

The Ritual Origins of the Roof-Box at Newgrange

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## Abstract

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This thesis explores the unique archaeological feature of Newgrange known as the roof-box, which was rediscovered after the excavations carried out at the site in the 1960s by Michael J. O’Kelly. This rediscovery led to the realization that the roof-box is in fact an open structure that is aligned with the winter solstice sun, and that the solstice sun annually penetrates the passageway illuminating the chamber of the tomb. Since this discovery, Newgrange has grown into a major tourist site that is focused on the solstice phenomenon. This thesis will examine concepts of ritual throughout history in association with the roof-box and winter solstice. It will also examine concepts of authenticity and public ritual in the form of modern tourism, and the various ways in which the roof-box at Newgrange is interpreted.

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## Newgrange and the Roof-Box

The megalithic passage tomb of Newgrange is one of the most important archaeological and cultural heritage sites in Ireland. It is also one of the most fascinating sites due to its unique archaeological feature known as the *roof-box*. The roof-box is a stone structure situated above the passage tomb entrance which allows the winter solstice sun to enter the narrow passage way and illuminate the dark chamber within the tomb. Although Newgrange has gone through numerous changes throughout the years, such as the excavation and reconstruction carried out by Michael J. O’Kelly and the Office of Public Works in the 1960s, the nature of the roof-box and its authenticity has been a continuous topic of inquiry. Was the roof-box found to be preserved in its original structural form when it was rediscovered during excavations in the 1960s, thus reflecting its original function? Or was the structure of the roof-box altered over the years, specifically during the reconstruction and excavation, to be deliberately aligned with the winter solstice sun?

Newgrange dates to 3200 B.C. which makes it older than both Stonehenge and Avebury, and it is also several centuries older than the pyramids of Egypt (O’Kelly 1982, 7). Newgrange is located in the Boyne Valley of County Meath, Ireland, about 1 kilometre from the River Boyne and 14 kilometres near the mouth of the river near the town of Drogheda, which is about 50 kilometres north of Dublin (O’Kelly 1982, 13).

There are over forty other prehistoric sites that are also situated throughout the landscape of the Boyne Valley, and more than half of these sites are passage tombs (O’Kelly 1982, 13). The two most dominant and numerous types of burial monuments in

Ireland during the Neolithic period were court tombs and portal tombs, both are represented by over 470 sites across Ireland. The second most common type of tomb in Ireland are passage tombs which are represented by over 200 sites all varying in size and importance (Flanagan 1998, 44).

Court tombs consist of a varying number of chambers laid out in an infinite variety of arrangements with a main gallery that connects to each individual chamber, or sometimes a dual-burial gallery, all of which are enclosed in a small mound or cairn of stones. Portal tombs are thought to be developed from court tombs and are similar in arrangement (Flanagan 1998, 47-50). Passage tombs are another common type of burial monument consisting of a long passageway which is typically located on higher ground, hills, or the summits of mountains (Flanagan 1998, 61). Megalithic art in the form of carvings is also a distinct feature associated with passage tombs which can be found extensively at Newgrange and the Boyne Valley (Flanagan 1998, 61).

Although Passage tombs consist of long passageways leading to a chamber, they are universally covered with round cairns rather than long cairns like other types of tombs, and have the tendency to be situated in clusters known as a 'cemetery' or 'necropolis' (Flanagan 1998, 62). In the Boyne Valley, clusters of small passage tombs are situated around the three larger more prominent passage tombs of Newgrange, Knowth and Dowth (Flanagan 1998, 44). Newgrange is surrounded by three smaller individual passage tombs, as well as other remains such as standing stones, enclosures and tumuli (O'Kelly 1982, 13). Northwest of Newgrange is the passage tomb of Knowth, which has seventeen smaller passage tombs surrounding it. Finally, the passage tomb of

Dowth lies east of Newgrange, and is surrounded by two other small passage tombs (O'Kelly 1982,13).

Inside the mound of Newgrange is a long and narrow passageway leading to a cruciform shaped chamber. This passageway and chamber are comprised of large, heavy slabs that were built entirely without mortar, hence the classification of a 'megalithic' passage tomb (O'Kelly 1982, 13). The overall structure of Newgrange is circular, and is covered with a mound or cairn of loose medium-sized water rolled stones that are about 15-22 cm in average diameter (O'Kelly 1982, 21). These stones are interspersed with layers of turves which are made up of organic material such as turf, humus and other types of soil and vegetation (O'Kelly 1982, 85).

Surrounding Newgrange is a non-concentric circle of standing stones, with the nearest circle 7 metres from the edge of the cairn, and the farthest circle 17 metres away from the cairn (O'Kelly 1982, 13). Only 12 stones out of a possible 35 to 38 have survived and are irregularly spaced, except for 3 of the largest stones that are located opposite the tomb entrance and stand on average 2.5 metres above ground level (O'Kelly 1982, 13). In addition to the non-concentric circle of standing stones that surrounds Newgrange, there is a kerb of slabs that line the cairn and sides of the mound. These 97 massive slabs are long and laid horizontally around the base of the mound (O'Kelly 1982, 21).

Newgrange is unique compared to other nearby passage tombs within the Boyne Valley as well as other passage tombs throughout the rest of Ireland since it is the only known passage tomb with a roof-box structure (O'Kelly 1982, 93). The Roof-box sits above the passage tomb entrance, resting partially on top of two different roof slabs. It is

90 cm in height, 1 m wide, and 1.2 m from front to back and it is open at the front which allows the Winter solstice sun to directly shine through the narrow gap and into the passage chamber (O’Kelly 1982, 21).

The earliest written account of Newgrange was in 1699 by the Welsh scholar Edward Lhwyd who wrote several letters following his careful examination of the site during his tour of Ireland. In a letter dating to 15 December 1699, Lhwyd described Newgrange as being a ‘cave’ that had been opened not long before his entry, and that there was an entrance stone, or a flat, broad stone that was ‘rudely carved’ and placed edgewise at the entrance. Lhwyd wrote that the long narrow passage tomb increased in height until it led to a 6-metre-high cave, or chamber with three cells. He also described the presence of many stones to have ‘barbarous sculpture’ (cited in O’Kelly 1982, 24).

Despite Lhwyd’s detailed observations of the entrance of Newgrange, the roof-box had gone undetected for centuries and was covered by the overgrowth of vegetation and soil that had been used for grazing farm animals. By the 1830s, antiquarians and scholars began writing about their observations of the protruding stone in more detail. This stone was described as a horizontal stone lintel with carved lozenges along its edge. As a result of these early observations, the roof-box eventually earned the name the *false lintel*. The term itself also has its origins in the observations of Newgrange in 1847 and 1849 by antiquarian Sir William Wilde, who wrote that in the 1840s a local gentleman cleared away the stones and rubbish and brought to light a remarkable stone that sloped outward from the entrance of the mound (cited in O’Kelly 1982, 36). Wilde also wrote of ‘the edge of another very curious, and most exquisitely carved stone’ that was found ‘projecting from the mound, a short distance above, and within the line of the present



entrance' which may 'decorate the entrance into some other chamber, which further examination may yet disclose' (cited in O'Kelly 1982, 36). After these observations the roof-box became known as a *false lintel* due to the belief that it could possibly lead to another passage entrance (O'Kelly 1982, 36).

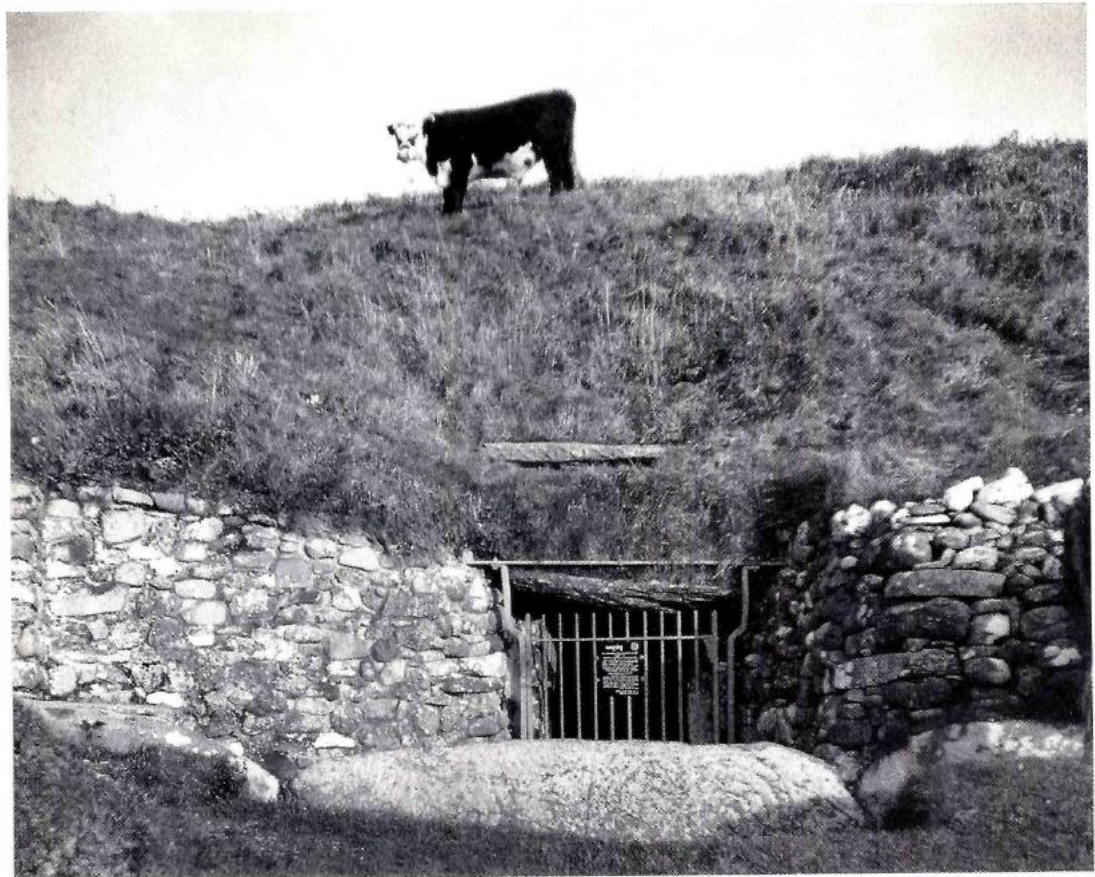


Figure 1. Michael J. O'Kelly, 'The entrance to Newgrange as it appeared in the romantic days of candlelight and cattle,' Newgrange, 1982, 57

