
The “Round Mound” and its Structural Requirements: A Possible Scenario for the Evolution of the Form of the Stupa

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Abstract: *The “round mound” or cairn is one of the simplest megalith type – consisting of a rounded heap of earth or rubble, usually marking a burial spot. As the size of the cairn grows it needs to be contained using various structural techniques such as containment using large boulders as bounding circle, stone slabs embedded in the earth around in a circle etc. Using examples from various megalithic sites in the subcontinent, an attempt is made to understand a possible evolutionary sequence of the Buddhist stupa using the structural necessities of containment. A unique megalith at Mallasandram, near Krishnagiri, which represents a “proto-stupa” or an intermediate type between a dolmen and a stupa, is discussed. It is stressed that this is not presented as a linear evolutionary sequence, but rather as how the evolved form of the stupa derives from the structural requirement to build higher and more extensive mounds.*

Keywords: Megalith, Cairn, Boulder Circle, Dolmen, Stupa, Drum, Relic Chamber

Introduction

The “round mound” or cairn is one of the simplest monuments found worldwide – consisting of a rounded heap of earth or rubble, usually marking a burial spot. Cairns with or without bounding circles of boulders are quite common in the British Isles and the rest of Europe (Burl 1976, Scarre 2007). Cairns and boulder circles are also two of the most common megalith types found in the Indian subcontinent (Moorti 1994, Brubaker 2001). Typically cairns are rounded mounds of rubble or rubble mixed with earth, and come in various sizes, from 1-3m to over 20m in diameter.

In 1979, Ian Kinnes had suggested that creating a round mound was the most “economical method of creating all round visual impact” (Leary et al 2010). This seems to be the case with monuments across scales. Of the several megalithic monuments fashioned out of the soft laterite regions of Kerala in south India, the simplest is the topikal or the “hat stone” (Figure 1) which is a simple hemispherical or semi-

hemispherical mound of laterite, roughly a couple of metres in diameter. Though the topikal is a monument type endemic to central and northern Kerala, similar small scale mounds were constructed out of chipped stone pieces to form the simple cairn (Figure 2) at many places elsewhere in the subcontinent.



Figure 1: A “hat stone” or topikkal at the megalithic site at Kudakkallu Parambu in Kerala



Figure 2: A small (disturbed) cairn at the megalithic site of Byse in southern Karnataka

Both topikals and cairns form part of the so called “South Indian Megalithic Complex” that is generally ascribed to the south Indian Iron Age and Early Historic period, roughly 1200BC – 500AD (Bauer et al 2007), though the construction of megaliths could have started earlier than the Iron Age (Morrison 2005, Menon in press). However, the ashmounds of the preceding Neolithic period in south India are considered by some to have fulfilled the role of the earliest monuments in this region (Johansen 2004). These large features are massive accumulations of cattle dung that were heaped up and fired in several episodes to become the monumental features of the Neolithic (Figure 3). Similar large scale “round mound” monuments are known elsewhere in the world, too, though in different context, such as Silbury Hill at Wiltshire in England (Leary et al 2010).



Figure 3: A Neolithic ashmound at Sanganakallu, northern Karnataka

The stupa is another round mound monument that succeeded the age of megalith-building in the Indian subcontinent, though megalith production seems to have continued for at least some more time, side by side with stupa and temple construction in the Early Historic period (Bauer et al 2007, Fogelin 2004).

In this paper, we will make a case for the stupa being an evolved form of the simple megalithic cairn, with the structural necessities for erecting a large and stable round mound dictating the form of the evolved stupa. This strand of reasoning has evolved from the study and documentation of numerous megalithic as well as stupa sites in the country.

The megalithic cairn – “form follows scale”

As mentioned earlier, cairns come in various scales, from 1-3m in diameter (Fogelin 2004), to large accumulations of earth and rubble over 20m in diameter (Abbas et al 2014). Cairns may or may not have bounding circles of boulders, irrespective of scale, though it is common to find the larger cairns bounded by boulder circles (Moorti 1994, Menon 2012b). Boulder circles not associated with cairns are also quite common (Figure 4).



