



McDONALD INSTITUTE CONVERSATIONS

Towards a Broader View of Hunter-Gatherer Sharing

Edited by Noa Lavi & David E. Friesem



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Noa Lavi & David E. Friesem,
Cambridge, October 2019

Chapter 6

An ethnoarchaeological view on hunter-gatherer sharing and its archaeological implications for the use of social space

David E. Friesem & Noa Lavi

In the context of this volume, the practice of sharing as a foundational schema of contemporary hunter-gatherers (Hewlett et al. 2011), is discussed beyond the distribution of food to include the sharing of selves (Bird-David, this volume; Widlok this volume), space (Hewlett et al., this volume), social identity (Lewis, this volume; Sillander, this volume), knowledge (Gardner, this volume; Boyette & Lew-Levy, this volume) and things (Lewis, this volume; Quintal-Marineau & Wenzel, this volume). Unfortunately, too often it is remarkably hard to find evidence of these aspects of sharing within the archaeological record, especially as we go back in time. As presented in the introduction to this book (see Lavi & Friesem, this volume), sharing is a social practice, but one with the potential to leave an archaeological signature. As such, it may shed new light on intangible social aspects of past hunter-gatherer societies. However, hunter-gatherer sharing did not receive the same amount of attention in the archaeological research as in ethnographic studies of contemporary hunter-gatherers (see Kelly et al., this volume for a discussion on the different scholarly scales of anthropology and archaeology). The few archaeological studies which found evidence of sharing among hunter-gatherer groups mostly focused on distribution of food (e.g. Bunn & Kroll 1986; Enloe 2003; Isaac 1978a, 1978b; Stiner et al. 2009). This volume offers pioneering attempts by archaeologists to detect sharing of selves (Barkai, this volume; Spikins, this volume), identity (Honoré, this volume; Osborn & Hitchcock, this volume), knowledge (Tos-tevin, this volume) and landscapes (Kelly et al., this volume; Osborn & Hitchcock, this volume). Yet, as the archaeological record is limited to material residues, it is still a great challenge to identify and reconstruct mundane social behaviour. What should we look for, for example, in order to identify evidence of the intimacy of living-together and the co-presence in each other's lives that initiate and structure sharing, in its

broadest meaning, as reported among contemporary hunter-gatherers (see Bird-David, this volume; Widlok, this volume; Hewlett et al., this volume)?

First, it is important to discuss the limitation of drawing analogies between contemporary communities and prehistoric foragers and the caution required when dealing with such issues. Clearly, there is a significant diversity among contemporary hunter-gatherer societies as well as fundamental differences between past and present societies. Among other things, the climate and the social and physical environment can impact the choice of exploited resources, group size, site structure and different individual choices. While we do not consider direct analogies to be valid, we suggest that the contemporary context can elucidate how specific ways of living, which we cannot observe among agrarian or industrial societies, may form patterns of material deposition and leave an archaeological signature. Therefore, we use the ethnographic prism and its fine grain data (see Kelly et al., this volume) as a methodological exercise to understand the relationships between the social, the spatial, and the material. Moreover, we show that there are similarities in the mechanism of sharing and its social implications which override the differences among contemporary hunter-gatherer societies inhabiting different environments. This ethnoarchaeological approach can help us decipher intangible social aspects of the archaeological record by offering an interpretive framework for the human agency behind the formation of material distribution in archaeological sites (see David & Kramer 2001; Friesem 2016 for a review on ethnoarchaeology).

Here we focus on how the practice of sharing selves, space, actions and things is manifests through people's use of space. We draw mainly on our ethnographic work among the Nayaka in South India. While the Nayaka live in a tropical environment, their notion and practices of sharing appear to be shared

by many other hunter-gatherers inhabiting different environments around the globe. By integrating our work among the Nayaka with relevant examples from other ethnographic studies, we provide a limited and focused interpretive framework for examining the archaeological record in search for social practices such as sharing and co-presence. To do so, we examine the architectural design of dwelling units, site structure, construction materials and the spatial distribution of activity remains in- and outdoors. We argue that by examining the above aspects, archaeologists can learn more about the intangible aspects of the dwellers' social world.

