PPNA Jericho: a Socio-political Perspective

Danny Naveh

A reexamination of the published data concerning PPNA Jericho is used to demonstrate that various building operations, especially the monumental buildings, were actively functioning in several social spheres, both at the inter-group and intra-group levels. At the inter-group level, the monumental buildings served as a means to establish a hold over an area with favourable resources. At the intra-group level, they functioned in founding and regulating new types of socioeconomic relations. Central themes in the changes occurring at this level include production intensification and the growing prominence of long-term delayed-return obligations within the socioeconomic system.

Of the various sites attributed to the Sultanian Culture, Jericho stands out through the quantity of unique traits of its material culture. This article reexamines some of these unique elements, the reasons for their formation and the various spheres in which they functioned.

During the excavations in Jericho (1952–58), Kenyon defined two Neolithic strata which lacked ceramic finds, Pre-Pottery Neolithic A and B (PPNA and PPNB). These stratigraphic units have developed into terms defining time-periods within the Neolithic, the PPNA spanning the period 8300/8000 to 7300/7200 BC (uncalibrated radiocarbon years) (Bar-Yosef 1995, 190). Crowfoot-Payne (1983) divided the PPNA into two separate entities, each with a defined material culture. The earlier of these is the Khiamian Culture, lasting for 200–300 radiocarbon years (Goring-Morris & Belfer-Cohen 1997, 80–84; Bar-Yosef 1998, 169). The later is the Sultanian Culture named after Tell es-Sultan, the settlement identified with Biblical Jericho.

The PPNA subsistence economy is understood to have comprised crop cultivation, gathering and hunting with no animal domestication (e.g. Bar-Yosef & Belfer-Cohen 1989, 476–84; Bar-Yosef 1995, 190–92; Cauvin 2000, 34–9). Lithic assemblages include El-Khiam arrowheads, tranchet axes, various types of sickle blades (such as the 'Beit Ta'amir knife), Hagdud truncations, perforators, burins and scrapers. Groundstone tools include slabs with cup-marks, shallow grinding bowls, pestles, hand rubbers and limestone polished celts. Other characteristics such as settlement patterns, architecture and burial patterns are addressed below. It should be noted that the scope of this study is limited to what can be termed the Sultanian interaction sphere or, in geographical terms, the southern Levant (present-day Jordan, Palestine and Israel). Thus, reference to data from PPNA sites such as Tel Aswad, Jerf el Ahmar and Mureybet, which Cauvin (2000, 34–9) attributes to the two further distinct cultures of the Aswadian and the Mureybetian, will be limited.

Several traits that distinguish Jericho from other Sultanian sites are:

1. *Scale:* Jericho covers about 2.5 ha. Archaeological material had accumulated during the PPNA to a maximum height of 9 m around the western excavation trench (Trench I) where 34 consecutive PPNA phases were identified (Kenyon 1981, pl. 238). In other places, PPNA material had accumulated up to 4.5 m. Netiv Hagdud is the only other southern Levantine PPNA site whose archaeological scale is comparable to Jericho. Its estimated area is about 1.5 ha and its sediment accumulation reaches at least 3.8 m. No other southern Levantine PPNA site exceeds half a hec-