Figure 4: A large boulder circle at Junapani in Vidarbha, Maharashtra

Figure 5 shows a small cairn at a place called Buddhana Jeddu, near Udipi in south Karnataka. This rounded heap of chipped laterite pieces is roughly 2.5m in diameter and less than a meter in height. At this scale, it is possible for the heap to retain its shape over a large period of time without dissipation. This, however is not true of accumulations which are larger – both in terms of diameter and height. This is illustrated by Figure 6, which shows a large cairn without a bounding circle at Ramalingeshwara Hill at Aihole in northern Karnataka, which has dissipated over time, losing its circular shape as well as diminishing in height.

It will thus come as no surprise that a large number of cairns of extended size – say, over 10m in diameter, come with a bounding circle of large boulders that help contain the cairn material and the mound to retain its shape. Figure 7 shows one such large cairn (<20m in diameter) at the extensive megalithic site of Champa in Vidarbha, Maharashtra and Figure 8 shows another large cairn (~9m in diameter) at Sanur in Tamilnadu, with bounding circles of large boulders.



Figure 5: A small cairn made of heaped pieces of laterite at BuddhanaJeddu near Udupi



Figure 6: A large cairn, which has lost its form over time, at Ramalingeshwara Hill, Aihole



Figure 7: A large cairn with a bounding circle of boulders at Champa in Vidarbha, Maharashtra



Figure 8: A large cairn with a bounding circle of large boulders at Sanur, Tamil Nadu

Containing similar sized, or even smaller heaps with greater height presents another challenge to containment. In these cases, the tendency to dissipate under the persistent tug of gravity is even more difficult to counteract. A novel method to achieve this is noticed in at least two sites. At ChikelChetti, near Bandipur in Karnataka, there is a megalithic site with cist burials and cairns (Menon et al 2011). One of the cairns – roughly 10m in diameter and over a meter in height (Figure 9), has a bounding circle made of stone slabs driven into the ground at an angle to contain the cairn material (Figure 10). Another megalith at Avathi, near Bangalore in Karnataka also employs the same method to contain cairn material within a small diameter (Figure 11).



Figure 9: A cairn at ChikelChetti near Bandipur in Karnataka which uses a slab circle to contain cairn material within a diameter of 10m

Thus it can be seen that larger cairns need a suitable containment strategy involving bounding circles of large boulders or embedded slabs for enhancing monumentality (greater height or diameter or both) and in order to prevent dissipation.

The “proto-stupa” of Mallasandram

Mallasandram (12° 38' 13.0"N, 78° 05' 52.9"E) is a megalithic site near Krishnagiri in Tamilnadu. Most of the megaliths are distributed in three clusters on a rocky hill near the village of Beerpallam, which can be approached from Samalpallam on the Krishnagiri-Hosur road. The megaliths of Mallasandram have been discussed by Tilner

(2004), where he refers to the site as “Birpalli”. From his discussion, as well as the accounts of Branfill (1880) and Murthy (1976), Mallasandram seems to belong to a class of sites represented by Iralabanda and KadirirayaCheruvu. The most striking monuments at these megalithic sites are dolmens surrounded by concentric multiple slab circles, one of which is shown in Figure 12.