Ethnoarchaeology of hunter-gatherer use of space

Studying the use of space and the spatial distribution of materials is a common practice in archaeological research, as it holds a key for understanding patterns of human behaviour, organization and perception of oneself and the world (Clarke 1977; Hodder & Orton 1976; Kent 1993; Kroll & Price 1991). The value of ethnoarchaeological research lies not only in its ability to link between social and ontological notions and people's use of space, but also in the association of behaviours with specific processes that may form or alter an archaeological record (David & Kramer 2001; Friesem 2016). Within the ethnoarchaeological studies conducted among contemporary hunter-gatherers, many look at the relationship between people and space manifested through mobility, settlement patterns, site structure, hunting strategies and different activities such as: knapping, butchering, hunting, processing of meat, building huts etc. (e.g. Binford 1980, 1978b, 1978a; Fisher & Strickland 1989; Friesem et al. 2017, 2016; Friesem & Lavi 2017; Galanidou 2000; Gould 1980; Gould & Yellen 1987; Kent & Vierich 1989; Kroll & Price 1991; O'Connell 1987; Whitelaw 1989; Wiessner 1982; Yellen 1977). Investigating hunter-gatherer use of space in a single residential site, the seminal studies by Yellen (1977) among the !Kung San in the Kalahari desert in Botswana and Binford's (1980, 1978a, 1978b) work among the Nunamiut Caribou hunters of Northern Alaska were the first ones to provide clear models for patterns of material deposition resulting from hunter-gatherer use of space and site structure. Binford (1978b) built a spatial model for site structure according to the scale and content of the activity preformed in the site divided into zones (e.g. drop zone, toss zone, sleeping area, hearths etc.). Binford suggested that site structure is a result of human body and activity response to environmental conditions and functionalism and therefore the material deposition patterns may reveal the type of

activity, number of participants and environmental conditions such as wind, cold, heat and light (Binford 1983, 1978b). One of the major criticism about Binford's work, as laid out by Wiessner (1982), focuses on Binford's emphasis on environmental factors and not taking into account the human agency and the cultural factors which affect people's perceptions, decision making and behaviour. Yellen (1977) suggested a ring model for the !Kung dwelling site in which the centre of the site is a communal area surrounded by huts and an outer ring beyond the huts is where other activities are held. However, he also notes that social reasons have a major role in the !Kung's movements and other decisions and that people's manufacturing activities are so diverse that the patterns of material deposition in their sites cannot be predicted. He argued that, except for their largest camp site, any other site of the !Kung activity will not leave enough residues to allow an archaeological identification of such an ephemeral activity (Yellen, 1977). Joining this argument, Fisher & Strickland (1989), who worked among the Efe Pygmies in the forests of Zaire, argued that the Efe have a flexible perception of their spatial requirements resulting in materials being deposited without a defined spatial pattern. Several ethnoarchaeological works tried to link between hunter-gatherer use of space and key social practices. Kent (1991; see also Kent & Vierich 1989) argued that the spatial organization of hunter-gatherers does not reflect ecological conditions; rather, it is dictated by the anticipated mobility – how long people expect to occupy the site. It also has been suggested that the location and distance between dwelling units can be used as an indicator for kin relationships among the group (Gargett & Hayden 1991; O'Connell 1987; Whitelaw 1989). Overall, sharing, mobility and egalitarianism were reported as the main factors behind the distribution of materials and the ever-changing site structure (Fisher & Strickland 1989; Friesem & Lavi 2017; Galanidou 2000; O'Connell 1987; Whitelaw 1989; Wiessner 1982).

Social dynamics and their archaeological implications

Ethnoarchaeological studies unanimously argue that the spatial deposition and distribution of materials in hunter-gatherer sites are dictated by their social notions and practices. Therefore, it is essential to first dwell upon the dynamics behind hunter-gatherer social use of space before attempting to understand its material reflection.

Woodburn, in his famous paper '*Egalitarian Societies*' (1982), defined two types of social and economic systems: the immediate-return system and the

delayed-return system. The social organization of immediate-return societies was classified by Woodburn (1982) based on the following basic characteristics: (1) social groupings that are flexible and constantly changing in composition; (2) individuals that have a choice of whom they associate with in residence, in the food quest, in trade and exchange, in ritual contexts; (3) people that are not dependent on specific individuals for access to basic requirements; and (4) relationships between people, whether relationships of kinship or other relationships, that stress sharing and mutuality but do not involve long-term binding commitments and dependencies (Woodburn 1982, 434). Woodburn's classification of immediate-return hunter-gatherers has been refined and elaborated in the decades that followed. However, many of the characteristics discussed above are still central to the way hunting and gathering people are described by anthropologists even today.

