



More Than Shelter from the Storm

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The Origins of a Built Environment

Placemaking and the Spatial Signatures of Neanderthals and Modern Humans

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Our modern lives are encased in a built environment. Within built structures, we sleep, cook, work, play, defecate, and travel. These structures serve to satisfy our physical requirements to maintain a comfortable body temperature and stay sheltered from the elements and protected from disease-bearing insects. In addition to satisfying our physical needs at the most basic level, the structures of this built environment are themselves conditioned by cultural factors, from the ways in which they are built to the organization of objects and activities within them. The living spaces of sedentary people are particularly imbued with cultural meaning because these structures are permanent and therefore allow for significant investment in time, energy, and resources. This level of investment is not seen in the campsites of mobile peoples. In these settings, structures are more ephemeral. Indeed, investment in site structure has been found to be negatively correlated to the frequency of residential moves (Diehl 1992; Kent 1991). Even though the campsites of highly mobile groups tend to be characterized by more ephemeral building materials and a lower visibility on the landscape, their organization still follows cultural rules (Fisher 1978; Fisher and Strickland 1991; Kent 1984; MacDonald and Maher, Chapter 4, this volume; Yellen 1977).

The organization of campsites, whether or not they incorporate built structures, constitutes a kind of placemaking that is commonly extended to the landscape in general. Meaningful places on the landscape are created through

the persistent engagement in practices that instill the location with individual and collective significance (Ashmore 2014; Basso 1996; Whitridge 2004). By this rubric, placemaking practices encompass a broad range of behaviors visible in the hunter-gatherer archaeological record including, but certainly not limited to, mortuary activity, caches and deposits, visual markers and spatial organizations that are, in turn, often linked to more ephemeral ritual and symbolic practices (e.g., Conolly 2018; Hood et al., Chapter 5, this volume; Macdonald and Maher, Chapter 4, this volume; Maher 2019; Norman and Eldridge, Chapter 8, this volume; Skeates 2017). Here we examine patterns of spatial structuring throughout the Paleolithic and argue that although we might see glimpses of repetitive spatial patterning by Neanderthals, it is not until modern humans that we can see clear evidence for “placemaking” within living sites, rendered in the repetitive, systematic, and culturally mediated organization and amelioration of space to create what can appropriately be described as a home.

The use of space is categorically different in *Homo sapiens sapiens* than in other primate species. Like humans, other great apes deliberately construct fix-points on the landscape (Groves and Sabater Pi 1985). However, these fix-points are hastily made nests, built in less than five minutes, and usually made with materials immediately present. The nests are used by only one individual (or a mother and baby) and are never reused. New nests are built each evening. For these apes, the use of space and the building of structures is solely the product of satisfying physical needs. The hastily crafted nest, usually manufactured only by bending vegetation, highlights an important difference between the way humans and nonhumans manipulate their environment: the role of the materials and objects they employ. For humans, the materials and objects themselves—their locations, properties, affordances—become a constituent of social meaning rather than an incidental means to an expedient end. Thus, the materials that mediate meeting these practical needs have central roles in the social aspects of these acts. These object-mediated interactions are especially characteristic of humans (Vauclair and Anderson 1994). Conkey (1993:95) extends this beyond the social by asserting that humans alone are “symbolists and materialists simultaneously.” The physical modification of space and the construction of cultural meaning around it are simultaneous and inextricable acts. Dobres (2001:49) goes on to bring these ideas together in a conception of human technology (which surely includes

the modification of space) that is a “material-symbolic-social triad.” The built environment of humans is not just the creation or delineation of a shelter; it is the product of interactions between humans, objects, and environment governed by learned social rules and elaborated with cultural and symbolic meaning.

Clearly, the meaning imbued in our use of space—for sedentary as well as mobile populations—is a uniquely human characteristic. But when in our evolution did our use of space and our built environment become dictated by culturally mediated practices? Here we address this question through a comparison of Neanderthal and modern human living sites because these two populations provide the most compelling evidence. However, the mosaic of archaic hominins living in the late Pleistocene is becoming increasingly complicated, and the phenomena described here have broader implications, beyond just these two hominins.

Archaeological Evidence for Built Environments in the Lower and Middle Paleolithic

Because other great apes create fix-points through the construction of nests, we can assume that hominins have been creating some sort of locale on the landscape since our divergence with chimpanzees and bonobos. These locales were not identifiable to archaeologists until hominins began modifying stone resources to make tools. During the earliest part of our human story, these fix-points were located next to resources, for example, animal carcasses or raw material sources (Kuhn and Stiner 2019). But in the Middle Pleistocene, something changed. Kuhn and Stiner (2019) argue that at about 450 ka, hominids shifted their fix-points to rockshelters and caves, which are generally located farther away from sources of food. These were places hominins visited repeatedly, and they provisioned them with food and raw materials. In addition, these were places where they were certain to find other people with whom they could share resources, connect socially, and rear their young.

It is in the interval following this shift, approximately MIS stages 11 through 6, when some archaeologists begin to identify evidence for a greater investment in living spaces through built structures. Among the sites most often cited are Lazaret Cave, Terra Amata, and Bilzingsleben. Terra Amata and

Table 2.1. A list of proposed built structures for pre-*Homo sapiens sapiens* sites (not intended to be comprehensive)