Figure 10: Detail of the same cairn showing part of the circle made of slabs driven into the ground on end



Figure 11: Similar detail in a cairn at Avathi, near Bangalore



Figure 12: One of the dolmens with a double slab circle at Mallasandram, near Krishnagiri in Tamil Nadu

However, there is one unique megalith at Mallasandram that merits discussion from the point of view of this paper. At the heart of this monument, in the western cluster, is a large dolmen, measuring 1.3m x 1.7m on the inside, with a circular porthole in its eastern orthostat, which is surrounded by a circle of erect, tight-fitting slabs, roughly 10m in diameter (Figure 13). The orthostats of the dolmen are interlocked in the “swastika” pattern that prevents inward collapse – a technique encountered often in the construction of dolmens and cists, such as at Hire Benakal in Karnataka. Outward collapse of the orthostats was prevented by building a rubble wall adjacent to them, a part of this wall adjacent to the southern orthostat is still extant (Figure 14). The intervening space between the dolmen and the surrounding slab circle seems to have been filled up with a mixture of earth and rubble, which formed a mound till the top of the orthostats of the dolmen. The monument, which has been badly stripped by treasure seekers, still retains a part of this mound in the south-eastern quadrant (Figure 15). It cannot be said for certain if the original arrangement had a capstone for the dolmen; unless a slab now lying broken into three pieces within the dolmen might have served that role.



Figure 13: A panoramic view of the megalith at Mallasandram showing the central dolmen with its surrounding circle of close-fitting erect slabs



Figure 14: Detail showing a rubble wall adjacent to the southern orthostat of the central dolmen

The similarity in form of this monument with the stupa is very evident. From the outside, what is visible is the outer part of the slab circle, which forms the “drum” of the proto-stupa and the mound that extends till the top of the orthostats, which are about 1.8m in height (Figure 16). Thus, essentially it is a large mound atop a cylindrical drum enclosing a chamber within, which is more or less what a stupa is. The

mechanism by which the slabs of the circle are held in place is visible in the portions where the mound has been stripped away by vandals. It can be seen (Figure 17) that large blocks of stone have been employed to hold the slabs in position, before filling in with earth and rubble. Figure 18 (a, b and c) depict how the monument would have looked like when complete.



Figure 15: A part of the mound covering the dolmen still exists in the south-eastern quadrant



Figure 16: A view of the “proto stupa” monument at Mallasandram from the outside showing the “drum” of the stupa formed by erect slabs of surrounding slab circle



Figure 17: Detail showing the large blocks of stone that have been employed to keep the erect slabs of the surrounding circle in position

