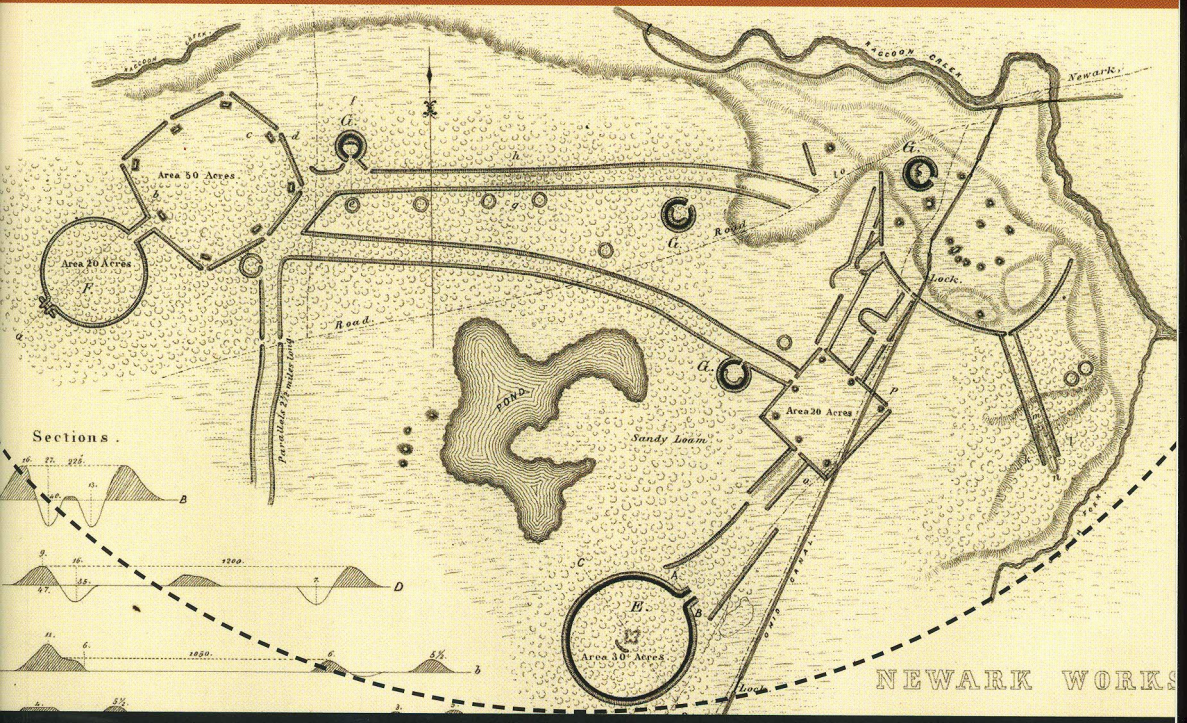
THE NEWARK EARTHWORKS

ENDURING MONUMENTS, CONTESTED MEANINGS



EDITED BY LINDSAY JONES AND RICHARD D. SHIELS

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TIMOTHY DARVILL

Beyond Newark

Prehistoric Ceremonial Centers and Their Cosmologies

CEREMONIES AND RITUAL observance connected to concerns about life, fecundity, well-being, and death are fundamental elements of the human condition and everyday experiences; they are axiomatic to what Martin Heidegger referred to as "dwelling" on the earth and fit within his four-fold concept of "oneness": earth and sky, divinities and mortals.[1] Many aspects of these emotional attachments lie in the domain of intangible heritage—language, music, dance, sacred knowledge, beliefs, representations, cosmologies, and worldviews that peoples and societies hold dear and transmit through oral traditions, participation, pupilage, and performance. But such things also find formal expression in the tangible material world through what Colin Renfrew described as "technologies to cope with the unknown": symbolic and projective—architecture, art, ceremonial monuments, holy objects, sacred places, and special spaces.[2] Embodied in such material culture are the practical realizations of big pictures that serve as mnemonics for beliefs, the means to structure ceremonies and rituals, and, in a very real sense, ways of representing in microcosm the world of particular social realities.

Size is important for ceremonial monuments in a social context. Almost every society provides opportunities for people and their gods to meet together, be it in natural sanctuaries in the landscape, domestic shrines within the house, transportable tabernacles, or towering temples. Most serve local communities and are of commensurate scale. Occasionally, however, much larger ceremonial centers serve extended communities and act as regional foci within sacred landscapes by representing symbols of cosmic, social, and moral order. In prehistoric times such centers typically appear at one of three key moments in the development of social complexity: the emergence of stable agricultural communities, the formation of hierarchical or chiefdom

societies, or the coalescence of political units into simple state systems immediately preceding the appearance of urban centers. The Newark Earthworks (fig. 1) represent the physical remains of one such substantial ceremonial center spread over more than 83 ha beside the Licking River in central Ohio.[3] The sheer scale and diversity of Newark's numerous components represented by enclosures, mounds, avenues, platforms, and burial grounds set it apart as one of a handful of important and significant Hopewell ceremonial centers. Much is already known through studies dating back to the mid-nineteenth century,[4] but many questions remain to be answered about how it developed, how it worked, and what the various components meant to those who used it. Some of these can only be answered through new research at the site itself, but comparative perspectives are also potentially useful. Accordingly, this essay looks beyond the Newark Earthworks and the Ohio valley into the wider world of ceremonial centers across time and space in order to provide a broad context through cross-cultural comparisons and mapping possibilities. Working on a wide canvas, I shall explore four themes represented at selected ceremonial centers across Eurasia, Africa, and the Americas: sacred geography, seasonal communal meetings, cosmological structuring, and links between life and death—all of which bear on what can be seen in the archaeological record at Newark and related Hopewell centers.