Period*	Site Name (location)	Evidence	Current Interpretation (<i>initial interpretation in italics</i>)	Citations
MIS 11 or 9 (374–424 ka or 300–337 ka)	Bilzingsleben (Thuringia, Germany)	Circular distribution of artifacts with open spaces at center and “doors” facing south	<i>VOIDS attributed to hut floors;</i> <i>VOIDS indicate location of trees</i>	Mania 1991; Gamble 1999; Müller and Pasda 2011
MIS 11 or 9 (374–424 ka or 300–337 ka)	Terra Amata (Nice, France)	Postholes and circular arrangement of blocks	<i>SERIES of oval huts;</i> Extensive post-depositional disturbance indicates no huts present	de Lumley 1969a; Villa 1982
MIS 6 (130–191 ka)	Lazaret Cave (Nice, France)	Arrangement of stones lining one side of main occupation	<i>Hut against rockshelter wall;</i> Rock fall or clearing of space	Mellars 1996; Kolen 1999; de Lumley 1969b; Valensi 2000)
MIS 5 (71–130 ka)	Westwand, Level B1 (Rheindahlen, Germany)	Behausung I: Compact concentration of artifacts with void at the center	<i>Dwelling supported by central pole;</i> Not a dwelling	Svoboda 1989, Stapert 1990
		Behausung II: Oval pit with raised area surrounded by small areas of discoloration at periphery, interpreted as postholes	<i>Dwelling divided by raised areas;</i> Disputed, but could be result of natural processes	
MIS 5 (71–130 ka)	Wallertheim A (Mainz, Germany)	Limestone block manuports on a flood plain	Anvils or windbreak	Adler et al. 2003
MIS ¾ (57–71 ka)	Buhlen, Lower Site, Layer 4 (Buhlen, Germany)	Ring of large stones, wall effect indicated by Stapert’s ring and sector method	<i>Tent ring;</i> Enclosed structure or windbreak	Hilbert and Fiedler 1990; Stapert 1990
MIS 3 (29–57 ka)	Molodova I, Layer 4 (Dniester Valley, Ukraine)	Preferentially selected mammoth bones in circular arrangement, pits, hearths, and patterned distribution of artifacts	<i>Enclosed hut;</i> Windbreak	Demay et al. 2012
MIS 3 (29–57 ka)	La Folie (Poitiers, France)	Posthole and manuports on a flood plain	Windbreak	Bourguignon et al. 2002, 2006; Bourguignon 2010
MIS 3 (29–57 ka)	Abri Romaní, Layer N (Capellades, Spain)	Series of hearths along back of shelter with 5 m long wooden pole	Sleeping hearths and potential windbreak/shelter	Vallverdú et al. 2005; Gabucio et al. 2018

Note: * Dates for MIS stages from Hao et al. 2012.

Bilzingsleben date to interglacial MIS stages 9 or 11, and Lazaret Cave dates to glacial MIS stage 6 (Table 2.1). Bilzingsleben contains fossil remains from at least three individuals that have been variously assigned to *Homo erectus* and *Homo heidelbergensis* (Gamble 1999). The hominin fossil record during this interval displays a great degree of variation, making it a matter of ongoing debate regarding which and how many species were even present in Europe. This being the case, it is difficult to be certain which hominins are responsible for leaving the cultural remains at these sites, particularly the earliest ones. However, most paleoanthropologists would identify *Homo heidelbergensis* as the species living in Europe during MIS stages 9 and 11, and by MIS 6 the local population had evolved into Neanderthals.

Lazaret Cave contains a ring of large rocks that de Lumley argues were used to secure the edges of a tent-like structure set up against the wall of the rockshelter (de Lumley 1969b; Mellars 1996; Valensi 2000). De Lumley also excavated the open-air site of Terra Amata in southern France where he claimed to have found successive occupations, each with postholes and circular stone foundations, the remnants of ancient huts (de Lumley 1969a; Gamble 1999). The evidence for huts at Bilzingsleben was based on circular formations of rocks and large animal bones with south-facing entrances (Mannia 1991). However, many of these claims have not withstood criticism. The most widely read and accepted critique was by Paola Villa (1982) for Terra Amata. She used refitted lithics to show that the site had been extensively reworked by post-depositional processes, and as a result, the 21 successive “living floors” simply could not have existed (Kolen 1999; Villa 1982). As such, Terra Amata is no longer cited as having evidence for built structures, and it would be prudent to be skeptical of claims from sites that have not yet been similarly subjected to rigorous scrutiny. In *The Paleolithic Societies of Europe*, Gamble (1999) applies Stapert’s (1989) ethnoarchaeology-derived ring and sector analysis on the huts at Bilzingsleben and concludes that the distribution fits the pattern for an open-air “drop” zone and does not require a hut to explain the circular arrangement. Instead he argues that the empty areas in the center of the three huts were likely the locations where trees grew and that hominids gathered around them for their shade. In a longer narrative on Lower and Middle Paleolithic living spaces, Kolen (1999) casts doubts on the claims for structures at all three sites, characterizing them as similar to the nests made by nonhuman primates.

The best examples for built structures during the later Middle Paleolithic (post-MIS stage 5) are similarly disputed. One of the most widely cited claims is the proposed mammoth bone hut from the Ukrainian site of Molodova I, layer 4 (Demay et al. 2012). Layer 4 is 1,200 m² in area, containing 40,000 lithics characteristic of the Mousterian tradition; approximately 3,000 animal bones, mostly mammoth; and 25 fire features. The site is dated to MIS 3 by a radiocarbon date of 44 kya or older, which is supported by microfossils and pollen indicative of this period. Besides the numerous fire features, the site also contains several odd spatial features, including a pit of bones containing no lithics, an area with ocher and cutmarks on bones unrelated to butchering or other subsistence activity, and a circular arrangement of mammoth bones. This arrangement of mammoth bones is like those seen in the Upper Paleolithic (most famously at Kostenki) and has been interpreted as a hut. Kolen (1999) critiques this interpretation and argues that instead of a constructed dwelling, this circular arrangement was the result of moving objects aside in order to make an area for sleeping. Demay and colleagues (2012) recently reanalyzed the mammoth bones and found that those found within the circular arrangement had been actively selected (e.g., tusks, long and flat bones) which would seem to refute Kolen's argument. On the other hand, as Stapert (1990) correctly points out, the numerous fire features, some of which are directly adjacent to—or even within—the walls of the structure, and the high density of artifacts are testament to the complicated occupational history of this site, which makes the alleged structure more difficult to interpret.