Bird-David (1994) elaborated on how the concept of 'immediacy' is useful to describe hunter-gatherer social life. The immediate social environment – the composition of people at a given moment within the dwelling site – constitutes a kind of immediate kinship system in which people view as kin all those with whom they live and share (Bird-David 1999; and in this volume). In order to maintain relationships, a person is expected to share with everybody as and when present and to give others anything they ask for (Bird-David 1999; see also Widlok, this volume; Sillander, this volume). People are not only expected to share things but also spaces and actions (see also Hewlett et al., this volume). Thus, the practice of sharing exceeds the mere distribution of material resources. The sharing of things, spaces, actions and time, and literally 'being-together' form the kinship system (Bird-David 1999, 1994; see also Myers 1986 for similar ideas among the Pintupi in Australia). Relations are therefore not 'pre-given' but must be worked out in a variety of social processes (Myers 1986). Without the constant maintenance by acts of sharing and being-together, kinship relations would fade away. The constant flow of coming and going people created what was defined by Alan Barnard (1981) as a 'universal kinship system', in which everyone within the community related to everyone else as kin and through kinship terms (which include both human and non-human persons; see Bird-David 1999; Lavi 2018; Naveh 2007 for the Nayaka; for more examples of such 'extended family' categories among other hunter-gatherers around the world, see also Fortier 2009; Ingold 2000; Kohler 2005). This is a social concept that describes 'relating' as something one does when one shares a place and cooperates with others.

Furthermore, the common experience of sharing also contextualizes the knowledge one makes of others (Bird-David 1999). Based on her work among the Nayaka, Bird-David (1999) argued that knowledge does not involve the separation of knower and known but rather developing the skill of being in the world with others and knowing them through this experience of togetherness (Bird-David 1999). She referred to this relational framing of the social environment (which, in the Nayaka case, included both humans and non-humans) as relational epistemology (later she also termed it 'relational ontology'; Bird-David 2008). This way of knowing the world plays an important role in many hunter-gatherer societies (Bird-David 1999; for North American Rock and Waswamipi Cree and Ojibwa, see also, respectively, Brightman 1993; Feit 1994; Hallowell 1960). Thus, hunter-gatherer epistemology, relatedness, kinship systems, social identity, knowledge and economy are fundamentally rooted in people's practice of sharing space, time, actions, selves and things with their immediate and dynamic social environment.

Activity areas and spatial patterns of material deposition

In our previous geo-ethnoarchaeological study carried out among the Nayaka, a forest-dweller forager society in South India, we argued that the distribution of materials in their dwelling sites can be classified as a dynamic deposition pattern, reflecting the Nayaka's social dynamics (Friesem et al. 2017, 2016; Friesem & Lavi 2017).

Activity areas were formed according to the social dynamics in a given moment. People chose the location of their activity according to the ever-changing composition of the people around them in order to be with some or to avoid others. Every task or activity took place in a different location according to people's social choice of persons with whom they wished to share their space and actions at that specific moment. Just as social relations and social grouping were flexible and changing, so were the locations of people's activities, which changed frequently along social considerations. Overall, there were no designated areas for specific activities in the site. People cooked, made crafts, socialized and even built light structures in different locations around the site, according to their immediate social relations and the ever-changing composition of people going from and coming to the site (for more details on our ethnoarchaeological observations see Friesem & Lavi 2017).

This dynamic use of space and the ephemeral nature of activity areas within a dwelling site are not unique for the Nayaka. They are, in fact, quite typical among hunter-gatherers (Fisher & Strickland

1989; Myers 1986; O'Connell 1987; Wilson 1988; Yellen 1977). From the archaeological perspective, the question is what could be preserved as a signature considering such a dynamic and ephemeral deposition pattern. Mallol et al.'s (2007) pioneering geo-ethnoarchaeological work among the Hadza, presented one of the first systematic studies into the archaeological formation processes related to hunter-gatherer activity. They showed how, while the Hadza's use of fire does result in deposition of fire residues, those are not preserved long after abandonment as the fire residues (e.g. ashes, charcoals and burnt substrate) are easily removed or deteriorate due to wind, rain and trampling. Mallol et al.'s (2007) conclusion echoed the argument previously made by other ethnoarchaeologists (e.g. Fisher & Strickland 1989; O'Connell 1987; Yellen 1977) regarding the low probability of hunter-gatherer activity leaving markers that would be visible in the archaeological record. Nevertheless, our recent geo-ethnoarchaeological study among the Nayaka, which included the analysis of microscopic remains found within sediments collected from both living and abandoned sites, showed that while this pattern is generally true for the main areas of primary activity, but that waste areas tend to better preserve an archaeological signature of the activity that took place at the site (Friesem et al. 2017, 2016). Among sites abandoned for *c.* 30 years only scarce macro- and microscopic residues were found to indicate the activity that once took place in this area. However, waste accumulating at the edge of the activity terrace of the Nayaka's sites showed clear evidence for fire residues and plant remains (Friesem et al. 2017, 2016). Thus, our argument was that if we can witness the residues of human activity within waste areas but not within the adjacent primary activity areas we are probably dealing with a more dynamic and ephemeral activity of the kind that is commonly observed among contemporary foragers with their associated social behaviour (Friesem & Lavi 2017). Similar observations on the potential of waste areas to evince hunter-gatherer activity were reported in several ethnoarchaeological studies (see Binford 1978 for the Nunamiut in Alaska; O'Connell 1987 for the Alyawara in Australia; Fisher & Strickland 1989 for the Efe in Zair; Gargett & Hayden 1991 for the Pintupi in Australia; O'Connell et al. 1991 for the Hadza in Tanzania). The potential of waste areas to better preserve activity residues is connected with the rapid burial of the materials (Friesem et al. 2016). But the deposition patterns of refuse materials in waste areas can be affected by different factors such as group size and length of occupation. In addition, the availability of resources (for example the use of