Sacred Geographies

Ceremonial centers generally both represent and create a sacred geography through a social use of space that is intimately and recognizably linked to beliefs and understandings of sacred and profane worlds. As Paul Wheatley pointed out some years ago, operationally, ceremonial centers were instruments for the creation of political, social, and economic order, but structurally they were symbols of cosmic, spiritual, religious, and moral order.[5] Positioning in the landscape was therefore important, and often gave special meanings to the ceremonial centers of particular communities. A connection with water, especially rivers or lakes, is common. This may have the practical advantage of facilitating communications and access to a site, but water also has many attributes that find expression in beliefs (healing, purification, a liminal zone between worlds, a boundary that restricts the movements of people and spirits). It can also be seen metaphorically as representing the journey of life from source to sea. James Mooney notes that among Cherokee

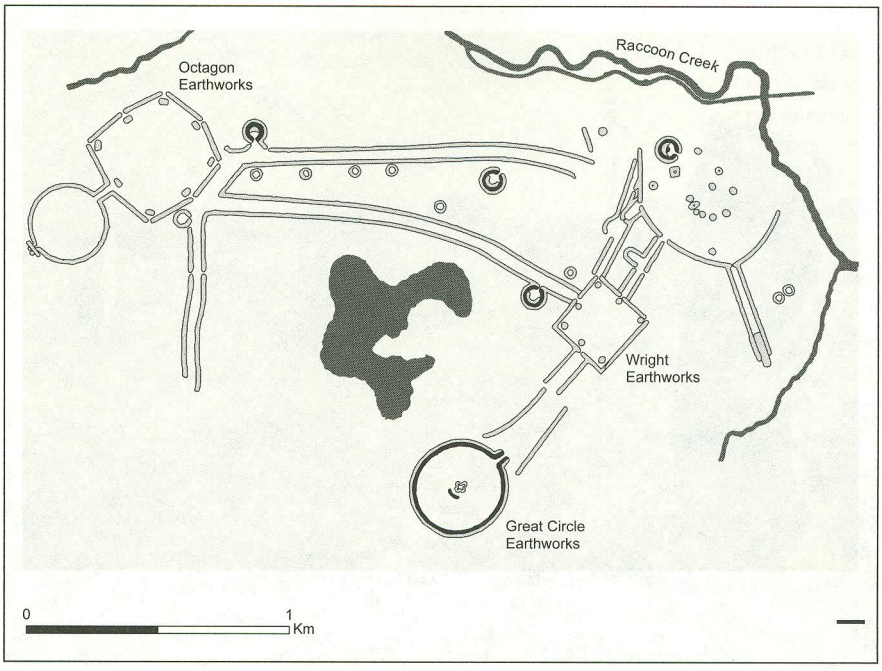


FIGURE 1. Plan of the main component monuments of the Newark Ceremonial Center. (After Squier and Davis, *Ancient Monuments of the Mississippi Valley* [1848], plate 25; drawing by Vanessa Constant)

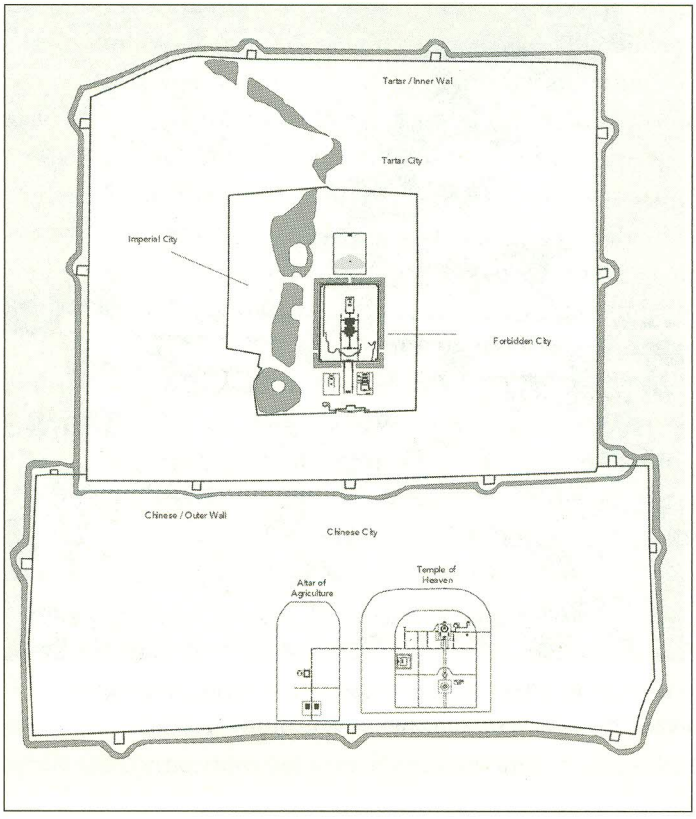
people every important ceremony contains a prayer to the "Long Person," the formulistic name for the river.[6]

Sometimes the linear form of rivers can perhaps be glimpsed in the elongated enclosures and defined pathways found at nearby ceremonial centers. It has been suggested that at Newark movements between the various enclosures were structured by embanked avenues that link them together and connect the whole complex to the South Fork of the Licking River via the Cherry Valley Ellipse with its burial mounds and enclosures.[7] Similarly, in the quite different cultures of southern Britain in the fourth and third millennia BCE, cursus monuments often run parallel or at right angles to rivers, while avenues link rivers to henges and henge enclosures.[8] At Stonehenge the earthwork avenue linking the stone circle with the River Avon is 2.5 km long with a stone circle at start and finish.[9] Avebury is much the same, with the stone-lined West Kennet Avenue (fig. 2) starting at a stone circle on Overton

FIGURE 2. West Kennet Avenue at Avebury, Wiltshire, United Kingdom, looking south-east with pairs of stones marking the edge of the processional route that originally led from the Sanctuary via the River Kennet to Avebury Henge. (Photograph by Timothy Darvill; copyright reserved)

Hill before passing beside the River Kennet and progressing on to Avebury itself over a total distance of 2.4 km.[10]

Such linearity implies that those passing along the route were arranged in some kind of order that is played out in the timing of their arrivals and departures, the structuring of their movements between nodes within the complex, and their visibility or otherwise to those assembled at the site. Such performances have been documented at the Temple of Heaven (Tian Tan) in Beijing, China, situated south of the Forbidden City (fig. 3). Here emperors of the Ming (1364–1644 CE) and Qing (1644–1911 CE) dynasties worshipped heaven and prayed for good harvests in a complex covering 273 ha. Movements between the main foci—the Circular Mound Altar in the south and the Altar of Prayer for Grain in the north (fig. 4)—were structured along the 360 m long Haiman Road, which forms the central axis of the complex. Changes of clothes and regalia were needed along the way so that some components of the structure, for example the Platform of Changing Clothes, were