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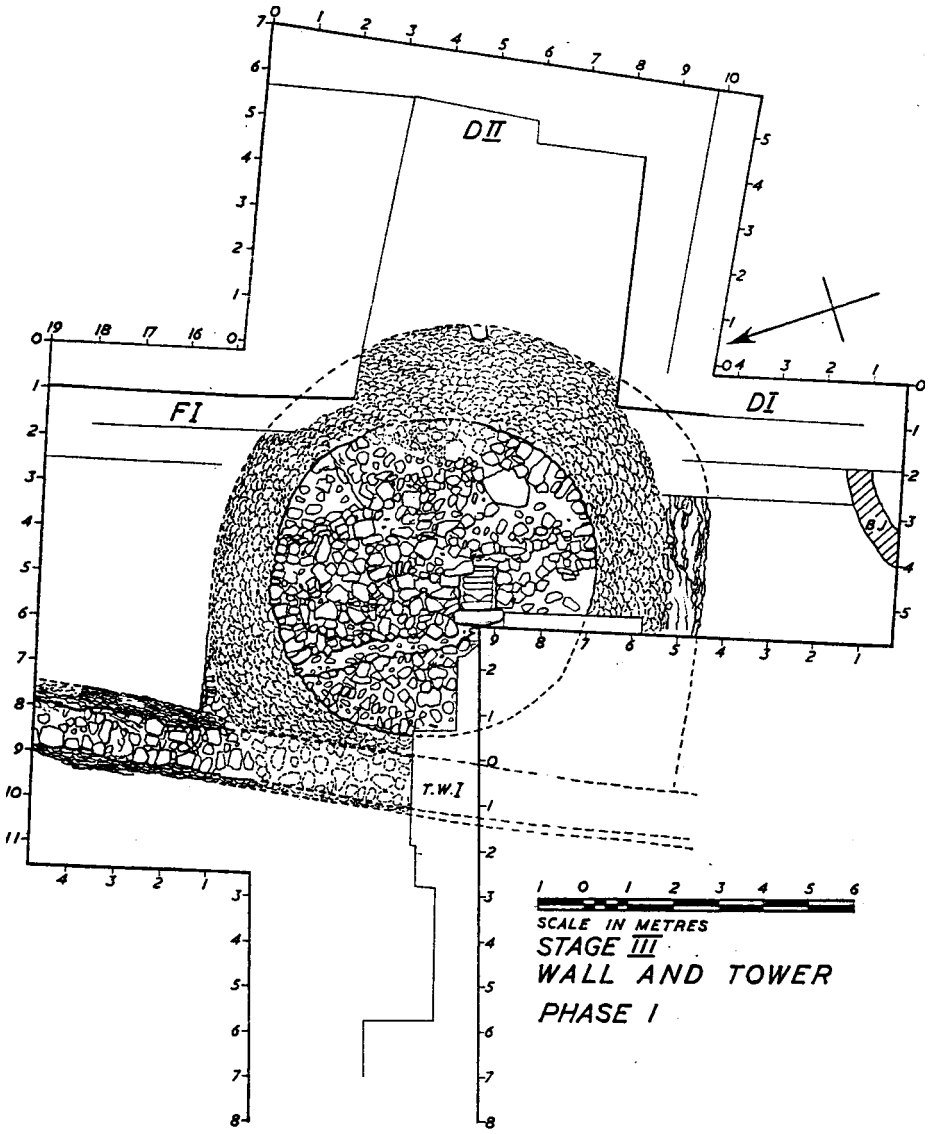

Figure 1. *PPNA Jericho, Trench I, Stage III. (From Kenyon 1981, pl. 203 - note wall BJ should be wall B; reproduced with the permission of the Council for British Research in the Levant.)*

tare. Their sediment accumulation is also less.[1]

2. *Monumental buildings:* these include:[2]

A. A free-standing perimeter wall which, according to the data presented by Kenyon, surrounded the site on its north, west and south. Three distinct building phases were identified on the west, two on the south, and one on the north (Kenyon 1981, 6–12, 114, 175). The first phase of this wall (in the western trench) was preserved to a height of 3.6 m, and its maximum width at its base was 1.8 m (Kenyon 1981, 19). Its inner face was covered by mud plaster. According to Kenyon, the state of preservation of the sediments in Area E may indicate that they were supported by a wall to the east. Her opinion is that it should be identified with the, as yet uncovered, eastern section of the perimeter wall (Kenyon 1981, 289). If this is the case, the remnants of the eastern face of the wall should be found at about 4 to 7 m below the present surface in Area H (Bar-Yosef 1986, 161).

B. In the western trench, a tower was uncovered adjacent to the internal face of the perimeter wall (Figs. 1 & 2). The Tower, 8.2 m high and 9 m in diameter at the base, was built of undressed stones (Kenyon 1981, 19). A 20-step staircase made of carefully dressed slabs led to the structure's roof. The outer face of the building and the internal staircase corridor were also covered by mud plaster (Kenyon 1981, 20). From topographic data in Kenyon's published sections, Bar-Yosef estimates that no other structure of this kind was ever built at Jericho (Bar-Yosef 1986, 161). In Stage VIA, twelve individuals were buried in the passage leading from the entrance toward the staircase, and the structure's entrance was sealed off (Kenyon 1981, 33–4, pls. 242–3).

C. Special features, termed by Kenyon 'enclosures', were uncovered around the Tower. These facilities, some built on top of each other, were in use from Stage IV until Stage VIIA.[3] The enclosures were mainly of stone with a plaster material covering the floors and walls. A few were preserved to significant heights, one enclosure reaching 3.12 m. Kenyon interpreted the enclosures erected in Stage IV, north of the Tower, as water tanks and the rest of the enclosures as grain

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storage facilities (Kenyon 1981, 39–40).