degradable organic matter such as timber as opposed to the use of a durable material such as a stone) and environmental conditions will significantly affect the preservation of activity residues within sites as well as in waste areas. Thus, the spatial behaviour that stems from the practice of sharing, living-together, high mobility and immediacy result in patterns of material deposition that pose a serious challenge for archaeologists. Such ephemeral spatial behaviour does not result in large amount of activity remains being deposited in one particular spot, making it very hard for archaeologists to detect a distinctive archaeological signature that would help them to make inferences about social behaviour.

Dwelling units and use of dwelling space

Hunter-gatherer dwelling units were often regarded as 'huts' rather than 'houses' exhibiting an ephemeral architecture (Bird-David 2009; Wilson 1988). Furthermore, these societies were described, among other aspects, as not interfering with their environment and not transforming it into a built or domestic one (Ingold 2000; Wilson 1988). Generally, many foraging societies exhibit dwelling units composed of light materials abundant in their immediate vicinity. They are mostly made of grasses, leaves and timber. Among the Nayaka, these structures are often open, lacking any walls and made only with posts supporting a thatch roof, or at least semi-open with parts of the walls missing (Bird-David 2009; Lavi & Bird-David 2014). Of course, to a certain extent the environment and the availability of resources influence the design and construction materials of the house (Friesem & Lavi 2017). For instance, among forest-dweller foragers where bamboo is available it will be used more than any other construction material (e.g. Bird-David 2009). On the other hand, among foraging societies living in arid regions, grasses and bush branches will be more frequently used (e.g. Yellen 1977), and obviously among Arctic foragers construction materials will reflect their environment and may differ significantly on a seasonal base (e.g. Briggs 1970). Nevertheless, it seems that forager architecture has to do more with a social preference than lack of materials, knowledge or skills. The Nayaka, for instance, occasionally build houses walled entirely, from ground to roof, with mud bricks, either as a wage labour for neighbouring societies (Lavi & Bird-David 2014) or to partly strengthen their own buildings (Friesem et al. 2016; Friesem & Lavi 2017). Even so, when building their own houses, they tend to opt for partly walled constructions and lighter wall material such as splitted bamboo. In general, it seems that the rule of thumb among hunting and gathering societies is that houses are open or semi-

open structures, built with very light and easily modified materials. Above all, the house design and site structure among foragers seems to manifest a social preference to ensure maximum sharing, co-presence and living-together (Bird-David 2017, 2009).

From an anthropological and archaeological perspective, houses are particularly interesting to look at as they are a part of the material environment that may be preserved in the archaeological record and be used as a proxy of the dwellers social world (Kent 1993). Houses form an important part of the objective reality in which dwellers grow up and acquire their taken-for-granted and often unconscious habits of acting in the world and thinking about it (Bourdieu 1977; Carsten & Hugh-Jones 1995). Some scholars suggested that the built environment reproduces the same notions that shaped its building (Duncan 1985; Korosec-Serfaty 1985). The design of the house, its orientation, the location of objects in it and the points of views and social interactions it allows are direct and indirect statements about proper conduct, which dictate patterns of behaviour and meanings (Saegert 1985). More specifically, re-thinking of forager architecture and site structure, beyond the once used terms of 'primitive' or 'ephemeral', may reveal how dwelling units reflect foragers' social world and senses of self, relations, and community (see also Bird-David 2009).