Another potential Middle Paleolithic structure can be found at Buhlen, Lower Site, Layer 4, in Germany. This site has a circular arrangement of dolomite boulders, some with diameters of over one meter (Stapert 1990). There are several concentrations of burnt bones, some of which are located underneath the boulders. This has been interpreted to be the result of earlier occupations prior to the movement of the boulders (Hilbert and Fiedler 1990; Stapert 1990). Several boulders were located within the proposed circle and were thus theorized to be used as seats or tables. At the center of the circular arrangement is a large hearth. This hearth formed the basis of the ring and sector analysis conducted by Stapert (1990). He found a bimodal pattern in the arrangement of artifacts radiating out from the hearth, which lends support to the interpretation of this feature as a dwelling. Stapert (1990) similarly analyzed another Middle Paleolithic potential dwelling at the Westwand site

in Rheindahlen, Germany. In addition to an oval dwelling proposed by Bosinski (Svoboda 1989) at the time of excavation, another potential hut was proposed by Thieme (1983) based on a tightly concentrated cluster of artifacts with an empty central area where a tent pole may have been located. Stapert (1990) found that the distribution of artifacts did not show a wall effect and that the empty area was likely a tree. Furthermore, post-occupation tree throws can often result in circular arrangement of rocks/artifacts with a “cleared” center where the root ball upturned (Andrews et al. 2021; Morgan 2015). In this case, a natural explanation is just as likely as one that implicates the presence of a structure.

More recently excavated sites, such as La Folie in France and Abric Romaní in Spain, have both produced evidence for the existence of structures. At La Folie, a briefly occupied site located on a floodplain, one posthole was found associated with a stone manuport (Bourguignon 2010; Bourguignon et al. 2002; Bourguignon et al. 2006). This stone was one of numerous manuports that were arranged in a circular formation. This circular structure is over 10 meters in diameter and has been interpreted as a windbreak. A non-pedogenic organic formation was found next to the windbreak that may have been a type of bedding or mat. Micromorphological analysis supports these findings. A very similar spatial pattern can be found at Wallertheim A in Germany, also located on a floodplain (Adler et al. 2003). The remains of in situ knapping and the processing of at least one deer are associated with a hearth identified by calcined bone. In addition, six limestone blocks were found at the site, which Adler and colleagues hypothesize to have been used as anvils or in the construction of a windbreak, as at La Folie. In contrast, the occupations at Abric Romaní were located within a large rockshelter. Usually rockshelter and cave occupations are not amenable to the identification of spatial patterning, but sediments within Abric Romaní accumulated at a remarkably fast rate that preserved a 20-meter sequence of well-stratified Middle Paleolithic deposits. Therefore, while palimpsests are still present, they represent a much smaller number of occupations (Vallverdú et al. 2005). Furthermore, the rockshelter was periodically wet. This allowed for the formation of travertine, enabling a series of U-Series dates and preserving numerous impressions of wood, much of which was introduced to the site to be used as fuel (Castro-Curel and Carbonell 1995; Solé et al. 2013). In Layer N, a series of hearths were set along the back of the shelter, and nearby there is an impres-

sion of a large, pole-like piece of wood (Vallverdú et al. 2010). Vallverdú and colleagues (2010) argue that these hearths correspond to sleeping hearths documented ethnographically, and the wood might indicate the existence of a dwelling. The wood imprint is 5.1 m long, 6 cm thick on one end, and tapering to 3 cm at the other. This “pole” is devoid of branches and could have leaned against the rockshelter wall to form a rudimentary shelter.

Although some of these structures have been interpreted as closed huts, there is no evidence to suggest that any of them were more elaborate than windbreaks. Chu (2009) studied the thermoregulatory benefits of windbreaks and concluded that they would have been highly effective tools to help site residents stay warm. In this way, these built structures were another extension of the many strategies Neanderthals (and some earlier/contemporary hominins) used to satisfy their physical needs. Unfortunately, their presence alone cannot confirm or refute cultural structuring of space among these populations of hominins. The evidence is too infrequent in both time and space to demonstrate a repeated pattern of site structure and maintenance indicative of group-agreed-upon practices.

Cultural versus Organized Use of Space

Instead of arguing for a “cultural” structuring of space in the Middle Paleolithic, many researchers have claimed that Neanderthals “organized” their space or used it “differentially” (Alpers-Afil and Hovers 2005; Riel-Salvatore et al. 2013; Spagnolo et al. 2018; Vaquero 1999). What does the organization of space imply? For most of these researchers, it simply means that some spatial patterning of artifacts can be discerned. For Riel-Salvatore and colleagues, an “organization of space” means that sometimes Neanderthals deposited their debris outside of the rockshelter of Riparo Bombrini, and other times they deposited it within the shelter, corresponding with how the site was used. Similarly, at Roc de Marsal, Reeves and colleagues (2019) found that spatial patterning was evident at a very basic level, implying that Neanderthals did use the site in repetitive ways. The ability to identify spatial patterning has a lot to do with how frequently and intensively the site was occupied. Sites like La Folie and Wallertheim A, for example, exhibit remarkable spatial patterning because these sites were located on floodplains, and over bank deposits covered single short-term occupations (Adler et al. 2003; Bourguignon

2010). At heavily occupied rockshelter sites like Riparo Bombrini or Roc de Marsal, the identification of *any* spatial patterning is therefore behaviorally meaningful and suggests that Neanderthals were engaging in repetitive behavior. But is this indicative of *cultural* structuring of space? Indeed, how can we define this concept, and what criteria should we use to identify it?

