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Mongolian Deer Stones, European Menhirs, and Canadian Arctic Inuksuit: Collective Memory and the Function of Northern Monument Traditions

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Abstract Northern peoples and those living in the Arctic and environments with broad vistas created cultural landscapes with distinctive monument traditions that supported their cultural and political systems. This paper explores three societies in different geographic regions and time periods during the past 10,000 years that used stone monuments to humanize their landscapes and invoke or honor gods or spirits, mythological ancestors, or deceased leaders. Canadian and Greenland Inuit and their predecessors of the past thousand years marked their lands with abstract human figures known as Inuksuit; Neolithic and Bronze Age Europeans built megaliths, henges, and passage graves; and Mongolian Bronze Age nomadic pastoralists populated the central Asian steppe with burial mounds (khirigsuurs) and anthropomorphic deer stone monuments. Each tradition contributed in different ways to shape and perpetuate the society's values by invoking spirits, ancestors, or heroic leaders. The enduring presence of these creations reinforced cultural or ethnic identity through ritual, group ceremonialism, landscape values, communal enterprise and labor, and collective memory. This paper identifies commonalities and differences between these traditions and how they functioned. We also see how successive societies perpetuate, change, reinterpret, or invent new uses and meanings for ancient monuments and their landscape settings to create new ethnicities and histories for their own times.

Keywords Bronze Age · Megalith · Deer stone · Inuksuk · Menhir · Collective memory · Landscape

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All cultures employ collective memory to establish core beliefs and shared values, and there are thousands of ways it is formed and transformed over time. Here, we consider three examples from different times and places in the northern world where stone monuments played a key role in remembrance and cultural landscape formation, representations of power, and social and cultural continuity (Fig. 1a–c). Our most detailed case is from Lake Bronze Age Mongolia of *ca*. 1000 BCE in which deer stone monuments and khirigsuur burial mounds populated a steppe landscape with highly visible reminders of a pastoral nomadic society's history and contemporary traditions (Jacobson 2001; Fitzhugh 2009a, b, c; Turbat *et al*. 2011). We explore the Mongolian case from two geographically distant and chronologically separated perspectives. A West European Neolithic megalith tradition 2000 years earlier provides comparative perspective of standing stones erected singly and in circles and causeways for celestial observation and/or seasonal or social renewal celebration (Richards 2013). A more recent example comes from the Canadian Arctic where Dorset and Thule culture hunters and their Inuit descendants created an Inuit cultural landscape marked by human-like *inuksuit* figures (Hallendy 2000, 2016). In each of these cases, the prominence of standing stone monuments reminded individuals of the society's social, political, and cosmological order; memorialized its leaders; built solidarity; sent messages; or historicized important places and events. Each fulfilled the society's need to create a humanized landscape that sustained its system of values and to varying degrees carried messages forward from the past, reminding later peoples about societies, beliefs, and cultural traditions far removed in time.

Cultural Mnemonics in Open Landscapes

Creation and maintenance of collective remembrance depends on visual, linguistic, social, and ceremonial or ritual clues (Schama 1996; Edmonds 1999; Van Dyke and

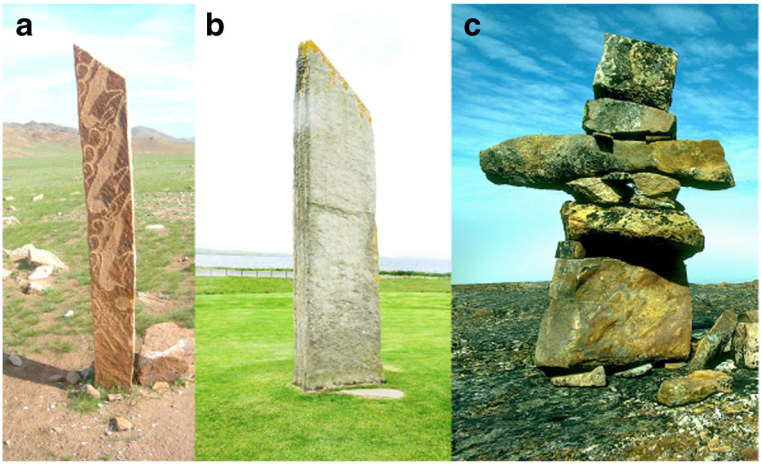

Fig. 1 Northern standing stone monuments: **a** Mongolian deer stone *ca*. 900 BCE (photo: W. Fitzhugh); **b** Orkney Stenness stone *ca*. 3000 BCE (photo: W. Fitzhugh); **c** Canadian *inuksuk*, *ca*. 1500 CE (photo: N. Hallendy)

Alcock 2003; Williams 2003). In almost all cases, communication leading to shared beliefs or narratives involves using well-understood symbols or forms in a physical or ceremonial space such as a sanctuary or a place for periodic celebration (Bender 1993). According to Tilley (1994, p. 26), the power of such places is based on both cognitive and unconscious kinesthetic factors: physical encounters, sounds, and visual clues that reinforce core beliefs and social values, especially when experienced collectively. Sacred places and ceremonies are often socially hierarchical. They may range from solitary rituals in a household shrine, a Palaeolithic cave, or a vision quest in the wilderness to others involving large-scale gatherings in natural settings like Iceland's Thingvellir, or architectural spaces like Maya palaces, a European cathedral, or the U.S. National Mall. Preagricultural or nonsedentary societies generally did not build permanent architectural environments for these purposes, although there are many notable exceptions like Göbekli tepe (Schmidt 2010), early Maya centers (Inomata *et al*. 2015), European megaliths (Bradley 1993), and Poverty Point (Gibson 2000). Music, dance, special clothing (*e.g*., shamanic garments and paraphernalia), séances, and ceremonies timed to astronomical cycles, or certain forms of artifacts or art styles, served to reinforce shared beliefs.

In hunting or nomadic cultures that occupy open spaces like the Arctic, the Eurasian steppe, or deserts, where the largest cultural construction may be no more substantial than a tent, mechanisms enhancing cultural identity and collective memory often involved altering the physical landscape (Ehrhardt 1964; Buggey 1999; Krupnik 2004; Krupnik *et al*. 2004). Some of the ways societies perpetuated traditions or rituals include changing the profile of a prominent hill or mountaintop by the addition of rocks or cairns; naming landscape features for cultural heroes or gods (*e.g*., *Uluru*/Ayer's Rock (Layton 2001) or *Mato Tipila*/Devil's Tower (Gunderson 1988); or erecting earthen constructions to mark sacred places like the Ohio Serpent Mound (Fletcher *et al*. 1996), Mongolian ovoos (DePriest 2008), *mani doh*/Tibetan Buddhist prayer rocks, Middle Jomon standing stones and henges (Habu 2004), Korean Neolithic monuments (Nelson 1999), 4th millennium BCE Neolithic stone figures in Yemen and Saudi Arabia (Franke 2011), or subjects of this essay: Mongolian Bronze Age khirigsuurs and deer stones. Among small-scale hunting and gathering societies, such features often memorialized concepts that constituted the core of a cultural tradition. Unlike hierarchical societies, memorializing at this level did not create opposition between the elite and commoner (Overholtzer 2013; Bradley 1993); in these societies, stone monuments probably had a well-understood egalitarian message although it may have differed locally and regionally (Tilley 2004, p. 86).

The following examples illustrate how three prehistoric societies in northern settings created a distinctive cultural landscape by raising stones and statuary, mounds, megaliths, and other structures. The original purpose is often unknown or unclear today, but given the prominence of these features, their presumed ritual or ceremonial importance, and in some cases the labor required to create them, we can assume that they were important in maintaining cultural identity (Chesson 2001; Connerton 1989; Yoffe 2007).

The thesis explored here is that landscape modification has been a powerful tool for creating and sustaining cultural, social, and political values since the beginning of the Holocene and probably long before. Although all cultures utilize methods for enhancing collective memory and instilling cultural values, the process is especially observable archaeologically in steppe or open environments where human constructions are visible

over great distances or stand out against natural landforms. The three examples discussed here reveal how built structures have been used by cultures at different organizational levels, in different northern environments, and from different time periods (Early Neolithic, Bronze Age, and Recent). Each became the first societies in their respective regions to utilize permanent landscape modification as a means of forging cultural unity or political integration, both visually and through the collective memory process, to perpetuate a common set of values, remember history, and perpetuate a cultural or political tradition. What these values were is often as mysterious today as the cultures and physical structures themselves, and interpreting their original meaning and function turns out to be more archaeological art than science. We begin with a recent prehistoric stone building tradition in the Eastern Canadian Arctic in which ethnography and oral tradition might be helpful for interpreting the more ancient monuments of Bronze Age Mongolia and Neolithic Eastern Europe.

Inuksuit in the Canadian Arctic

The Canadian Arctic and other areas of the circumpolar north, including Scandinavia (Ehrhardt 1964) and Russia (Mizin 2013), display a variety of stone markers, some dating to ancient times, and others, especially those serving as navigational markers, to recent centuries. Among these features are cairns, perched rocks, pinnacles, stacked rocks, pointers, and a group of human forms known to the Canadian Inuit as *inuksuit* or as *inunnguaq* in Greenland (Fig. 1a) (Stoddard 1969; Lewis 1966; Hallendy 2000; Graburn 2004; Solera 2014).

As in other northern treeless regions, the Canadian Arctic has a long tradition of landscape alteration involving free-stone architecture. Lacking standing timber, Paleoeskimos (4500–600 BP) altered the local geomorphology by utilizing rocks for house foundations, food caches, hunting blinds, and animal traps. Their successors, the Thule culture and their Inuit descendants utilized rock, driftwood, and whale bone for similar architectural purposes, including rock-mounded burial cairns. For many years, their stone monuments unrelated to domestic use or grave construction were neglected by archaeologists due to the difficulty of determining their meaning, function, age, and cultural attribution (Fitzhugh 1981). The most significant work relating Inuit conceptions of space, geography, identity, and collective memory has been the "imaginaries" research conducted by Peter Whitridge (2004). Using archaeological, ethnographic, and material culture, Whitridge illustrates how Inuit use two- and three-dimensional carved maps, stone way-finding aids, and human-form inuksuit to "people" their barren landscape, thus identifying themselves in it and creating a collective sense of their "Inuit" world.

In recent decades, using lexicology and oral history methods, Norman Hallendy investigated one category of the Inuit gestalt illuminated by inuksuit monuments in the Cape Dorset region of southwest Baffin Island. He has traveled with Inuit to map and catalogue stone structures and collected information about their physical structure and the Inuktitut names and meanings associated with different constructions (Hallendy 2000, 2009, 2016). Hallendy's work in cultural landscape reconstruction is unique; his long association with Inuit elders and attention to lexicology also revealed much about Inuit thought and philosophy. Unlike the predominantly wood-based material culture of

forest people, Arctic and high-altitude regions like Tibet (Belleza 2001, 2002) carry a large quota of information in stonework.

Most of the rock structures and monuments Hallendy documented are associated with Thule culture and their modern Inuit descendants. Their abundance and diversity in the Canadian Arctic and Greenland appears to be unique in northern regions in terms of abundance and diversity of constructions related to subsistence, habitation sites, and burial cairns. Thule use of rocks approximates a geological force; their "footprints" in stone are seen everywhere in the Arctic landscape (Bryce-Bennett 1977; Wilson *et al.* 1981; Fitzhugh 1981). Most of these structures had specific messages that were encoded in memory traditions; they told one where to hunt, which track to follow, or who went before. They were part of the Inuit logistical "road-map" and were functional components of subsistence systems. However, several types of Inuit stone monuments (Hallendy 2000, pp. 46–48, Appendix A) do have a mnemonic dimension, and some of their function and meaning could be accessed through oral tradition.

In Inuktitut language "inuk" means "person." Hallendy translates *inuksuit* (singular, *inuksuk*) as "that which stands in place of a human." *Inuksuit* are abstractions of the human form that can vary from a vaguely human-shaped pile of rocks to elaborate stone constructions with legs, arms, and head. The original form may have been a simple rock pile with a tuft of grass for hair used to channel animal movements in hunting drives. In recent times, *inuksuit* have become symbols of Canadian Inuit ethnicity, logos for governments and organizations, sculptural "graffiti" erected by tourists and hikers outside the Arctic, and decorative works of Inuit art in airports and museums (Graburn 2004; Engelstad 2012). A large *inukshuk* by David Ruben Piqtoukun stands in the entrance of the Canadian Embassy in Washington, D.C. Where inuksuit are endangered by hydroelectric development, mining, and tourism, concern has been raised about their preservation, for they are one of the few remaining visible traces of Inuit way-finding and navigation that continue to function within their original setting (Heyes 2002). At the same time, that *inuksuit* are becoming endangered in the Arctic, in southern Canada, and many places around the world, *inuksuit* built by Arctic-savvy hikers have become a plague to park rangers and environmental purists.