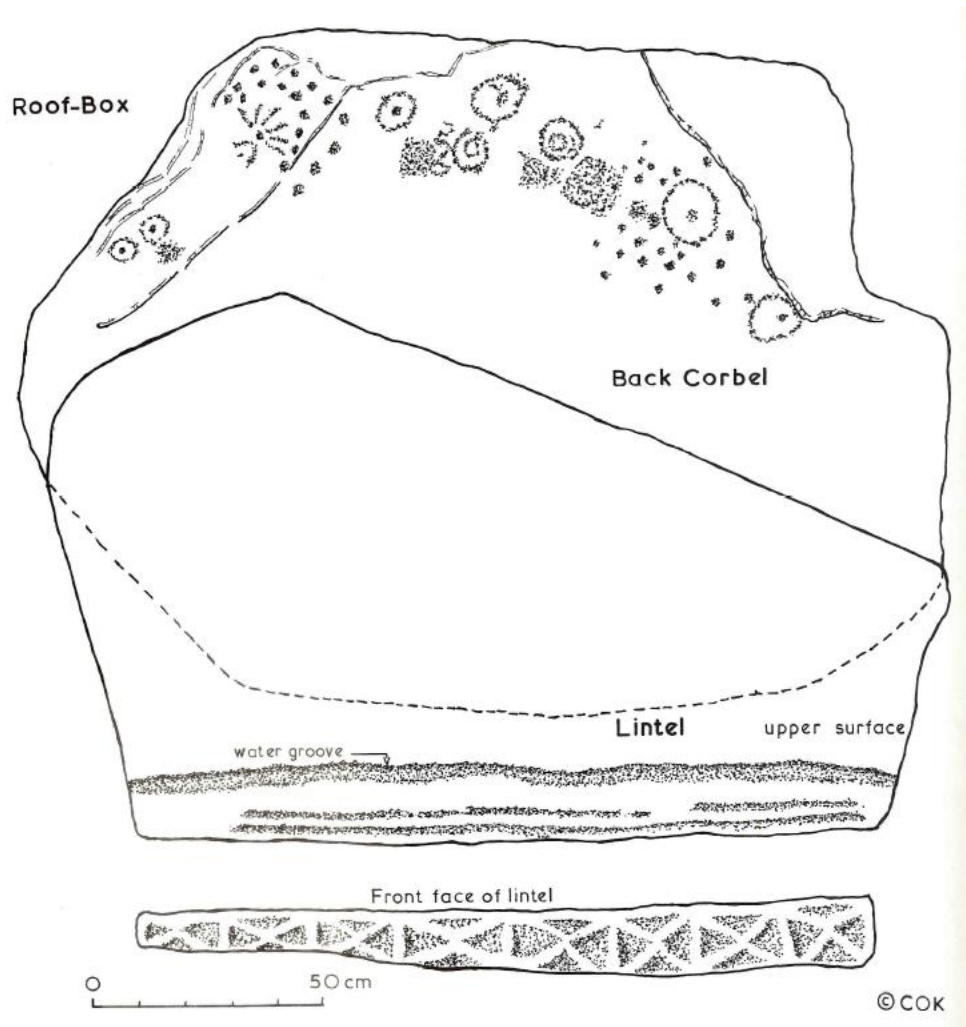


Figure. 2. Michael J. O' Kelly, *Roof-box Lintel, Newgrange*, 1982, 182

It was not until the 1960s when a thorough excavation was carried out at Newgrange by Michael J. O'Kelly, followed by conservation efforts and reconstruction supervised by the National Parks and Monuments Branch of the Office of Public Works, Ireland (O'Kelly 1982, 23). During the excavations, the roof-box and passage way of the tomb were fully uncovered and it was finally discovered that the false lintel was in fact more of a box-like structure that was open at the front. Due to this discovery the false lintel was given the new name of the *roof-box* (O'Kelly 1982, 93).

On December 21st, 1969, not long after the discovery of the roof-box, Michael J. O' Kelly recorded the first modern observation of the winter solstice sun that shone, not through the doorway, but through the roof-box and into the passageway illuminating the chamber of the tomb:

At exactly 8.54 hours GMT the top edge of the ball of the sun appeared above the local horizon at 8.58 hours, the first pencil of direct sunlight shone through the roof-box and along the passage to reach across the tomb chamber floor as far as the front edge of the basin stone in the end recess. As the thin line of light widened to a 17 cm-band and swung across the chamber floor, the tomb was dramatically illuminated and various details of the side and end recesses could be clearly seen in the light reflected from the floor. At 9.09 hours, the 17 cm-band of light began to narrow again and at exactly 9.15 hours, the direct beam was cut off from the tomb (O'Kelly 1982, 123-124).

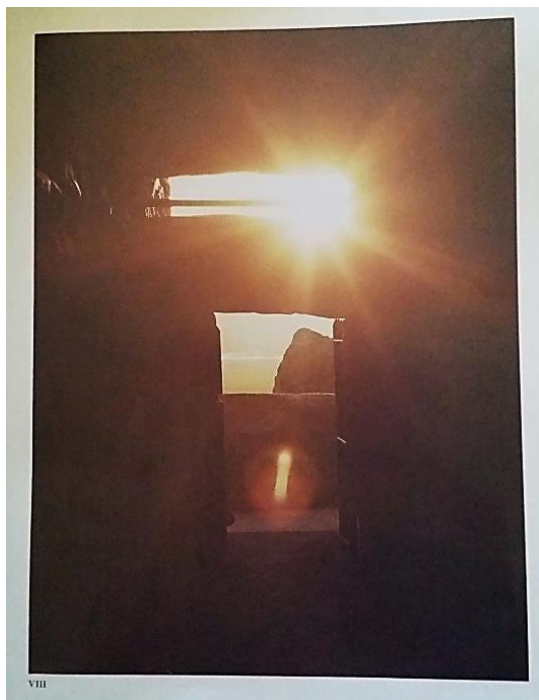


Figure 3. Michael J. O'Kelly, "At dawn on midwinter's day the sun shines through the slit in the roof box..." Newgrange, 1982, 29.

## The Ritual Origins and Folklore of Newgrange

It remains unclear what the original purpose of the roof-box might have been, and why it was built in alignment with the winter solstice sun. It also remains unclear who the original builders of Newgrange were, and more specifically who may have constructed the roof-box itself. However, it was during the Neolithic period from 4000-2000 B.C or the Later Stone Age when the first megalithic monuments were constructed on the Irish landscape which were associated with ritual meant to identify, glorify, or commemorate someone or something (Flanagan 1998, 31-45). Although we cannot be certain what rituals may have been practiced, the ritual associations of these megalithic monuments, and potentially the roof-box itself, appear to have undergone several changes and interpretations throughout the years by different groups of people who have used Newgrange and the surrounding landscape, or who have been associated with the area in some form.

Eogan and Byrne (1967, 105-106) state that the geographic area surrounding Newgrange underwent a series of transformations and changes occurring within two different periods, and that these changes led to the emergence of different vibrant societies that influenced each other. The first period of these transformations and changes started from about 3800 B.C to about 2200 B.C when three cultural groups flourished: Western Neolithic (Prehistoric I), Passage Tomb (Prehistoric II), and Beaker (Prehistoric III). The second period began from the early centuries A.D until the 14<sup>th</sup> century when three more cultural groups also flourished in the same area: Late Iron Age (Historic I), developed Early Christian (Historic II), and Anglo-Norman/Cistercian (Historic III) (Eogan & Byrne 1967, 105). However, for a time of about 2000 years following the

Beaker period and throughout the Bronze and Iron Age, activity at Newgrange was nonexistent. It was during the early centuries A.D that Newgrange became the focus for activity again (Eoghan & Byrne 1967, 117).

Evidence of ritual activity associated with these periods of cultural change and transformation can be found at Newgrange such as the burial finds of five persons, two unburnt and three cremated, which were discovered during O’Kelly’s excavations (O’Kelly 1982, 126). Sherds of pottery, jet beads and copper pins have also been found around the periphery of Newgrange which date to about 2000 B.C. and may indicate small scale Beaker settlements or squatters (O’Kelly et. 1978, 303). Roman coins, as well as other gold ornaments were also found during this time period and were likely to have been ritually deposited as votive offerings (Eoghan & Byrne 1967, 118).

Apart from the material evidence of ritual in the form of burial goods, votive offerings, as well as settlements and a variety of megalithic monuments, references to ritual at Newgrange can be found in early Irish literature. Although there do not seem to be any direct references to the roof-box itself, the references that are made in relation to Newgrange are through closely associated themes of ritual and supernatural lore. These references may reflect the remnants of earlier oral traditions, beliefs and rituals of pre-literate societies which appear to have some relation to the roof-box and the winter solstice phenomena.

In Irish mythology *Brú na Bóinne* is the most common name used to refer to the burial monument of Newgrange itself. However, the term *Brú na Bóinne* today refers to the geographic area of the bend in the river Boyne, or the Boyne Valley in which

Newgrange, as well as other passage tomb complexes such as Knowth and Dowth, are located. The word *Brú* is derived from the old Irish word *Brug*, or *Brugh*, which means abode, hall, mansion, or castle, and is referred to as the dwelling place of the Dagda who was known as ‘the good god’. The Dagda, including his wife Boann and their son Oengus, belonged to the mythical Tuatha Dé Danann of Irish mythology (O’Kelly 1982, 45).