Instead of using the fraught and imprecisely defined term “culture,” Gamble (1999) talks of “gatherings” as opposed to “social occasions” and “landscapes of habit” rather than “social landscapes.” He argues that it is not until the Upper Paleolithic that we can see humans transforming locales into *places*. Neanderthals practiced routinized behavior, but they did not invest places and things with meaning the way modern humans did (and do).¹ Maher and Conkey (2019) prefer to use the term “place-making” rather than distinguishing between “place” and “space.” No matter the terminology, these authors are referring to the same thing, a shift in the way physical space is conceived (Knapp and Ashmore 1999). Maher and Conkey (2019:1) specifically choose to use the word “home” to refer to living sites, with all its attached connotations. They argue that “home” implies a space that is “imbued with quotidian and symbolic meaning.” Hodder (1992) contrasts the home (*domus*) with the wild (*agrios*) and argues that the conceptional division of these two spaces became particularly elaborate in the Neolithic and went hand in hand with the domestication of wild plants and animals (essentially bringing them into the realm of the *domus*). He acknowledges that the origins of the “home” began earlier, however, in the Paleolithic. Indeed, Maher and Conkey refer to the “place-making” of a home for the Magdalenian in Western Europe and the Epipalaeolithic in Southwest Asia. They argue that terms like “home” and “community” are usually reserved for sedentary sites while hunter-gatherer sites are called “campsites,” which might contain “huts” or “shelters.” Therefore, the symbolic and value-laden descriptive “home” is denied to hunter-gatherer sites because they lack permanence.

Most Paleolithic researchers avoid the term “home,” particularly for pre-Last Glacial Maximum sites. Often we only employ it when talking to the lay public. In academic articles, we avoid such a term because we cannot prove the relationship these people had to their living spaces. It is viewed as “unscientific” to make such inferences. Furthermore, many would argue that “home” is a word that is particularly imbued with meaning and that, by using it, we are projecting a Western and modern worldview onto these ancient

foragers (see comments in Maher and Conkey 2019:115–129). The preferential use of a more “objective” or scientific (as opposed to more familiar colloquial) terminology for earlier hunter-gatherer sites both reflects and reifies the scholarly notion of a lack of a cultural dimension to space in these societies. Regardless of what terms we choose to use, by refusing to study the ways past humans viewed their living spaces, we may be ignoring one of the vital differences between *Homo sapiens sapiens* and other closely related hominins. We should not, however, assume that there is a strict dichotomous relationship between viewing a site as a “home” and viewing it merely as a spot in which to eat, sleep, and manufacture tools. Presumably all hominins had a relationship to their space that went beyond simple economic parameters. It is a difficult subject to address, however, and most researchers prefer to stick to the question of whether the use of space is “organized.” Kolen (1999) provides one of the most comprehensive considerations of the “home” within Middle Paleolithic sites. She contrasts “home” with “nest,” which could be viewed as the opposite end of the spectrum. She concludes that most “structures” built by Neanderthals were in fact created through the “centrifugal” clearing of debris to create a space in which tasks could be performed comfortably. By contrasting “home” with “nest,” however, Kolen does not leave space for a middle ground. Searching for “organization” within living spaces may seem like the middle ground, but it, too, misses the mark. It is clear from the summary above that many hominins *did* organize their space. Mere organization, however, is not the defining characteristic of cultural use of space.

How, therefore, are we to evaluate sites based on nebulous terms like “home,” “culture,” or “organization”? Maher and Conkey (2019:115) propose seven features that in various combinations might define a site as a “home”: (1) well-defined activity areas; (2) evidence for cleaning and maintenance; (3) features such as caches or pits; (4) reuse of site and features; (5) palimpsest deposits; (6) contrast between inside/outside use of space; and (7) patterns that go beyond the centrifugal living structures described by Kolen (1999). Many of these listed features have been found at Neanderthal sites, in particular a tendency to reuse specific locales repeatedly, creating palimpsest deposits (Clark 2017; Machado et al. 2013; Reeves et al. 2019). Additionally, Riel-Salvatore and colleagues (2013) found differences in the use of inside and outside spaces at the rockshelter of Riparo Bombrini. The identification of activity areas has been notoriously elusive for the Middle Paleolithic, but the

same could be said of the Upper Paleolithic and even in ethnographic cases (Clark 2017). Goldberg and colleagues (2012) used micromorphology to show that Neanderthals repeatedly cleaned out their hearths at Pech de l'Azé IV and Roc de Marsal. However, one could argue that this type of behavior had more to do with fire maintenance than with "cleaning" to maintain the integrity of the site's spatial organization. Indeed, in an analysis of seven Middle Paleolithic open-air sites, one of us (AEC) used lithic refitting to reconstruct the movement of lithic artifacts throughout space. I found evidence for routinized behavior (i.e., the movement of certain "preferred" lithic categories) but no evidence to suggest cleaning or site maintenance (Clark 2017, 2019; but see Spagnolo et al. 2018). Furthermore, the construction of features such as pits are rare in the Middle Paleolithic, although one could argue that the construction of a windbreak or the importation of "bedding" could be interpreted in a similar way and is arguably more elaborate than Kolen's centrifugal structures. In sum, while we agree with Maher and Conkey that "home" as a concept should be used to describe hunter-gatherer sites, this list does not seem to encapsulate what makes *Homo sapiens sapiens* sites as different from those left by other hominins. Before we attempt our own list, we will describe a case study from the Vézère Valley of France that, to us, truly captures the nuances between these different concepts of "home."

An Example from the Aurignacian in the Vézère Valley of France

The Vézère Valley of France is a historically important region for Paleolithic archaeology, subject to a long history of excavation. By virtue of this, it is well known as a hot spot for Paleolithic sites, home to some of the most famous and recognizable names in prehistory: Lascaux, Le Moustier, La Madeleine. These sites span the Paleolithic, but sites that date to the earliest Upper Paleolithic (Aurignacian) and are attributed to modern humans are particularly numerous (Sisk 2011; White 1980). Many of these sites were excavated by prehistorians, in collaboration with local landowners and collectors, in the early part of the twentieth century. These sites contain a highly standardized material culture, but it is aspects of their built environment, specifically its elaboration and standardization, that are pertinent to our discussion today. At the time these sites were excavated, prehistorians were primarily concerned with refining and ordering Paleolithic chronocultural units, which were defined

through typological similarities between artifacts and assemblages, particularly those related to lithic industry (e.g., Breuil 1913; Peyrony 1933). As a result, recording the spatial organization of sites was not a paramount concern at the time of their initial excavation. While these excavations took place early in the history of the field without the use of modern methods, some of the techniques employed were highly advanced for the time. For example, Marcel Castanet, who excavated the site of Abri Blanchard under the supervision of Louis Didon, used water screening to find small beads and drew detailed maps of the area excavated (White et al. 2017). Many of these sites were revisited by a team lead by Randall White in the late 1990s and early 2000s (of which we were members) (Bourrillon et al. 2018; Bourrillon and White 2015; White et al. 2018; White et al. 2012; White et al. 2017). Although many of the sites had been nearly emptied by earlier excavations, these reinvestigations illuminated a spatial pattern that was startling in its standardization.