Hallendy's research reveals that the seemingly barren Canadian Arctic landscape has a subtle but richly textured visual history. During a trip to Itiliardjuk, his companion Simeonie Quppapik said, "See those hills; see that *inuksuk*; see everything around us… We respect *inuksuit* because they are our helpers and they connect us to our past." Another Inuk (Hallendy 2000, p. 44) noted that *inuksuit* "attach me to my ancestors and to this place." Hallendy describes the *inuksuk* as a semalith, a message created by the arrangement of stones to provide information: "It was essential to know the locations for intercepting caribou, finding geese, and if need be, catching fish. There were no paper maps, no way-finding tools, only memory providing a sense of direction. Occasionally Inuit would encounter an *inuksuk* known as a *naluniakutak*, literally a 'deconfuser', placed at a strategic location during some forgotten time to help the traveler" (Hallendy 2016, p. 76). He learned that the morphology of the *inuksuk* is not the message. Rather, the *inuksuk* is a physical, abstract image to be visually remembered with a specific message or meaning ascribed by a hunter only to that particular *inuksuk* within a particular geographic and situational context. These "silent messengers" placed upon the landscape by successive generations of hunters are not time-dependent; their meaning, like frozen words, exists as long as the *inuksuk* stands or its

remains (*Inuksuviniq*) can be seen and its message remembered or even invented. He sees Inuit understandings about *inuksuit* as emerging from sematic sets (Hallendy 2000, p. 94) that might be considered as webs of visual and mental element relationships. A sense of the elaborate nature of Inuit perception can be appreciated by an index of verbal terms relating to *inuksuit* (Hallendy 2000, Appendix A).

Inuksuit comprise a wide variety of physical forms and arrangements (Hallendy 2000, pp. 46–48). In addition to navigation and subsistence markers, they can act as message centers and places of power or veneration. They may be solitary or grouped, aligned, or circled. For those whose meanings are generally understood, they act as a kind of semaphore, marking "waiting places" where one intercepts caribou, fishes for char, or waits for good weather before embarking on a boat journey. They frequently take on a psychological role, a "friend" to the solitary hunter or traveler. A place called Tukilik in the Amajuaq plain of western Baffin Island where hunters waited for caribou has more than 200 standing *inuksuit*, perhaps to confuse animals during ambush hunts (Fig. 2). A Cape Dorset elder told Hallendy that places with *inuksuit* were called *tukalik* (places of meaning). Elders believed that some ancient *inuksuit* referred to as *inuksutuqaaluk* were built by the pre-Thule Tuniit (Dorset) people and are venerated as one respects elders, ancestors, and ancient traditions. "The standing stone(s) in the Arctic, arranged by the Inuit and those who came before them, act as helpers, became symbols, and the most ancient became objects of veneration in the collective memory of their creators" (Hallendy 1997, p. 43). The one thing common to the many semaliths that Hallendy and Mizin (2013) have documented is that the stones are not modified, inscribed, or mortared.

Humans have occupied the Eastern Canadian Arctic since about 4500 years ago, first by pre-Dorset and Dorset Paleoeskimo cultures and, after *ca*. 1300 CE, by Thule, a whaling culture that migrated from Alaska and the Bering Strait (Friesen and Mason 2016). Thule replaced Dorset culture and most, if not all, of its people (Raghavan *et al*. 2014; Park 2016) and became the ancestors

Fig. 2 Tukilik site, a caribou hunting place with more than 200 *inuksuit* near Nettling Lake, West Baffin Island (photo: N. Hallendy)

of the modern Inuit. Some *inuksuit* may have been created by the Dorset, but most probably date to Thule and the early historical period. None have ever been identified as an individual or known person. Today, the original meanings of *inuksuit* not related to way-finding are no longer known, either because they were created by the lost Dorset people or by the Thule ancestors of Inuit. Even so, they remain venerated as messengers from the past that provide cultural roots for the present and a strong sense of identity to modern Inuit people.

There are other types of Inuit stone structures whose messages have been carried forward. The Inuit have had a long tradition of adjudicating social grievances. In Greenland, contesting individuals competed in drum dances in which the winner was determined by public consensus (Thalbitzer 1914–41; Kleivan 1971). In 1991, Inuit elders took Hallendy to a secret location called *Akitsiraqvik* ("a place to strike out or punish"), where an Inuit trial took place before white men arrived in Cape Dorset. Stone benches and uprights formed a ring with a huge monolith opposite the entry (Hallendy 1998). In another instance, Inuit kept secret the location of a standing stone erected as an English claim marker by Martin Frobisher in 1577 (Fig. 3). After Frobisher's departure in 1578, and as recently as the mid-1800s, Inuit visited this monolith periodically to "perform devotions" and deposit good-luck offerings (Hall 1864, 2: p. 285; Fitzhugh and Olin 1993, fig. 2.9).

A final example of Inuit stone-raising unrelated to economic pursuits has been documented archaeologically along the northern Ungava and Labrador coastlines (Fitzhugh 1981; Kaplan 1983; Curtiss 2007), where on prominent headlands and

Fig. 3 Inuit woman making devotions to an Inuit-ornamented claim marker in southeast Baffin Island, Canada, erected by the Frobisher expedition in 1576–1578 (Hall 1864)

Fig. 4 Pinnacles on Coffin Island, Labrador (photo: W. Fitzhugh)

islands, needle-like slabs of rock can be seen silhouetted against the sky (Fig. 4). At Coffin Island in Okak, Labrador, scores of such pinnacles are visible from the sea while others have been broken and thrown down. Their age and function is unknown, and no relevant information has been found in oral history or ethnographic accounts. Pinnacles are not associated with pre-Dorset, Dorset, Labrador Inuit, or European cultures, but they do occur in areas of Ungava Bay and northern Labrador occupied by precontact Thule culture. Knud Rasmussen's (1931, p. 379) report of a Central Canadian Arctic Netsilingmiut tale of *inuksuit* being erected as memorials for drowning victims suggests a possible explanation. Such a story might also explain the destruction of the Okak site following Moravian Christianization in the late eighteenth century. As is common in other instances of religious conversion, the original message has been lost. Today, Labrador Inuit see pinnacles as objects of veneration even though their meaning has not survived.

Inuksuit exist in a wide variety of forms, and those relating to navigation and way-finding, camp locations and river crossings continue to have meanings known to modern Inuit. What is less clear are the hundreds of *inuksuit* apparently unconnected with travel and subsistence. Like the Coffin Island pinnacles, these figures have lost their original function or meaning and new meanings or explanations have been assigned to fit a new culture or context. Frobisher's territorial claim marker became an object of Inuit veneration for 300 years; the Coffin Island pinnacles may have come in conflict with a new religious order. None of the *inuksuit* have astronomical connections, and none reference specific individuals. In place of their original meanings or functions, *inuksuit* have taken on new cultural and political significance as Inuit identity symbols, tourist attractions, or markers of ancient tenure in land claim negotiations. Only in the relatively recent instance of the Cape Dorset Inuit trial court do we have a clear example of an ancient stone structure that carries a specific memory tradition into the present. In short, Inuit monuments play an active role as agents of collective memory, serving as road-maps and way-points, "recollectors" and "reminders" of dangers, historical events, and places of power, and especially—even when the original functions have been lost—as

symbols of identity through a shared history. Richard Bradley (1993) has described this phenomenon of ascribing new meanings in the life history of ancient monuments as "invented tradition."

The Mongolian Deer Stone-Khirigsuur Complex

During the Early Bronze Age, the Mongolian steppe began to be populated with burials beneath stone pavements or rock piles that were the first permanent monuments known in this largely open grassland environment (Kovalev and Erdenebaatar 2009). By the Late Bronze Age (LBA), *ca*. 1500 BCE, these unobtrusive features were replaced by an explosion of built-up burial mounds and anthropomorphic standing stones and created a distinct cultural landscape that is recognizably "Mongolian" today (Fig. 5). LBA Mongolians were part-time warriors and semi-nomadic breeders of horses, sheep, goats, cattle, and camels, as well as hunters, fishermen, and possibly incipient horticulturalists (Honeychurch 2015, pp. 109–156; Houle 2015; Spengler *et al*. 2016). Sheltered in tents that were probably similar to today's *gers* or yurts based on ancient rock art images (Miklashevich 2011; Miniaev and Sakharovskaia 2007), the population shifted seasonally and was largely self-sufficient except for imports of bronze tools and weapons (Erdenebaatar 2004) and probably Chinese textiles. Population density may have been similar to rural Mongolia today: less than one person per square kilometer. Little is known about LBA domestic life, but it too probably resembled the daily life of modern Mongolian herders. The aboveground archaeological remains of this society of *ca*. 1300–700 BCE consists almost entirely of ceremonial and commemorative structures known as *khirigsuurs* (stone-fenced burial mounds) and anthropomorphic *deer stones*. Research is only beginning to reveal artifact inventories, settlement patterns, and subsistence data (Houle 2009; Houle and Erdenebaatar 2009; Broderick and Houle 2013; Broderick *et al*. 2014; Seitsonen *et al*. 2014; Wright et al. 2007). In the absence of a more complete description, the culture has been called the Deer Stone-Khirigsuur Complex (DSKC; Fitzhugh 2009b) or simply Deer Stone culture. By comparison, its closest relatives—the Karasuk, Tagar, and Pazyryk cultures of South Siberia and the Minusinsk Basin—all have detailed domestic and mortuary inventories (Honeychurch 2015, p. 112; Jacobson-Tepfer 2015, pp. 17–20).

Fig. 5 Uushigiin Övör site near Muren, north-central Mongolia (photo: W. Fitzhugh)

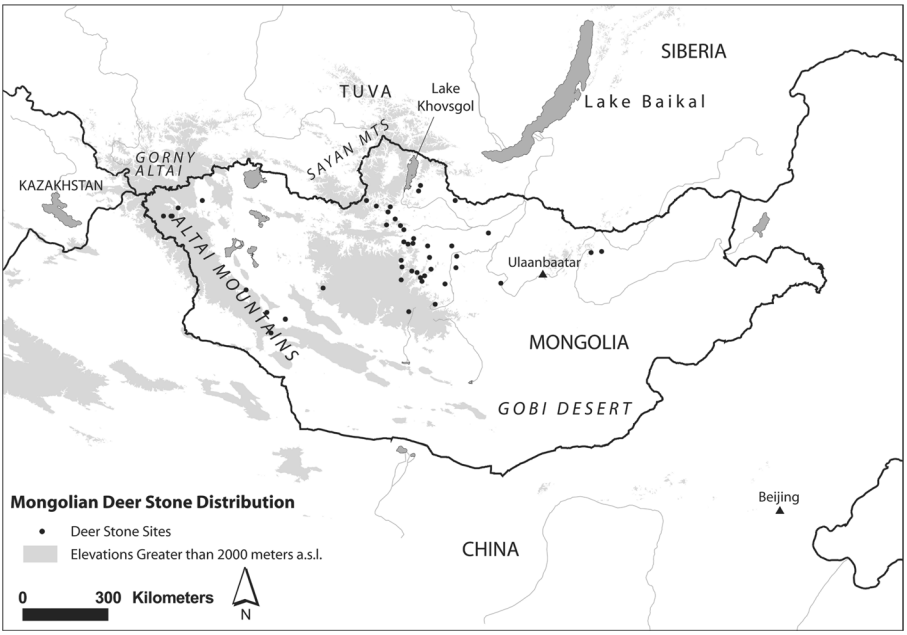

Fig. 6 Distribution of deer stone sites in Mongolia (after Volkov 1981)