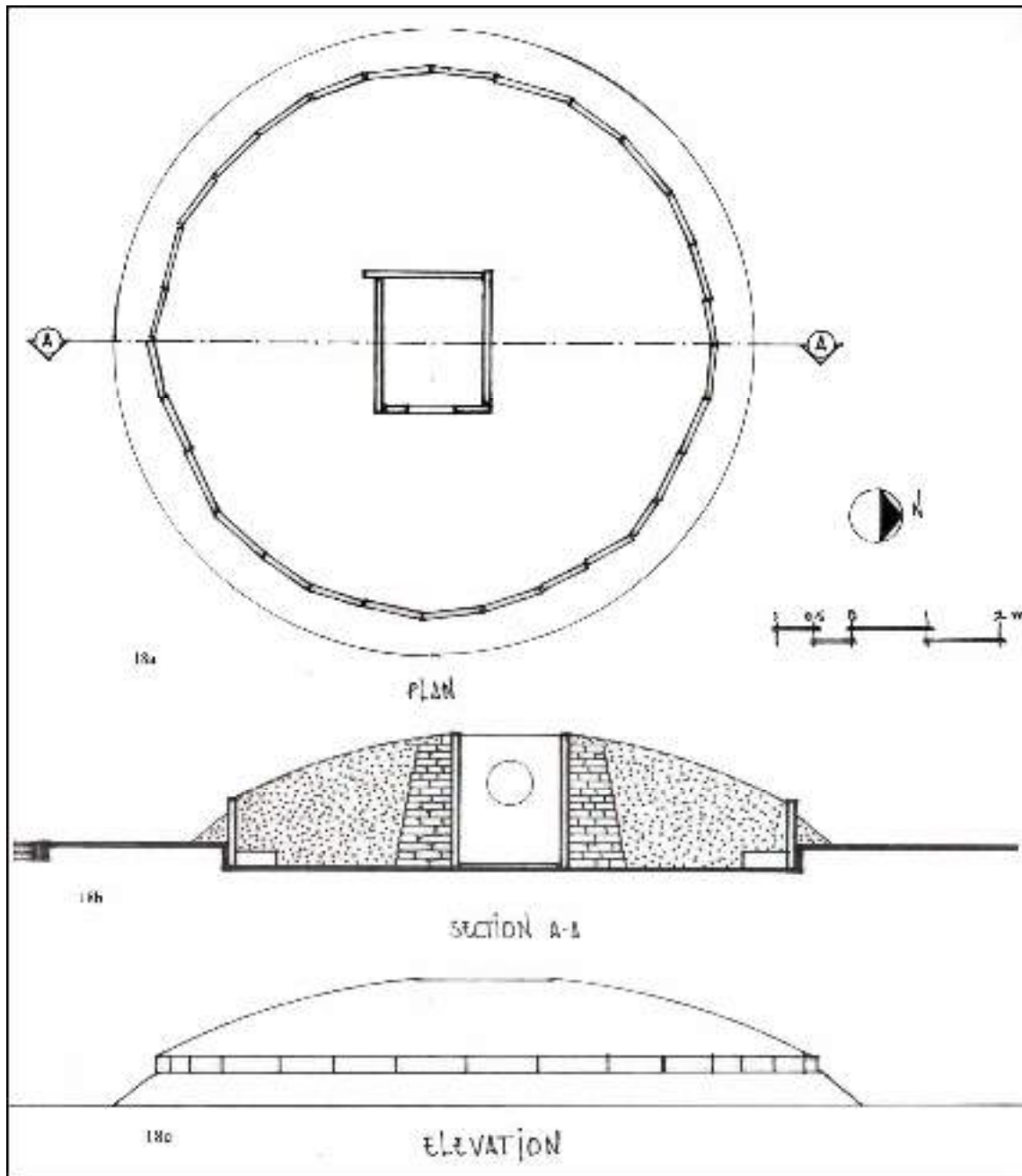


Figure 18: Plan (a), section (b) and elevation (c) of the stupa-like megalith at Mallasandram as it would have looked when complete

Though this is the only extensive monument of this type at the site, many smaller monuments with the same design philosophy can be seen in the eastern cluster (Figure 19). These too consist of dolmens surrounded by very tight slab circles with an infill of earth and rubble.

Discussion

The cairn or the round mound of earth/rubble is the simplest funereal/memorial monument, which was in vogue from very early times. Though the Neolithic

ashmound is not a burial marker, the round mound or cairn has been a popular sepulchral megalith at various places worldwide. The stupa as a sepulchral or a burial monument was not restricted to the Buddhists, as illustrated by the Jain stupa at KankaliTila, near Mathura. In the Mahaparinirvana Sutra, in reply to a query by Ananda about how his corporeal remains should be treated after his passing, the Buddha replies “As they treat the remains of a king of kings, so, Ananda, should they treat the remains of the Tathagatha. At the four crossroads a dagaba should be erected to the Tathagatha” (Davids 1894).



Figure 19: Smaller megaliths of similar type in the vicinity of the “proto-stupa”

The connection between megaliths and Buddhist stupas has been the subject of conjecture since long (Cunningham 1854, Venkataramanayya 1930, Longhurst 1936, Menon 2012a). Apart from the obvious similarity in form as “round mounds”, there are many instances of spatial proximity between megaliths and Buddhist stupas. Schopen (2010) calls attention to numerous Buddhist stupa sites that have earlier extant megalithic monuments in the vicinity. He also laments the fact that the early excavators at many Buddhist sites did not report in detail the megalithic tombs – mostly round mounds referred to as “barrows” or “tumuli”, at several sites (Goli, Chandavaram, Panigiri, Jaggayyapetta, Kusinara and Lumbini). A large number of megalithic monuments were also observed near the Great Stupa at Amaravati (Fergusson 1873, Sarkar and Nainar 1980, Schopen 2010). According to Fergusson (1873), there were “some hundreds of” rude stone circles in the neighbourhood of the Great Stupa at Amaravati. Col. Mackenzie’s drawings of a megalith at Amaravati is reproduced in Fergusson (1873), and it shows an earthen mound surrounded by large roughly dressed