The term *tuath* is derived from the old Irish *túath*, which refers to the basic social unit of early Ireland which was made up of about 3,000 people with approximately 150 *túatha*, or tribes, which were each ruled by a king. *Túath* also refers to the territory in which a group of people lived, and where its members social identities and rights were recognized (Koch 2006, 1692). The term *tuatha* can also be found in Irish mythology in clear reference to the Tuatha Dé Danann, who were known as an otherworld race of rulers and the ‘people of the goddess Danu’, who was an ancient Celtic land-Goddess (Ó hÓgáin 1991, 407). In Irish mythology the Tuatha Dé Danann were said to have inhabited Ireland before the coming of the Gael, or the Celts, and were supernatural beings that lived among men and who could perform deeds beyond the power of mortals, which many early Irish manuscripts make several references to (Waddell 2014, 18).

In the foregoing extracts we find a mixture of mythical and dimly historical persons, into which it is not necessary for our present purpose to enter. Their importance, in the present connexion, consists in that they establish the existence at a very early date, of a tradition associating Brugh na Boinne, the burial-place of the Kings of Tara, with the tumuli on the Boyne. The association of particular monuments with the Dagda and other divinities and heroes of Irish mythology implies that the actual persons for whom they were erected had been forgotten, the pagan traditions being probably broken by the introduction of Christianity. The mythical ancestors of the heroes and kings interred at Brugh, who, probably, were even contemporarily associated with the cemetery, no doubt subsequently overshadowed in tradition the actual persons interred there (Coffey 82, 1892).

One such early Irish text is the 11<sup>th</sup> century *Book of Lecan*, where it reads that the Dagda built a great mound for himself and his three sons, Aengus, Aed, and Cermaid, and that it was upon these men that the men of *Erin*, or Ireland, made the *Síd*, or mansion, of the Brugh (O’Kelly 1982, 46).

These early sources of Irish mythology have themes of ritual or supernatural lore told through stories of the manipulation of time, or the manipulation of the sun which is expressed throughout the narration of mythological characters, monuments and places. The burial tombs that are situated on the landscape acted as focal points for ceremonial activities that ordered space, time and mind. These ceremonial activities reflected a socio-religious culture, and the way in which the ancient builders may have viewed certain knowledge and power as the ability to predict some celestial events, thus appearing to control time through the use of monuments that were built to display astronomical alignments within their socio-religious culture (cited in Waddell 2014, 19).

The River Boyne has mythological origins associated with *Bóinn*, a name which comes from the earlier *Bóind* or *Bóand*, and is associated with the Celtic goddess of the River Boyne whose name is also derived from *bóu-vinda*, an earlier primitive Irish form. *Bóu-vinda* is one of the earliest cited Irish toponyms dating back to the 2<sup>nd</sup> century B.C., and is found in Ptolemy’s geography where the word takes the form *Buvinda*. The original word *vind* refers to a range of meaning from wisdom to the color white, or brightness, and is associated with the river goddess in bovine form. The word *find* meant *great seer*, and when combined with *bóu*, the word referred to the Celtic goddess of the River Boyne who took the form of an illuminated, wisdom giving cow. This archetype

has parallels in earlier Indo-European sources, and in Sanskrit literature rivers are symbolised as milk flowing from a mystical cow (Ó hÓgáin 1991, 49).

The mythological origins of the River Boyne can also be found in the early Irish prose *Dindschenchas*, or place lore, which reads that the creation of the River Boyne came from the well of Nechtan near Carbury Hill, in Co. Kildare. The *Dindschenchas* also reads that the well of *Nechtaín*, son of Labraid, is where the river Bóand flowed from, and that those who went to it could not go without their two eyes bursting unless it was Nechtaín himself and his three cupbearers (cited in Waddell 2014, 20). One day Bóand, the mother of Oegnus, who was the son of the Dagda, denounced the well's powers and decided to test it for herself. Thrice she walked around the well and three waves from the well broke over her, depriving her of a thigh, one of her hands, and one of her eyes. Bóand fled toward the sea with the water trailing behind her, and it was from her that the flow of the river Boyne was created (cited in Waddell 2014, 20).

References to the mythological origins and associations of places can be found in other early Irish texts, where several references to Newgrange, along with themes of the manipulation of time or the manipulation of the sun can be found. One such source is the *Lebor Na Nuachongbála*, or *The Book of Leinster*, which dates to the years between 1151 and 1224, and is one of the earliest surviving manuscripts written entirely in Irish (Koch 2006, 1125). The Book of Leinster narrates how Oengus, or Aengus, took possession of the Brug from his father the Dagda, who had allowed himself to be tricked to into letting his son take the dwelling not for a day and a night, but for eternity (O'Kelly 1982, 46). In the story, Oengus is granted a day and a night in the Brug but he takes permanent



possession of it by declaring that ‘night and day are the whole world and that is what has been given to me’ (cited in Waddell 2014, 23).

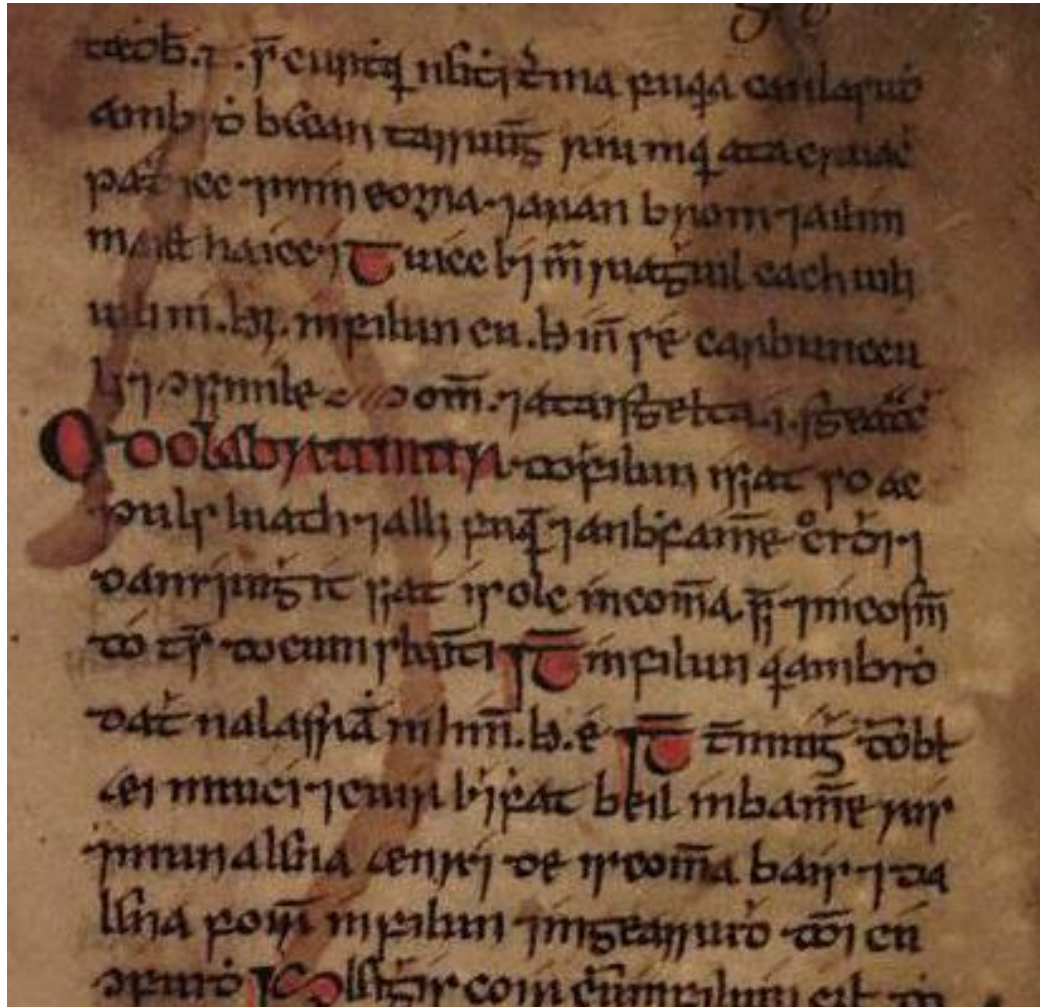


Figure 4. Irish Script on Screen, *The Yellow Book of Lecan*, Trinity College Dublin, MS 1319/2/1

Another 9<sup>th</sup> century early Irish text with 11<sup>th</sup> century reworkings called *Tochmarc Étaíne*, which is translated as *The Wooing of Étaíne*, has additional themes of the manipulation of time. The book itself is an Irish saga in three diverse sections which survive in a detached section from *Leabhar Buidhe Leacáin*, or the *Yellow Book of*

*Leacan*, and also survive fragmented in *Lebor na hUidre*, or *The Book of the Dun Cow* (Koch 2006, 1674). In *The Wooing of Étaíne*, the Dagda uses enchantment and deception against Elcmar, which is another name for *Nechtán*, or *Nechtaín*, who occupies the Brug. The Dagda tells his son Oengus how to persuade Elcmar to give up possession of the Brug by seeking kingship for a day and a night, which is meant to mean eternity because he says that ‘it is in days and nights that the world is spent’. As a result, Oengus gains possession of the Brug and Elcmar relocates to another nearby ‘otherworldly mound’ (cited in Waddell 2014, 23). The story highlighted in the text reads:

And let this be the will of Aengus, that he be king for a day and a night in the Brug, and see that thou not yield the land of Elcmar till he submit himself to my decision; and when he comes let Aengus’ plea be that the land has fallen to him in fee simple for sparing Elcmar and not slaying him, and that what he had asked for is kingship of day and night, and said he, ‘it is in days and nights that the world is spent (Bergin, 1997, 147).

Later in the story, Oengus seeks to woo *Étaíne Echraide*, or *Étaín of the Horses*, the beautiful daughter of King Ailill of Northern Ireland. The name *Étaíne* is derived from a diminutive of Old Irish *ét*, which means passion or jealousy (Koch 2006, 1674). However, Midir of Brí Léith obtains *Étaíne*, but Midir’s jealous wife Fuammach inflicts a series of cruel enchantments on the girl in order to drive her from the world. *Étaíne* is eventually reborn a thousand years later as the daughter of the wife of a man named *Étar*. The ability of Fuammach to inflict enchantments on *Étaíne* which result in her rebirth a thousand years later is another example of the manipulation of time that is found in Irish mythology. Later in the story, themes of the supernatural in association with burial mounds are described when the men of *Eiru*, or Ireland, dig up the otherworld mound of

Brí Léith in search of Étaíne. They uncover fifty distinguishable otherworld women but mistakenly choose Étaíne's daughter, instead of Étaíne herself (Koch 2006, 1674).