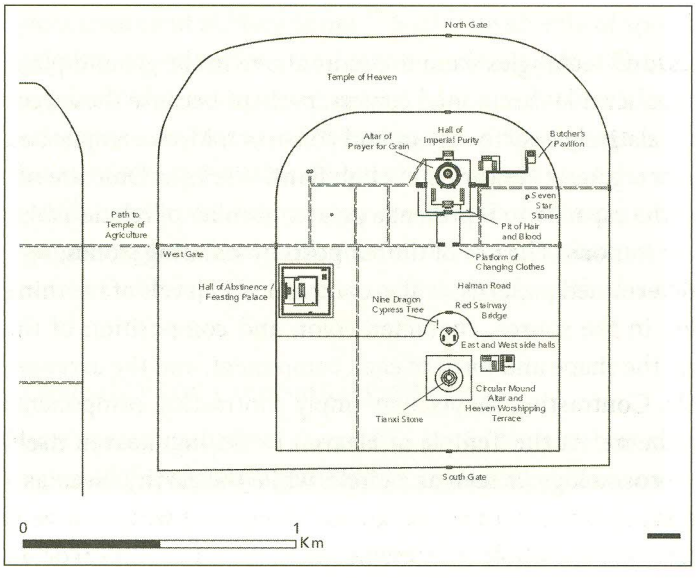


FIGURE 3. Beijing and the Temple of Heaven, China. *Top,* the main component monuments of the Beijing Ceremonial Center, Beijing Shi. *Bottom,* detailed plan of the Temple of Heaven (Tian Tan). (Top after C. P. Fitzgerald, *Ancient China* [London: Elsvier/Phaidon], 1978, 26; bottom after Yang and Lu, *Temple of Heaven,* 96; drawing by Vanessa Constant)

FIGURE 4. Temple of Heaven (Tian Tan), Beijing, China. Hall of Prayer for Good Harvests, looking north. (Photograph by Timothy Darvill; copyright reserved)

principally concerned with transformations in preparation for later stages of the journey.[11]

Circles, squares, and rectangles seem to predominate in the ground plans of individual components at ceremonial centers, perhaps because these geometric shapes are relatively easy to set out and construct. More complicated forms such as the octagons at Newark and High Bank Works in Ohio are not unusual and have the capacity to represent a greater number of relationships and focal points or stations. The use of timber posts or standing stones, separately or in predetermined patterns, is also common, and levels of meaning may be embedded in the source, character, color, and composition of the materials selected, the shape and form of each component, and the arrangement of the whole. Contrasting shapes may imply contrasting components of a conceptual scheme. At the Temple of Heaven in Beijing, heaven itself, following Chinese cosmology, is seen as a circle, while the earth is seen as a square. Thus the symbolic structure of a square juxtaposed with a circle is common in the layout of the whole monument and in the architectural detail

of individual components. Details such as shape and form can also be important in the interpretation of meaning, especially binary oppositions that may reflect very fundamental dimensions such as life and death; male and female; day and night; summer and winter; old and young; and, as already seen in the Chinese case, heaven and earth. For the Stonehenge landscape, Mike Parker Pearson and his Madagascan colleague Ramilisonina suggested an east–west division of the local landscape into a domain of the living focused on Durrington Walls and a domain of the ancestors focused on Stonehenge itself.[12] They suggest that such divisions were monumentalized in the use of timber structures in association with the living and stone for the memorialization of the dead. It is a seductive model but one that is founded on questionable cross-cultural structural analogies.[13] Elsewhere I have shown that while Stonehenge was certainly a cemetery in its early years, the great ceremonial complex was transformed through the placing of powerful stone pillars, the so-called bluestones brought more than 220 km from outcrops in the Preseli Hills of southwest Wales.[14] These stones were set up and used within a massive stone structure made from locally available sarsen stones in a fashion that replicated traditional shrines more typically made of timber. The arrangement of the bluestones at Stonehenge represents in microcosm the arrangement of the outcrops in the real landscape from where they came, while the connections between bluestones and water in the Preseli Hills and the traditional association of both with healing and well-being provide a strong reason for the movement of the stones themselves and their subsequent treatment at Stonehenge.[15] Such movements of special materials from a significant source for use in ceremonial contexts at distant centers has been documented in other situations and has been dubbed "shrine franchising" by anthropologist Tim Insoll.[16] In the case of Stonehenge it is especially telling that the earliest available documentary accounts of the site set down in the twelfth century CE, which were presumably derived from oral histories and legends, explain the significance of the stones as having magical powers for healing and locate their source quiet correctly in the far west of Britain.[17]

Seasonality and Communal Gatherings

Some ceremonial centers were also settlements, others simply places where dispersed populations gathered at a particular time; most involve the fission and fusion of populations as numbers swell for significant events and then dwindle as the routines of everyday life demand. At a practical level the

availability of subsistence resources may be significant for the timing and duration of gatherings, which thereby mimic seasonal rhythms. Symbolically, such gatherings often revolve around appeasing supernatural forces, vision questing, enlightenment, and attempts to turn favors from deities to secular advantage. The gatherings themselves may thus be destinations for pilgrimage, powwows, trading fairs, sacred games, or a combination of these. Conceptual associations between landscape features, sacred spaces, constellations visible in the heavens, mythologies, and journeys are not uncommon and have been well documented by Linea Sunderstrom in relation to the Black Hills of South Dakota among Lakotas, Cheyennes, Kiowas, and Kiowa-Apache communities.[18]

Something similar may be glimpsed in the ancient world documented by Tacitus, the first-century CE Roman politician and writer. He records that among the Suebi tribe of Germania the oldest and noblest lineage was the Semnones. All the people of this blood gathered together at a set time in a wood hallowed by the auguries of their ancestors. The ceremonies opened with the sacrifice in public of a human victim. It was believed that the nation had been born within the wood and that the god who ruled over them dwelled among the trees.[19] In the case of the ceremonies at the Temple of Heaven in Beijing, the whole population had an interest in successful intersessions with the gods, but those actually involved in the process were limited to the emperor's family and the officiating priests. The emperor was cast as the Son of Heaven, who administered earthly matters on behalf of, and representing, heavenly authority. The ceremonies essentially map a physical and metaphorical journey that started with a period of starvation and ended with sumptuous feasting several days later.[20]