boulders arranged in a circle, in other words, a megalith that would be termed a cairn stone circle in today's terminology. Schopen (2010) also discusses the discovery of urn burials below one of the smaller stupas at Amaravati. It would appear that the Buddhist stupas were located within and atop a megalithic graveyard, an observation that Schopen (2010) interprets as meaning that those locations "were already occupied by the protohistorical dead before they were taken over by the immigrant monks."

Lars Fogelin (2004) discusses the Early Historic Buddhist monastery at Thotlakondain North-Coastal Andhra Pradesh. At Thotlakonda, there is a main monastic complex on the hill, consisting of a Maha Stupa, 12 smaller stupas, five chaityas and a large monastery. The landscape surrounding this complex is covered with a dense collection of small stone cairns. The cairns are quite small, between one and three meters in diameter and up to one meter in height. Fogelin speculates that the cairns must have been erected over the cremated remains of Buddhist monks and lay-people, thus making a case for the continued practice of megalith production even after the advent of formal monuments like the evolved Buddhist stupa.

A lot of attention has been focused over the years on the external resemblance of stupas to megaliths. In the case of megaliths such as the cairn, the resemblance is obvious, but the resemblance of even megaliths like dolmens (Figure 20) in their intact form to the round mound is not so straightforward to grasp. Dolmens are oblong, box-like structures created of slabs of stones, forming a chamber which might have once held relics and votive offerings. Most dolmens found today have been looted by treasure seekers over centuries and their original form badly disturbed. The dolmen at Meguti Hill at Aihole, shown in Figure 20, is one such monument. However, examination of another lesser disturbed monument on the same hill (Figure 21) shows that the chamber was surrounded by a packing of chipped rubble blocks and covered on the outside with other inclined slabs whose top ends rested on the periphery of the capstone. The overall impression that such an arrangement creates is that of a low mound. The similarity to a rounded mound is also seen in some crude dolmens, termed Irregular Polygonal Chambers or IPC's by Sundara (1975), as shown in Figure 22, at the megalithic site of Hire Benakal.

The connections between cairn megaliths and stupas stretch beyond mere spatial proximity and similarity in overall form. The inner architecture of some stupas also suggest similarities to megaliths. It is usual to have a relic chamber within sepulchral stupas that usually contain a relic casket containing the remains of the Buddha or other venerated Buddhist monks. There are some instances of the relic chamber resembling megalithic cist burials in form. Cunningham's excavations of Tope no. 3 at Andher exposed the relic chamber within, which he describes so – "The side stones were placed so as to overlap at one end, thus forming a Swastika or mystic cross of the relic chamber" (Cunningham, 1854). The drawing accompanying this description shows an arrangement of slabs similar to that of the dolmens of Hire Benakal discussed above or the Brahmagiri type of cist construction with capstone (Wheeler 1948). The

relic chamber of Stupa no. 17k at Bhojpur depicted by Cunningham (1854) show analogous form, too. This is quite similar to the “proto-stupa” of Mallasandram discussed above, though the relic chambers are much smaller than the dolmen chamber encountered at Mallasandram.



