

“At Home in the Paleolithic: The Making of the Home and its Archaeological Signatures”

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Abstract

Homes are spaces where we rest, prepare food, eat, care for children, and enjoy the company of our loved ones. The physical space varies culturally and might be indoors, outdoors, or both. It might be permanent year-round, or it might be reconstituted repeatedly as one moves from place to place. Yet no matter the context, the home is the setting for some of the most important aspects of our social, cultural, and economic lives. It is no wonder, then, that home holds a special emotional and symbolic significance for humans. But how did the home come to be? And how did the home itself play a role in the evolution of humans? In “At Home in the Paleolithic: The Making of the Home and its Archaeological Signatures”, I consider the material signatures of the myriad economic, symbolic, and social behaviors that together constitute the home. I then track these signatures through time, focusing on the origins and evolution of homemaking within the Paleolithic.

Question 1: Describe the research that forms the basis of this application and the conclusions that you have drawn. (Note: if you are including a short period of additional research in your fellowship application, explain why this work is essential given your publication plans.) [Maximum: 1500 words]

Homes can take a variety of forms depending on the culture and the environment, but they are a ubiquitous phenomenon within human societies (Lawrence 1982; Allen 2015). They are the locations where we rest, prepare and share food, care for one another, and perform a variety of small tasks. Yet a home is not merely a physical space, but a concept (Kent 1995; Lawrence 1995; Ingold 2000; Moore 2000). “Home” holds profound meaning to both the individual and the society. Therefore, a consideration of home is not just about what we do in these spaces, or the physical space itself, but how we feel about these spaces (Kent 1984; Lawrence 1995). In my research, I am interested in taking a deep time perspective to investigate how these spaces came to be so important to humans and how homes themselves contributed to making us into the species we are today.

The places where people gathered, prepared food, and slept have long been of interest to Paleolithic archaeologists (Isaac 1978; Potts 1984; Binford 1998; Kolen 1999; Rolland 2004; Domínguez-Rodrigo and Cobo-Sánchez 2017; Kuhn and Stiner 2019; Maher and Conkey 2019; Stiner 2021). Most sites we excavate are these types of localities because they are the repetitive and concentrated focus of activities, many of which produce a considerable volume of debris,

making them archaeologically visible. However, Paleolithic archaeologists usually avoid labeling these locations “homes”, instead they use terms such as base camps, central places, or, simply, sites (Maher and Conkey 2019). After all, “home” is an ambiguous concept that is difficult to define even in the present (Rapoport 1995). What kind of material signatures can we then look for in the past? The economic component of the home is easiest to address and quantify through archaeological material, which largely consists of refuse related to food consumption (animal bones) and tool making (lithics). And, in general, most Paleolithic archaeologists tend to focus on the economic aspects of human behavior rather than the social and symbolic aspects (Whitelaw 1994). However, by ignoring the full social and cultural importance of the home, and the myriad types of behaviors that occurred there, we are missing a crucial dimension of their role in human lives and in human evolution. The archaeological signatures of these behaviors might be more subtle, especially deeper in time. However, we can look for clues such as habitual actions relating to site upkeep and other material expressions that might be akin to homemaking.

My project focuses on the development and emergence of the home over the course of human evolution. I use the home to address many aspects of past human behavior that were vital to past lives, but which often remain understudied by archaeologists. This includes the perpetuation of cultural knowledge, the development and maintenance of social relationships, and the emotional and symbolic connection to physical spaces. In addition, this project focus allows me to consider women and children, in particular. Homes and domesticity are often considered to be a woman’s domain (Hegmon et al. 2000; Allison 2007). Yet, in the discourse regarding Paleolithic living sites, women and children are rarely mentioned and, if they are, it is only as passive recipients of meat provided by male group members (Leonetti and Chabot-Hanowell 2011). And, as Gero (1991) points out, women were likely responsible for a large portion of the archaeological signatures within sites. Therefore, I plan to explore the active role of women in the creation and maintenance of this space that is so vital to human survival and the perpetuation of human culture.