Evidence that some of these enclosures were indeed used for the storage of plant material is provided by clear traces of fire in and around an enclosure built in Square DI in Stage IV and burnt during Stage VIA. These traces include large fragments of burnt timber and chunks of plaster which, Kenyon claims, were used as roofing material and which collapsed as a result of fire (Kenyon 1981, 30). The state of preservation of the timber and plaster indicates that they were subjected to intense heat. This was perceived by Kenyon as evidence that the enclosure contained flammable materials such as grain. The mere fact that no other clearly identifiable storage facilities were identified at the site while these enclosures were in use further supports this interpretation. In the absence of an alternative interpretation, it seems that at least some of these enclosures were indeed used for the storage of plant material such as cereals (see Mellaart 1975, 50–51; Bar-Yosef 1986, 161; Byrd 1994, 659; Goring-Morris & Belfer-Cohen 1997, 80–84).

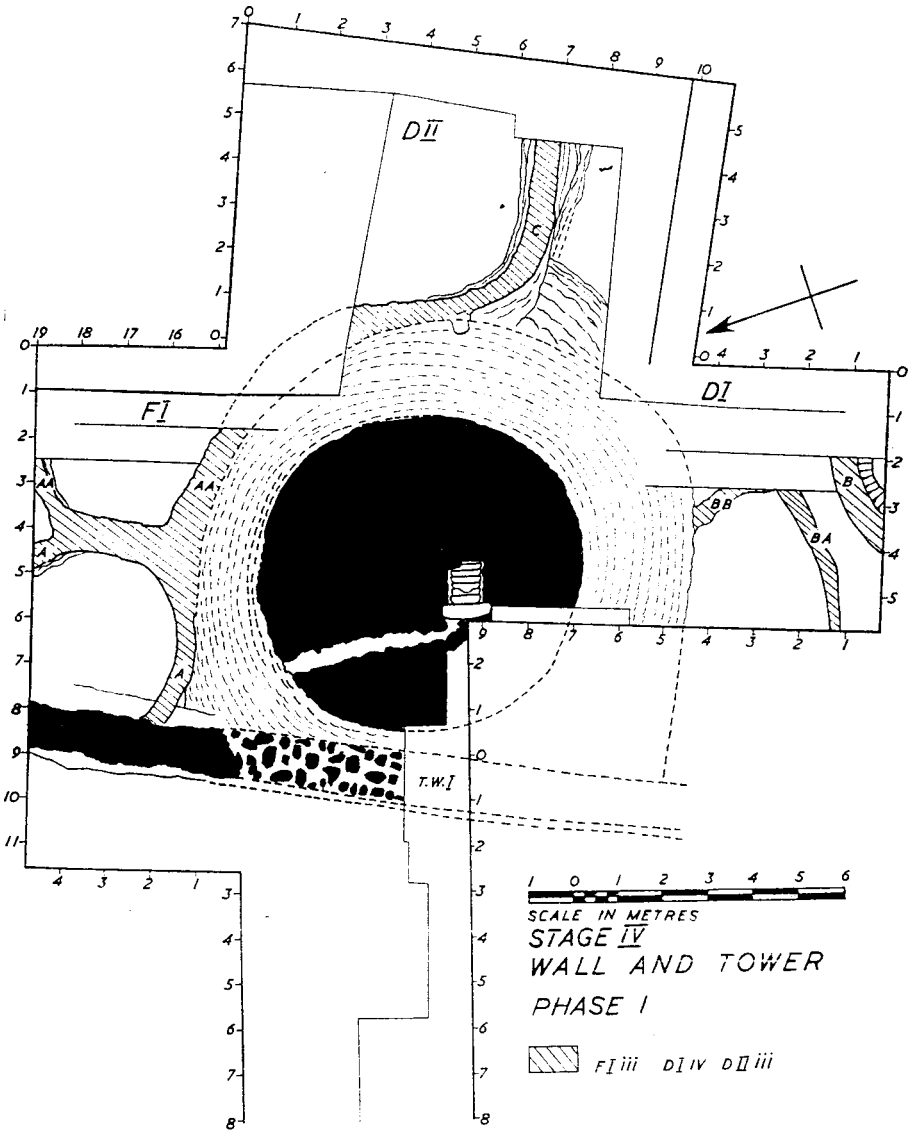

Figure 2. *PPNA Jericho, Trench I, Stage IV. (From Kenyon 1981, pl. 204 - note wall C should be wall CA; reproduced with the permission of the Council for British Research in the Levant.)*

D. Parallel to the second phase of the perimeter wall in the western trench (Stage V), a ditch was quarried in the bedrock to a maximum depth of 2.1 m (Kenyon 1981, 26).