Newgrange is not the only burial monument that is associated with supernatural lore or the manipulation of time. The nearby passage tomb of Dowth, which was known in early Irish literature as *Dubad*, and as *Síd mBresail* or the *Otherworld Mound of Bresal*, was the location where the mythological warrior Cú Chulainn travelled supernaturally between *Síth mBresail* or Dowth and *Mac Óg Síth in Broga*, which was another name for Newgrange. In Irish mythology Cú Chulainn's sister casts a spell that fixes the sun in the sky so that a day might last indefinitely in order to allow him to travel supernaturally between mounds. However, Bresal, who in this tale is not only the name of a monument but also a mythological figure, lustfully commits incest with her and the spell is broken and the sun departs (Waddell 2014, 24).

His sister came to him, and told him that she would stay the sun's course in the vault of heaven, so that they might have an endless day to accomplish their task. The maiden went apart to work her magic. Bressal followed her and had union with her: so that place is called Ferta Cuile from the incest that was committed there. Night came upon them then, for the maiden's magic was spoilt (Gwynn 2008, 273-1).

Eogan and Byrne (1967, 387) argue that there was an early Christian period occupation at Newgrange as well as the surrounding Boyne Valley, and that there are several references to these burial monuments that are frequently made in Irish literature of this time period. Eogan and Byrne (1967, 387) also argue that although the *Dindshenchas* is clearly highly influenced by biblical motifs, it may still be of interest to archaeologists due to the close associations of archaeological sites, place-names, and mythological narratives which influenced Christian literature during the Christian period. The

influence of burial monuments and supernatural lore found in Christian literature shows there has been some level of reinterpretation incorporated from the remnants of earlier oral traditions and beliefs of pre-literate societies associated with burial mounds.

In *Landscape and lamentation: constructing commemorated space in three Middle Irish texts* Huckins MacGugan argues that Medieval Irish mythological texts, such as the *Dindsenchas*, act as a form of preservation of cultural memory through literary compositions written about monuments, place-names and lamentation festivals which reflect the landscape shaped by ritual, death, burial, as well as the graves and the bodies they contain. Therefore, cultural memory is made up of 'collective understandings of the past which are held by people in a given social and historical context' (cited in Huckins MacGugan 2012, 189).

Huckins MacGugan (2012, 192) also argues that as a form of preserving cultural memory, prehistoric and early medieval mounds as well as sacred burial spaces were actively re-interpreted and reused in the Middle Ages for different purposes. Mythology played an important role in the selection of monuments in order to solve legal disputes over ancestral territory which provided ideas of dynastic continuity with mythical ancestors, the dispensation of judgement and exposition of law, as well as the selection of appropriate places for inaugurations and assemblies, or ritual.

Burial mounds, or *Síd* mounds, are often associated with their inhabitants and otherworld rituals of kingship and lamentation, as previously mentioned in Old Irish texts from *The Book of Leinster*, *The Book of Leacan*, and the *Dindsenchas*, among several others. These texts refer to the associations, usage, and the possession or ownership of the Brug, or Newgrange (Huckins MacGugan 2012, 210). Gabriel Cooney also argues that

the constructed spaces of Neolithic landscapes, such as monuments and burial tombs across Ireland were already ancient by the time early Irish texts were composed. These monuments would have been visible to medieval authors, acting as the foundation of the cultural landscape, or the foundations of which mythological stories were based upon in medieval texts (cited in Huckins MacGugan (2012, 211). Huckins MacGugan (2012, 211) also reminds us that Ireland did not exist in cultural isolation, and that the re-use and re-interpretation of ancient burial mounds and monuments were a common occurrence throughout the medieval world. This has been the case with kings in Norse society who became gods after death, and the worship of them as a house-dweller changed to worship of the house and eventually worship of the burial mound, where people would ritually leave votive offerings. As previously mentioned by Huckins MacGugan and Cooney (2012), the way in which these monuments have been re-interpreted and re-used in medieval times appear to have reflected the remnants of earlier beliefs and oral traditions of pre-literate societies.

O’Kelly (1982, 45) also argues that the myths associated with Newgrange are not to necessarily be taken literally, but suggests that these stories have been re-interpreted, told and retold again in both oral or written form and that they have undergone many changes throughout the generations. O’Kelly also argues that even though these stories underwent many changes, the underlying themes remained intact as they were passed on, and that their sacred beginnings can be detected regardless of the version or date (1982, 45).

Although these mythological stories in early Irish texts do not make any direct references to the roof-box, they do however, refer to Newgrange in association with

themes of ritual, supernatural lore, and the manipulation of time and the sun. These references may reflect the remnants of earlier oral traditions, beliefs and rituals of pre-literate societies that may have been centred around the winter solstice sun which Newgrange and the roof-box was built to align with. The appearance of the Winter Solstice sun may have been a significant or sacred spectacle to the ancient peoples who witnessed it, especially if it was observed penetrating the roof-box and entering the passage tomb. As previously mentioned, this may have been viewed as a form of power or knowledge associated with the ability to predict celestial events, or control time within a particular socio-religious culture. According to Waddell (2014, 24-25), this phenomenon may have also been viewed as the rebirth of the sun, and as an equivalent to the Resurrection for the medieval Christian.

The relationship of local peoples to the land, or monuments on the land, such as Newgrange, may have acted as a mnemonic device, or a symbol for representing and remembering the past reflected through oral history of earlier non-literate societies. According to Waddell (2014, 25), real individuals in such societies could survive in popular memory for several generations, until the individual could be assimilated into the mythical model, or through mythical type stories told through oral traditions, such as a hero. Similar examples of mnemonic devices are found in the man-made features and monuments preserved in the mythology and place-lore in the Dindschenchas, as previously mentioned. Eric Hirsch argues that myth in relationship to landscape and time reflect the manner in which myths assimilate historical events and processes into local understandings of the world. This in turn helps to make the interpreted world and cultural landscape appear obvious and self-evident. Hirsch also argues that the features of locality

are in a sense used to re-work understandings of the world on a local and global scale (cited in Tilley 2006, 25). Additionally, Tilley (2006, 26) argues that the landscape, as well as the temporalities of it, are scaled and multiple, and reside in nature, the hills, rivers, forests, people, activities, events, but also through monuments and memorials in which the interpretations and re-interpretations of these places survive throughout time.

It is intriguing to consider the similarities between the supernatural lore, ritual, and the manipulation of time or the sun found in several Irish mythological texts in comparison to the Winter Solstice sun phenomenon and the roof-box at Newgrange. Monuments such as Newgrange, or more specifically the roof-box, could have acted as a device or symbol representing the remnants of earlier oral traditions of the ritual and beliefs of pre-literate societies reflected through the associated mythology. The roof-box may have acted as both a mechanism that allows the winter solstice sun to penetrate the tomb, as well as a mnemonic device that symbolizes or represents the phenomenon of the winter solstice itself, carrying the remnants or cultural memory of ritual throughout the centuries.

O'Kelly (1982, 94) states that there is evidence on the roof-box at Newgrange that shows it was used in such a way which allowed ancient peoples to ritually control the entrance of sunlight into the passage tomb. He describes how the roof-box slit had been closed tightly by a set of two quartz blocks, one of which had been *in situ* when the roof-box was re-discovered during excavations. These quartz blocks also showed clear evidence of scratch marks from being pulled out and pushed back in a number of times so that the surviving block had been rubbed smooth. Scratch marks were also apparent on

the surface of RS1, or Roof Slab 1, that the blocks of quartz were resting on (O'Kelly 1982, 94).

Ritual activity is strongly associated with both Newgrange and the roof-box through the evidence of votive offerings of Roman coins, as well as mythological texts and the alignment of the monument itself to the winter solstice. However, we don't know what the exact purpose of the ritual activities were, we only know that there is evidence of these actions. The interpretation of what these ritual activities may have been has changed throughout the years according to the different groups of people who have used Newgrange and the surrounding landscape, or who have been associated with the area in some form. The re-interpretation of the roof-box, and of Newgrange has continued into more recent times, especially after the roof-box was re-discovered during excavations in the 1960s by Michael J. O'Kelly and the Office of Public Works.



## Excavation and Interpretation of the Roof Box

In 1892, long before Newgrange was excavated, Coffey described the monument as being a rather disappointing sight when viewed from the road. He stated that it was overgrown with scrub and trees, and that its overall outline blended into the trees and the rest of the landscape which concealed it from view. He also mentioned that the rising ground around the monument foreshortened it, making it appear smaller, and that one could not see the true size of the monument until they have walked completely around it (Coffey 1892, 2-3).



Figure 5. 'Tumulus at New Grange', Coffey 1892, 2-3.

Eventually the number of visitors to Newgrange began to increase, which slowly contributed to the deterioration of the monument. The deterioration of the monument was mainly due to the clothing of visitors rubbing onto the stones and causing the carvings on the monument to be worn down. Many visitors were also carving graffiti into the stones (O'Kelly 1982, 39). Eventually, local concerned citizens began to write letters to the

Board of Public Works detailing how the site was deteriorating, and how ‘many of the interesting carvings on the surfaces of the stones are fast becoming obliterated by the rude inscription of brutish-minded and selfish men’s names all over the surface of the various stones’ (cited in O’Kelly 1982, 39). This meant that significant damage was being made by tourists and unsupervised visitors who were carving graffiti on the ancient carvings found on the stones. Further damages to the mound had also occurred due to people climbing over the mound, and animals burrowing, or pulling it apart (O’Kelly 1982, 10).

Under the provisions of the Ancient Monuments Protection Act in 1882, Newgrange, as well as Knowth and Dowth, were taken under state care and the monuments became the responsibility of the board of Public Works (O’Kelly 1982, 10). In order to prevent any further damages from happening to the monument, the Office of Public Works placed an iron gate at the entrance of the passage tomb and several support beams were placed inside of the tomb to support the structure (O’Kelly 1982, 39).