Fixing a meeting place within an otherwise fairly impermanent system has much practical value, but Colin Renfrew has suggested that gathering places were critical for creating human interactions as a fundamental of the human condition.[21] By creating contexts for group-oriented social interaction, often in the form of cosmologically rendered rituals structured through physically constructed monuments, there are opportunities for developing and sharing cognitive understandings of socially constructed realities. It is a view that accords well with studies by the evolutionary psychologist Robin Dunbar, who sees collective talking, laughing, singing, and dancing as key social activities that humankind developed, enhanced, and elaborated because of the intoxicating effects of participation and the emotional enrichment, euphoric state, and sense of well-being that ensued.[22]

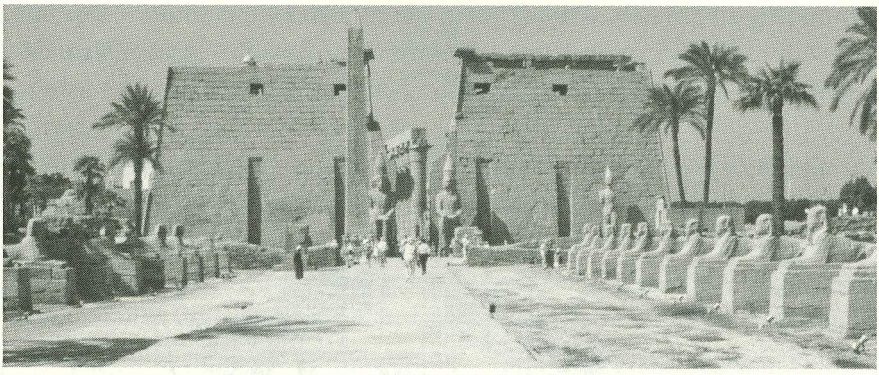


FIGURE 5. Temple of Amon-Ra at Luxor, Egypt, looking east along the processional avenue lined by sphinxes with rams' heads, through the courtyard of Nectanebo to the pylon of Ramses II, preceded by two obelisks (one preserved; its missing partner was removed to the Place de la Concorde in Paris in 1836), and two seated colossi representing the Pharaoh. (Photograph by Timothy Darvill; copyright reserved)

Journeying to ceremonial centers and cult places may be as important as arriving. Traditional routes are typically marked by decorated stones, rocks, special trees, or perhaps formal ceremonial roads and spirit paths.[23] Installations may be expected along the routes, as Petersen has shown with the reference to the water systems, khans, mosques, forts, palaces, cemeteries, settlements, and road markings associated with the Islamic Hajj routes of Arabia.[24] Architecturally spectacular are the great sphinx-lined avenues joining temples at Luxor, Egypt (fig. 5), but more typical are the less elaborate structures such as the Great Hopewell Road running southward from Newark for perhaps sixty miles or so to Chillicothe, which may be a formally defined approach route for those attending the ceremonies.[25]

All these dimensions have major implications for the layout and physical structure of the ceremonial center itself. As already noted, elements such as enclosures form arenas for performance, avenues structure movements, and mounds focus attention on particular people or activities. All serve both to include and exclude; they perpetuate social and religious orders. But it is also important to focus on the spaces as well as the structures, especially the large open spaces, as these are likely to be the plazas, dancing grounds, game fields, and campsites that come into use as the occasion builds. In terms of their meaning and significance, big events also demand big attendance.

Studies of contact-period Creek settlement sites in the Southeast of North America shed much light on one kind of ceremonial center: the "square

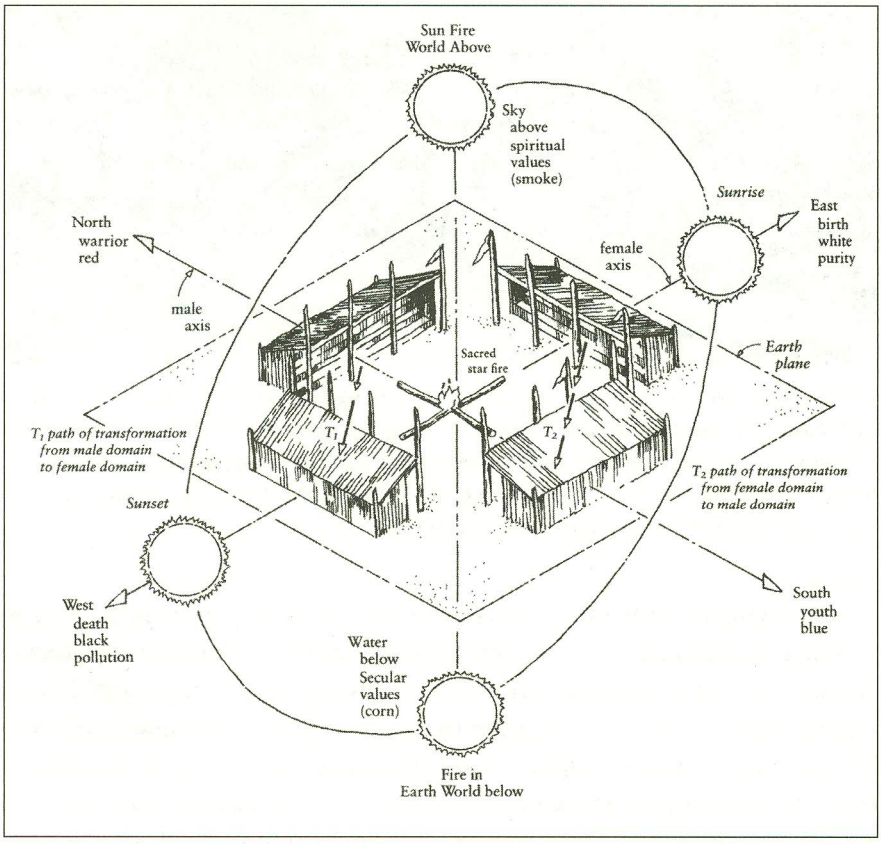


FIGURE 6. Schematic plan of a Creek square ground showing the cosmological symbolism and principal axes. (After Nabokov and Easton, *Native American Architecture,* 110; drawing by Vanessa Constant)

ground,"[26] which is sometimes considered a development of prehistoric plaza sites in the same area.[27] This was the summer location of the sacred fire, and the traditional center of political and religious activities (fig. 6). Four shelters called "clan beds" were situated around a square plaza. In late summer the Green Corn Ceremony was intended to renew ritual and cosmic vitality and reaffirm social structure. On the fourth day of the ceremony the scared fire was rekindled and campfires relit from it. The flame, which represented the sun itself, was believed to renew the vitality of the household, village, and cosmos. Color was symbolic in the square ground. Red clan beds (signifying war) were built astride the male axis, while white beds (peace) were placed on the female axis. A man's seating assignment reflected his change in age

and role from boy to warrior to old man. There is also the suggestion that the male passage followed a path from the world of his mother to the world of men and warriorhood and then finally, as an elder, a return to the female domain.