Deer Stones

Deer stones are found over a huge territory in central, northern, and western Mongolia (Fig. 6) and in neighboring regions of southern Russia, Kazakhstan, and northwestern China (Kubarev 1979; Savinov 1994; Tsebiktarov 2002, 2003; Hatakeyama 2002). Well over 1000 deer stones may exist in Mongolia, but probably less than half remain standing (Volkov and Novgorodova 1975; Volkov 1981; Novgorodova 1989; Takahama *et al.* 2006; Fitzhugh 2009a, b; Turbat *et al.* 2011; Honeychurch 2015, pp. 112–122; Jacobson-Tepfer 2001, 2015). The most extensive study of deer stone archaeology since Volkov's 1981 work is a monographic study by Bayarsaikhan (2016). Deer stones are found on the open steppe—never in forested locations—and are often associated with khirigsuur burial mounds. Deer stone settings vary. Sometimes they are found alone, but at large sites in the core of the deer stone culture area north of the Arkhanghai Mountains, they are set in groups or rows, evenly spaced, aligned north/south. At Uushigiin Övör, 14 east-facing stones are set in two parallel north-south lines near a group of khirigsuurs (Fig. 7). Most deer stones are surrounded by small rock mounds covering east-facing heads of sacrificed horses (Fitzhugh and Bayarsaikhan 2011; Kovalev *et al.* 2016). A typical horse head burial consists of a skull, mandible, seven cervical vertebrae, and four hoof cores. The symmetrical arrangement of horse features around a deer stone shows they were part of a deer stone dedication ritual, as demonstrated by radiocarbon-dated horse features surrounding Ulaan Tolgoi DS 4 (Fig. 8). Outward from the horse head features are usually small round or oval cobblestone hearths containing calcined bones of sheep, goats, and other animals. Horses were sacrificed to accompany the deer stone personage in the next life, while calcined bones in the hearths are remains of ritual offerings. A fourth component

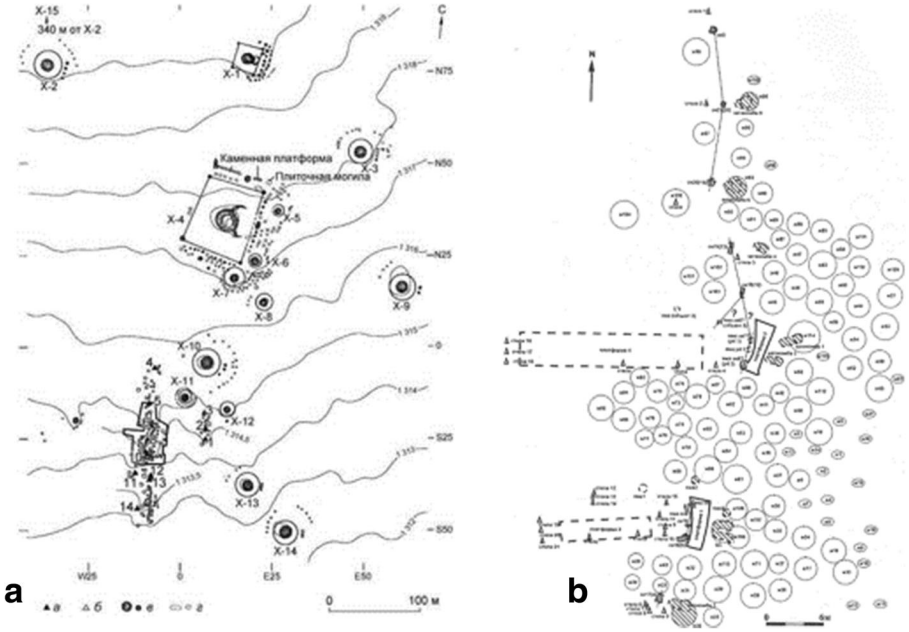

Fig. 7 **a**, **b** Excavation plan of Uushigiin Övör (after **a**, Kovalev et al. 2016, Pl 2; **b**, Takahama et al. 2006)

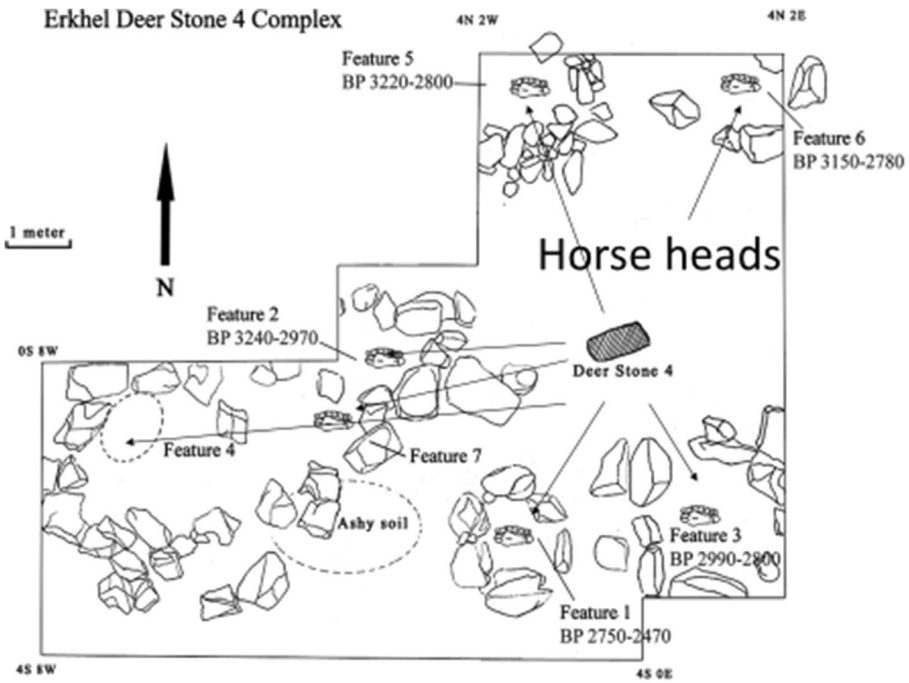

Fig. 8 Excavations at Ulaan Tolgoi Deer Stone 4 surrounded by horse head features

present at some deer stone sites is a rectangular stone pavement on which are found the bones of sacrificed animals.

Human remains are never associated with deer stones, which seem to have served, as argued below, as cenotaphs for political, warrior, or spiritual leaders whose bodies were lost or buried elsewhere. The stones themselves can be up to 4.1 m high, but most are of human size and are designed with great artistry. Some approximate the finest Classic or Post-Classic Mayan stelae. Production, even with a combination of stone abraders and (almost certainly) bronze chisels, could have taken months. The largest deer stones and the largest deer stone sites, such as Uushigiin Övör and Jargalantiin Am, are found in the most fertile pasture areas for horses and other domestic animals. Geographic prominence, artistry, and great age have made deer stones iconic symbols of Mongolian national identity and major tourist attractions.

Deer stones are rectangular or square in cross-section and are usually made from slabs of granite, basalt, or slate taken from local quarries such as that associated with the Ulaan Tolgoi site at Lake Erkhel (Fitzhugh 2004, p. 19). In the DSKC heartland, most deer stones are granite. Those at Uushigiin Övör (Takahama *et al*. 2006; Beaubien *et al*. 2007; Kovalev *et al*. 2016) and Jargalantiin (Turbat *et al*. 2011) have finely carved designs, and their surfaces are polished to a high degree, whereas those from peripheral regions like Khovsgol Aimag, while still mostly of granite, have fewer images of deer, weapons, and tools; have simpler belt designs; and are rarely polished. Deer stones from western Mongolia, in the Mongolian Altai, tend to be made from softer slate and greywacke. Although easier to carve, they are rarely polished and are often broken and covered with modern graffiti. Most deer stones, regardless of size and ornamentation, have recognizable head, torso, and waist sections and lack arms and legs (Fig. 9). In rare instances, the head has a human face, ears, and mouth; but in most cases, faces are indicated by two or three diagonal slashes (//,///) and ears by circular earrings with dangling tassels. When in their original settings, deer stones face east or southeast toward the rising sun. Deviation usually indicates a misinformed restoration. A looping string with pits between the face and torso represents a beaded necklace. Carvings on the torso give the deer stone its name. Here, we see elegantly engraved renditions of the Siberian maral or red deer (*Cervus sibiricus*) with wave-like antlers scrolling across its back, which always has a sharp, peaked withers (Fig. 10). The body is often placed in upward "flying" position, legs tucked under its belly, but when the stone is narrow, the figures head down or straight up. Two reindeer-like brow antlers and large pointed ears not present on elk or moose are always present. Although called a "deer stone" and the image a "Mongolian Deer" (Jacobson 1993; Jacobson-Tepfer 2001), this creature is more than a deer; it is a spirit entity formed by the fusion of a deer body with the neck and head of a bird with a thick bulging throat, a high rounded skull, a large round eye, and a long, thin bill with a fleshy tip. Such figures displaying animal-to-animal or animal-to-human transformation have been an important theme in East Siberian and Asia art and mythology since Neolithic times (Chang 1981; Nelson 1999; Qu 2014).

Whether shown singly or in nested ranks as though in a herd or flock, the Mongolian Deer is almost always portrayed exactly to these specifications, making it the defining feature of the deer stone as well as the central iconic spirit image of the DSKC and

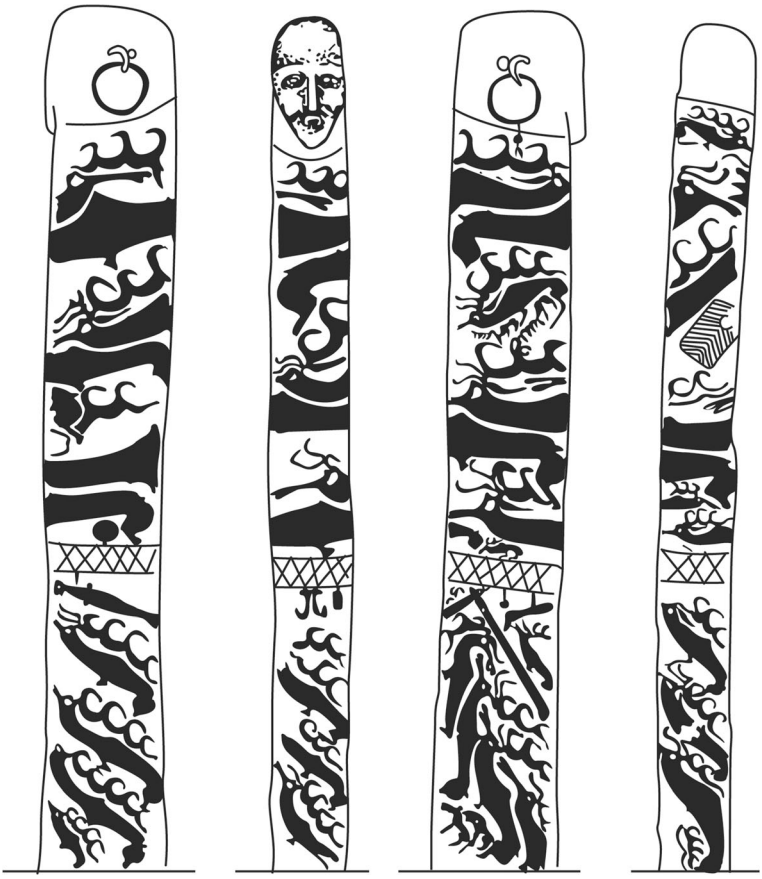

Fig. 9 Uushigiin Övör site, Deer Stone 14 (Volkov 1981)

associated rock art (Fig. 11) (Jacobson-Tepfer 2001; Kortum 2014). During this culture's 600-year tenure, essential features of the deer image remain constant. These images are carved into the flat surfaces of deer stones and, in most cases, continue around its four sides. Although usually less than 0.5 cm deep, shadow effects make the engravings highly visible as the sun rotates around the stone during the day. Recognizing its similarity to the deer motif in Early Iron Age Scytho-Siberian Animal Style art, early researchers like Radloff, Okladnikov, and Dikov, and more recently Volkov, Novgorodova, Kubarev, and Savinov assigned a date of *ca*. 600–200 BCE to deer stones (Jacobson-Tepfer 2001).

Other images found on the torso include bows and arrows, quivers, shaman's mirrors, and shield-like chevron motifs. The lowest part of the stone—the waist—shows a textured warrior's belt with attached weapons and tools such as a battle ax, a chariot rein hook, a whetstone, and a knife or dagger (Fig. 12). Belts display a great diversity of patterns from stone to stone, and the weapons and tools also differ in type, size, and form (Figs. 13 and 14; Novgorodova 1989, pp. 189, 200). The same is true of the spatial arrangement of the deer image(s); while it usually retains the same body outline, its size, body orientation, and arrangement differ from one stone to another, making each stone a unique artistic creation.