All sites discussed here consist of early Aurignacian deposits occurring directly on the limestone bedrock of rockshelters along the Vézère River and the small drainages that feed it. Ultrafiltration radiocarbon dates on bone place these sites within a window of approximately 32,000–33,000 years BP (uncalibrated) (White et al. 2017). While this region has many sites that fit this description, we focus on four of them: Abri Castanet, Abri Blanchard, Abri Cellier, and Abri Pataud (Figure 2.1). These four sites display evidence for a systematic and repetitive method of structuring the site and the built environment. Likely, this pattern was replicated at many other sites in the region, but early twentieth-century excavations destroyed these traces. In fact, White's team revisited four sites (Castanet, Blanchard, Cellier, and Sous-le-Roc), and only one (Castanet) had sizable deposits remaining that could be excavated using modern techniques. Blanchard and Cellier had only small pockets of intact deposits remaining, some of which nevertheless proved informative. Sous-le-Roc was a mess of back dirt and badger activity and thus is not considered here. In contrast, Pataud was excavated in the mid-twentieth century by Hallam Movius with good record keeping and near-modern excavation techniques. In addition, there are notes and maps drawn by Castanet and Didon for the site of Blanchard. George Collie, who excavated Cellier, left minimal records that are often difficult to interpret; therefore, we rely on only a small pocket of deposits that remain as well as impressions left in the bedrock (White et al. 2018).

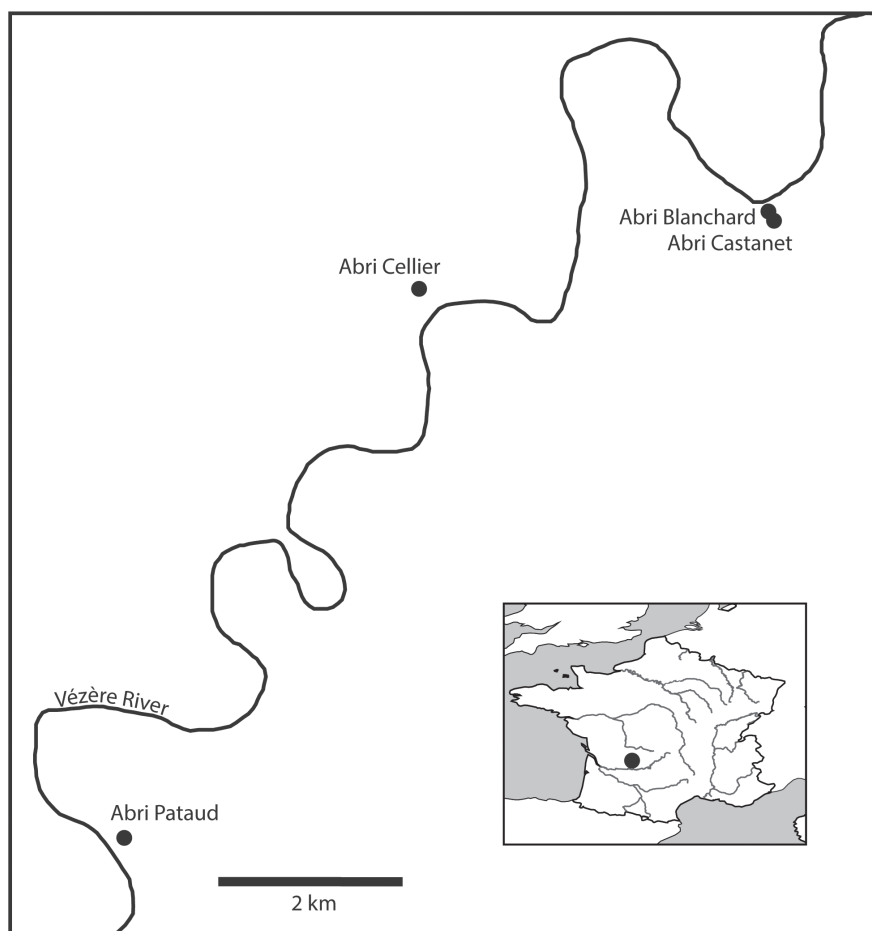


Figure 2.1. The location of the sites discussed in the text.

Fire Features

Our discussion begins with the Castanet site, where in 2009 and 2010 White's team excavated a large multipurpose fire feature (for more information on the excavation of this feature, see White et al. 2017). This fire feature initially appeared as an amorphous smear of blackened sediment, approximately 2.5 m² in size. In the course of excavation, three features became apparent, built directly in concavities that were themselves intentionally dug into the bed-rock substrate (Figure 2.2a). Two features (217 and 218) were directly adjacent