In an archaeological context in Britain there is extensive evidence for seasonal occupation along the Avon valley and around Durrington Walls to the east of Stonehenge during the third millennium BCE.[28] Recent investigations around the great henge enclosure of Durrington Walls suggest that at midwinter this was a large, bustling, and mixed community of possibly thousands of people, a seasonal encampment of revelers awaiting ceremonies at Stonehenge.[29] Hunting, cooking, and eating pigs seem to have occurred,[30] and fires were a conspicuous feature of the small square houses.[31]

The presence at ceremonial sites of repetitious elements is a common pattern and deserves exploration. In some cases there may be a series of similar structures because the very purpose of the event involved gathering essentially repetitious social groups who might each have a focus within the larger communal structure. At Newark, the Octagon with its attached circle is paralleled by the similarly aligned Great Circle and Wright Earthworks, between and around which are numerous smaller embanked or ditched enclosures (fig. 1). The avenues linking these components suggests some kind of progression between the various parts, as discussed above, but in this way of thinking the superficial similarities in the structural form of each element masks the differences. Binary divisions of society along the lines of male/female, day/night, and summer/winter are fairly common and find expression in the use of different sectors of a site. Ternary divisions around a cosmological representation of space in terms of an underworld, earth plane, and sky world or time as being past, present, and future can also be imagined. Close attention to contextual associations is needed here, as particular people, plants, animals, and sprits may be associated with particular domains, while other kinds of being such as birds, trees, water, and shamans may be able to connect or pass between worlds.

Episodic gatherings imply episodic construction and refurbishment. Archaeological evidence suggests that ceremonial centers are dynamic places that develop and change over time as pieces are added and redundant structures abandoned. There is always a temptation to see the plan of a site in its totality as some kind of architectural blueprint, a preconceived design that people gradually moved toward over centuries or millennia. Such a pattern would be exceptional in a prehistoric context. Indeed, Richard Bradley

has argued that the design of places was in many ways less important to prehistoric people than the acts of creating them.[32] Thus what we see is not always what was intended but rather what emerged. In this way of looking at sites, the recutting of ditches, the extension of avenues, the reorientation of alignments, the construction of new enclosures, the placing of the next burial mound, and so on arise from social tensions and contests of authority rather than grand designs. In the case of the platform mound at Irene, Georgia, Victor Thompson has argued that the construction of the mound served to cement community relations through widespread participation, but upon completion the top of the mound became exclusive space with access to it controlled both physically and visually.[33]

Material, texture, and color may be important too. The construction of a communal focus can physically embody components from the social world. Mention has already been made of the so-called bluestones at Stonehenge, a range of dolerites, rhyolites, and tuffs that were selected from particular outcrops in west Wales and brought to Stonehenge because of their perceived magical powers.[34] Elsewhere in Europe there are cases where material representing the territories of those building a communal monument are integrated into the structure. On the island of Jersey in the English Channel, for example, the passage grave of La Hougue Bie includes in its construction seven different kinds of stone brought from different outcrops in the north, south, and east. All were variously used to form the walls and roofing of the central burial chamber and approach passage in the early fourth millennium BCE.[35] Somewhat later in date, on the Isle of Man between Britain and Ireland, the great stepped parliament mound known as the Tynwald Hill lay at the center of a Norse open-air meeting place (fig. 7). It is believed to be constructed from soil brought from each of the parishes that it served.[36] Interestingly, the power of the mound is such that people leaving the island sometimes take a tiny piece of the hill with them to reinforce their ancestral connections to the place.

One consequence of building monuments from differently sourced materials is that when new, these structures would have been rather colorful. Miles Russell has suggested that the exposed surface of some Neolithic long barrows in southern Britain would have looked rather like a Battenberg cake of yellows and browns, as materials of contrasting colors were dumped into adjoining fenced bays that structured the body of the mound.[37] At the Thornborough central circle, excavations in 1952 revealed the presence of gypsum on the original surface of the enclosure bank, suggesting that its builders had

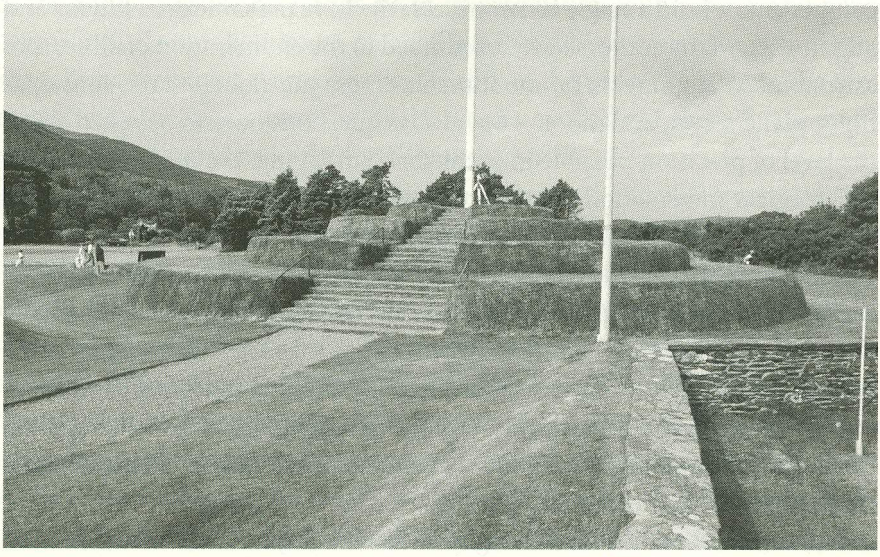


FIGURE 7. Tynwald Hill at St. John's, Isle of Man, looking west with the walled processional way opening onto a penannular enclosure surrounding the centrally placed stepped Thing Mound, or parliament hill. Open-air parliaments have been held on the mound since Norse times and continue annually on July 5 to this day. (Photograph by Timothy Darvill; copyright reserved)

deliberately tried to make the monument appear white.[38] It is a practice that chimes with Brad Lepper's recognition that yellowish brown gravel had been deposited on the berm between the ditch and the dark brown bank at the Great Circle at Newark.[39]

Timing and tempo may be fixed into the form and architecture of ceremonial centers. The rondels of central Europe are generally seen as meeting places and cult centers at which there may have been a strong link with the marking of time.[40] But preparing, journeying, attending, and participating takes time, so that the overall duration of gatherings must be seen in terms of weeks or even months. Certain times were no doubt deemed more sacred than others, so being there at the right time was important; in this, astronomy has key a role to play.