My consideration of the home unites multiple avenues of research that I have pursued throughout my career. The core part of this research draws upon three separate projects. The first is the output from my dissertation and postdoctoral work. For my dissertation, I studied the spatial arrangement of artifacts and features within seven open air Middle Paleolithic (MP) sites in France (Clark 2016, 2017, 2019). I wanted to know whether the spatial organization of lithic materials, the main type of evidence remaining in these sites, could tell me something about the social lives of the Neanderthals who frequented these locales. What did they do at these sites? Could the spatial patterning of lithics tell me something about the social relationships between group members (e.g., Yellen 1977; Gargett and Hayden 1990; Whitelaw 1991; O’Brien and Surovell 2017; O’Brien and Walker 2022)? Can I detect any evidence for cleaning or spatial organization? To address these questions, I developed two methods to analyze the spatial patterning of lithic artifacts, making use of refitting data and technological attributes. The results of this spatial analysis indicate that the dominant spatial patterning at these Neanderthal sites was the result of a prodigious amount of knapping, the use of a small proportion of the knapped tools, and the temporal dynamics of site use, i.e., how long they stayed and how repeatedly they

visited. I found no evidence for cleaning or other related behaviors, and no spatial structuring that could tell me something about the social organization of group members.

However, I soon expanded this study to include two additional sites dating to the Upper Paleolithic (UP) period for a post-doctoral project. When I applied the methods I had created for my MP sample, the results were startling. Unlike the MP, where results were coherent only after I aggregated the data from all seven sites, the UP sites did not need to be aggregated; each site told a coherent story on his own. Certain lithics were clearly “selected” for use, and were repeatedly moved away from the knapping areas, while other lithics were repeatedly left with the knapping debris. The organization of lithic production was clear and well defined spatially.

This left me with the same old trope: Neanderthals, unlike modern humans in the UP and modern humans today, were incapable of organizing their space. The “organization of space” was one of the traits listed as a hallmark of “modern human behavior” (Mellars 1996; Henry 1998; Wadley 2001). Most archaeologist now reject the validity of this checklist, and I didn’t want to get drawn into the tired “human or not” debate. I didn’t think the explanation was that simple. I also wanted to interrogate the uses of these spaces more profoundly. What happened in these spaces? It wasn’t just the production and maintenance of tools: it was the rearing and teaching of children, the strengthening of social bonds, and maintenance and sometimes subversion of social norms (Hodder 1987). What kind of relationship did hominins have with these spaces and how was it expressed? To answer these questions, I needed to place the results of my spatial analysis into a wider context, considering the use of these spaces in a diverse sample of modern societies, among non-human primates, and summarizing the changes we see in living spaces over the course of the Paleolithic.

I began this effort by integrating of the results of my spatial analysis with information generated by two other projects. This work has largely been focused on caves and rockshelters, which provides an important complementary component of the story. For the first of these projects, I studied the composition of the lithic assemblage from Tabun Cave, in Israel, to investigate how the site was used over its 200 ka of occupation, spanning the Lower and Middle Paleolithic (Clark 2015; Kuhn and Clark 2015). I also incorporated information from my long-term work at a series of Aurignacian (early UP) rockshelters from the Vézère Valley of France. These sites exhibited a remarkable degree of repetition in how the living spaces were organized, from the configuration of the hearth to the embellishments on the shelter walls (White et al. 2017). It therefore seemed that by the early UP, a culturally specific form of “home-making” could be identified (Clark and Ranlett 2022). But how did we get there and what does it mean?

I seek support from the Wenner Gren Foundation to present this research in the form of a monograph which I am tentatively entitling “At Home in the Paleolithic: The Making of the Home and its Archaeological Signatures”. In this book, I will consider the function of the home in human society cross-culturally, but also as it contrasts to analogous structures used by animals. I will highlight the particularly important role of women in these spaces. I will then go on to consider how we might study the evolution of the home in deep time. The second major part of the book will be a presentation of my doctoral and post-doctoral research and the methods archaeologists use to disentangle the complicated depositional record of Paleolithic living spaces.