In the late 1890s some repairs and conservation work was undertaken by the first Inspector of Ancient Monuments, Thomas Newenham Deane, who also appears to have explored the kerb and exposed some of the highly decorated kerbstones, K52 and K67 (Lynch et al. 2014, 13). It was not until 1928 when R.A.S Macalister and a few others explored the kerb further and exposed kerbstones K2 to K54. However, no carvings were reported on these stones (Lynch et al. 2014, 14). Eventually in the winter of 1961, P. J. Hartnett, Archaeological Officer of the State Tourist Board *Bord Fáilte Éireann*, organized a meeting at Newgrange about the deterioration and disregard of the monument. Those who attended were Mr. J. P. Hartnett himself, as well as Mr. G. Bagnall of Bord Fáilte Éireann. The meeting also included:

Mr. W. P. le Clerc, inspector of National Monuments; Dr. A. T. Lucas, Director of the National Museum of Ireland; Professor G. F. Mitchell of Trinity College Dublin; Professors R. de Valera, Michael J. O’Kelly, and M. V. Duignan of the University Colleges of Dublin, Cork, and Galway respectively; as well as Dr. S. Ó Nualláin, Archaeological Officer of the Ordnance Survey (O’Kelly 1982, 10).

It was then agreed upon by those present at the meeting that three hectares of land would be purchased by Bord Fáilte Éireann from the landowner, Mr P. Delaney, and that the Office of Public works would be responsible for its maintenance. It was also agreed upon that there would be access for the general public to visit the monument at reasonable times (O’Kelly 1982, 10).

By 1965, excavation and reconstruction began by the Office of Public Works and Michael J. O’Kelly, which included the help from workmen paid from grants given by the Special Employment Schemes Office and thereafter by the Office of Public Works. Volunteers from American, British, Irish, and other European universities helped with the excavation work every summer by cataloguing artifacts and other finds, as well as surveying, drawing, and other duties (O’Kelly 1982,11).

Additional excavations were carried out at Newgrange at later dates, such as in 1984, when the Office of Public works began conservation work to stabilise the north side of the tomb which had collapsed in areas between kerbstones K52 and K67 (cited in Sweetman et al. 1987, 283). However, in order to transport supplies to help with the reinforcements and to allow cement trucks to transfer cement, a road was needed in the west area of the monument. As a result, Sweetman was able to conduct limited excavations on a 50 m area west from the passage tomb of Newgrange. This area revealed parallel pits and post holes that were likely to have formed a stone circle about 20 m in

diameter, as well as Beaker pottery and sherd of a stone bowl dating to 2000 BC (Sweetman et al 1987, 283).

The most prominent and thorough excavations at Newgrange, as previously mentioned, were those of Michael J. O’Kelly who excavated the monument with the Office of Public Works in the 1960s, and who eventually rediscovered the roof-box along with the Winter Solstice sun phenomena.

The roof-box had gone undetected for centuries before its rediscovery by Michael J. O’Kelly, and had been covered by the overgrowth of vegetation that had overtaken the mound which had been used as land for grazing farm animals. The roof-box could be observed as part of a horizontal stone with lozenges along its outer facing edge that was protruding through the overgrowth of vegetation. Antiquarians and scholars wrote about their observations of the mound and the protruding roof-box from the 1830s, which is when the roof-box earned the name the *false lintel* (O’Kelly 1982, 93). Sir William Wilde was one such antiquarian who visited Newgrange in 1847 and 1849, and who later wrote about his observations of the site (O’Kelly 1982, 34). Wilde states that in the 1840s a local gentleman cleared away the stones and rubbish and brought to light a stone that was very remarkable, and which sloped outwards from the entrance of the mound (cited in O’Kelly 1982, 34). Wilde also described his observations of what could be the same stone as ‘the edge of another very curious, and most exquisitely carved stone, was found projecting from the mound, a short distance above, and within the line of the present entrance’, and that it may ‘decorate the entrance into some other chamber, which further examination may yet disclose’ (cited in O’Kelly 1982, 34). After Wilde’s observations,

the roof-box became known as the *false lintel* due to the belief that it could possibly lead to another passage entrance (O'Kelly 1982, 36).

Coffey (1892, 29-30) also described his observation of a 'pattern along the edge of a remarkable slab' above the entrance of the passage with an 'X or gate pattern carved in relief', and suggested that it was some sort of architrave or lintel stone. Coffey also mentioned that the carvings on the projecting edge of the stone were marked in horizontal course, and that they were remarkable and more advanced than the general ornamentation on the rest of the chamber. He described that they show a distinctly architectural character, and that its 'great carved stone at the bottom and carved course above' gave the suggestion of a 'rudimentary conception of a *fassade*' (Coffey 1892, 37).

Although the false lintel could be seen protruding from the mound, as observed by Coffey in 1892, and later by Wilde in the 1840s, the monument remained fully unexcavated and uncovered until the excavation and restoration work that was carried out in the 1960s by Michael J. O'Kelly with the Office of Public Works. It was then that the roof-box and passage were fully uncovered, and it was finally discovered that the false lintel was in fact more of a box-like structure that was open at the front, therefore it was given the new name of the *roof-box* (O'Kelly 1982, 93).

According to O'Kelly, the roof-box and its alignment with the Winter Solstice sun was discovered by accident during the excavation and reconstruction, which was an attempt to better preserve the monument. As it had been found, the orthostats, which are the upright stones that line the inside of the passageway, were leaning forward and the roof was in danger of collapsing. Additionally, the support beams that had been

previously installed inside of the tomb in the 1800s by the Office of Public Works were failing to support the roof, which was also causing the monument to become hazardous and in danger of collapsing (O’Kelly 1982, 93). Due to these structural issues, it was then decided that work had to be done in order to restore the orthostats to their proper vertical positions which would reinforce the roof and overall structure. The cairn, or the covering of stones on the top of the monument, had also suffered a collapse in one area and needed to be completely removed so that the proper reinforcements could be made to prevent any further deterioration to the mound (O’Kelly 1982, 93).

O’Kelly (1982, 112) states that during the excavation, every detail was thoroughly documented. Every corbel and roof-stone was plotted, every stone was numbered in sequence with the same number affixed to the corresponding stone in the plan, and an eight-layer plan of the roof was drawn which would enable the slabs to be restored to their original positions with complete accuracy if needed (O’Kelly 1982, 112). In order to gain access to the orthostats that needed to be straightened the cairn had to be removed, as well as the roof-box which was sitting on several roof-slabs. However, a large portion of the tomb and a remainder of the passage roof was left unexcavated, including several tilted orthostats located further inside the passage way that could not be straightened due to the complex structural nature of the inside section of chamber (O’Kelly 1982, 98). A reinforced concrete tunnel was installed above the passageway in order to prevent the orthostats from tilting any further, and to reinforce the other leaning orthostats located in the more complex structural area of the passage that remained unexcavated (O’Kelly 1982, 98).

After the reinforcements were put in place to properly support the structure from collapsing, the next task was to reconstruct the monument to resemble how it may have originally looked, and to make the monument functional for the increasing number of visitors. Today, the appearance of Newgrange, most notably the face of the monument and the entrance, is much different than many other passage tombs or ancient grass covered monuments that are commonly found across Ireland. Newgrange is now partially covered with gleaming white quartz that stands out in contrast against the grassy green landscape, even on cloudy or rainy days. The entrance has several structures built onto it, such as wooden railings and stairs. The wooden staircases that have been built over kerbstones K97 and K2 at each end of the entrance stone give access to the tomb without the risk of damage to the decorated slabs and kerbstones that surround the monument. Additionally, the iron gate closing off the passage tomb entrance was removed to allow guided tours inside the passage tomb led by employees of the Office of Public Works (O'Kelly 1982, 111).

The structural and aesthetic changes that have been made to Newgrange may perhaps take away from the more romanticised notions of passage tombs, burial mounds, or other megalithic monuments that can be seen scattered across the landscape of Ireland. The structural and aesthetic changes perhaps adds a sense of artificialness to the monument when in comparison to other sites, and may cause one to question the legitimacy of the interpretations of Newgrange. However, as O'Kelly (1982, 109) outlines, there is a reason the monument was reconstructed in this way.

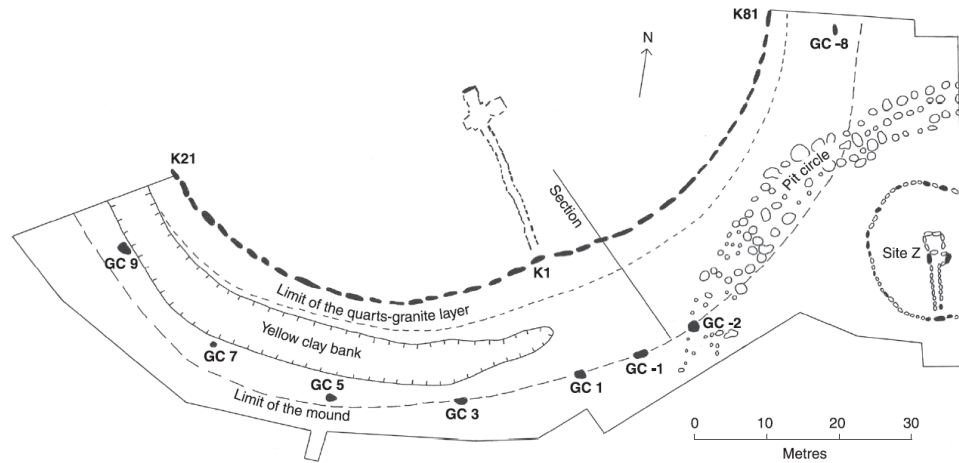


Figure 6. Excavated area by Michael J. O’Kelly, Eriksen 2008, 255.