Figure 20: A dolmen on Meguti Hill at Aihole



Figure 21: Another dolmen on Meguti Hill, with its rubble packing and outer casing of slabs intact



Figure 22: An IPC at Hire Benakal resembling a small mound



Figure 23: The Buddhist stupa at Kanaganahalli, near Sannati in northern Karnataka, showing some of the still extant sculptured slabs of the lower drum

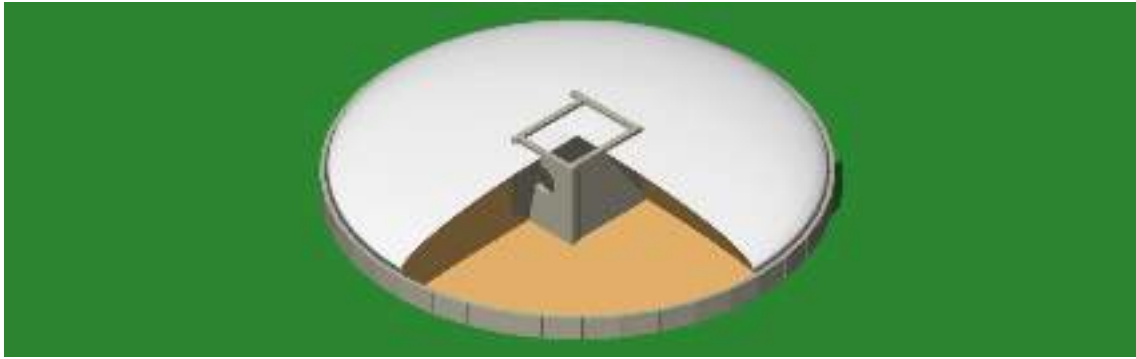


Figure 24: A cutaway 3-D illustration of the “proto-stupa” megalithic monument at Mallasandram, with the dolmen at the centre, and drum of slabs encircling it