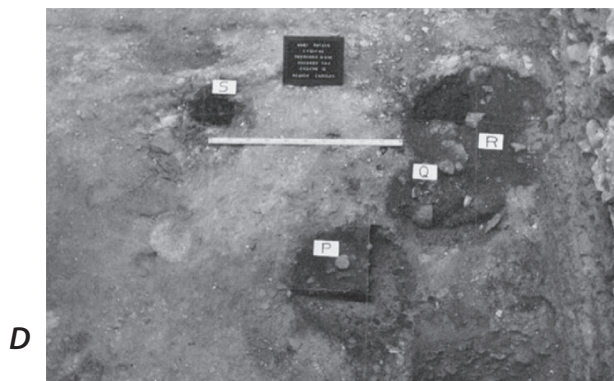
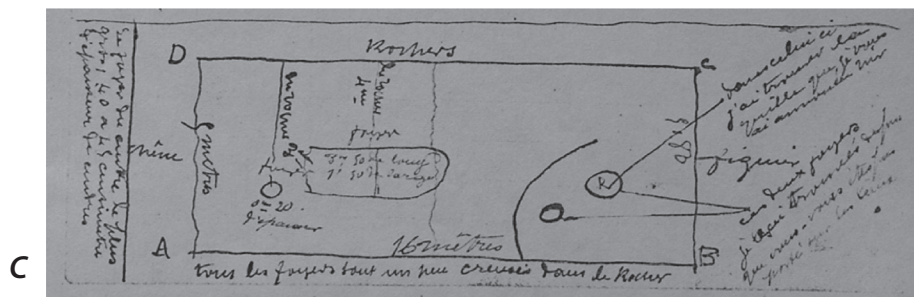
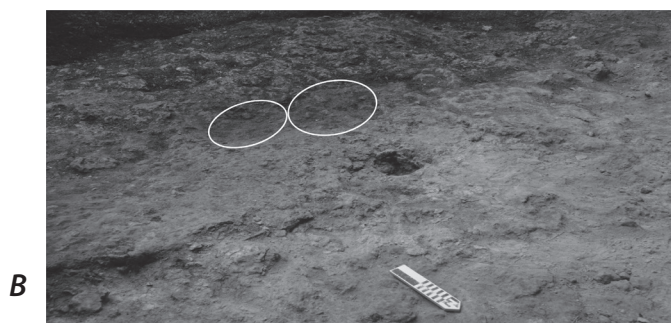
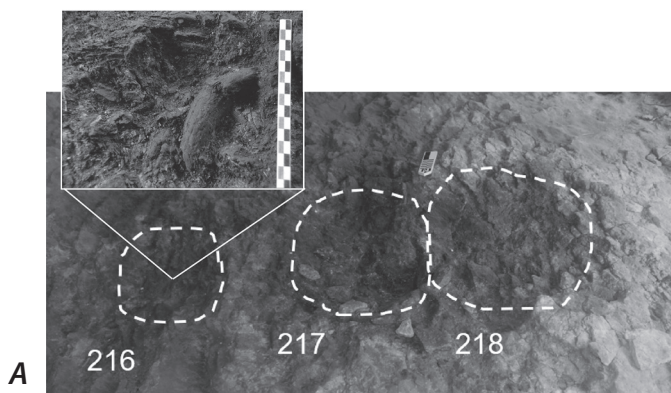


Figure 2.2. The systematic construction of fire features at four Aurignacian sites. (A) The features 216, 217, and 218 at Abri Castanet. (B) The small hole found filled with burnt bone (foreground) with fire-reddened depressions behind (white dashed lines). (C) Map drawn by Marcel Castanet for Abri Blanchard. In the center is the 3.5 m by 1.5 m rectangular feature. Smaller circular fire features are drawn to the right. (D) Photo of the lowest level (Layer 14) at Abri Pataud with hearths dug directly into bedrock (from Movius 1966).

to one another, each approximately one-quarter square meter in size. Feature 217 was further defined by six vertically oriented limestone plaquettes that were placed on its western margin. These features contained deposits approximately 15 cm thick that were rich with charcoal, colorful flecks of iron oxide, and, especially, burned bone. Approximately 15 cm away from these two features lay a smaller, third feature (216). This feature contained burned bones, including a bovid horn core, that were completely fragmented but still in their anatomical position, indicating fragmentation occurred after deposition in the feature. It appeared, upon excavation, as embers only just extinguished.

The relationship between these three features was investigated through magnetic susceptibility (Brodard et al. 2015; White et al. 2017). The limestone bedrock provided almost no signal, thus the strong magnetic reading registered was entirely due to the heated sediments. The signal from Feature 217 was strong and homogenous, indicating that the burning took place *in situ*. In contrast, the signal from Feature 218 was heterogeneous, implying that the burned material was likely moved there. Finally, Feature 216 emitted a homogenous signal that was somewhat weaker than Feature 217, indicating that the material was likely moved there while still burning. All three features exhibited the same orientation of the magnetic field and therefore were likely used at the same time.² Based on these results, we can hypothesize that Feature 217 was the central hearth, and 218 was an area of overflow and potential ash dump. Feature 216 was a special-purpose area where hot embers were moved, likely to control the heat. These features were likely used for many purposes, including food preparation. The large amount of iron oxide fragments within the features as well as a golf ball-sized smear of ocher paste adjacent to Feature 217 suggest that the preparation of pigment was another activity focused around the hearths. In addition, debris related to the manufacture of basket-shaped beads, antler hunting weapons, and carinate scrapers/Dufour bladelets surrounded the hearths (White et al. 2017).

The sophisticated use of fire demonstrated at Castanet implies a structured use of space that is already at odds with what is exhibited at earlier sites. However, even more significant was the repetition of this multicomponent fire feature at several other nearby sites. In 2014 White's team returned to the site of Cellier, which had been excavated by Collie in 1927 (White et al. 2018).

Upon excavation, we realized that the site had been emptied by clandestine excavations following cessation of formal excavations by Collie. However, after cleaning the bedrock, we found a small depression filled with intact hearth deposits very similar to those found in Feature 216 (Figure 2.2b). Furthermore, nearby we found two fire-reddened depressions that were the same size and orientation as Features 217 and 218. These three features therefore provided evidence for a multicomponent fire feature that was strikingly similar to the one excavated at Castanet.