Cosmological Structuring

Alignments onto heavenly bodies are embedded into the design and structure of the key components of most ceremonial centers, although not all the

components within a single center necessarily have the same orientations and alignments. Many authors have succumbed to the enumeration of all sorts of astronomical alignments for monuments across the globe—stars, constellations, planets, sun, and moon—but always questions have to be asked about the level of precision possible in prehistoric surveying, the quality of the archaeological information relating to the contemporaneity of features used for sighting, and, of course, issues surrounding the visibility and placement of celestial bodies in the sky as seen by potential observers in the past because of changes arising through precession. As Clive Ruggles has admirably demonstrated, the most common alignments are toward key moments in the progress of the sun and moon across the sky.[41] Sun and moon are sometimes seen as deities in their own right, with the sun generally seen as male, while the moon is female (Greek: Apollo/Artemis; Roman: Apollo/Diana; Navajo: Day Traveler/Night Traveler).

At Newark, the axis of the Octagon allows the major north moonrise to be observed from the platform on the southwest side of the Observatory Circle through the opening on the northeast side of the Octagon.[42] This alignment occurs in precise astronomical terms every 235 lunar months or 18.6 solar years, but in practical terms it can be observed for a few days each month for up to a solar year either side of the lunar extremum itself. There is no evidence that key moments in the solar cycle were fixed into the architecture of the Newark Earthworks, although both sun and moon are well represented at other contemporary ceremonial centers in Ohio and at many other centers across the world.[43] Stroke-ornamented pottery culture rondels such as that in Goseck, Germany, in central Europe tend to have entrances that open toward the sunrise and sunset on the winter solstice, whereas the slightly later Lengyel culture enclosures combine solar alignments with markers indicating changes in moon phase.[44]

The principal axis of Stonehenge is famously aligned with the summer and winter solstices, and there is increasing evidence that it was sunset in the southwestern sky at the winter solstice that attracted the most attention.[45] But here too alignments that fix key lunar events are also represented, most notably the four station stones marking the corners of a rectangle whose long northwest–southeast sides align on the major limiting moon rising in the south (full in summer) or setting in the north (full in winter), which happens every 18.6 solar years.[46] Lionel Sims has argued that the builders here were deliberately trying to invest the sun with properties that reflected the moon's religious significance to earlier communities in the area.[47] The significance

of the winter solstice may often lie in its association with rebirth and new beginnings. Certainly this was case at Tian Tan, China, where the axis of the site reflects the physical astronomical reality of the winter solstice, while the metaphysical religious purpose of the rituals carried out there focused on ensuring good harvests in the forthcoming year.[48]

In all these instances the relationship between the architecture and the movements of heavenly bodies is fairly general. Ceremonial sites were not scientific observatories for the development of abstract understandings. Rather, they were working models of a socially constructed universe that was understood by each society in its own terms; recurrent and predictable configurations prompted particular activities linked to wider cosmologies. The rhythm of the sky became the rhythm of life. Time and space were no doubt the important considerations in all these cases: being in the right place at the precise moment that worlds collide, deities come close to humans, or doorways between realms open wide to allow movement across other impenetrable divides is central to ritual practices and religious beliefs.

Juxtaposing the movements of the sun and moon is a feature of many early cosmological and calendrical schemes.[49] As a device for representing the passing of time—what Gavin Lucas calls time indication[50]—observing the daily cycle of the sun and marking the two solstices provide secure and verifiable moments that anchor festivals and events to the routine of daily life. Conveniently, it divides the year into two seasons—summer and winter. The addition of lunar observations allows the recognition of lunar months (average 29.53 solar days), and if the lunar extrema are included, then metonic eras each equating to 18.6 solar years can be defined as a basis for time reckoning.[51] At Stonehenge some kind of time-reckoning system was probably built into the architecture of the Sarsen Circle (fig. 8), which contains thirty upright pillars joined at the top by lintels. Notably, stone 11 is about half the size of all the others, yielding 29.5 stones in reality—the average number of solar days in a lunar month.[52]

Calendars were probably only part of the story at Stonehenge and other ceremonial centers. As I have discussed elsewhere, neither the time-indication devices nor the time-reckoning apparatus embedded into the architecture of Stonehenge in themselves provide plausible reasons why the monument was constructed; they were built into its structure to facilitate and program its real purpose.[53] Rather it was the life of the sun attaining its daily passage through the heavens and the underworld that was of greatest interest to those occupying the earth. In a similar way Herman Bender usefully distinguishes

FIGURE 8. Stonehenge, Wiltshire, United Kingdom, showing the Sarsen Circle from the enclosure boundary, looking southwest. (Photograph by Timothy Darvill; copyright reserved)

between the "function" of structures such as medicine wheels in North America that fix alignments in a permanent structure and determine and verify particular celestial events or sequences of events, and their "purpose," which was to help maintain the universal order on behalf of humankind.[54] The beauty of the system is that everyone could recognize the patterns at a general level by locally observing solar and lunar movements against the skyline or in domestic shrines and therefore know when it was time to attend larger-scale gatherings.

Understanding the basic movements of the heavens and the juxtaposition of celestial bodies at key moments is a dimension of traditional sacred knowledge that must have developed over many generations. It is not something that had to be replotted every time it was needed, however, as archaeologically there is evidence for such things being recorded through encoding in material culture. Most well-known is the Nebra Disc from the Mittelberg near Nebra in central eastern Germany, deposited about 1600 BCE in a pit within a walled hilltop enclosure.[55] In its first form this gold-inlayed copper disc shows the sun or full moon, crescent moon, Pleiades, and various other stars encoded to show the leap rule needed to synchronize lunar months with solar years. Later it was modified to include two gold arc-shaped plates indexing the extreme risings and settings of the sun at the summer and winter solstices, and finally a boat symbol was added to reflect the cosmologies of the mid-second millennium BCE in central Europe.[56] Of about the same date is the gold lozenge recovered from the grave of an adult male buried in

Bush Barrow just to the southwest of Stonehenge.[57] Alexander Thom and colleagues also see this as an alidade-type instrument for fixing key epochs within a simple calendar,[58] a view not universally accepted.[59] In North America, star maps were used by Lakota communities and perhaps other groups, but few people knew of them, and even fewer were able to read them and understand their meaning.[60] Such maps may well be relevant to understanding the form, structure, and layout of the Newark Earthworks.