Examining indigenous architecture, based on her work among the Nayaka, Bird-David (2009) showed how the light and open structures the Nayaka built out of bamboo, branches and grasses allowed people to act inside and outside the houses in full visibility of the others. As opposed to opaque walls made of mud or stones, the light vegetal walls enabled people to continue taking part in conversation even behind these walls. This architectural preference allows a continuous co-presence in each other's lives through sharing of space, actions, selves and things (Bird-David 2017, 2009). Another important aspect of the dwelling units lies in their plasticity. Built from light materials, the structures could be modified rapidly. This feature enables an exceptional practice in which the house's orientation and even location can be adjusted according to the ad hoc social dynamics, sometimes within the scale of days.

In his work among the Hadza, Woodburn (1972) provides a rare description of the orientation of dwelling units within a single dwelling site and how they express social dynamics. He mentions that among the Hadza it is very common for young married women to stay close to their mother while their male spouses tend to avoid relations with their mothers-in-law. As a result, Woodburn (1972) showed that houses of married women are located close to their mothers but their

openings do not face their mothers' houses. In case of married sisters, their houses are built in close proximity and their openings are oriented towards each other, exhibiting the intimacy and close relationships between the sisters; however, their openings will never be oriented towards the mother's house. The only exception reported by Woodburn (1972) of a house opening oriented towards the mother's house was a case of an unmarried daughter who was pregnant and lived on her own. Woodburn (1972) concluded that since the work of building the dwelling units among the Hadza is done by women, the site structure reflects the social relationships between women more than the one between men.

Turnbull's (1965) work among the Mbuti is another example of the dynamic nature of forager dwelling site structures. He describes how houses were spatially modified, almost on a daily basis, and how even the minor changes in the dwelling units resulted from the immediate dynamics in the social relationships between the group members.

When Amabosu saw Ekianga occupy the hut built by his youngest wife, Amabosu's sister, he took action. His own wife, who was Ekianga's sister, built an extension to the house facing it almost directly away from her brother, looking right into the entrance of to the hut of Ausu, her husband's kinsman. The reason was that Amabosu felt Ekianga should not be sleeping with his youngest wife at that time, and wanted to show his displeasure. Ausu, not wanting to take sides, carefully projected the entrance to his hut so that it no longer looked directly at Amabosu's, which would have been taken as indicating extreme intimacy, but instead faced narrowly across to the hut of his wife's uncle, Masisi: Masisi's son's wife, who was not only kin to Ekianga's young wife but close friends with her, promptly added to her hut, despite her husband's protests, and faced it boldly toward Ekianga. Ekianga's young wife, Kamaikan, responded the next day by facing her hut of the direction of her friend, at the same time deflecting it away from her co-wife's hut, Arobanai, next door. Arobanai had on the day of her arrival made an addition facing toward Kamaikan as a conciliatory gesture, but in face of this rebuff she turned the entrance of her hut away again. Meanwhile Masisi's lineal cousin, Manyalibo, made no effort to enter the dispute, but rather turned

slightly toward the rest of the camp. Masisi contented himself with completing the entrance to his hut on the second day, leaving it facing the way it was. An extension he built several days later, as did Ausu, was merely to provide separate accommodation for young girls who were approaching puberty (Turnbull 1965, 102–3).

Today, many contemporary foraging societies are experiencing significant change in their built environment due to development and aid intervention in the form of housing projects, restrictions on mobility and encouragement of individual property (Lavi 2018). The context of such contemporary interventions may seem less relevant for deciphering the archaeological record; however, in a fascinating way, it shows how people modify their physical environment to fit their social environment instead of the opposite. This further supports the argument about the association between the formation and modification of dwelling units and forager social world. Nowadays, dwelling sites become permanent and dwelling units are built for forager communities using durable materials such as cement, bricks and mortar (Lavi 2018; Lavi & Bird-David 2014). Lavi & Bird-David (2014; see also Lavi 2018) show how among the Nayaka, instead of being confined to closed spaces of the cement houses built for them by the state or non-governmental organizations, people not only continued to act outside, but also added large and open porches to their brick and mortar houses. These added architectural features, built from light materials, allowed people to act under the roof, protected from the monsoon rains and winds, but within full visibility of others and thus not compromising on sharing the co-presence in each other lives.

This reading of hunter-gatherer dwelling units highlights the cultural processes associated with the formation and use of these structures. However, archaeological formation processes are not limited to the time of use. Post-abandonment and taphonomic processes acting on different artefacts greatly influence their preservation in the archaeological record (Schiffer 1987; Shahack-Gross 2017). In contrast to structures built from more durable materials, for instance earthy construction materials or stones, structures built from degradable vegetal materials pose a serious challenge for their preservation after abandonment (Friesem & Lavi 2017; Wilson 1988; Yellen 1977). Nevertheless, examination of the archaeological record reveals few cases where materials have been preserved permitting the reconstruction of dwelling units made of perishable materials. Even if these cases

represent the exception rather than the rule in terms of archaeological preservation, they can be still used as an important window into the social world of past societies.