Finally, in the last section, I will put together all the evidence compiled by archaeologists to present a state-of-the-art narrative of the evolution of the home in the Paleolithic.

Question 2. Describe your research process (the research design you used to gather your evidence). How have you used this evidence to support the conclusions that you have drawn? [Maximum: 500 words]

The research that forms the core of this manuscript consists of an intra-site spatial analysis of nine open-air Paleolithic sites in France. My analysis focused on lithic artifacts, the only material preserved at these sites. I developed two interrelated methods which were applicable to all sites in the sample, despite differences in artifact density and depositional history. These methods made use of data collected through lithic refitting and technological analysis as well as the spatial positioning recorded during excavation. While many archaeologists have attempted to identify “activity areas” through the spatial patterning of archaeological material (e.g., Dekin 1976; Whallon 1984; Rigaud and Simek 1991; Grimm and Koetje 1992; Koetje 1994; Merrill and Read 2010; Hovers et al. 2011; Moreau 2021), ethnographic research suggests that most activities are spatially overlapping (Yellen 1977; Spurling and Hayden 1984; O’Connell 1987; Fisher and Strickland 1989). Moreover, since lithic artifacts are the only material remaining at these sites, and lithic production creates a lot of debris, the dominant spatial pattern was driven by where lithics were knapped. Once lithics were knapped, however, some of them were moved to other parts of the site. I captured this movement through the use of lithic refitting data. I also complemented this approach by studying the contents of the high, medium, and low density parts of the site, reasoning that the high density areas were the centers of lithic knapping and lithics moved outward from there. This inference was supported by the contents of the high density areas: small flakes and knapping mistakes (i.e. the debris of lithic production) were overwhelmingly located there.

Therefore, these methods documented the production of lithic artifacts and their movement within the site, capturing a record of site formation. Because I was using the same methods at each site, the results could be directly compared and by incorporating other lines of evidence, I could reconstruct how these sites were formed through a mixture of occupation duration and site reuse. I could also assess whether activities related to site maintenance, such as cleaning, were present. I found that the spatial patterning within Middle Paleolithic sites was largely the result of lithic knapping and tool use, along with repeated site visitation. Similar processes structured the Upper Paleolithic sites but there was also evidence for a higher degree of spatial structuring, which I interpreted to be the result of cleaning and other forms of intentional site maintenance.

The results of this study serve as a core for my manuscript. It is an example of how we can link the most mundane of archaeological materials, lithic artifacts, to lofty anthropological questions, such as the origin and development of the home. My results show that we must shift our perspective from one of a static view of archaeological sites, where activities are frozen in time, to one which focuses on the formation of spatial patterning. This shift in focus will allow us to identify repetitive behaviors, the habitual actions which are what make a home.

Question 3: Outline the publication/s that will result from the fellowship. [Maximum: 500 words]

This fellowship will result in the publication of a book. The focus of the book will be the evolution and development of the home. The book will be divided into three major sections. The first will be focused on the home as we know it today and how it functions in human societies. I will also consider the function of corresponding spaces for animals, so that we can obtain a baseline for our last common ancestor and so we can understand how human homes are unique in the animal world (Groves and Sabater Pi 1985; Ingold 2000; Stewart 2011; Samson 2012). I will also use this section to focus on women and children who are so often linked with the home in many societies. After I have considered thoroughly the human home, and the actors who created and maintained these spaces, I will move on to Part 2 which I will focus these homemaking behaviors and how they might manifest archaeologically. I will first consider the kind of patterning we might expect and then I will move on to present methods for the study of spatial structure within Paleolithic sites, with a particular focus on my study of open air sites in France. Finally, in the third section, I will bring together the available evidence from archaeological sites worldwide to present a narrative on how the home evolved to play such a crucial role in human societies. I have shared a book proposal with editors of the University of Cambridge Press and they have indicated a strong interest in the publication of this manuscript.