The reconstruction and interpretation of Newgrange was carried out in such a way as to replicate as closely as possible how the monument may have originally looked, and was based on findings from the excavation of the site. Newgrange was also reconstructed to reflect the high degree of engineering skills and architectural features (O’Kelly 1982, 109). Not only was the monument constructed and interpreted in a way to most likely resemble the original design, additional structural features were added to accommodate for the increasing number of visitors. As previously mentioned, the increasing number of visitors to the deteriorating site had become a concern. By 1978, the number of visitors reached about 70,000. Both O’Kelly and the Office of Public Works decided that the original archaeologically correct design would have to be changed, as it would be more efficient to create more space at each side of the tomb entrance to allow for the increasing number of visitors to the site (O’Kelly 1982, 111). In order to accommodate this space, the walls of the monument entrance were built only as far back as the outer kerbstones, K97 and K2 (O’Kelly 1982, 111). The broken lines of the wall on each side of the roof-box and passage entrance were deliberately terminated to show that the wall stops there,



and that the original design does not follow to this point of the wall. The curved walls surrounding the roof-box and passage entrance were constructed of limestone, as opposed to quartz on the rest of the walls surrounding the monument, which was also meant to show that this section is not intended to represent the original archaeologically correct part of the wall that surrounds the rest of the monument (O'Kelly 1982, 111). During reconstruction, space had been made in order to provide room for the wooden staircases that were built over top of kerbstones K97 and K2. This allowed visitors to easily climb the stairs and enter the passage tomb entrance without causing any damage to the carved decorations on the stones surrounding the monument (O'Kelly 1982, 111). Lastly, the interpretation of the white quartz walls of the monument was based on the evidence found outside the tomb of a spread of granite and quartz, which had been due to a previously collapsed facade (cited in Office of Public Works, 2009, 28).

The interpretation of the roof-box is not only based on the finds from the excavation which give clues to its aesthetic appearance. It is also interpreted based on ritual evidence from associated mythology and supernatural lore, the presence of votive offerings, as well as the alignment of the monument and of the structure of the roof-box itself which O'Kelly states was found in its original position during excavation. O'Kelly states that the roof-box was discovered sitting above the passage tomb entrance, and resting partially on top of two different roof slabs. It measured 90 centimeters in height, 1 metre wide, and 1.2 metres from front to back, and it was described as being open at the front which allowed the winter solstice sun to directly shine through the narrow gap, reaching all the way to the back of the passage chamber (O'Kelly 1982, 21). It was not

long after this discovery that O’Kelly recorded the first modern observation of the winter solstice sun entering the roof-box on December 21, 1969.

In addition to O’Kelly’s observations, Dr. John Patrick, who had devoted much time to the study of solar and lunar alignments of ancient monuments in Ireland and Britain surveyed the roof-box at Newgrange. Patrick concluded that it was deliberately aligned to the winter solstice sun, as was the orientation of the monument itself. Therefore, from the observations of both O’Kelly and Patrick, it was demonstrated that the light from the winter solstice sun does in fact enter the roof-box and penetrates the passage chamber for about a week before and a week after December 21 (O’Kelly 1982, 124). Dr. John Patrick stated that in order for the ray of sunlight to travel from the roof-box directly to the back of the passage chamber, it must be in the azimuth range  $133^{\circ}42'$  -  $138^{\circ}24'$ . He also stated that since the floor of the chamber is 15 centimetres lower than the roof-box, the elevation of the horizon in the distance would have to be at a minimum of  $0^{\circ}51'$  in order for the sun’s direct rays to enter the slit of the roof-box. Light rays will not enter the roof-box and passage tomb if the elevation exceeds about  $1^{\circ}40'$  (cited in O’Kelly 1982, 124). Patrick argues that these measurements of azimuths and elevations mean that the light from the winter solstice sun will shine through the roof-box and into the passage chamber if its declination lies between  $-22^{\circ}58'$  and  $-25^{\circ}53'$ , which means that the alignment is reliable to about  $15'$  and  $5'$ . Although the monument has deteriorated over time, such as the tilted orthostats, all of which had been straightened during conservation efforts except for a few that are located near the more structurally complex area of the chamber. The leaning orthostats that were not straightened had created the effect of reducing the beam of light that enters the chamber from 40

centimetres, to 17 centimetres (cited in O’Kelly 1982, 124). Patrick argues that despite the changes of the monument which has affected the light, that:

It therefore seems that the sun [in theory] has shone [into] the chamber ever since the date of its construction and will probably continue to do so for ever, regardless of secular changes in the obliquity of the ecliptic. It also means that the spectacle occurs for a number of days before and after the winter solstice (cited in O’Kelly 1982, 124).

As previously mentioned, O’Kelly (1982, 94) states that the scratch marks found on the roof-box provide evidence that it was used as a device that ritually controlled the entrance of sunlight into the passage tomb. The roof-box device had been closed tightly by a set of two quartz blocks that had been pulled out and pushed back in a number of times which caused scratch marks on the surface of the roof slab that would have acted as a way to control the light into the passage tomb.

O’Kelly’s interpretation, as well as that of Dr. John Patrick’s, is that the roof-box is an original feature of Newgrange that had been preserved in the mound prior to excavation, and that the roof-box opening allows the sun to enter the passage tomb which was built in alignment to the winter solstice Sun. O’Kelly stated that he hoped the work of excavation, reconstruction, and interpretation of the monument has helped breathe a faint spark of life into Newgrange, and that it now justifies some part of it’s ancient claim to be the *Brú* or *mansion* of the Good God, the Dagda of early Irish tradition (O’Kelly 1982, 116).

Just as the reconstruction of Newgrange is an interpretation by O’Kelly and the Office of Public Works of how the monument may have originally looked, the idea of

Newgrange being the mansion of the Good God, the Dagda of early Irish tradition, is another such interpretation of earlier groups of people who have reflected these ideas in medieval literature. The early Irish texts, as previously mentioned, have themes of ritual that reflect the manipulation of time or the sun represented through the narration of mythological figures and place names. These themes are associated with monuments such as Newgrange and the roof-box, and may have acted as a mnemonic device to remember and interpret the remnants of ritual and beliefs carried through time from earlier pre-literate societies. Just as these are much older interpretations of the Newgrange, O'Kelly and the Office of Public Works have created a new era of interpretation which is reflected through public heritage and tourism.

## Tourism, Heritage and the Roof-Box

Following the excavation and reconstruction of Newgrange by Michael J. O’Kelly and the Office of Public Works, Newgrange and the roof-box had entered a new era of interpretation. This interpretation included the showcasing of the roof-box and the Winter Solstice phenomenon to a larger audience through public heritage and tourism, both locally and internationally. In 1993, due to outstanding universal value as an internationally renowned archaeological complex, Newgrange as well as Knowth, Dowth, and the entire area of Brú na Bóinne was officially recognized and designated as a UNESCO World Heritage Site (Lynch et al. 2014,13).

The *Archaeological Ensemble of the Bend of the Boyne*, otherwise known as Newgrange and the surrounding landscape, was included as part of the World Heritage site consisting of approximately 780 hectares of the core area contained within the bend of the River Boyne. This area also includes a buffer zone comprising approximately of 2,500 hectares outside of the area to the north to the River Mattock, which is located south to the ridgeline of an escarpment overlooking the core area of the site (World Heritage Ireland, 2010a). The criteria in which Newgrange and the surrounding area had been judged and accepted onto the World Heritage List in 1993 was based on a set of three of the six criteria for cultural heritage of outstanding universal value:

1. Representing a masterpiece of human creative genius.
2. Bearing a unique or at least exceptional testimony to a cultural tradition or to a civilisation which is living or which has disappeared.
3. Being an outstanding example of a type of building, architectural or technological ensemble or landscape which illustrates significant stage(s) in human history (World Heritage Ireland 2010a).

As a result of Newgrange becoming classified as a UNESCO World Heritage Site in 1993, as well as the reconstruction of the monument to create space for the increasing number of visitors, the Office of Public Works created what is called the *Winter Solstice Lottery*. The Office of Public Works states that the winter solstice sunrise is on the shortest days of the year, beginning at 8:58 am when the sunlight shines through the roof-box and into the passage tomb. The sunlight reaches the back of the passage chamber for a total of 17 minutes, and the monument is opened from dawn on December 18<sup>th</sup> to December 23<sup>rd</sup> allowing inclusive admission into the passage chamber for lottery winners during the solstice, and free general admission for the site grounds (Office of Public Works, 2017b)

The Winter Solstice Lottery allows anyone to apply who has filled out an application form in the Brú Na Bóinne Visitor Centre upon visiting Newgrange. World Heritage Ireland states that there were 32,522 entries for Winter Solstice in 2017 (World Heritage Ireland 2010b). However, due to the large number of visitors and the small size of the passage tomb, only a limited amount of people can be in the chamber at once and are therefore chosen by lottery alone. 60 names in total are drawn, and each winner is invited to allow a guest to accompany them on one specific morning from December 18<sup>th</sup> to December 23<sup>rd</sup>, which is the amount of time the sunlight can be seen entering the passage chamber while the Winter Solstice sun is in alignment with the monument. This means that the 60 lottery winners are divided into groups of 10 along with their guests, and each group enters the passage chamber on an different day. Therefore, 10 winners at a time visit the passage tomb on each of the days from December 18<sup>th</sup> to December 23<sup>rd</sup> (World Heritage Ireland, 2010b).

The Winter Solstice experience at Newgrange is entirely dependent on the weather, as cloud coverage and rain can easily prevent the sunlight from entering the tomb on any specific day between December 18<sup>th</sup> to December 23<sup>rd</sup>. However, this does not prevent crowds of people from visiting Newgrange, and it certainly does not take away from any of the excitement on each day at sunrise when hopeful lottery winners gather in anticipation to observe the winter solstice phenomenon. Although only a select few people are allowed to enter the passage tomb, those who are not lottery winners are encouraged to stand outside of the monument and take part in the event, which can still be an exciting and meaningful experience to many (World Heritage Ireland, 2010b). The Office of Public Works states that in 2016, the number of visitors at Newgrange was 156,766, and the number of visitors for the Brú Na Bóinne Visitor Centre was 50,567 (Office of Public Works, 2010b).