Excavation notes by Marcel Castanet and Hallam Movius reveal that similar features likely also existed at Blanchard and Pataud. At Blanchard, Marcel Castanet drew a final site plan in which he indicates several fire features that had been dug into the bedrock (Figure 2.2c). One of these features was a rectangular shape, approximately 3.5 m long by 1.5 m wide. This description fits very well with our initial perception of Features 216, 217, and 218 before meticulous excavation using small wooden tools and brushes revealed that they were distinct features. In addition, Didon (1911:250; translated in White et al. 2017) describes a portion of this fire feature as follows: “a sort of breccia composed of ashes and conglomerated bones, and it was as if one needed simply to blow on it to revive the fire that had been extinguished so many centuries ago.” Didon’s evocative description of this feature is almost identical to our own observations during the excavation of Feature 216. Although unaccompanied by similarly poetic prose, comparable features were found at Pataud in layer 14 (Movius 1966). Within this layer, Movius notes a number of fire features built directly into intentionally modified depressions in the bedrock. In particular, hearths P, Q, R, and S are very similar to the multicomponent features we found at Castanet and Cellier (Figure 2.2d). Hearth S is a small feature filled with burnt bone, very similar to Feature 216.

Here we have shown a repeated pattern of multicomponent fire features, all built into the limestone bedrock with similar configurations, at four sites within 10 km of one another. These hearths are the physical remains of a very specific set of behaviors regarding fire use that was replicated at sites within the same region and time period. The groups in this region all built, configured, and used their hearths in a similar manner. It seems credible to argue that an overarching cultural framework dictated these practices.

The fire features were not the only physical elements of these sites that would have made them recognizable to a cultural group member. Many of these limestone rockshelters were further embellished with engravings on the ceiling (likely painted) and cordoned off with skins attached via perforations carved in the limestone ceiling, usually along the shelter dripline (White et al. 2017). Although engravings and the limestone perforations (called “*pierre à anneaux*,” Figure 2.3b) are a common feature at Aurignacian sites in the Vézère, most were found in the backdirt of early twentieth-century excavations and thus have poor provenience (Bourrillon and White 2015). Others are still in place on the ceilings of rockshelters, but in that position, they are divorced from contextual deposits that could provide a chronological or cultural attribution. However, during White’s excavations at Blanchard and Castanet, we were fortunate to discover both of these limestone modifications in primary context associated with the deposits (Bourrillon et al. 2018; White et al. 2012). In fact, at both sites, engraved blocks had fallen directly onto the occupied surface. At Blanchard, we discovered a block with an engraved auroch lying facedown on sediments rich with Aurignacian material (Figure 2.3a). On a much larger block of roof fall at Castanet, we found an engraved vulva after dismantling the block to excavate the rich sediments below. Engraved blocks were also found at Cellier and Pataud (White et al. 2018). *Pierre à anneaux* have been found in the rubble left by early excavations at all four sites. At Castanet, we found one in the last year of excavation among the fallen blocks of the collapsed shelter (White et al. 2017).

Pierre à anneaux are usually found along the driplines of shelters, although sometimes they can also be found on free-standing blocks (White et al. 2017). Denis Peyrony (1935) hypothesized that these perforations were used to hang skins from the edge of the rockshelter to enclose the space within, trapping heat and serving as a windbreak. Alternatively, they could have been used to suspend things off the ground, for example, animal carcasses for butchery. However, experiments have shown that these perforations could not withstand heavy loads, lending support to Peyrony’s interpretation (White et al. 2017). Furthermore, at Castanet, the roof of the rockshelter was only about two meters above the floor, so hides would have been very effective at sealing this area off. Cementum studies on horse and reindeer teeth indicate that Castanet was occupied during the winter, making the retention of heat even

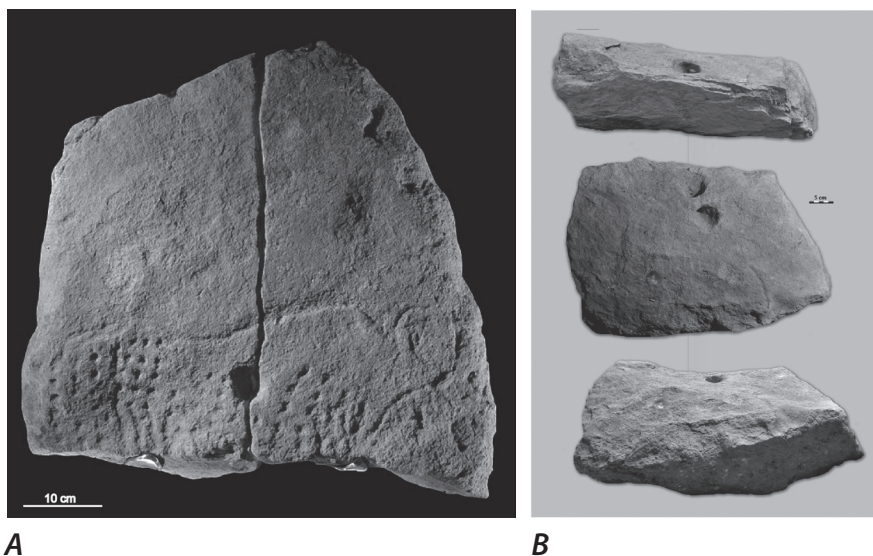


Figure 2.3. (A) Engraved auroch from Blanchard. (B) *Pierre à anneaux* from Cellier (photo by Raphaëlle Bourrillon).

more important. The enclosed shelters would have been dark, but in addition to the light from the fireplaces, we found a fat-burning lamp next to Feature 217. A lamp was also found at Cellier as well as other nearby Aurignacian sites such as Grotte de la Boissiere, La Ferrassie, and Laussel (Beaune 1987). Each one of these enclosed shelters, with their carefully arranged fire features and decorated ceilings, would have been immediately recognizable to the greater cultural group residing within the Vézère Valley. Taken together, the built environment at these sites form a constituent of the patterns of social interactions within a group and a signal of group identity across the landscape.