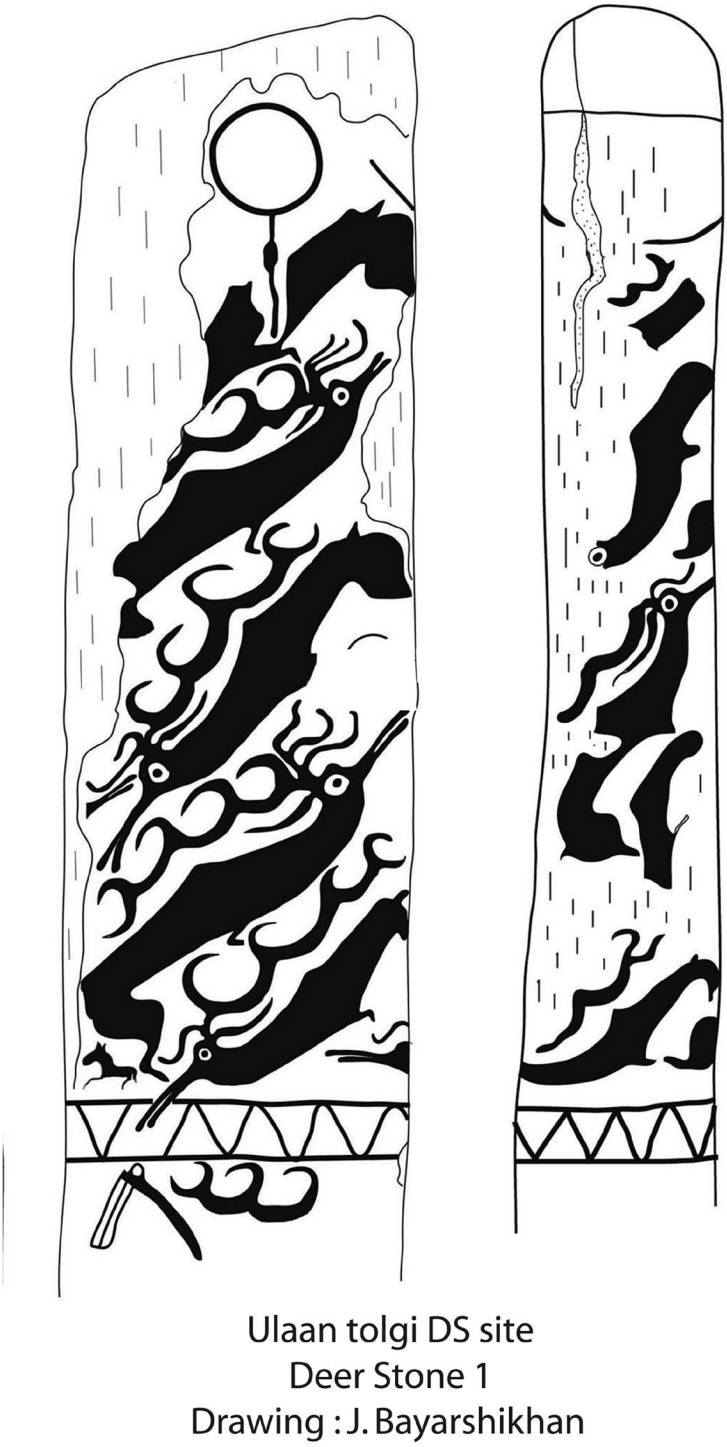

Fig. 10 Ulaan Tolgoi deer stone 1 (drawing: J. Bayarsaikhan)

Fig. 11 Mongolian deer engraving at Biluut rock art site, Khoton Nuur (photo: R. Kortum)

The identity of the anthropomorphic figure represented in deer stone art has been much discussed. Dikov (1958, p. 46) believed deer stones were memorials to deceased leaders who could be recognized by their distinctive tools. However, most Russian deer stone scholars since then, including Volkov, Novgorodova, and Savinov, proposed variants of Okladnikov's belief that the stones portrayed ancestors, or mythic or fertility cult figures (*e.g.*, Kubarev 1979, p. 86; Jacobson-Tepfer 2001, p. 38). Dikov has by far the stronger argument, and this view has been enhanced by the detailed studies of weapons, tools, and belt designs resulting from Novgorodova's and Savinov's documentation. The individualistic treatment of tools, belts, and deer images is a strong indication that deer stones represent memorials for leaders who were known to the carvers and the wider community. In addition, it seems likely that the deer images on deer stones may copy body tattoos as seen in the frozen warrior graves (Rudenko 1970; Griaznov 1980, 1984; Jettmar 1994). The ancient Northeast Asian artistic tradition of using designs on clothing and body tattoos to spiritually protect the body from harm (Fitzhugh 1988) seen in the Early Bronze Age Pazyryk tombs of 800–600 BCE (Fig. 15) can probably be extended to deer stone warrior memorials.

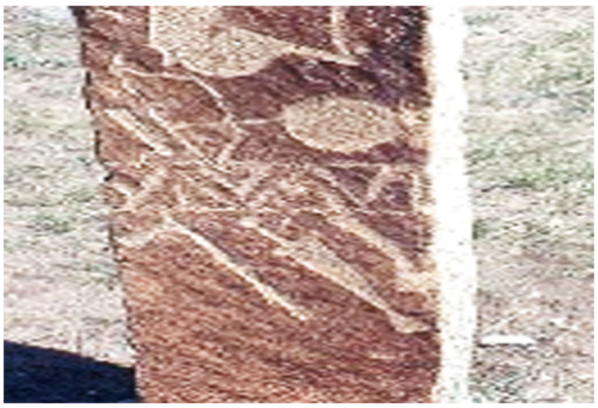

Fig. 12 Uushigiin Övör, Deer Stone 9 belt implements (photo: W. Fitzhugh)

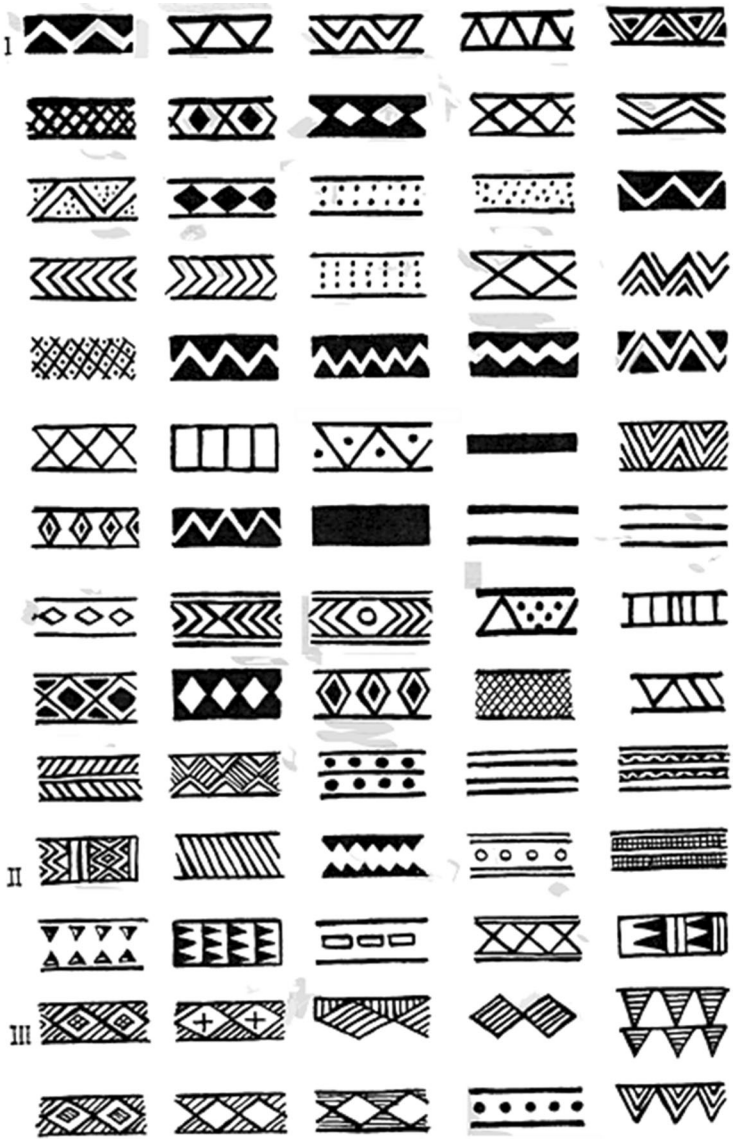

Fig. 13 Design variation in deer stone belts (Novgorodova 1989, p. 200)

The question of identity is crucial for any discussion of collective memory. In the absence of textual documentation, the matter can be approached indirectly with reference to Turkic figures of the sixth–eighth centuries CE (Fig. 16). Like most Russian archaeologists, the Russian art historian L. N. Ermolenko (2006) argued that Turkic figures carved both as flat stelae and full-round upper body sculptures found at ritual sites in the Altai region are generic ancestor or mythological figures. The case can perhaps be argued in reverse: what would deer stones look like were they created as generic ancestors or heroes? Perhaps they might resemble Inuit inuksuit—stylized forms with no human detail other

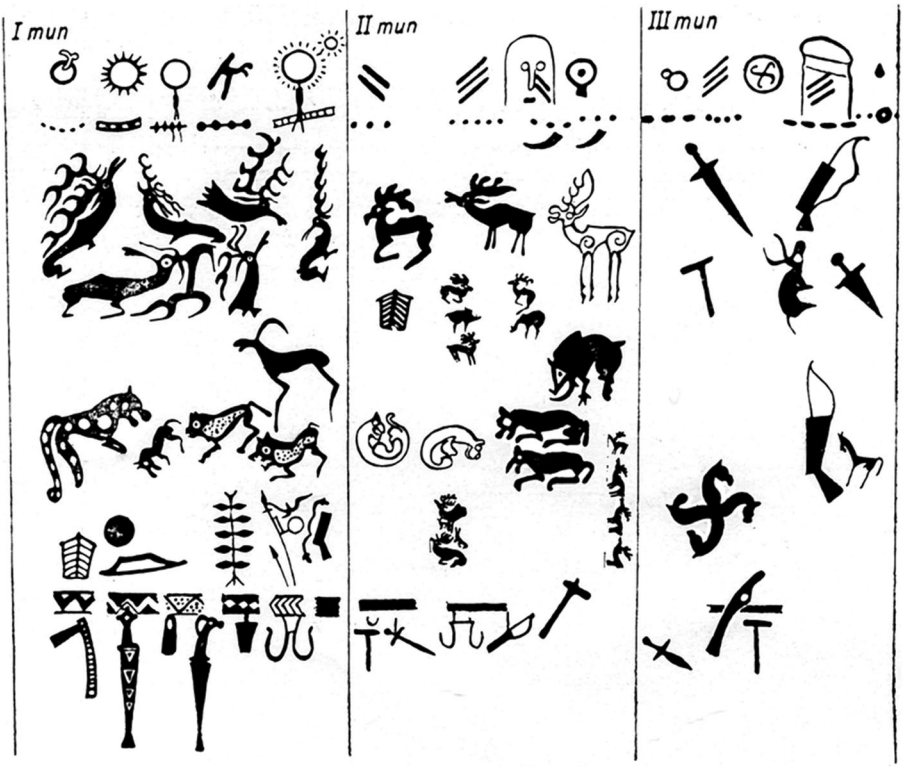

Fig. 14 Deer stone motifs by type classes I, II, and III (after Novgorodova 1989, p. 179)

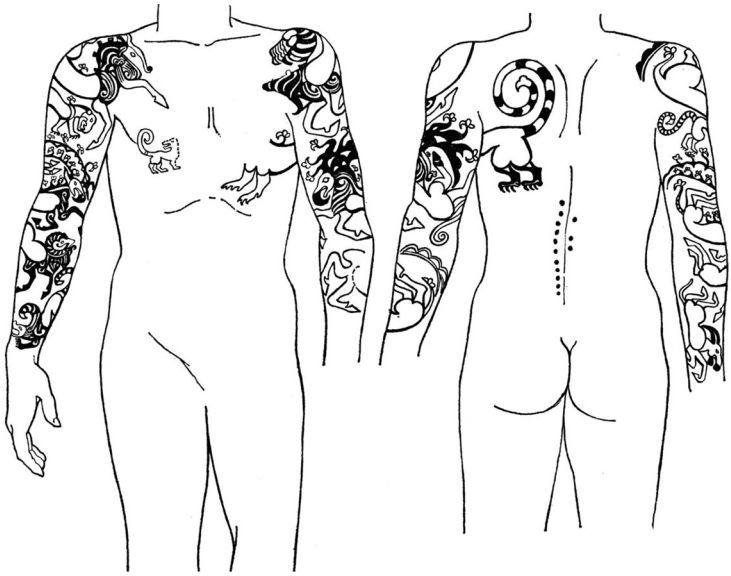

Fig. 15 Tattooed Pazyryk warrior, Gorni AltaI, southern Russia (Rudenko 1970)

Fig. 16 Turkic figure at a ritual site at Khotan Nuur, Mongolian Altai (photo: R. Kortum)

than elementary anatomy. Or they might look like abstracted Cycladic figurines, or the clay figurines of Central Mexican cultures. But why would one create generic figures with such unnecessary detail like highly variegated belt and weapon patterns? Of the hundreds of deer stones recorded, no two are alike. Deer stone belts and tools are highly distinguishing features. Among Asian cultures from the Bronze Age to medieval times, a man's belt and weapons were personal items and probably had spirit connections. At least since the early Bronze Age, they were crafted with artistry and individualized distinction. Leaders of the thirteenth-century Golden Horde in Russia can be identified as part of the Genghissid lineage by the symbols and styles seen in their belt insignias, horse gear, and weapons (Kramarovsky 2013). Five hundred years after the DSKC, the 8000 soldiers of the Qin terracotta army were given costumes and weapons distinctive of their rank and function.