Figure 7. People Gathering outside of Newgrange during the Winter Solstice, Office of Public Works, 2017

In addition to the Winter Solstice Lottery, as well as the general solstice gathering on the grounds at Newgrange, the Office of Public Works and *Fáilte Ireland* began an innovative live streaming of the event through their website which aired at 8:30 am on Wednesday, December 20 and Thursday, December 21, 2017. The live stream of this event meant that anyone who wished to witness ‘the magic of winter solstice at Newgrange’ could do so from anywhere in the world (Office of Public Works, 2017a). In response to this innovative live streaming event of the Winter Solstice at Newgrange, the Minister of State for Tourism and sport, Brendan Griffin TD stated:

This is a fantastic way to share the unique magic of Newgrange with a much larger audience. It is also a great way to highlight the type of compelling history and heritage that Ireland offers as a destination (cited in Office of Public Works, 2017a).

The Minister of State with responsibility for the Office of Public Works, Kevin ‘Boxer’ Moran also commented on the Winter Solstice event saying:

Newgrange nestled in the Boyne Valley is an important historical site in Ireland's Ancient Heritage which attracted over 207,000 visitors in 2016. Our annual Winter Solstice Lottery received over 33,000 applications to witness this event with winners from as far as Austria, Italy, Switzerland and the United States of America, showing the continuing fascination the Solstice has the world over (cited in Office of Public Works, 2017a).

Additionally, Jenny De Saulles, who represented Irish tourism through *Fáilte Ireland's Ireland's Ancient East*, explained that Newgrange is a very important site for the tourism brand, and that they are pleased to be teaming with the Office of Public Works to create the live video stream of the Winter Solstice for an even wider audience to enjoy the history, heritage, and ancient atmosphere of Newgrange. De Saulles also states that *Fáilte Ireland* intends to create several pieces of exciting content for the future promotion of



*Ireland's Ancient East*, at home in Ireland, and abroad (cited in Office of Public Works, 2017a).

The live streaming video of Newgrange was recorded to allow anyone to re-watch it from anywhere in the world. The video starts by emphasizing and drawing attention to the Winter Solstice experience as being ‘5000 years in the making’, and describes it as ‘One of Ireland’s Greatest experiences. The end of winter, and the start of new life, this year, be part of the wonder.’ This creates the idea that the Winter Solstice is a unique, rare and ancient experience that people themselves can take part in (Office of Public Works, 2017a).

In the video, presenter Máire Treasa Ní Dhubhghaill stands outside of the monument interviewing people and sharing information on the history of Newgrange and the roof-box and explains how the Winter Solstice phenomenon occurs at the monument. Many tour guides employed by the Office of Public Works are interviewed as well, including Leontia Lenehan, who shares that Newgrange was built not only as a place of worship and pilgrimage, but also as a place of burial. Lenehan also shares that on that very day of the Winter Solstice 2017 live stream, it just so happened to be the 50<sup>th</sup> anniversary of Michael J. O’Kelly’s first observation of the Winter Solstice at Newgrange on the same day in 1967 (Office of Public Works, 2017a).

Overall, the Winter Solstice event is a significant time for many people. Both lottery ticket winners and non-lottery ticket winners who were interviewed during the live streaming event shared that they had travelled from near and far, both within Ireland as well as all over the world to be a part of the solstice event. Many shared that they were visiting Newgrange on the Winter Solstice for a variety of different reasons, which

included an annual family visit to the site, as well as a couple who exchanged wedding vows. For some other attendees who were interviewed, the Winter Solstice at Newgrange had personal religious or spiritual importance (Office of Public Works, 2017a). The overall atmosphere in the live streaming Winter Solstice video at Newgrange is one of celebration, music, and enjoyment, where hundreds of people have come together for many different reasons. The lottery winners hope to catch a glimpse of the winter solstice sun through the roof-box, as many believe it would have looked 5,000 years ago to the Neolithic people who built the monument. For the non-lottery winners who cannot enter the passage chamber, there appears to be a sense of anticipation to just be present at an important site at such a significant time of year, and to be a part of the celebration of Winter Solstice (Office of Public Works, 2017a).

Although there may be no true way of knowing what the actual rituals were of the original people who observed the winter solstice sun through the roof-box. The roof-box itself has become a focal point, or a symbol of ritual that has been re-interpreted different ways over the years by different groups of people who have used Newgrange and the surrounding landscape, or who have been associated with the area in some way. After the excavations and reconstruction by Michael J. O’Kelly and the Office of Public Works, the roof-box has come to symbolize not just ancient ritual, but modern ritual as well. The way in which people gather annually at Newgrange on the Winter Solstice is in a sense, a form of ritual. As tourism to the site increases, the re-interpretation of ritual associated with the roof-box continues. The people who continue visiting the site all find their own meaning and their own interpretation of the experience at Newgrange. With the new innovative live streaming of the Winter Solstice event, the interpretation of the roof-box and the

Winter Solstice at Newgrange by the Office of Public Works and Fáilte Ireland is showcased all over the world, where people can be a part of the experience without having to visit the site, thus continuing the re-interpretation of the site to an even wider audience through technology.

Although Newgrange is promoted through tourism which highlights the idea of ancient ritual from Ireland's past, it is a modern ritual experience that anyone locally, or worldwide can take part in, and an experience in which people can find their own meaning in. In Christopher Tilley's *Identity, Place, Landscape and Heritage*, he argues that things and places are active agents of identity, rather than pale reflections of pre-existing ideas and sociopolitical relations. These places of change have real material and ideological effects on people and social relations, and are just as much subjects as objects of identity (Tilley 2006, 17-18). Tilley also argues that part of creating a sense of social identity and self is non-verbal, and by making, consuming, exchanging, and using things that always assume a specific form, such as monuments or memorials which are meant to help preserve cultural memory, these things can become a sense of identity which can reflect, mediate, or serve as a sort of performance for understanding or experience in which people reveal themselves (Tilley 2006, 17-18). This can be compared to the way in which visitors at Newgrange interpret the Winter Solstice experience often as something *ancient* that they are collectively taking part in, but they also interpret the experience in their own way, finding their own meaning through their own individual thoughts and feelings or ideas.

Similarly, Tilley (2006, 7) argues that tourism is fundamentally dependent on the production and reproduction of new and different things for the purpose of discovery.

Through tourism, various forms of conscious productions of local distinctiveness take place, through social interactions with material culture, and through a display of culture that is being creatively made, interacted with, and experienced. This can also be compared to the way in which O’Kelly and the Office of Public Works have created a new interpretation of the roof-box and monument which is carried into modern day and is reflected in public heritage and tourism. Tourism requires the identities between insiders and outsiders to be continuously defined, redefined, and interpreted, which through time becomes mutually implicated involving marking differences, strategies, and performances or concepts of exclusion and inclusion, private and public, front, and back spaces for interaction (as cited in Tilley 2006, 16).

## The Question of Authenticity

Although Newgrange and the roof-box has been well documented during the excavation and reconstruction efforts, and the site attracts thousands of visitors every year who hope to catch a glimpse of the winter solstice sun entering the passage chamber, there are still some who argue that the roof-box is not all that it seems to be.

In an *RTÉ One Nationwide* video broadcast that was aired in Ireland on Wednesday, April 20, 2016, reporter Niall Martin visited Newgrange and interviewed archaeologist Dr. Robert Hensey who claims to have a new theory on the roof-box at Newgrange. Hensey argues that Newgrange had been built in different stages and that the roof-box was not at Newgrange from the beginning, but that it was instead added later as an extension to a smaller already existing passage tomb (Nationwide 2016). He explains that the roof-box was a way of combating the slope of the land, and that the roof-box is situated 2 metres above the passage entrance to compensate for the angle of the passage, because a short passage without the extended part of the monument would have allowed the sunlight in without necessitating the roof-box. Hensey argues that after the decision was made to extend the Newgrange passageway out to the front, the roof-box was needed to allow the light to enter the lengthened passage way. Since the passage slopes downhill, the light would no longer reach the back of the chamber. Therefore, the roof-box was built above the entrance and set back a short distance in order to let the winter solstice sunlight to shine through the passage again (Nationwide 2016).

Despite O’Kelly’s claim that the roof-box is authentic and was found *in situ* during excavations, Hensey argues that O’Kelly deliberately constructed the roof-box

when the excavations and reconstructions occurred. As previously mentioned, O’Kelly stated that it was necessary to remove the cairn and the roof-box in order to straighten and reinforce the orthostats that were leaning inward and causing the roof to become unstable (O’Kelly 1982, 93). Hensey argues that O’Kelly stated that the outer part of the entrance was a ‘free standing structure’, and that there is a gap three stones inward from the entrance and above the beginning part of roof-box that is filled with dry stone walling that doesn’t match the rest of the passage stones. According to Hensey, this is where the extension begins of the newer piece of the passageway that O’Kelly supposedly constructed (Nationwide 2016).

Interestingly enough, the Office of Public Works noticed the statements made by Robert Hensey in the *RTÉ One ‘Nationwide’* video broadcast. As a result, the Office of Public Works publicly released a statement and letter on their official Twitter site (@opwireland) on December 21<sup>st</sup>, 2016, which explained their stance on the whole controversy. In the letter The Office of Public Works stated that the suggestion of the roof-box being a ‘50 year old construct’ is entirely untrue. The Office of Public Works argues that Hensey has stated that the roof-box feature at Newgrange is ‘...attested in antiquarian accounts and drawings, in early 20<sup>th</sup> century photography, and then extensively in the substantial O’Kelly excavation archive. There is no question that the roof-box is a modern construct or invention’ (cited in Office of Public Works, Twitter post, December 21, 2016 [11:30 a.m], accessed March 22, 2018, <https://twitter.com/opwireland>).

In response to Hensey’s statements, the Office of Public Works also stated that that Dr. Hensey himself has researched the excavation and re-instatement works that were

carried out by Michael J. O’Kelly, and that O’Kelly himself thoroughly recorded all of his excavations which are available in archived sources available upon request from the National Monuments Services Archives, Heritage, Regional, Rural and Gaeltacht Affairs (Office of Public Works, Twitter post, December 21, 2016 [11:30 a.m], accessed March 22, 2018, <https://twitter.com/opwireland>). The Office of Public Works added two photos of the roof-box lintel protruding from the mound of Newgrange prior to excavation, where the lozenges on the front of the stone lintel, or roof-box, are clearly visible as previously mentioned in the early observations of antiquarians.