Archaeological implications

Given the aim and scope of this article, we do not provide a comprehensive archaeological review, rather we chose few well-studied archaeological cases in order to serve as examples for how the approach we lay out above can illuminate our understanding of sharing, in its broader sense, during prehistoric times. We focus on few examples from the Near East ranging from the Upper Palaeolithic (UP) to the Pre-Pottery Neolithic (PPN), when the transition to farming (i.e. the transition from foraging to agriculture and animal husbandry) took place *c.* 11.5–10 thousand years ago [ka].

The site of Ohalo II presents a habitation site dated to the Late Upper Palaeolithic (*c.* 23.5–22.5 ka) during the Last Glacial Maximum (Nadel 2002; Nadel et al. 1995). This site was submerged under the southwestern part of the Sea of Galilee, Israel. It was exposed and excavated during two events of dramatic drop in sea level during 1989–1991 and 1999–2001. Being covered by water rapidly after abandonment, the site presents exceptional preservation exhibiting the remains of six brush huts with several concentrations of hearths, a human grave and large quantities of archaeological materials such as flint and ground-stone tools, a broad spectrum of animal remains, such as mammals (including rodents), birds, fish and molluscs (Belmaker et al. 2001; Nadel 2002; Nadel et al. 2006, 2004; Rabinovich & Nadel 1994; Simmons & Nadel 1998; Weiss et al. 2004). The site is mostly famous for its rich plant assemblage which shows that the inhabitants of Ohalo II processed wild cereals using grinding stones, consumed plants after cooking on hearths, made grass bedding and built their huts using branches and leaves (Nadel et al. 2012, 2004; Snir et al. 2015; Weiss et al. 2008, 2004). The investigators of the site reconstructed the site's huts as oval structures of *c.* 11 sq. m with a frame made of branches and covered with leaves. Integrating different lines of evidence, they suggested that people constructed and re-used a series of successive floors which were occupied for a long time and that the internal hut space was divided into different activity areas. A food preparation and consumption area was associated with the hearth at the centre of the hut. The site's investigators also reconstructed a flint-knapping area and a sleeping area with grass bedding (Nadel et al. 2012, 2004; Snir et al. 2015; Weiss et al. 2008, 2004). Similar evidence

has been reported from Kharaneh IV in the Azraq Basin in Jordan where the remains of large huts were dated to 20 ka (Maher et al. 2012). A micro-botanical analysis of sediments from Ohalo II and Kharaneh IV has helped in those sites' reconstruction, suggesting that a variety of grasses, wetland reeds and sedge resources were used in both sites as part of the hut superstructure, perhaps as bundled thatching to cover the frame made of wood and shrubs. These wetland sedges were also used to form a loose floor covering or matting (Ramsey et al. 2018). The floors of the huts in Kharaneh IV revealed a high density of artefacts, including stone tools, bones, shells and ochre. These were interpreted to represent a long-term occupation (Maher et al. 2012). It has also been suggested that in both Ohalo II and Kharaneh IV the accumulation of artefacts on the floor represents a long-term occupation during which there was no sweeping or cleaning of the floors (Nadel 2003; Ramsey et al. 2018).

The interpretation of the floor assemblages from Ohalo II and Kharaneh IV stands in contrast to ethnoarchaeological reports that describe the practice of sweeping and cleaning of floors as a common and frequent action among contemporary hunter-gatherers (Fisher & Strickland 1989 for the Efe; Friesem & Lavi 2017 for the Nayaka; O'Connell 1987 for the Alywara; O'Connell et al. 1991 for the Hadza). In addition, in order to assess the use and division of space among the inhabitants of Ohalo II and Kharaneh IV it is crucial to understand the resolution of the archaeological record and the time frame it may represent. As opposed to ethnographic observations that allow observing human behaviour as it happens, rarely does the archaeological record, especially in a Palaeolithic context, permit a resolution that is within the time-scale of human action (see Kelly et al., this volume for discussion on the scale of analysis in archaeology as opposed to ethnography). Thus, it is very challenging to unequivocally determine the exact timescale in which activity remains were deposited on the floors. In other words, it is unknown whether the division of space and the activity areas reported for each floor sequence in Ohalo II and Kharaneh IV represents few days, months or years of occupation. While the former scenario could be associated with a shorter time of occupation exhibiting a dynamic use of space, similar to the one we report from our work among contemporary hunter-gatherers (see also Bird-David 2009; Friesem & Lavi 2017), the latter suggests a longer term of occupation with a divided and designated use of space. In the latter case, this may imply a difference from contemporary hunter-gatherers not only in patterns of use of space but also in the social practices, in particular, in the notion of sharing. Furthermore,

we should bear in mind that activity remains tend to better preserve indoors than in outdoor spaces (see Friesem et al. 2014 and Mallol et al. 2007 for discussion on the differences in preservation between roofed and open areas), thus often the archaeological record provides only a partial image of people's use of space in a site obscuring the evidence for outdoor activity.