Part 1: The Home

Chapter 1: What is the home? What happens in the home? What does the home look like cross-culturally?

Chapter 2: How is the human home different from corresponding places for animals, i.e. nests, burrows, or great ape sleeping platforms.

Chapter 3: Women and children in the home: these are spaces usually associated with women. How true is this cross-culturally? And if it is true, that these spaces are predominantly female, can we consequentially use them to get at the active role of women and children in human evolution? Can the “invisible sex” be made visible (Waguespack 2005)?

Part 2: The Archaeological Home

Chapter 4: A materiality of the home. What kind of patterning can we expect to see archaeologically? What kind of information can we access? Subsections/material categories: hearths, patterning of material remains (bones, lithics, etc.), embellishments (built structures, bedding, engravings)

Chapter 5: How can archaeologists reconstruct the home? Methods to disentangle the spatial patterning of Paleolithic sites:

Chapter 6: Case study: disentangling the spatial structure within 9 open-air Paleolithic sites in France

Part 3: The Emergence and Transformation of the Home

Chapter 7: Hearths

Chapter 8: Objects

Chapter 9: Embellishments

Chapter 10: Bringing it all together: the social and cultural life

Question 4: The goal of the Wenner-Gren Foundation is to support original and innovative research in anthropology. What contribution does your project make to anthropological theory and to the discipline? [Maximum: 250 words]

Home has a special significance to human beings. It is a place of refuge, of shelter, both physically and metaphorically. For that reason, it has long been of interest to anthropologists, as a place where resources are pooled; where social relationships are created, maintained, and negotiated; and where cultural knowledge is shared (Isaac 1978; Kent 1984; Potts 1984; Sept 1992; Binford 1998; Kramer and Ellison 2010; Lenoetti and Chatbot-Hanowell 2011; Wiessner 2014; Allen 2015; Maher and Conkey 2019). We understand the importance of the home to living communities, but we have an imperfect understanding of how the home came to be. In this project, I endeavor to present such a narrative by incorporating results of my own spatial analysis with the scholarship of many anthropologists who consider a holistic understanding of the home and how we might find evidence for the social, symbolic, and economic facets in the archaeological record. All archaeologists study living spaces, but rarely have we focused on the full meaning of these spaces and their function within society beyond their economic role. This project will fill this void and, I hope, provide an inspiration for further research.

Bibliography

Allen, J., 2015. *Home: How Habitat Made Us Human*. Basic Books, New York.

Allison, P.M., 2007. Engendering Roman domestic space. *British School at Athens Studies* 15, 343-350.

Binford, L.R., 1998. *Hearth and Home: The Spatial Analysis of Ethnographically Documented Rock Shelter Occupations as a Template for Distinguishing Between Human and Hominid Use of Sheltered Space*.

Clark, A.E., 2015. Changes in Land Use and Occupation Intensity at the Onset of the Middle Paleolithic? A View from Tabun Cave, Israel, in: Conard, N.J., Delagnes, A. (Eds.), *Settlement Dynamics of the Middle Paleolithic and Middle Stone Age*. Kerns Verlag, Tübingen, pp. 127-144.

Clark, A.E., 2016. Time and Space in the Middle Paleolithic: Spatial Structure and Occupation Dynamics of Seven Open-Air Sites. *Evolutionary Anthropology* 25, 153-163.

Clark, A.E., 2017. From Activity Areas to Occupational Histories: New Methods to Document the Formation of Spatial Structure in Hunter-Gatherer Sites. *Journal of Archaeological Method and Theory* 24, 1300-1325.

Clark, A.E., 2019. Using spatial context to identify lithic selection behaviors. *Journal of Archaeological Science: Reports* 24, 1014-1022.