Figure 8. OPW Comments regarding the Roof Box to the Newgrange Monument, Twitter, accessed March 22, 2018, <https://twitter.com/opwireland>



### **Comments regarding the Roof Box to the Newgrange Monument**

Following excavations at Newgrange in the 1960s, the monument's entrance, including the roof box, passageway were fully re-instated. The suggestion made that the roof box is a "50-year-old construct" is entirely untrue.

Dr. Robert Hensey, an archaeologist who has researched the excavation and re-instatement works carried out by Professor Michael O'Kelly confirms this position. Dr. Hensey has stated, "The roof-box is attested in antiquarian accounts and drawings, in early twentieth century photography, and then extensively in the substantial O'Kelly excavation archive. There is no question that the roof-box is a modern construct or invention; indeed the O'Kelly archive allows us to carefully compare the roof-box before and after restoration".

The excavation and reinstatement works carried out by Prof. Michael O'Kelly were fully recorded and include detailed drawings and photographic images. Prof. O' Kelly's archives are fully available to consult upon request from the National Monuments Service Archives, Department of Arts, Heritage, Regional, Rural and Gaeltacht Affairs.

The attached photographs which were taken in 1935 and 1954 respectively show the Monument pre excavations and clearly identify the positioning of the roof box as it is today.

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Figure 9. OPW Comments regarding the Roof Box to the Newgrange Monument, Letter, accessed March 22, 2018, <https://twitter.com/opwireland>

Interestingly enough, in the *RTÉ One Nationwide* video broadcast, reporter Niall Martin interviews an 82 year-old local man named Hugh Russell, who describes a local



folk memory of the Winter Solstice sun phenomena at Newgrange that he had learned about as a child, and explains that it had existed in the area generations before archaeologists figured it out:

My father was born in 1880, so therefore, he went back a long time. Now, when we would be farming on our farm, we could see the buses going to Newgrange, and he used to tell me that the light shone in on Solstice day. Bob Hickey and his wife they were the caretakers, he explained what Newgrange was and he didn't tell us how long it was, when Newgrange was actually discovered, but he explained to us, and brought us in then, and he brought us into the cremation chamber there, and showed us that, and then told us about the light shining through on the shortest day of the year (Nationwide 2016).

The concept of an archaeological monument being aligned to the winter solstice is not a completely new concept. Even though the roof-box appears to be a unique feature compared to other passage tombs, there have been many other sites that have shown evidence of astronomical alignments in several ways. This means that the very nature of the monument of Newgrange being aligned to the Winter Solstice sun is in itself not an entirely unique occurrence. Surveys conducted on megalithic monuments throughout England, Scotland, Wales and Brittany by Alexander Thom have been found to have astronomical alignments with orientations toward the motions of the moon, the rising and setting sun at solstices, equinoxes and quarter days, as well as the rising and setting points of first magnitude stars (cited in Lynch 1994, 23). A study by Ní Loingsigh (1975) was conducted which measured the centers of stone circles in Southwest Ireland in the region of Cork and Kerry in order to find the possibility of a line oriented on an event of astronomical significance (cited in Lynch 1994, 23). 37 stone alignments were tested on the basis of the criteria of each site having three or more standing stones which are in a

straight line and intervisible. 23 out of the 37 stone alignments in the test area within Cork and Kerry were found to be significantly oriented in one direction only, with 13 of them aligned eastward, and 8 of them aligned westward (cited in Lynch 1994, 24). Lynch demonstrates that the test results show that the probability of these alignments operates at 0.00000089, and that the chances of 25 out of 37 sites having an astronomical alignment by accident is one in a million; therefore, the astronomical hypothesis of this study may be accepted (1994, 25). The study suggests that some megalithic sites may have an astronomical alignment, which means the possibility of many other sites being astronomically aligned is not an impossibility. The monument of Newgrange itself is built in alignment with the Winter Solstice sun, therefore, it does not seem to have been impossible for ancient peoples, whether they were the original builders, or groups of people who used the site at a different time, to have also constructed the roof-box in alignment with the Winter Solstice sun.

In *The Brú: A Hiberno-Roman Cult Site at Newgrange?* Gibbons and Gibbons (2016) argue that recent reassessments of Newgrange, the remains and antiquarian accounts, as well as aerial photography all suggest that the tomb had been altered and that the interior had likely been entered as a part of a continuing ritual or religious deposition of Roman votive offerings over several centuries in the Iron age (Gibbons and Gibbons 2016, 67).

As previously mentioned, Roman coins, as well as other Roman gold ornaments were found outside the periphery of Newgrange and were likely to have been ritually deposited as votive offerings (Eogan & Byrne 1967, 118). O'Kelly proposed that there had been no interference inside the mound itself during the Bronze Age, Iron Age, Early-

Christian or Anglo-Norman Ages, and that the site had been left untouched. O’Kelly also argued that the finds of Roman votive offerings over an extended period of time outside of the tomb meant that they were deposited from visiting Romans from Britain, who revered the ‘powerful gods’ from the local mythology that were believed to have lived at Newgrange (Gibbons and Gibbons 2016, 73). However, Gibbons and Gibbons (2016, 71) argue that Newgrange was a prominent focus for religious and ritual deposition in the Late Iron Age, and that during this time period many monuments were modified and adapted to accommodate new ritual practices that were incorporated into the folklore and origin myths of the ruling dynasties of the area (cited in Gibbons and Gibbons 2016, 69).

As previously mentioned, Gabriel Cooney argues that the constructed spaces of Neolithic landscapes, such as monuments and burial tombs across Ireland, were already ancient by the time the early Irish texts were composed. These landscapes and monuments would have been visible to medieval authors and would have been the foundation of the cultural landscapes, or the foundations of which mythology was based upon that is reflected in medieval texts (cited in MacGugan 2012, 212). The deposition of high value Roman material in front of the entrance of Newgrange found ranging from southeast to southwest, and the presence of the possibility of elite burials shows that Newgrange was likely to have been developed over several centuries and was considered to be an important site in the pre-Christian period. According to Gibbons and Gibbons, this also further explains the mythological associations with Newgrange such as the Dagda, as well as other figures such as Elcmar, or *Nuadu*, Óengus, and Bóann, or *Bóand* (Gibbons and Gibbons 2016, 75). The mythological association between these figures and Newgrange may point to historical connections, or strong Romano-British connections,

especially with the Boyne valley. Linguistic associations such as the borrowing of Latin titles and terminology with early Leinster figures and the Roman army, as well as Patrician documents associating Irish kings with British mothers also point to this possibility (cited in Gibbons and Gibbons 2016, 73).

## Conclusion

There are many questions regarding the purpose and authenticity of the roof-box that can be asked. Could the roof-box at Newgrange have been built during the Roman occupation of the site when it was used for ongoing religious and ritual depositions, as Gibbons and Gibbons (2016) suggest? Could the roof-box have been added sometime during the many phases of settlement and activity the site has experienced over the centuries? Could the roof-box be a '50-year-old construct' which Dr. Robert Hensey claims O'Kelly has created? Or was the roof-box found *in situ*, perfectly preserved and rediscovered when it was excavated in the 1960s, as O'Kelly suggests? There may not be answers to these questions. However, it is not the age of the roof-box that gives it authenticity. It is irrelevant whether its origins are ancient or modern, or if it has been changed or altered in some way over the years. The function of the roof-box and how it is used and interpreted continuously over time is what makes it authentic.

The roof-box, regardless of the time it was constructed, was built to reflect the already existing winter solstice alignment of Newgrange; therefore, the roof-box acts as a mechanism that allows the sun to enter the passage chamber of the monument. The physical evidence of ritual exists in the alignment of the monument of Newgrange itself, and the roof-box acts as a focal point to allow the light to ritually enter the passage tomb every year on the winter solstice. As previously mentioned by O'Kelly (1982, 94), evidence in the form of scratch marks were found on the roof-box from stones being pushed in and out, which O'Kelly argues is evidence that the roof-box was used in such a way as to allow ancient peoples to ritually control the entrance of sunlight into the passage tomb.

Additionally, evidence in the form of Roman votive offerings show that the site may have been used as a place of continuing ritual or religious deposition over several centuries in the Iron age. Later medieval Irish texts make several references to themes of ritual and supernatural lore in association with Newgrange and the manipulation of time, and of the sun. Huckins MacGugan (2012, 211) argues that the monuments mentioned in medieval literature would have been visible to authors in the medieval period, acting as a foundation of cultural landscape which mythological stories were based upon, and that the re-use and re-interpretation of monuments and burial mounds was common. Similarly, real individuals of past societies could survive in popular memory for several generations, eventually being assimilated into the mythical model (cited in Tilley 2006, 25). The cultural memories of people or rituals, may have been told and retold through narrative stories and oral traditions carried on throughout the years and associated with landmarks or monuments the would have acted as mnemonic devices. As O'Kelly (1982, 45) argues, these stories would have undergone many changes but the underlying themes remained intact, preserving some of the remnants of their sacred beginnings and reflecting to some degree the beliefs of pre-literate peoples.

After the excavations and reconstruction carried out in the 1960s by Michael J. O'Kelly and the Office of Public Works, the roof-box was re-discovered, and a new era of interpretation was introduced. This included the aesthetic reconstruction of the monument to reflect how the original monument may have looked, which was based on evidence from O'Kelly's excavation and interpretation. It also included structural changes to accommodate a growing number of visitors, both locally and internationally. The roof-box came to symbolize not just ancient ritual, but modern ritual as well. The way in

which people gather annually at Newgrange on the Winter Solstice is in a sense, a form of ritual. Winter Solstice at Newgrange is a time of annual celebration, music, and enjoyment, where many people come together for different reasons, all interpreting the site and finding meaning in many different ways (Office of Public Works, 2017a).

In conclusion, it is irrelevant whether or not the roof-box is an original feature of the monument, if it was built or changed at a later date during the many phases of activity the site has gone through over the centuries, or even if it is a '50-year-old construct'. The roof-box itself acts as a symbol or mnemonic device that has carries with it cultural memories both of the past, and present, as it is continuously reinterpreted. The function of the roof-box and how it is continuously used and interpreted is what gives it authenticity.



Figure 10. Lynch, et al., Aerial View looking west, 2014, 62.

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