to so much effort for these monuments?” In retrospect, I am not surprised that I do not have an answer to these questions – these are the broad, big-picture questions that anthropologists have always asked and will continue to ask. What I have accomplished here is to test one set of models of inquiry to see how far they could take me towards answering such questions, to begin assembling the toolkit of archaeological methods and theory that I will implement as I move forward in my career.

Postscript

Following the formal completion of this thesis, I was able to test the accuracy of my alignment by observing the sunrise on the morning of October 30, 2015. This date is one of the shoulder days of Samhain; I chose to observe the alignment on this date due to predicted cloudy skies on the traditional cross-quarter day, October 31 (Figure 12).

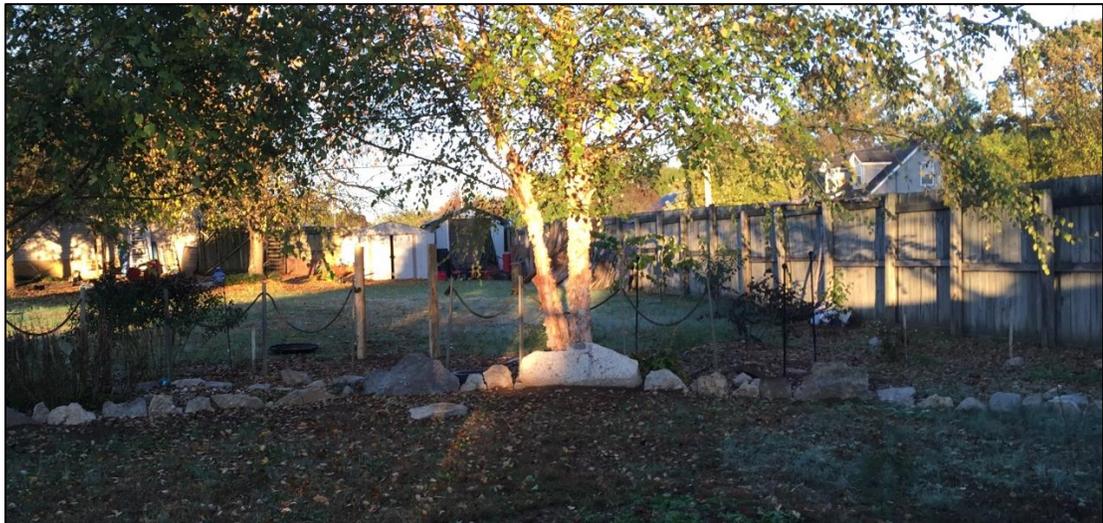


Figure 12 Sunrise on the Recumbent Stone

I stood alone in the stillness of the morning and watched the sun crest the horizon, pour across the landscape, and finally enter my now completed sacred space. I held my breath, hoping that all of my hard work would come together in both a recognizable solar alignment and a meaningful experience.

The alignment didn't appear as I expected it to, with the sun's rays hitting the wide band at the center of the stone. Instead, the light slowly descended on the circle, first illuminating the triskele on the southernmost end of the recumbent stone. Although this was not what I had planned, the beauty of the symbolism struck a deep chord for me, and I could not be more delighted with the outcome (Figure 13).



Figure 13 The Illuminated Triskele

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