Turkic warrior figures provide further support. Taking issue with L.N. Ermolenko's 2006 claim that monumental Turkic figures are stylized representations, Kubarev (2007) argued that their presence at burial and ritual sites proves their historical reality. He also noted that William of Rubrick, writing of a visit to the court of Mongke Khan in 1254, observed: "The Kumans [Tatars] construct a large mound above the grave and erect a statue in honor of the deceased; the statue faces east and shows the figure holding a bowl in the area of his navel" (Puteshestviya 1957, p. 102 quoted in Kubarev 2007, p. 142). These Turkic statues seem likely to have arisen as a revived funerary sculpture tradition inspired by LBA deer stones. In addition to their individual features, the patterning of deer stone design and their ritualized, ceremonial site settings suggest a strict code of production. With some 1000 deer stones having been created over a period of 5–600 years, only select individuals could receive this recognition. Some of these individuals must have been shamans. Shamanic elements displayed on deer stones, including faces seen as blowing or singing (see Fig. 9), bronze mirrors, and skeleton-like pentagonal shields, suggest that shamans played a major role in society and may also have been military or political leaders.

Until the 1990s, it was assumed that deer stones dated to the Scythian horizon *ca*. seventh–third centuries BCE. Similarities to Scythian art and cross-dating of deer stone tool styles with Karasuk grave finds in southern Russia suggested contemporaneity (Okladnikov 1954; Dikov 1958). It was therefore surprising when a tomb at Arzhan II provided a pre-Scythian date in the late ninth century BCE (Chugunov *et al*. 2010). Cross-ties suggested that images of deer with a straight tiptoe stance rather than folded

legs, or those with moose-like heads, might be late developments in deer stone art (Volkov 1995). A decade of new fieldwork aimed at dating deer stone sites throughout northern and western Mongolia confirms Volkov's view for a pre-Scythian age for deer stones but indicates a much earlier beginning than he originally envisioned (Table 1) (Fitzhugh *et al*. 2005; Fitzhugh 2009a; Fitzhugh and Bayarsaikhan 2010, 2011). Radiocarbon dates on horse teeth and hearth charcoal from horse head burials and hearths associated with individual deer stones consistently indicate a 600-year span for deer stones from 1400 to 700 BCE. Proto-Scytho-Saka art was being produced in Mongolia and perhaps in other areas half a millennium before Pazyryk and the later Scytho-Saka Iron Age cultures of Central-Western Asia.

The foregoing discussion is based on the highly ornamented monument type known as the "Classic Mongolian" or type 1 deer stone. Early Russian researchers also recognized the existence of two other type classes that share the minimal deer stone code of an east-facing stone with face slashes, earrings, neckless, and belt (Fig. 17a–c). Type II ("Sayan-Altai") deer stones found in the Sayan and Altai mountains north and west of the core area of "Classic Mongolian Deer Stones" (Volkov's type I) in north-central Mongolia share these basic features but replace the stylized Mongolian Deer with more realistic images of moose, deer, boars, felines, and others and occasional images of weapons. Type III ("Eurasian") stones, the simplest type, rarely display more than the minimal features of face slashes, earrings, and belt, usually without any animals, and occur in the Altai and sometimes as far west as the Pontic region and even in Eastern Europe (Volkov 1995). These types have been defined both on the basis of style and geography. Types II and III are difficult to date stylistically because the weapons are few and undiagnostic. However, the animals' tiptoe stance and moose-like faces suggest a Pazyryk date of *ca*. eighth–sixth centuries BCE or later. None of the type II or III stones have been found with datable horse head or hearth features. However, at the Khyadag East site north of Uushigiin Övör, a series of small rudimentary type III stones were found associated with copper slag, charcoal, and a type I deer stone carrying two Scythian-style coiled feline images. Its charcoal dated 750–400 BCE, at the late end of the DSKC (Fitzhugh and Bayarsaikhan 2009). At present, there is no clear understanding of the spatial, temporal, cultural, or functional relationships between the better known and type I and type II and III deer stones (Fig. 18). For our purpose, it is important to note that none of the type II or III deer stones carry features that make them identifiable as "portraits" of specific individuals.

Khirigsuur Burials

Khirigsuur mounds represent the burial side of the DSKC and are found in the same geographic regions as deer stones (Tsebiktarov 1995; Frohlich *et al*. 2009; Wright 2007, 2014a, b). While most deer stones are associated with khirigsuurs, most khirigsuurs—and there are tens of thousands of these burial features—are not associated with deer stones. Like deer stones, khirigsuur mounds may be large or small and are also found singly or in groups in the open steppe pasture lands. Khirigsuurs in north-central Mongolia occur in two forms: a boulder mound surrounded by either a circular or a square boulder fence (Fig. 19; Frohlich *et al*. 2009; Fitzhugh 2009a and field notes 2002–12). A stone pavement may connect the space between the central mound and the east side of the fence. Along the east side of the fence, 1–2-m diameter satellite mounds contain east-facing horse head packages identical to

Table 1 Deer stone and Khirigsuur project radiocarbon dates from Khovsgol, Arkhangai, and Bayan Ulgii Aimags

Site/feature	Location/year	Sample no.	Material	Uncorrected	Calib (2-sig)
Ulaan Tolgoi DS4 S-17	Erkhel/2003	B-182958 AMS	Charcoal	2170 ± 40 BP	BP 2320–2050[a]
Ulaan Tolgoi DS4 S-7	Erkhel/2003	B-182959 AMS	Charcoal	2930 ± 40 BP	BP 3220–2950
Ulaan Tolgoi DS4 F1	Erkhel/2004	B-193738 AMS	Bone coll.	2530 ± 40 BP	BP 2750–2470
Ulaan Tolgoi DS4 F2	Erkhel/2004	B-193739 AMS	Bone coll.	2950 ± 40 BP	BP 3240–2970
Ulaan Tolgoi DS4 F3	Erkhel/2004	B-193740 AMS	Bone coll.	2810 ± 40 BP	BP 2990–2800
Ulaan Tolgoi DS4, F5	Erkhel/2005	B-207205 RAD	Bone coll.	2790 ± 70 BP	BP 3220–2800
Ulaan Tolgoi DS4, F6	Erkhel/2005	B-207206 RAD	Bone coll.	2740 ± 70 BP	BP 3150–2780
Ulaan Tolgoi DS5, T1	Erkhel/2002	B-169296 AMS	Charcoal	2090 ± 40 BP	BP 2150–1960[a]
Ulaan Tolgoi DS5, F1	Erkhel/2005	B-215694 AMS	Tooth coll.	2800 ± 40 BP	BP 2980–2790
Ulaan Tolgoi DS5, F2	Erkhel/2006	B-222535 AMS	Tooth coll.	2830 ± 40 BP	BP 3050–2850
Ulaan Tolgoi M1, F1	Erkhel/2005	B-207209 AMS	Bone coll.	1880 ± 40 BP	BP 1900–1720[a]
Ulaan Tolgoi M1, F2	Erkhel/2005	B-215692 AMS	Tooth coll.	2860 ± 40 BP	BP 3080–2870
Ulaan Tolgoi M1, F2	Erkhel/2005	B-215644 AMS	Charcoal	2980 ± 40 BP	BP 3310–3000
Ulaan Tolgoi M1, F3	Erkhel/2005	B-215693 AMS	Tooth coll.	2950 ± 60 BP	BP 3320–2940
Nukhtiin Am DS1/2	F1Galt/2006	B-222534 AMS	Tooth coll.	2830 ± 40 BP	BP 3050–2850
Nukhtiin Am Md1,F1	Galt/2006	B-240685 AMS	Tooth coll.	2630 ± 40 BP	BP 2790–2730
Evdt 2 DS 2 Circ. feat.	Evdt Valley	B-215643 AMS	Charcoal	3030 ± 40 BP	BP 3350–3090
Tsatstain Kh DS1,F1	Tsaagan/2005	B-207208 AMS	Tooth coll.	2920 ± 40 BP	BP 3160–2920
Tsatstain Kh DS1,F2	Tsaagan/2005	B-207207 AMS	Tooth coll.	3000 ± 40 BP	BP 3330–3060
Urt Bulagiin KYR1:21	Khanuy/2006	B-222532 AMS	Tooth coll.	2780 ± 50 BP	BP 2980–2770
Urt Bulagiin KYR1:22	Khanuy/2006	B-222533 AMS	Tooth coll.	2790 ± 40 BP	BP 2970–2780
Tsagaan Asga F3	Bayan Ulgii/2008	B-246611 AMS	Charcoal	2850 ± 40 BP	BP 3070–2860
Tsagaan Asga F4	Bayan Ulgii/2008	B-246612 AMS	charcoal	3000 ± 40 BP	BP 3330–3070
Khogorgo-3, Md1	Shishged 2007	B-240687 AMS	Tooth coll.	3450 ± 40 BP	BP 3830-3620
Khushuugiin Devs. F1	Erkhel/2006	B-222536 AMS	Tooth coll.	2140 ± 40 BP	BP 2320–1990[a]
Khushuugiin Devs. F2	Erkhel/2007	B-240688 AMS	Tooth coll.	2450 ± 40 BP	BP 2720–2350
Khushuugiin Devs. F3	Erkhel/2007	B-240689 AMS	Tooth coll.	2680 ± 40 BP	BP 2860–2740
Khushuugiin Devs. F1	Erkhel/2007	B-243716 AMS	Tooth coll.	2410 ± 40 BP	BP 2700–2640[b]
Khyadag E. DS pav.7	Erkhel/2007	B-240690 AMS	Bone/tooth	2610 ± 40 BP	BP 2770–2720
Hort Uzuur DS3	Hort Azuur/2006	B-222537 AMS	Charcoal	2230 ± 40 BP	BP 2340–2140[a]
Hort Uzuur DS2,L2, F1	Hort Azuur/2007	B-240691 AMS	Charcoal	2710 ± 40 BP	BP 2870–2750
Avtiin Fea.5 Sample 6	Shishged/2007	B-242730 AMS	Charcoal	2670 ± 40 BP	BP 2850–2740
Khoton 333 F18	Bayan Ulgii/2008	B-246610 AMS	Charcoal	2840 ± 40 BP	BP 3070–2860
On Khad Khushuu	Bayan Ulgii/2008	B-246613 AMS	Tooth coll.	2930 ± 40 BP	BP 3220–2960
Bor Hujiriin A1, F2	Tsagaan/2008	B-246614 AMS	Tooth coll.	2640 ± 40 BP	BP 2790–2730
Bor Hujiriin A2, F1	Tsagaan/2008	B-246616 RAD	Charcoal	2670 ± 50 BP	BP 2860–2740
Khuush. Gol F2	Erkhel/2008	B-246617 AMS	Tooth coll.	2750 ± 40 BP	BP 2940–2760
Khushuug. Gol A3, F3	Erkhel/2008	B-246618 AMS	Tooth coll.	2910 ± 40 BP	BP 3210–2940
Khushuug. Gol F6	Erkhel/2008	B-246619 AMS	Charcoal	2850 ± 40 BP	BP 3070–2860
Khyadag E A3 F32	Erkhel/2008	B-246620 AMS	Tooth coll.	2520 ± 40 BP	BP 2740–2470
Khyadag E A2 midden	Erkhel/2008	B-246621 RAD	Charcoal	2460 ± 50 BP	BP 2730–2350