Regardless of the limitations imposed by the nature of the archaeological record, the dwelling structures from Ohalo II and Kharaneh IV do show high similarities to contemporary hunter-gatherer dwellings (see, for example, Hewlett et al. in this volume for the Aka forest-dweller, and Mallol et al. 2007 for similar description of huts among the Hadza in Tanzania's savannahs). The site structure in both Ohalo II and Kharaneh IV, in which several huts stood in close proximity one to another and were constructed from light organic matters, suggests that even when people were inside the dwellings, they were still able to hear, talk and maybe even see other people standing outside, thus continuing to share space and actions with other members of the small group, emphasizing co-presence.

The transition from forager to producer lifeways, associated with the Palaeolithic-Neolithic transition in the Near East c. 11.5–10 ka, is considered to be one of the most fundamental transformation in human culture marked by the emergence of a new economy, technology, architecture, social order, etc. From the earliest phases of the Neolithic, the majority of habitation sites are strikingly different in their architectural design from the previous Epi-Palaeolithic dwellings. Many Neolithic sites exhibit durable mud brick structures with closed and opaque walls, forming a relatively fixed village plan made of multiple houses, streets and public areas. The early phases of this architectural plan and design are perhaps best known from two of the most famous early Neolithic sites in the Near East, situated in Central Anatolia: Aşıklı Höyük and Çatalhöyük dated to the PPNA (c. 10.5–9.4 ka (Stiner et al. 2014)) and PPNB (c. 9.1–8 ka (Bayliss et al. 2015)), respectively. Although the two sites have many differences in their architecture and structure (Cutting 2006), single-room houses made of mud bricks were built attached to one another in both of them, permitting entrance to the houses only from the roof and leaving almost no outdoor spaces between the houses. In both sites, the majority of the buildings duplicate a similar inner space division with a built hearth or an oven either in the centre or corner of the house, and other activity areas mainly for storage and processing food and tools. As opposed to Palaeolithic dwellings, houses in Aşıklı Höyük and Çatalhöyük provide clearer evidence for long-term

occupation; it includes not only the durable nature of the mud brick walls but also radiocarbon dates and stratigraphic evidence (Düring 2005). For instance, in Aşıklı Höyük's deep sounding a sequence of several mud floors one on top of the other evinces the continuous construction of houses in the exact same location over a long period of time. The remains of combustion features indicate that they, too, were placed in the exact same location, adjacent to the right wall of the house, in every construction episode (Friesem, personal observation 2010).

It seems that since houses in Aşıklı Höyük and Çatalhöyük were built attached or at least very close one to another, the only remaining outdoor space available for activity could have been on top of the houses' roofs. Unfortunately, roofs rarely preserve in the archaeological record as they tend to collapse and decay after abandonment (see Friesem et al. 2014 for a discussion on archaeological formation processes of roofs in mud structures). It is possible that people spent most of their time on the roof, working in full visibility of their neighbours. But due to the absence of activity spaces on top of roofs in the archaeological record, such a possibility is almost impossible to trace. Thus, again, this situation leaves us with only a partial image of the activity and use of space in these sites.

The implications of the architecture and use of domestic space to understand the social organization of early Neolithic societies is a widely studied topic (e.g. Baird et al. 2017; Banning 2003; Banning & Chazan 2006; Byrd 1994; Flannery 1972, 2002; Goring-Morris & Belfer-Cohen 2008; Hodder & Pels 2010; Kuijt 2018; Kuijt & Goring-Morris 2002). For instance, in case of Çatalhöyük, there is an ongoing debate on whether each house represents a household, possibly of a single nuclear family, or whether several houses were shared by an extended household composed of several nuclear families (see Kuijt 2018 for the latest review of this debate). In addition, it has been argued that the variation in building size and in the richness of interior decoration indicate the existence of differences in household wealth or status in Çatalhöyük while the absence of these features in Aşıklı Höyük point to the lack of social stratification (Cutting 2006). The close proximity of the dwelling units and their small size, as well as the possible social organization in form of multi-family households or extended households do hint on some sort of sharing between people, both within a single dwelling unit and between several units shared by a defined social unit (e.g. Bogaard et al. 2009). The fact that this sharing was carried out between immediate kins is not significantly different from the situation among contemporary hunter-gatherers (see Bird-Da-