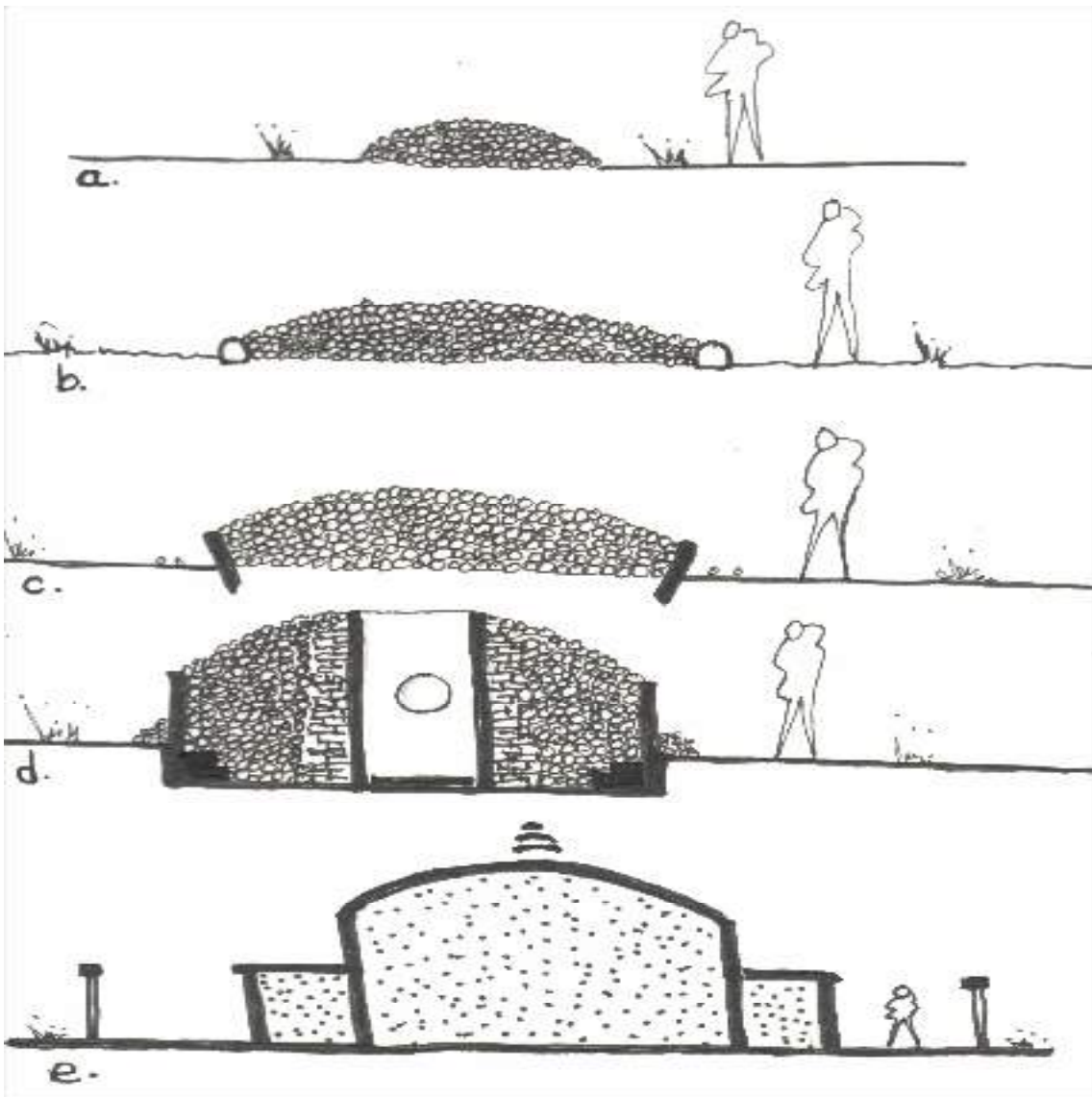


Figure 25: An illustration of how structural requirements influence the form of the round mound at the scale of various monuments discussed in the text, with a stylized human figure for scale

It is tempting to look at the form of the evolved stupa, most often encountered in the Buddhist context, as a product of evolution of the round mound in an attempt to make it more prominent – with respect to larger spread as well as height. We have already seen in earlier discussions the various structural techniques involved in making round mounds of greater extent and height – namely, containment using large boulders or slabs embedded in the ground, in a circle around the mound.

Though it is stressed that it is not a case of linear development from the simple cairn to larger mounds with boulder circles and slab circles to the evolved form of the stupa, it cannot be denied that the drum of the stupa (Figure 23) is a product of the structural necessity for containment of a large mass of earth or rubble. The stupa-like megalith at Mallasandram (Figure 24) is an illustrative example of a monument that is halfway between the cairn and the evolved form of the stupa. Figure 25 illustrates how the form of a round mound or stupa is derived from structural requirements of the round mound at various scales.

It needs to be pointed out, though, that one of the main handicaps in tracing the evolution of the form of a monument by studying examples from different places is the paucity of reliable dates from most megalithic sites. Though in general it is accepted that megaliths are a class of monuments that were built in the Iron Age and whose construction might have continued into the Early Historic period, the number of reliable dates from the nearly 3000 known megalithic sites are few in number. Unless we know the period of construction of, say, the Mallasandram megalith, it would be difficult to verify the scenario of possible evolution outlined in this paper.

Conclusion

The round mound or the cairn seems to be one of the earliest and most common monument types – a form common to ashmounds or megaliths or even later monuments, like the stupa. The structural adaptations that permit the construction of larger round mound monuments result in the transformation of the cairn from a simple rounded heap to more complex forms bolstered by boulder circles and slab circles which are quite similar to the form of the Buddhist stupa. Of particular interest is the development of the cylindrical drum of the stupa, which seems to be anticipated in the slab circles of inclined or erect slabs seen at Chikel Chetti and Mallasandram respectively. It is this component, which arose of the structural needs of creating a round mound on a truly monumental scale, which lent itself as the setting for sculptural panels depicting various religious and other themes for the benefit of circumambulating worshippers in monuments such as the Kanaganahalli stupa.

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