Table 1 (continued)

Site/feature	Location/year	Sample no.	Material	Uncorrected	Calib (2-sig)
Khyadag E A2 midden	Erkhel/2008	B-246622 RAD	Charcoal	2520 ± 50 BP	BP 2750–2440[c]
Khyadag W. F1	Erkhel/2008	B-246623 AMS	Bone coll.	2610 ± 40 BP	BP 2870–2750
Zuni Gol A1, F3	Shin Ider/2009	B-272756 AMS	Tooth coll.	2870 ± 40 BP	BP 3140–3090[d]
Zuni Gol A2, DS4	Shin Ider/2009	B-272757 AMS	Tooth coll.	2710 ± 40 BP	BP 2880–2750
Zuni Gol A3, F1	Shin Ider/2009	B-272758 AMS	Tooth coll.	2860 ± 40 BP	BP 3080–2870
Zuni Gol K3, F42	Shin Ider/2009	B-272759 AMS	Tooth coll.	2950 ± 40 BP	BP 3250–2980
TsiokhiotinA1 DS2 F2	Shin Ider/2009	B-272760 AMS	Tooth coll.	2790 ± 40 BP	BP 2980–2790
Khooshootiin Am F18	Galt/2009	B-272763 AMS	Tooth coll.	2880 ± 40 BP	BP 3150–2880
Jargalantiin Am DS F4	Jargalant/2011	B-341484 AMS	Tooth coll.	2780 ± 30 BP	BP 2950–2790

[a] Questionable dating result

[b] B-243716 Khushuugiin Devseg F1 also has intercepts at BP 2610–2590 and 2540–2340

[c] B-246622 Khyadag East A2 has a second intercept at BP 2410–2370

[d] B-272756 Zunii Gol A1, F3 has a second intercept at BP 3090–2870

those found around deer stones. East of the horse mounds are concentric rings of cobble hearths containing charcoal and calcined bone. The central mound usually contains a single human interred without grave goods. Because most graves are shallow—less than 50 cm deep—human remains are often poorly preserved. For this reason, until recently, khirigsuurs were thought to be ritual monuments rather than burial sites. However, excavations of khirigsuurs in northern Mongolia have almost always recovered a male or a female individual, with roughly equal gender frequency, ages ranging from young to old, in both circular and square-fenced mounds (Frohlich *et al*. 2009; Littleton and Frohlich 2012; Littleton *et al*. 2012). The largest mounds—sometimes 4–5 m tall and 30–50 m in diameter—are found in the most fertile river valleys and river confluences. Mound size

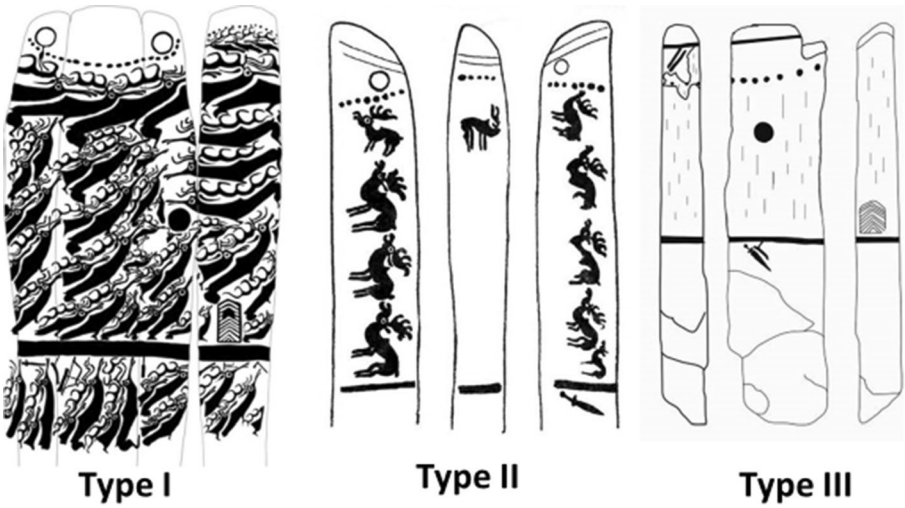

Fig. 17 Deer stone type classification (Volkov 1981; Savinov 1994): **Type I**, Classic Mongolian, north-central Mongolia; **Type II**, Sayan Altai, mountainous north and west Mongolia; and **Type III**, Eurasian, Altai and western steppe extending to the Pontic region and Eastern Europe

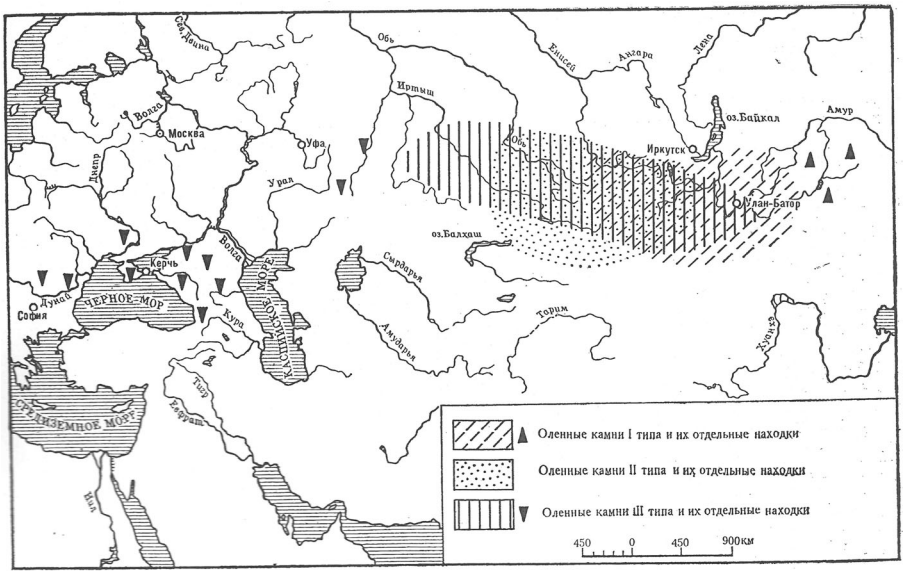

Fig. 18 Geographic distribution of types I, II, and III deer stones (after Novgorodova 1989, p. 181)

does not necessarily correlate with sex or age. Few of the largest mounds have been excavated, but their prominence and location at key transport and high-value pasture locations, and their frequent association with major deer stone concentrations, suggest elevated social and political status. Mounds display an exponential decline in size, becoming more numerous as their size decreases. The smallest are miniature khirigsuurs only 4–5 m across that are mostly found on east- or southeast-facing hill slopes rather than in valley bottoms. These "commoner" burials retain the essential khirigsuur signature: a central pavement (instead of a mound) covering a grave inside an enclosure bordered by a circular or square fence. Horse head burials and oval hearth features are not present in small hillside khirigsuurs.

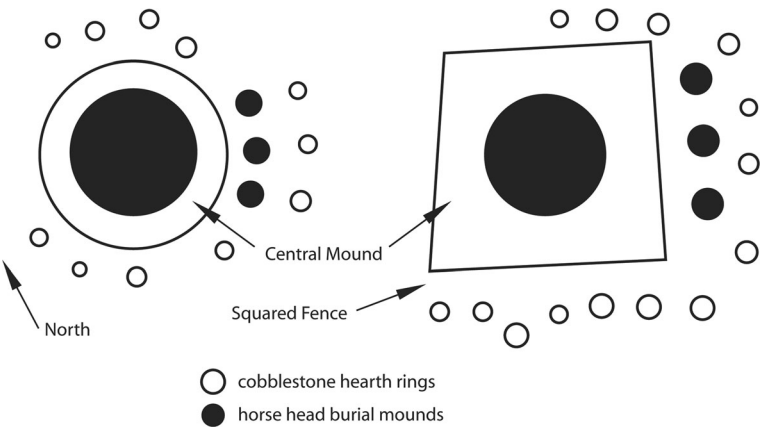

Fig. 19 Round and rectilinear types of khirigsuurs with satellite horse head mounds east of the fence and surrounding cobble hearths

The archaeological visibility of khirigsuurs has allowed researchers to map them over wide geographic regions, and the resulting distribution suggests clusters of family or clan burial grounds including people of all ages (Frohlich *et al*. 2009; Wright 2007, 2014a). Based on detailed GIS-based surveys in the Khovsgol-Muren region, Frohlich estimates that almost every individual in this society received a khirigsuur burial. Urt Bulag, a large khirigsuur in the Khanui valley, has 1700 satellite horse mounds and may have taken months to construct (Allard and Erdenebaatar 2005; Houle 2010, p. 30; Turbat *et al*. 2011). As at Ulaan Tolgoi, radiocarbon dates indicate that the horse sacrifices were probably part of a single funeral ceremony (Fitzhugh 2009a, p. 398).

Until recently, archaeologists believed that khirigsuurs and deer stones were created by different cultures. However, radiocarbon dates of horse teeth and charcoal from deer stone and khirigsuur horse head features and hearths have identical ranges (1300–700 BCE). In addition, deer stones and khirigsuur sites are often closely associated and share the same satellite mound horse head burials, oval hearths, and east-to-southeast-facing monument and horse head orientation (Fitzhugh 2009a, b). Although deer stones are rarely found in khirigsuur constructions in central Mongolia, in the Mongolian and Russian Altai, they are sometimes placed in the east side of khirigsuur mounds or enclosures, indicating a direct mortuary association. Generally, their relationship is complimentary; deer stone sites are usually found in close association with khirigsuurs. While khirigsuur ceremony seems to attend the afterlife of most if not all members of the DSKC society, deer stones and large khiriguurs commemorate only a small percentage of the population.

Culture Borders

The spatial geography of deer stones and khirigsuurs reveal clues about cultural and geographic boundaries. In addition to the lithological differences—granite and basalt deer stones in central Mongolia and soft slate in the Altai regions—western deer stones tend to have simpler designs, a less rigidly patterned graphic structure, and fewer deer images. Some Altai deer stones are found in large north-south alignments as at Tsagaan Asgat in Hovd Aimag, but most are solitary, and some are placed on the east sides of khirigsuur mounds or fence borders. Such khirigsuur-deer stone associations are common in neighboring Russian Gorni Altai. Khirigsuurs of these western regions often have radial "spokes" connecting the central mound with the fence which may represent a chariot wheel. Most importantly, these western mounds have charcoal-datable outlying circular sacrificial hearths but lack horse head burials. Today, mountainous western Mongolia is occupied by Muslim Kazakhs who breed sheep and goats but are not known—like central Mongolians—for large-scale horse-rearing. Geography is probably the principal reason for the modern ethnic and ancient cultural and ritual differences. Both areas shared core features of the DSKC tradition, but horses may have been too precious to sacrifice in the mountainous Altai.

Recalling the Past, Building a Culture

Unlike the succeeding Square Burial and Pazyryk cultures, wealth amassed by this society was not interred in khirigsuur burials and was recycled among the living.

Prestige and rank was expressed by the size and central location of the largest mounds and for select individuals, by deer stones. The identity of deer stone individuals and those buried in the largest khirigsuurs would have been known to all and passed down as local history reinforced by their physical presence, attendant stories, and ritual observances. Both constructions required labor. Khirigsuurs entailed stone transport, horses for sacrifice, and oversight of site design, construction, and feature placement. Protocols had to be followed in the selection of individuals to be honored with deer stones, and production required skilled artisans for quarrying and carving. Both required animal sacrifices and social investment in communal feasts and dedication ceremonies. These events helped build an historical tradition reinforced by monuments that were encountered frequently by all members of the society and were probably locations of periodic ceremonial gatherings that reinforced collective memory and helped maintain the DSKC as a stable, relatively homogeneous ethnocultural and political entity.