Clark, A.E., Ranlett, S., 2022. The origins of a built environment: Place-making and the spatial signatures of Neanderthals and Modern Humans, in: Macdonald, D., Andrews, B.N. (Eds.), *More Than Shelter from the Storm: Hunter-Gatherer Houses and the Built Environment*. The University of Florida Press, Gainesville, FL, pp. 13-39.

Dekin, J., Albert A., 1976. Elliptical Analysis: An Heuristic Technique for the Analysis of Artifact Clusters, in: Maxwell, M.S. (Ed.), *Eastern Arctic Prehistory: Paleoeskimo Problems*. Society for American Archaeology, Memoir No. 31, pp. 79-88.

Domínguez-Rodrigo, M., Cobo-Sánchez, L., 2017. A spatial analysis of stone tools and fossil bones at FLK Zinj 22 and PTK I (Bed I, Olduvai Gorge, Tanzania) and its bearing on the social organization of early humans. *Palaeogeography, Palaeoclimatology, Palaeoecology* 488, 21-34.

Fisher, J., John W., Strickland, H.C., 1991. Dwellings and fireplaces: keys to Efe Pygmy campsite structure, in: Gamble, C. (Ed.), *Ethnoarchaeological Approaches to Mobile Campsites: Hunter-Gatherer and Pastoralist Case Studies*. International Monographs in Prehistory, Ann Arbor, pp. 215-236.

Gargett, R., Hayden, B., 1991. Site Structure, Kinship, and Sharing in Aboriginal Australia: Implications for Archaeology, in: Kroll, E.M., Price, T.D. (Eds.), *The Interpretation of Archaeological Spatial Patterning*. Plenum Press, New York, pp. 11-32.

Gero, J.M., 1991. Genderlithics: Women's Roles in Stone Tool Production, in: Gero, J.M., Conkey, M. (Eds.), *Engendering archaeology: Women and prehistory*. Blackwell, Oxford, pp. 163-193.

Grimm, L.T., Koetje, T.A., 1992. Spatial Patterns in the Upper Perigordian at Solvieux: Implications for Activity Reconstruction in: Hofman, J.L., Enloe, J.G. (Eds.), *Piecing Together the Past: Applications of Refitting Studies in Archaeology*. BAR International Series 578, Oxford.

Groves, C.P., Sabater Pi, J., 1985. From Ape's Nest to Human Fix-Point. *Man* 20, 22-47.

Hegmon, M., Ortman, S.G., Mobley-Tanaka, J.L., 2000. Women, Men, and the Organization of Space, in: Crown, P. (Ed.), *Women and Men in the Prehispanic Southwest: Labor, Power, and Prestige*. School of American Research, Santa Fe, NM, pp. 43-90.

Henry, D.O., 1998. Intrasite Spatial Patterns and Behavioral Modernity: Indications from the Late Levantine Mousterian Rockshelter of Tor Faraj, Southern Jordan, in: Akazawa, T., Aoki, K., Bar-Yosef, O. (Eds.), *Neanderthals and Modern Humans in Western Asia*. Plenum Press, New York, pp. 127-142.

Hodder, I., 1987. The Meaning of Discard: Ash and Domestic Space in Baringo, in: Kent, S. (Ed.), *Method and Theory for Activity Area Research: An Ethnoarchaeological Approach*. Columbia University Press, New York, pp. 424-448.

Hovers, E., Malinsky-Buller, A., Goder-Goldberger, M., Ekshtain, R., 2011. Capturing a moment: Identifying short-lived activity locations in Amud Cave, Israel, in: Le Tensorer, J.-M., Jagher, R., Otte, M. (Eds.), *The Lower and Middle Palaeolithic in the Middle East and Neighbouring Regions*. ERAUL, Liège, pp. 101-114.

Ingold, T., 2000. Building, dwelling, living: How animals and people make themselves at home in the world, in: Ingold, T. (Ed.), *The Perception of the Environment: Essays on Livelihood, Dwelling and Skill* Routledge, London, pp. 172-188.