Links between Life and Death

Ceremonial centers often stand on boundaries. Sometimes these are physical boundaries beside rivers or geographically constituted units, sometimes they are social boundaries at the intersection of tribal lands or ground that is shared by adjoining communities, but they may also be cosmic boundaries where the mortals meet the immortals, spirits meet the living, and the quick and the dead are united. Burials are present around most ceremonial centers, as at Stonehenge, Newark, and countless others around the world.[61] However, just as significant as the human remains is the material culture. This represents elements of the prevailing system, contributors to the union, and it is common to find earth, fire, water, and air as familiar themes. Images of shamans such as the Wray Figurine from Newark have an intimate scale about them.[62] Altogether larger are the posts and stones that may represent ancestors or ancestral deities while also providing the sighting points for alignments or mnemonics for calendrical systems. In the case of Stonehenge, I have suggested that the five Sarsen Trilithons in the center of the site could be seen as conjoined deities, pairs of gods, or ancestors born at the same time from a single union who may also represent male/female, day/night, summer/winter oppositions.[63] The Great Trilithon to the southwest, the largest and most prominent, stands astride the principal axis and might cautiously be identified with a pair of deities representing day and night: the sun and moon. In both the Greek and Roman pantheons these might be seen as Apollo (male solar deity) and Artemis (female lunar deity), twins fathered by Zeus and born of Leto. Apollo represents divination, prophecy, healing, music, and causing the fruits of the earth to ripen, while Artemis is goddess of forests, hunting, agriculture, and childbirth; both were associated with the ability to cause sudden death.[64]

At Tan Tian numbers counted as architectural components reflected regular patterns that had meaning to the builders and users of the monuments.

The Hall of Prayer for Good Harvest at the northern end of the complex is constructed on a three-tiered marble base, each tier representing part of the cosmological order indicated by carved reliefs of clouds, phoenixes, and dragons.[65] The roof, covered with blue tiles to represent heaven, is supported by twenty-eight pillars, each identified with one of the recognized constellations; the side halls contain stone tablets representing the gods of the sun, moon, and stars. It was within the square enclosure surrounding the hall that animals were sacrificed in order to create new life, the remains of the ceremonies being ritually burned on stoves before being deposited in the Pit of Hair and Blood in the southeastern corner of the enclosure.

Potentially rather important is the way that prehistoric communities combined fundamental dimensions of their beliefs and worldviews in all aspects of the lived world. Thus with reference to life during the third millennium BCE in the isles of Orkney off the northern coast of Scotland, Colin Richards has shown that the layout of dwelling houses is a reverse image of the ground plan of their tombs and that the same structuring principles were also applied to their ceremonial sites in the form of henges and stone circles.[66] All three articulations to the social use of space drew on the visual imagery of the natural world in their architectural representation.[67] Elsewhere, the distinction between houses for the living and houses for the deities is rather blurred. As Ian Hodder and others have shown with such clarity, at Çatalhöyük, Turkey, the "houses" include remarkable mural painting; reliefs and sculptures of bulls, leopards, and women on the walls; and bodies buried beneath the floors.[68] As anthropology has shown time and time again, the principles that structure people's beliefs also provide the syntax for understanding the worlds they create for themselves, especially the social use of space within domestic contexts.[69] Sadly, few houses occupied by Middle Woodland populations in the Ohio valley are known, but one at Edwin Harness Mound in Ross County excavated in 1976 suggests a two-part structure linked by a short tunnel rather in the manner of the very much larger Octagon Earthwork and Observatory Circle at Newark and the similarly shaped High Bank Works near Chillicothe.[70]

Holistic views of the world do not preclude attempts by the living to steer and control behaviors in other worlds. Mounds, enclosures, fences, boundaries, ditches, and the paraphernalia associated with the technologies to cope with the unknown are all obvious examples. Some are concerned with remembering, prompting emotions and refreshing images and memories of bygone times. But equally there is a technology of forgetting.[71] In Britain there

is increasing evidence that the great earthwork enclosures of some henge monuments were the final act of construction, shutting off and separating the powerful ritually charged interiors and memories of the events that took place there from the lived-in world unfolding round about. Certainly this is the case at Durrington Walls and Balfarg and might also apply at Avebury.[72]

Conclusion: Questions of Balance

Across time and space there is much variety in the complexity, construction, purpose, and use of ceremonial centers. Each is unique, but each instances the context in which it was created and represents wider thinking. Belief systems and cosmologies lie at the heart of human action. To understand them requires a social-cosmological interpretation that relates the lives of those involved with the structures to the ongoing process of "becoming" rather than simply "being." A central theme is the idea of balance: balance between life and death, time and space, male and female, young and old, tradition and innovation, the known and the unknown, past and future. Only by understanding something of the bigger picture can individual components of our great ceremonial centers make sense. And this is true not just for the academic understanding of these places but also for their conservation and management. Balance is important here too. Naturally there are practical issues of hegemonic tensions about the ownership of traditions and the need for progress. Assessing archaeological significance and value is incredibly difficult and culturally specific.[73] One possible way forward, however, is linking research and knowledge creation to site management through the development of a research framework that reconciles tensions, defines attainable objectives, and recognizes that new work should not simply perpetuate "scientific knowledge."[74] There are many kinds of "knowledge" that can be developed and explored with reference to ancient sites that individually and collectively allow a bright future for the archaeological remains, exciting prospects for research and investigation, and a recognizable past accessible to the widest possible audience.[75]

Notes

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1. Heidegger, *Poetry, Language, Thought,* 148–49.