So what do khirigsuurs and deer stones tell us about collective remembrance among ancient Mongolians? In both cases, these highly visible monuments and their associated features created an indelible record on the ground and in the minds of "deer stone" people. It is also possible that renewal events took place at both types of sites. Khirigsuur and deer stone excavations occasionally recover ceramics or bronze items, but usually from later or modern periods. Even today, these monuments are places of local reverence as seen in the deposition of animal remains inside khirigsuur fences, tying blue or white silk *khadag* banners to deer stones, and offerings of discarded shoes, clothing, money, and crutches within khirigsuur precincts. From DSKC times, we have no evidence of regular postinstallation renewal rituals at either khirigsuurs or deer stones such as the continued sacrifice of horses and hearth-centered rituals at particular deer stone and khirigsuur sites. Rather, we see the building of more mounds and erection of new deer stones, often in carefully planned architectural settings, as was the case with Maya temple complexes (Jackson and Wright 2014). Lines of deer stones may represent a chronological sequence of leading individuals linked to central places of political power, but so far, these alignment sequences have not been dated. Bronze weapons and tools are occasionally found in graves, but most burials are single interments without grave goods. Status was achieved and marked in death by the size of one's mound, the number of sacrificed horses, or the size and artistry of one's deer stone. Although some have argued for a relatively low level of social political complexity (Wright 2014a), the standardization of khirigsuurs and deer stone art and architecture suggests the presence of social structure sufficient to maintain a chariot-based warrior hierarchy (as judged by weaponized deer stone leaders) dependent on the distribution of bronze weapons and technology (Jacobson-Tepfer 2012). Distant contacts are clearly evident in the widespread distribution of bronze implements and weapons, but as yet, there is insufficient chemical and metallurgical evidence to inform about sources and movement of bronze (Erdenebaatar 2004; Honeychurch 2015).

Deer stones and khirigsuurs appear to have served a fairly classic function in memorializing individual leaders and preserving their memory and contributions in a public manner. Landscape was an important component in this process, since both features would always have been part of the view-scape of local residents as they went about their daily lives (Jacobson-Tepfer *et al*. 2010). Even today, herders venerate mountains and hills, especially those located east of their home territories, and cache

the heads of deceased horses at the crests of hills. Although seasonally nomadic, deer stone people appear to have had a similar limited-range migration cycle as modern herders, rarely moving more than a few kilometers within a home base area (Houle 2010). Political and economic hierarchy is most evident in a spatial gradient in the number and sizes of khirigsuurs and deer stones from small tributary valleys with limited pasture to major river-bottom plains with large khirigsuurs and deer stone sites with multiple stones that display larger size, higher quality, and more complex carving. What little is known of domestic life does not yet suggest size-ranked dwellings and appears relatively egalitarian. Ranking in nomadic societies does not require elaborate or permanent architecture. The existence of a bronze trade, size-ranked mortuary structures, and elite deer stones point toward a society with a social and political hierarchy at the level of a complex chiefdom or incipient state. While leadership does not appear to have been hereditary, and wealth remained within the living society rather than being passed into the afterlife of its leaders, social control is evident in the large mound constructions located in central places. Beyond the pastoral basis for life, control of the bronze trade and strict adherence to cosmological beliefs sustained the social and political system as evidenced by the persistence of DSKC art and mortuary ritual. Khirigsuur architecture and deer stone art in the north-central Mongolian core area show little signs of stylistic change for nearly 600 years.

This degree of cultural unity and continuity is unusual in any cultural system, and in this case, an important factor must have been the curation of a core of beliefs supported by visible markers of social, economic, and political success. Deer stones memorialized important leaders throughout the geographic extent of the culture area but were concentrated in Central Mongolia where horse and animal production was most productive. This area is also the region where later state and empire societies were founded. The identification of deer stone personages linked these monuments to the events and stories of their day, and these were memorable enough to have "authorized" their preservation in perpetuity. In core settlement areas, the procession alignment of deer stone monuments provided a highly visible biographic history that could be "read" and recalled by local residents, and these stories would have been renewed periodically when larger regional groups assembled for the dedication of deceased leaders who received large khirigsuur burials or deer stones. Deer stones seem to have had a function similar to the Western tradition of installing individual statues of heroic figures widely throughout the landscape, while larger groupings of historic figures are gathered in central places or special ritual locations in cathedrals and national parks or cemeteries. The collective remembrance of these individuals and their roles and deeds, matched with khirigsuur ceremonialism, was a major part of the "cultural glue" that kept the DSKC a strong, unified social and political system.

The role of khirigsuurs as agents of collective memory is less clear. Presumably, everyone in a given locality could identify the individuals buried in the largest local mounds and could identify the names and stories of those buried in large mounds within a wider region. Stories of the owners of the largest mounds of all must also have been widely known. Whereas deer stones honored named individuals with memorable histories—perhaps at the level of local chiefs, generals, or powerful shaman-warriors—those buried in the largest mounds that entailed the greatest labor and the sacrifice of large numbers of horses were probably the polity's supreme leaders. Their burials were the grandest of all. Deer stones, on the other hand, are notable not for their size; the

largest concentrations of stones and finest artistic execution are found at sites in the most productive pasture regions and communication corridors along with the largest khirigsuurs.

Amidst the long-term homogeneity of the DSKC landscape, there are few signs that foreshadow changes to come at the end of this period, *ca*. 600 BCE. At the Zuni Gol site in north-central Mongolia, we uncovered a deer stone with iconography different from the classic type I Mongolian style (Fig. 20) (Fitzhugh and Bayarsaikhan 2010). Made of soft chlorite schist rather than granite, Zuni Gol DS 10 combines elements of the classic type with others that foreshadow the following Pazyryk culture and its Scythian-Saka Siberian animal style art. Classic elements of the Zuni Gol stone include ranks of iconic Mongolian deer images, rein-hooks, a striped pentagonal shield, a shaman's mirror, and weapons; however, there is no belt, and the motifs noted above are not in their usual positions. Most unusual is the appearance, instead of a human face or slash motif (///,///), of a frog and an ibis-bill bird shown with outstretched wings on opposing sides at the top of the stone, a boar's tooth suspended from a necklace, and multiple images of striped feline predators confronting boars and cattle. This stone blends features of type I classic (Mongolian) deer stones with images of predator-prey confrontations that are characteristic of Scytho-Saka art of the 700–400 BCE period of southern Siberia and Western Asia. Further evidence of a transition is seen in the blending of the fixed composition of the classic deer stone with the narrative style of

Fig. 20 Zuni Gol deer stone (drawing: J. Bayarsaikhan)

Scytho-Saka art. A few other instances are known of Mongolian deer stones with Scytho-Saka motifs like coiled felines. Although the Zuni Gol stone has not been dated, Scythian-style coiled felines on a deer stone at the Khyadag East site date to 750–400 BCE. These instances may signal cultural changes to come with the arrival of Pazyryk and Slab Burial cultures in the Mongolian Altai and Central Mongolia, respectively. The use of the deer stone format and its iconic Mongolian deer motif on a stone that includes predator-prey narrative style art signals the end of the DSKC tradition and the earliest known instance of "biographical" monument-making in the Central Asia steppe.

A dramatic change occurred *ca*. 800–600 BCE when the Slab/Square Burial and Pazyryk cultures replaced the DSKC. Slab/square burial people mined deer stones to "crib" their pseudo-log chambered burial pits, and both they and Pazyryk cultures interred horses and large amounts of material culture, including gold ornaments (Fig. 21) (Turbat *et al*. 2011). Square burials were surrounded by vertical slabs, without mounds, while Pazyryk graves continued the kurgan-DSKC tradition of making mounds hierarchically graduated by size. Both buried warriors in full regalia, along with their war horses and elaborate grave goods (Rudenko 1970; Griaznov 1980). While the "owners" of the elaborate Arzhan I and II burial complexes would have been known to all, Slab Burials and Pazyryk graves had no monumental features (like deer stones) for identifying the deceased. In such cases, the collective memory created may have been more local and probably short-lived. The use of anthropomorphic sculpture commemorating individuals identifiable in statuary did not return to the Central Asian steppe until the advent of the Turk empire *ca*. 600 CE.

Menhirs in the Britain Isles and Brittany

By way of comparison, and because they are among the earliest standing stones (other than Göbekli Tepe) known to exist, we briefly consider the menhirs of the UK and Brittany. Menhirs are often associated with megalithic circles but are also found singly, in pairs, or in alignments (Burl 2000; Darvill 2006). Some date as early as the sixth

Fig. 21 Repurposed deer stones at Square (Slab) Burial at Jargalant Am, Khanui Valley, excavated by Volkov (photo: W. Fitzhugh)

millennium BCE, but most are Late Neolithic, *ca*. 3000–2000 BCE, and are rough-hewn or completely without modification, as though it was most important to show human ability to transport a huge piece of nature to a new location and enhance an existing landscape as a place for communal worship or ritual. Engravings on menhirs are rare and simple forms, and the stones are not fashioned in a human likeness. In this era before metal tools, the erection of a large stone in its natural state seems to have been sufficient to humanize a landscape and, according to some interpretations, to create a link between earth and sky (Darvill 2013, p. 149). Like khirigsuurs, the positioning of upright stones in henges followed a carefully measured circle.

In Western Europe, standing stones functioned in a very different way than in Bronze Age Mongolia. Contrary to general understanding, there is little astronomical consistency in British stone alignments (Ruggles 1999), and double rows seem to have functioned as ritual pathways. Despite long-standing archaeological interest, menhirs have seen little large-scale excavation, and while many theories have been advanced (Tilley 2004, pp. 33–35), their functions are probably multiple and remain a topic of archaeological investigation. Whatever their purpose, they were important enough that societies continued to build them for several thousand years. None appear to represent historical events or individuals; instead, they served in some general way as focal points for periodic ritual or seasonal celebrations. Later examples were often associated with passage graves and henges. Menhirs and megalithic arrangements helped create a sacred geography and provided opportunities for establishing leadership, community solidarity, or marking a group's territorial claims. A similar argument has been made for deer stones and khirigsuurs (Honeychurch 2015, p. 121; Littleton *et al*. 2012; Wright 2014a). Colin Richards (2013) and others, studying stone circles and standing stones in northern Briton, Scotland, and Orkney, emphasize the importance of building these megalithic constructions rather than seeing their final form or function as an observatory or for social gatherings as paramount (Fig. 22). According to this interpretation, selecting, quarrying, and transporting stones and constructing the monument were vehicles for establishing or legitimizing leaders, defusing regional rivalries, and advancing social and political goals while also creating structure for subsequent ceremonial functions.

Research at Stonehenge has produced divergent theories (Darvill 2006), apart from the astronomical. For instance, Wainwright and Darvill (2009; Darvill 2016 propose that bluestones had healing powers and were brought to the site to create a health-

Fig. 22 Neolithic Standing stones, Stenness, Orkney, *ca*. 2500 BCE (photo: W. Fitzhugh)

inspired pilgrimage center. Pearson and Ramilisonina (1998) proposed that the stones represented early ancestor figures whose veneration reinforced collective memory of past history and traditions. Similar ancestor veneration theories have been advanced for the Stones of Stennes and the adjacent Ring of Brodgar (Burl 2000). Despite disparate interpretations, most scholars agree that menhirs and megalithic constructions created a central place for carefully staged ceremonial gatherings that fostered social and political integration. The same may be said for Göbekli Tepe (Schmidt 2010), which seems to have served primarily as a religious sanctuary; its standing T-shaped monoliths have a vaguely human form and, like deer stones, have animal figures on their torsos.

Wright (2007, 2014a), using data from surveys of the Egiin Gol valley in northern Mongolia, has explored similar ideas about the organization of khirigsuur construction, emphasizing the management and building of khirigsuurs as a function of small-scale social processes rather than management by central elites. His arguments make sense for the less populated territories where deer stones are rare and minimally carved and where khirigsuurs are small, easy to build, and few in number. But such a local "grass-roots" organization model is difficult to sustain in the more central regions like Khanui and Muren where mounds are numerous and large and where deer stones are more numerous and elaborately carved. The quantity, artistry, and size gradients for deer stones and khirigsuurs display dramatic increases from peripheral to central regions, for instance moving from Egiin gol to Khovsgul, Muren, or Khanui. High-quality deer stone production requires specialized knowledge in finding, quarrying, and transporting a suitable slab of granite with nothing more than stone, wood, (probably) bronze chisels, and human, horse, or cattle transport power. Artists had to be employed to create the elegant designs, and finishing work required days if not months. Communal sacrificial rituals accompanied by dedication ceremonies had to be orchestrated according to status differentials and other social and religious considerations. By analogy with historical records, the burning of animal bones in such feasts produced plumes of smoke that carried the celebrant's supplication to the sky gods, perhaps under the guidance of a shaman invoking spirit mediators, as suggested by deer stone shamanic motifs. A similar scenario could be painted for the construction and dedication of khirigsuur burials, with their attended horse and animal sacrifices. Although the huge Jargalant Urt Bulag khirigsuur was certainly not typical and may represent a late development in the DSKC, even moderately sized mounds and deer stone production required financing and supervision that is hard to imagine without high-ranking leaders.