Isaac, G.L., 1978. The Food-sharing Behavior of Protohuman Hominids. *Scientific American* 238, 90-109.

Kent, S., 1984. *Analyzing Activity Areas: An Ethnographic Study of the Use of Space*. University of New Mexico Press, Albuquerque.

Kent, S., 1995. Ethnoarchaeology and the Concept of Home: A Cross-Cultural Analysis, in: Benjamin, D.N. (Ed.), *The Home: Words, Interpretations, Meanings, and Environments*. Avebury, Aldershot, UK, pp. 163-180.

Koetje, T.A., 1994. Intrasite Spatial Structure in the European Upper Paleolithic: Evidence and Patterning from the SW of France. *Journal of Anthropological Archaeology* 13, 161-169.

Kolen, J., 1999. Hominids without homes: on the nature of Middle Paleolithic settlement in Europe, in: Roebroeks, W., Gamble, C.S. (Eds.), *The Middle Paleolithic Occupation of Europe*. University of Leiden Press, Leiden, pp. 139-175.

Kramer, K.L., Ellison, P.T., 2010. Pooled energy budgets: Resituating human energy -allocation trade-offs. *Evolutionary Anthropology: Issues, News, and Reviews* 19, 136-147.

Kuhn, S.L., Clark, A.E., 2015. Artifact densities and assemblage formation: Evidence from Tabun Cave. *Journal of Anthropological Archaeology* 38, 8-16.

- Kuhn, S.L., Stiner, M.C., 2019. Hearth and Home in the Middle Pleistocene. *Journal of Anthropological Research* 75, 305-327.
- Lawrence, R.J., 1982. Domestic Space and Society: A Cross-Cultural Study. *Comparative Studies in Society and History* 24, 104-130.
- Lawrence, R.J., 1995. Deciphering Home: An Integrative Historical Perspective, in: Benjamin, D.N. (Ed.), *Ethnoarchaeology and the Concept of Home: A Cross-Cultural Analysis*. Avebury, Aldershot, UK, pp. 53-68.
- Leonetti, D.L., Chabot-Hanowell, B., 2011. The foundation of kinship: households. *Human Nature* 22, 16-40.
- Maher, L.A., Conkey, M., 2019. Homes for Hunters? Exploring the Concept of Home at Hunter-Gatherer Sites in Upper Paleolithic Europe and Epipaleolithic Southwest Asia. *Current Anthropology* 60, 91-137.
- Mellars, P., 1996. *The Neanderthal Legacy: An Archaeological Perspective from Western Europe*. Princeton University Press, Princeton.
- Merrill, M., Read, D., 2010. A New Method Using Graph and Lattice Theory to Discover Spatially Cohesive Sets of Artifacts and Areas of Organized Activity in Archaeological Sites. *American Antiquity* 75, 419-451.
- Moore, J., 2000. Placing Home in Context. *Journal of Environmental Psychology* 20, 207-217.
- Moreau, G., Auguste, P., Locht, J.-L., Patou-Mathis, M., 2021. Detecting human activity areas in Middle Palaeolithic open-air sites in Northern France from the distribution of faunal remains. *Journal of Archaeological Science: Reports* 40.
- O'Brien, M.J., Surovell, T.A., 2017. Spatial Expression of Kinship among the Dukha Reindeer Herders of Northern Mongolia. *Arctic Anthropology* 54, 110-119.
- O'Brien, M., Walker, D., 2022. Communal Hunting and Teasing Out Signs of Cooperation in the Past, in: Clark, A.E., Gingerich, J.A.M. (Eds.), *Intrasite Spatial Analysis of Mobile and Semisedentary Peoples*. The University of Utah Press, Salt Lake City, UT, pp. 123-134.
- O'Connell, J.F., 1987. Alyawara Site Structure and Its Archaeological Implications. *American Antiquity* 52, 74-108.
- Potts, R., 1984. Home Bases and Early Hominids. *American Scientist* 72, 338-347.
- Rapoport, A., 1995. A Critical Look at the Concept "Home" in: Benjamin, D.N. (Ed.), *The Home: Words, Interpretations, Meanings, and Environments*. Avebury, Aldershot, UK, pp. 25-52.