2. Renfrew, *The Emergence of Civilization,* 405.

3. Squier and Davis, *Ancient Monuments of the Mississippi Valley*; Lepper, "The Archaeology of the Newark Earthworks"; and Lepper, *The Newark Earthworks.*

4. Squier and Davis, *Ancient Monuments of the Mississippi Valley.*

5. Wheatley, *The Pivot of the Four Quarters,* 225.

6. Mooney, "The Cherokee River Cult."

7. Lepper, "The Archaeology of the Newark Earthworks"; and Lepper, in this volume.

8. See Brophy, "Water Coincidence? Cursus Monuments and Rivers"; and Roy Loveday, *Inscribed across the Landscape.*

9. Royal Commission on Historical Monuments (England), *Stonehenge and Its Environs,* 11–13; and Pearson et al., "Newhenge," 15–17.

10. Pollard and Reynolds, *Avebury,* 100–105.

11. Yang and Lu, *Temple of Heaven,* 4.

12. Pearson and Ramilisonina, "Stonehenge for the Ancestors."

13. Barrett and Fewster, "Stonehenge"; and Whittle, "People and the Diverse Past."

14. Darvill, *Stonehenge,* 136–40.

15. Darvill and Wainwright, "Stonehenge Excavations 2008"; and Darvill and Wainwright, "The Stones of Stonehenge."

16. Insoll, "Shrine Franchising and the Neolithic in the British Isles."

17. Piggott, "The Sources of Geoffrey of Monmouth II."

18. Sunderstrom, "Mirror of Heaven."

19. Tacitus and Mattingly, *Tacitus on Britain and Germany,* 132–33.

20. Yang and Lu, *Temple of Heaven.*

21. Renfrew, *Prehistory.*

22. Dunbar, *The Human Story.*

23. Loubser, "From Boulder to Mountain and Back Again."

24. Petersen, "The Archaeology of the Syrian and Iraqi Hajj Routes"; and Porter, *Hajj.*

25. Lepper, "The Great Hopewell Road and the Role of Pilgrimage in the Hopewell Interaction Sphere."

26. Walker, "Tribal Towns, Stomp Grounds, and Land"; and Nabokov and Easton, *Native American Architecture,* 109–11.

27. Cf. Swanton, "The Creeks and Mound Builders."

28. Timothy Darvill, *Stonehenge,* 114–16.

29. Parker Pearson, "The Stonehenge Riverside Project," 142.

30. Albarella and Payne, "Neolithic Pigs from Durrington Walls, Wiltshire, England."

31. Parker Pearson, "The Stonehenge Riverside Project," 140.

32. Bradley, *Altering the Earth,* 98–112.

33. Thompson, "The Mississippian Production of Space through Earthen Pyramids and Public Buildings on the Georgia Coast, USA," 455.

34. Darvill, *Stonehenge,* 136–41.

35. Patton, Rodwell, and Finch, *La Hougue Bie, Jersey,* 29.

36. Darvill, "Tynwald Hill and the 'Things' of Power"; A Stranger, *A Six Days' Tour through the Isle of Man.*

37. Russell, *Monuments of the British Neolithic,* 31.

38. N. Thomas, "The Thornborough Circles near Ripon, North Riding," 429.

39. Lepper, *The Newark Earthworks: a Wonder of the Ancient World,* 12.

40. Whittle, *Europe in the Neolithic,* 190.

41. Ruggles, *Astronomy in Prehistoric Britain and Ireland;* and Ruggles, "Sun, Moon, Stars and Stonehenge."

42. Hively and Horn, "Geometry and Astronomy in Prehistoric Ohio"; and Hively and Horn, "A Statistical Study of Lunar Alignments at the Newark Earthworks."

43. C. Turner, "Ohio Hopewell Astraeoastronomy."

44. Bertemes et al., "Die neolithische Kreisgrabenanlage von Goseck, Ldkr. Weißenfels"; Pavúk and Karlovský, "Astronomische Orientierung der spätneolithischen Kreisanlagen in Mitteleuropa"; and Pásztor, Barna, and Roslund, "The Orientation of *Rondels* of the Neolithic Lengyel Culture in Central Europe."

45. Darvill, *Stonehenge,* 143–44.

46. Ruggles, "Astronomy and Stonehenge," 218–21.

47. Sims, "The 'Solarization' of the Moon."

48. Yang and Lu, *Temple of Heaven.*

49. Hodson, *The Place of Astronomy in the Ancient World.*

50. G. Lucas, *The Archaeology of Time,* 71.

51. Ibid.

52. Darvill, *Stonehenge,* 144.

53. Ibid.

54. Bender, "Medicine Wheels or 'Calendar Sites,'" 203.

55. Harald Meller, "Nebra."

56. Cf. Kaul, *Ships on Bronzes.*

57. Hoare, *The Ancient History of Wiltshire,* 202–4; and Ashbee, *The Bronze Age Round Barrow in Britain,* 76–78.

58. Thom, Ker, and Burrows, "The Bush Barrow Gold Lozenge: Is It a Solar and Lunar Calendar for Stonehenge?"

59. Needham and Woodward, "The Clandon Barrow Finery," 22.

60. Goodman, *Lakȟota Star Knowledge.*

61. On burials at Stonehenge, see Darvill, *Stonehenge.* On burials at Newark, see Lepper in this volume.

62. Lepper, "The Archaeology of the Newark Earthworks," 14.

63. Darvill, *Stonehenge,* 144.

64. Guirand, "Greek Mythology."

65. Yang and Lu, *Temple of Heaven,* 54.

66. Richards, "Monumental Choreography, Architecture and Spatial Representation in Later Neolithic Orkney."

67. Richards, "Monuments as Landscape."

68. Hodder, *Çatalhöyük.*

69. Parker Pearson and Richards, "Ordering the World."

70. Lepper, *Ohio Archaeology,* 132–34.

71. Bradley, *The Past in Prehistoric Societies,* 87–89; and A. Jones, *Memory and Material Culture.*

72. On Wiltshire, see Parker Pearson, "The Stonehenge Riverside Project," 133. On Balfarg, Fife, see A. Gibson, "Dating Balbirnie. On Avebury, see Pollard and Gillings, *Avebury,* 45–46.

73. Mathers, Darvill, and Little, *Heritage of Value, Archaeology of Renown.*

74. Darvill, *Stonehenge World Heritage Site;* Darvill, "*Scientia,* Society and Polydactyl Knowledge."

75. Cajete, *Native Science;* Darvill, "Research Frameworks for World Heritage Sites and the Conceptualization of Archaeological Knowledge"; and C. Turner, "Ohio Hopewell Astraeoastronomy."