In the Mongolian case, we see the need for viewing megalithic constructions as more than enterprises of social solidarity or avenues for social or political competition, as emphasized by some interpretations of the European Neolithic standing stones and constructions. Both types of Mongolian monuments demonstrate the integrating function of shared ritual, centrally planned and orchestrated, as seen both in complex khirigsuur architectural and mortuary patterning, paired with the semi-deification of a small class of elite leaders who become memorialized in deer stone cenotaphs. How these individuals were chosen is unknown, but regional patterning of deer stone and khirigsuur size, numbers, and complexity suggests a regional political hierarchy with increasing control linked to very limited (if any) plant agricultural production (Spengler *et al*. 2016), control of critical trade materials like bronze, and human and animal population levels, from peripheral to central regions. The process of building these monuments and the ceremonial acts of burial and deer stone dedication created a

landscape that grew and evolved over time, populated with accumulating history and knowledge of persons and events that provided the people of the deer stone era with a strong sense of social and political solidarity. Visual stimulus and recurring ritual was the key to remembrance and maintenance of these traditions. Menhirs must have had a similar function for the Neolithic peoples of Western Europe. They created a cultural landscape that was unmistakably human—either in form or as monumental human endeavor—and served as a focus for social or ceremonial gatherings. Quite likely, they held or represented spirits that connected social groups to a sacred spot or fixed geographical place. Unlike deer stones, their function had nothing to do with commemorating individual historical figures or events.

Invented Tradition: Repurposing Old Rocks

The Inuit examples discussed above illustrate the importance of social and cultural continuity in the transmission and sharing of knowledge. The *inuksuit* found throughout the Canadian Arctic and Greenland are not known in Alaska or Siberia. They seem to have had an independent origin east of the Mackenzie River and therefore may be of Dorset Paleoeskimo origin. As Hallendy's informants report (2016, p. 295), the Inuit and their Thule ancestors learned many of the skills they needed to live in their new Eastern Arctic environment from their *Tuniit* (Dorset) predecessors. Dorset culture and quite likely their people disappeared abruptly upon the arrival of more numerous and technologically proficient Thule people from Alaska *ca*. 1300 CE (Raghavan *et al*. 2014). Two hundred years later, at the onset of the Little Ice Age, Thule culture itself underwent a major transformation when the sea passages between the Arctic islands became frozen and breathing-hole sealing replaced whale hunting in the Central Canadian Arctic. This was followed by successive waves of European impact from the eighteenth to twentieth centuries (Fitzhugh 2008; Friesen and Mason 2016; Kaplan and Woollett 2016). These disruptions would have caused major losses of cultural knowledge. Enduring collective memory requires reinforcement through social, political, and frequently religious continuity. Thule and their Inuit descendants were nomadic peoples who lived in small scattered communities. Central political controls did not exist, and knowledge transmission occurred at the level of families and in seasonal gatherings of small bands. Rapid change between 1300 and 1800 combined with a hyperflexible sociopolitical organization probably accounts for the losses of information related to Dorset or early Thule stone monuments. As knowledge of original intent faded, the monuments acquired new meanings as successive generations found ways to incorporate them into their lives. Even so, many varieties of *inuksuit* can be related to their original purposes and messages concerning place, subsistence, and travel requirements, but rarely if ever with specific individuals or historical events. Only in the case of Labrador and Ungava pinnacles or the Baffin "courtroom" do we see connections with individuals.

Bronze Age Mongolia represents a very different scenario from the Canadian Arctic inuksuit and European menhirs. For more than 600 years, the DSKC sustained a nearly unchanging megalithic and mortuary tradition, producing hundreds of "biographical" stelae representing shaman-warriors whose stories could be commemorated, remembered, and retold, as well as a regionally and size-graded profusion of khirigsuur burial mounds. Deer stones and khirigsuurs are found over thousands of square miles, but in terms of deer stone numbers and artistry, and burial mound size and numbers, both are most numerous in areas

where water and pasture resources are most dependable and where trade routes converge. The stability of the DSKC can be best attributed to a centralized political system in which core beliefs about society and the cosmological order were shared and enforced by public opinion generated through rituals and celebrations with very fixed formats. The homogeneous nature of deer stone iconography and belief with roots deep in the past (Jacobson 1993; Jacobson-Tepfer 2015) suggests control by a political-religious elite in which the pinnacle of personal achievement was expressed by the honor of a deer stone or a large khirigsuur. For several hundred years, deer stones continued to be produced following a single design template of core motifs and design syntax, and khirigsuurs were constructed according to an equally standardized pattern (Wright 2014b), sometimes with hundreds of horse and hearth features at a single burial site. These core area sites supported a central political order, perhaps a complex chiefdom verging on statehood in a seasonally nomadic society without grain agriculture. An interesting feature of this system was the absence of personal material wealth expressed in burial ritual. DSKC status was reflected archaeologically by the size of one's khirigsuur and the artistry of one's deer stone. The existence of such a nomadic evolutionary pathway to statehood, empire, and political hierarchy has only become recognized by anthropologists in recent decades (Kradin 2003).

The success and endurance of this system can be attributed at least in part to the development of a core of widely shared beliefs implanted and nourished by a growing parade of heroic figures and accumulation of ostentatious burial mounds for political leaders who controlled, probably in a fairly indirect fashion, a vast territory comprising much of present-day Mongolia and surrounding regions. The process of control would have varied, but control over the distribution of bronze, gold, and highly valued imports like Chinese textiles, and how religious and political authority was expressed regionally from the DSKC center to its periphery would have been essential (Smith 2004). Most of the largest khirigsuurs are found in the central east-west and north-south travel corridors like the Selenge, Khanui, and Orkhon valleys that had high-value pasture areas, particularly for horse breeding. One key to the success of this ancient Bronze Age "semi-state" may have been the cultural program awarding high-ranking individuals with cosmologically reinforced status conferred by the deer-bird spirit entity that became the emblem of this culture and its foundational beliefs (Jacobson 1993, 2015). Deer stones would have been well-known, and khirigsuurs were everywhere apparent and carried a consistent message of centralized political and social control; everyone would have known the names and events associated with their lives. Together they served both as propaganda and inspired individual performance for six centuries before being replaced by Pazyryk and Slab Burial cultures with different beliefs, burial customs, and genetic backgrounds (Volkov 1968; Tsebiktarov 1998; Tumen 2004). During following millennia, deer stones and khirigsuurs remained as enduring visible markers of a past civilization on the open Mongolian steppe, but their historical messages were lost to those who followed with new stories to tell and new cultural and political programs to enforce.

Spirits, Place, and Ancestral Memory

Every culture builds its own origin myth and story and creates a cultural program to support its social, political, and religious infrastructure. However, as new political, social, or economic regimes are introduced, the nurtured values of the older society or social

segments shift or are replaced by new maintenance structures and symbols, and the old ways fade. Sometimes, this process is dramatic, resulting from invasion, revolution, or population replacement. More commonly, the process is gradual, occurring through acculturation or accommodation, often with continuance of the original leaders, as seen among late nineteenth-century Inupiat of North Alaska when shamans dropped their drums and masks and became Christian preachers (Burch 1994). Thereafter, Inupiat life and culture continued with many of the old technology and subsistence system, while dramatic changes occurred in values, worship structures, art, and technology.

In the cases reviewed here, the response to culture change involved losses or shifts in cultural maintenance systems, in particular in the way earlier physical structures or artifacts were interpreted. In northern and eastern Mongolia, the end of the DSKC saw a dramatic shift in burial ceremonialism with the arrival of Slab Burial culture which repurposed deer stones for a new burial form, abandoned khirigsuurs, and carried personal wealth into the afterlife (Tsebiktarov 1998, 2003; Honeychurch 2015, pp. 122–132; Turbat *et al*. 2011, pp. 112–139). A different pattern unfolded in the Altai, where Pazyryk people replaced the DSKC with a variant of the earlier Karasuk (kurgan) tradition and stocked its warrior graves with whole-horse sacrifices and precious valuables (Rudenko 1970; Griaznov 1980; Chugunov *et al*. 2010; Parzinger 2004, 2006; Parzinger *et al*. 2009; Turbat *et al*. 2009). Pazyryk emphasized militarism and acquisition of rank and wealth that was intended for the afterlife but was mostly recycled by looters. This shift marked a profound cultural and religious change in which the power of shamans and animal deities was replaced by more secular political and economic values (Jacobson-Tepfer 2015, pp. 285–302). Whatever sacred homage still remained for the Eurasian "earth mother" vanished as the deer stone stag became an emblem of earthly rank and prestige exemplified by the gold headdress ornament worn by an elite warrior buried at Arzhan II. Horses, the engines of war, replaced master spirits as the key to power and dominance.

Although generations of archaeologists have pondered the many issues involved, we know too little about the circumstances of European megaliths and the cultural themes they represented to speculate on cultural transfer and collective memory to subsequent societies of that ancient time. Arguably, cosmology and astronomical events and alignments played a strong role in Late Neolithic and Bronze Age megalithic ceremonialism. It seems likely that menhirs also functioned as social or political territorial markers with strong connections to spiritual powers inhabiting the landscape, as seems to have been the case with the eastern orientation of deer stones and khirigsuurs and their association with sacred hills and mountains. In later Neolithic and Bronze Age times, menhirs became associated with communal mortuaries and henges featuring seasonal or astronomical connections. Today, menhirs and stone circles have lost all connection with their original social or religious function and have been appropriated by modern society as archaeological laboratories and heritage or educational centers. Their progress from landscape markers of place and spiritualism to nineteenth-century objects of antiquarian mystery, and to modern tourist and economic attraction, is a history common to ancient stone monuments in many places in the world. Fortunately, public curiosity and growing awareness of the economic value in preserving and researching ancient monuments is reversing decades of speculation and conservation neglect.

Because of their recent history, Inuit stone monuments should be more amenable to anthropological interpretation. But here again, we face a near-impenetrable wall—in

this case, resulting from population replacement from Dorset to Thule and twentieth-century Christian conversion. Inuit rarely speak about shamanism or the role animals and master spirits played in their former lives. Like the Coffin Island pinnacles or the old Inuit dance festivals, these beliefs are considered outmoded and somewhat embarrassing, coming from a pre-Christian world. After barely 100 years of Christianity and the passing of three generations, new ways of thinking have submerged the old ways. As in the case of British megaliths and Mongolian deer stones, Inuit collective memory lasted only as long as a culture's will to perpetuate the original message through commemorative activity. The stories originally encoded in these old memorials have been mostly lost, and the heirlooms have been given new messages for our cultures and times. Stone messengers from the past, like enduring architecture, served well the purposes they were created for, but the cultures that came later assigned new meanings and roles. Today, processes of political devolution, identity, repatriation, and land claims are reviving interest in traditional culture and the messages of ancient monuments that were lost or made dormant during the colonial era.

Once, while painting a blue fiberglass release agent on Deer Stone 14 at Uushigiin Övör in order to make a cast, we were accosted by a young girl and her toddler brother. Looking concerned, she asked pointedly, "why are you painting our old stone men blue?" Today, as with Scottish menhirs and Inuit *inuksuit*, the Mongolian old stone men remain silent messengers from the past, reminding Mongolians, tourists, and others of an ancient time when mysterious master spirits and powerful men walked the earth. That same sense of detached veneration is a common sensation among modern observers of ancient monuments. Who these figures represented—whether spirits, ancestors, or real people—becomes less important over time and is replaced with the general sense of history and attachment that links ancient cultural landscapes with those who live today in their shadows. In the absence of real history, ancient monuments become subjects of invented history and tradition (Bradley 1993). Archaeologists, with their passion for explanation, may be particularly susceptible and display no lack of ingenuity in theory-building and hypothesis-testing. As archaeological research advances during a period of increased looting, site destruction, economic development, and tourism pressure, we need to heed the advice of this young Mongolian to ensure that these irreplaceable monuments exist for future generations.

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Conflict of Interest The author declares that he has no conflict of interest.

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