vid, this volume). However, the opaque walls, closed spaces and designated and affixed activity areas in each dwelling unit, reproduced through several construction episodes, implies that at least when indoors, people were secluded from co-presence and sharing of actions and space with most of the other individuals in their extended household and settlement. Relaying on the current interpretation and understanding of the archaeological record from Aşıklı Höyük and Çatalhöyük, we can suggest that the architectural design and preferences in both sites, while exhibiting some degree of sharing, are still a far cry from hunter-gatherer sharing as witnessed among contemporary societies. Yet, it is important to note that a better understanding of people's use of the outdoor space, particularly the roofs, might significantly change our interpretation of their social behaviour.

Contemporary circumstances of many hunter-gatherers today, with the intervention of development agencies in their everyday life, are not directly applicable to ancient societies, but they are nevertheless interesting to note. The Nayaka, for example, were recently given brick and mortar houses with opaque walls and closed spaces, built for them by development agents (Lavi 2018; Lavi & Bird-David 2014). Yet, despite the availability of such houses, and due to the cultural requirements for sharing and co-presence, people still preferred to avoid being indoor and continued to cook, eat, sit, and perform other mundane acts outdoor, in full-visibility of each other (Lavi 2018; Lavi & Bird-David 2014). And, when building their own houses, they still opted for open structures, despite having the experience of dwelling in fully walled houses. To build your own house with closed, opaque walls, therefore, is a conscious choice. If nothing else, we can say that the Palaeolithic-Neolithic shift towards dwelling structures that even allow the option of seclusion in fully closed spaces, point to a shift in how people construct their daily routines and the social expectations about them.

The Natufian culture, dated to 15–11.5 ka, stands at the crossroad between the Palaeolithic-Neolithic transition (Bar-Yosef 1998; Belfer-Cohen 1991; Grosman 2013). In terms of dwelling units and use of space, Natufian structures exhibit a hybrid between durable foundations, usually of 1–5 courses of stones, and superstructure that archaeologists argue to be made of organic materials (Goring-Morris & Belfer-Cohen 2008). To date, no remains of a Natufian house superstructure has been preserved to inform us whether it was closed and opaque (e.g. built with mud walls) or allowed visibility and interaction between indoor and outdoor spaces (e.g. built with loose plant material). As opposed to previous Palaeolithic sites,

among Natufian sites it is more common to find large installations made of durable materials (e.g. rocks, lime plaster and earthen construction materials) that cannot be mobilized (e.g. Arranz-Otaegui et al. 2018; Grosman et al. 2016; Power et al. 2014; Rosenberg & Nadel 2017; Weinstein-Evron et al. 2013). The Natufian installations can be found in both the interior parts of a structure as well as in public spaces. The latter case suggests either a more communal use of those installations or a spatial preference for more visible working spaces. A recent evidence of a plaster cover of a burial grounds found in Nahal Ein Gev II dated to 12 ka (Grosman et al. 2016; Friesem et al., accepted), alongside houses with wall foundations of several courses of stone, suggests long-term occupation of the site and a planned division of space within the site. The Natufian division and use of space present a distinctive difference from the dynamic use of space reported among contemporary foragers. Yet, communal activities seem to have taken a central role in the Natufian culture (e.g. Grosman & Munro 2016; Power et al. 2014) and it is not clear whether dwelling units undermined co-presence and sharing of things, spaces and actions among the site dwellers. Thus, the interpretation and extent of co-presence, living-together and sharing among the Natufians still await to be deciphered.

Concluding remarks

This volume provides a critical mass of data and theory regarding the value and meaning of sharing among contemporary hunter-gatherers which goes far beyond the distribution of food or material items. The practice of sharing manifests the ways people relate to one another, identify, acquire knowledge and perceive proper social conduct. But while this notion of sharing is well evident from ethnographic data, it is still almost impossible to get into such analytical resolution when we approach the archaeological record. In this chapter we suggest an interpretive framework for examining the archaeological record in search for social practices such as sharing and co-presence, by focusing on the architectural design of dwelling units and the architectural plan of the habitation site. We argue that by examining construction materials and the spatial distribution of activity remains in- and outdoors, archaeologists can learn more about people's social preferences in their use of space, which in turn will illuminate intangible aspects of the dwellers' social world. While this approach is by no means new to the archaeological research, we hope that the ethnographic data and anthropological theory on which we base the proposed interpretive framework will help to illuminate new aspects in the research of past societies.

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