Cultural Structuring of Space and the Establishment of the “Home”

The description provided above for the series of rockshelters in the Vézère Valley will seem particularly foreign to anyone who has excavated a Neanderthal site. However, it could equally seem foreign to someone who has excavated a modern human site. There is a great deal of variability in the spatial manifestations of human behavior. The sites described above displayed regular, patterned

behavior and obvious symbolic embellishments. The uniform repetition of this suite of site modifications across several sites, in the presence of ostensibly viable alternatives for ameliorating space, indicates that there is a cultural value to modifying sites in these specific ways. These methods for building an environment were conveniently rendered in medium that survived for archaeologists to excavate. However, the highly repetitive way fires were configured, structured, and used was nearly completely obscured by early twentieth-century excavators who were more concerned with the fantastic objects contained within the deposits than the traces of an ancient fire. One could argue, with reason, that Neanderthals could have practiced repetitive, culturally mediated use of space but that it was rendered in organic materials or obscured through repeated occupations. We argue here, however, that while these site characteristics likely obscured some of the nuance apparent between two extremes, the patterning described above is categorically different from anything exhibited by Neanderthals. In other words, the debate should no longer be rendered in oppositions: modern or not, complex or not, spatially organized or not. Instead, we should recognize that although the spatial structuring at many Neanderthal sites falls within the *spectrum* of behaviors that can be discerned at modern human sites, the excavated cadre of Neanderthal sites does not represent the entire range of spatial signatures left by modern humans.

Many authors have argued that Neanderthal use of space is purely related to their biomechanical needs (Kolen 1999; Mellars 1996; Pettitt 1997). In other words, they moved objects so they could sit comfortably, they built a fire when it was necessary to do so, and they even manufactured windbreaks or imported bedding to keep themselves warm. Some of these behaviors were routinized to the extent that some degree of spatial patterning is apparent in palimpsest deposits. However, the deliberate and systematic amelioration of features is absent in Neanderthal sites, such as the construction of formal hearths, and evidence for cleaning or site maintenance is rare. Many of these factors could be explained by group size and occupation duration. The Aurignacian rockshelters described above were likely occupied for an entire season, probably during the winter, at least in the case of Castanet. Most researchers agree that Neanderthal groups were small, and this has recently been supported by genetic evidence (Prüfer et al. 2014). Furthermore, most sites appear to have been occupied relatively briefly, albeit repeatedly. Although their small group sizes and high mobility can partially explain away

the lack of evidence for the amelioration of living spaces, it goes hand in hand with what makes Neanderthals so different from modern humans. With small group sizes and low population densities, Neanderthals may have had a comparatively lower need to expend efforts mediating intra- and intergroup interactions through material means. Evidence of sporadic symbolic behavior—burials, adornment, cave art—by Neanderthals has long been a part of our understanding of the species (e.g., Capitan and Peyrony 1921; Hoffman, Angelucci, et al. 2018; Hoffmann, Standish, et al. 2018; Jaubert et al. 2016; White 2001; Zilhão et al. 2010). Of course, a central question regarding Neanderthals is whether they were capable of such systematic symbolic activity. In other words, did other factors keep Neanderthal population densities low, never allowing them to “shine” symbolically? Or were population densities low because Neanderthals were not capable of navigating a larger sphere of social interactions? It could be a little of both. Either way, Neanderthals did not exhibit symbolic representation and culturally mediated practices to the same extent as the modern humans who replaced them in Europe. Therefore, they did not embark upon a path of ever-increasing technological, social, and environmental know-how that was transmitted over time and space within and among human cultural groups, that is, cumulative culture. This difference between modern humans and Neanderthals is evident in how they treat their living spaces. Clearly, Neanderthals had some relationship to their domestic spaces, or at least their fix-points on the landscape, because they visited them repeatedly, even open-air sites (Clark 2017; Reeves et al. 2019; Vaquero et al. 2012). But they did not seem to be “placemaking” in a way that can be recognized by archaeologists.

By contrast, the humans living in the Vézère Valley were using an established repertoire of environmental modifications, implemented through set procedures: they were not just making hearths; they were making hearths in the *same way*. The consistency of these solutions moves this behavior beyond expedient ameliorations related to physical needs to cultural norms of domesticity. Surely all modern and premodern humans were inspired, and limited, by the affordances of their living sites, but where premodern humans employ various ad hoc solutions, modern humans in the Vézère Valley were constrained by the boundaries of a cultural system. Just as cultural mores guided how stone and bone tools were made, how animals were butchered, and how ocher was used, these norms provided a road map for how living

spaces were structured and embellished. The result is a highly systematic and patterned organization of the domestic sphere, the home. In other words, the Vézère example demonstrates that the modern humans that inhabited these rockshelters engaged in placemaking behavior that marked these sites as their “home” and that, moreover, this placemaking was the result of engaged cultural practices. To augment Maher and Conkey’s list, therefore, we argue that the defining characteristic of a “home” for modern humans includes (1) systematic patterned behavior within and across sites, indicative of cultural norms, and (2) modifications or practices that create a relationship to place through symbolic means (e.g., by signaling group identity across a landscape, reuse of locales to the extent they might become synonymous with a group identity, presence of symbolic embellishments). All modern human sites might not demonstrate both of these characteristics, at least not in a way that is visible to archaeologists, but this is the essence of what distinguishes modern human sites from Neanderthal sites.

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Notes

1. The modern versus premodern heuristic, so often used to describe hominin species and behavior in Paleolithic archaeology and anthropology, is a problematic one (see Ames et al. 2013; Athreya 2018), particularly outside of the narrow confines of Eurocentric archaeological contexts. Among other things, it implies a binary state that is often incompatible with the mosaic of behavior and morphology seen in the record. That being said, in our narrow context, they remain loosely applicable as a shorthand.

2. Although contemporaneity can rarely be proven in archaeological contexts, the alignment of magnetic orientations for the three structures provides a very compelling case that they were used synchronously. In contrast, the errors associated with radiocarbon dates for this period would leave us unable to conclude that they were used in the same century, much less the same occupation.

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