- Rigaud, J.-P., Simek, J.F., 1991. Interpreting Spatial Patterns at the Grotte XV: A Multiple Method Approach, in: Kroll, E.M., Price, T.D. (Eds.), *The Interpretation of Archaeological Spatial Patterning*. Plenum Press, New York, pp. 199-220.
- Rolland, N., 2004. Was the Emergence of Home Bases and Domestic Fire a Punctuated Event? A Review of the Middle Pleistocene Record in Eurasia. *Asian Perspectives* 43, 248-280.
- Samson, D.R., 2012. The chimpanzee nest quantified: morphology and ecology of arboreal sleeping platforms within the dry habitat site of Toro-Semliki Wildlife Reserve, Uganda. *Primates* 53, 357-364.
- Sept, J.M., 1992. Was There No Place Like Home? A New Perspective on Early Hominid Archaeological Sites from the Mapping of Chimpanzee Nests. *Current Anthropology* 33, 187-207.
- Spurling, B., Hayden, B., 1984. Ethnoarchaeology and intrasite spatial analysis: a case study from the Australian Western Desert, in: Hietala, H.J. (Ed.), *Intrasite Spatial Analysis in Archaeology*. Cambridge University Press, Cambridge, pp. 224-241.
- Stewart, F.A., 2011. Brief communication: why sleep in a nest? Empirical testing of the function of simple shelters made by wild chimpanzees. *American Journal of Physical Anthropology* 146, 313-318.
- Stiner, M.C., 2021. The challenges of documenting coevolution and niche construction: The example of domestic spaces. *Evolutionary Anthropology* 30, 63-70.
- Wadley, L., 2001. What is Cultural Modernity? A General View and a South African Perspective from Rose Cottage Cave. *Cambridge Archaeological Journal* 11, 201-221.
- Waguespack, N.M., 2005. The organization of male and female labor in foraging societies: Implications for early Paleoindian archaeology. *American Anthropologist* 107, 666-676.
- Whallon, J., Robert, 1984. Unconstrained clustering for the analysis of spatial distributions in archaeology, in: Hietala, H.J. (Ed.), *Intrasite Spatial Analysis in Archaeology*. Cambridge University Press, Cambridge, pp. 242-277.
- White, R., Mensan, R., Clark, A.E., Tartar, E., Marquer, L., Bourrillon, R., Goldberg, P., Chiotti, L., Cretin, C., Rendu, W., Pike-Tay, A., Ranlett, S., 2017. Technologies for the Control of Heat and Light in the Vézère Valley Aurignacian. *Current Anthropology* 58, S288-S302.
- Whitelaw, T., 1991. Some Dimensions of Variability in the Social Organisation of Community Space Among Foragers, in: Gamble, C.S., Boismier, W.A. (Eds.), *Ethnoarchaeological Approaches to Mobile Campsites: Hunter-Gatherer and Pastoralist Case Studies*. International Monographs in Prehistory, Ann Arbor, MI, pp. 139-188.

Whitelaw, T.M., 1994. Order without architecture: Functional, social and symbolic dimensions in hunter-gatherer settlement organization, in: Parker Pearson, M., Richards, C. (Eds.), *Architecture and Order: Approaches to Social Space*. Routledge, London, pp. 217-243.

Wiessner, P.W., 2014. Embers of society: Firelight talk among the Ju/'hoansi Bushmen. *Proc Natl Acad Sci U S A* 111, 14027-14035.

Yellen, J.E., 1977. *Archaeological Approaches to the Present: Models for Reconstructing the Past*. Academic Press, New York.