3. *Domestic units:* The characteristic Sultanian house consists of a single unit, while (in Jericho?) two houses divided into two distinct units were exposed (Kenyon 1981, 52, 230, pl. 277). At other Southern Levant PPNA sites, Locus 8 at Netiv Hagdud provides the only comparable structure (Bar-Yosef & Gopher 1997, 55–6).
4. *Prestige items:* Although the excavation procedure at Jericho did not include systematic sieving, finds that can be interpreted as prestige items were uncovered in greater quantities per excavated volume than at any other Sultanian site (Bar-Yosef & Gopher 1997, 252; Crowfoot-Payne 1983, 662–3). The most abundant of these items are obsidian from an Anatolian source and beads made of a green stone. Kuijt, Bar-Yosef and Gopher see this as a testimony to the wealth of the site and its role as a distribution centre for items of this kind

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(Kuijt 1994, 181; Bar-Yosef & Gopher 1997, 55–6).

5. *Burials:* Most of the burials in PPNA sites have been found beneath the floors of domestic buildings, in fills of abandoned buildings, or in areas that can be termed open spaces (Belfer-Cohen *et al*. 1990, 83*). In addition to the twelve burials found in the entrance to the Jericho Tower (Stage VIA), further burials were found in special contexts. Seven were uncovered beneath enclosure floors (Kenyon 1981, 23–4, 38, 40). An infant burial and five further skulls of infants (all with the upper vertebrae still attached to the skull) were found under a structure (from Stage VIIIC) classified by Kenyon as having ceremonial significance (Kenyon 1981, 50). Outside Jericho, special context burial is known from Locus 8 at Netiv Hagdud, where 3 skulls were found on the floor of the structure (Bar-Yosef & Gopher 1997, 55–6).

The various characteristics that distinguish Jericho from other PPNA sites have in common the act of building. The site's surface area, the magnitude of sedimentation, the monumental building operations, the division of internal space in some of the houses and even the location of most of the special burials are all connected in one way or another to the act of building. This activity is one of the central ways in which people manifest their presence within the environment in which they live (Heidegger 1977). Of the various aforementioned traits, monumental building is the only presence/absence feature, which distinguishes Jericho from all other Southern Levant PPNA sites.

The building projects were the actions of a considerable number of working days. During this time, it would have been difficult for those involved to carry out basic subsistence activities such as hunting, gathering or cultivation. From modern construction data, Dorrell (1978, 15) has estimated that the town wall of Jericho could have been constructed in approximately 1360 working days. Assuming that a worker could erect a constructed volume not exceeding half a cubic metre per day, Bar-Yosef (1986, 158) has suggested that an estimated 10,400 working days for the wall's construction would be more reasonable. Either way, taking into account elements such as quarrying and the collection of raw materials (within the constraints of the technology available to people at that time), as well as the plastering operation with its multiple stages and the construction of the tower with its significant volume, it would seem that the energy output needed for the erection of these buildings was closer to Bar-Yosef's estimate and may even have exceeded it. It can be deduced, therefore, that these enterprises could not be completed without a prolonged[4] increase in production, at least in the Jericho area. Analyzing the character of the various building operations that took place at the site may play a key role in comprehending the unique socio-political processes that occurred at Jericho.

Theoretical frame

One of the main objectives of this study is to demonstrate how the different building operations carried out at PPNA Jericho could have been harnessed to function in a variety of spheres. Buildings, and especially monumental buildings, are embedded in symbolism at least some of which is understood by the general public. Symbolism found in public structures reflects the basis of the social order and can be used to obtain information about its underlying characteristics (Moore 1996, 11). Whatever the original purpose behind the erection of a specific building may be, however, the way in which this act is interpreted will vary from one individual to another. Experiencing and interpreting a specific product of building depends on numerous factors such as age, gender, social status, personal life experience and personal interests. The difference can be quite significant, even to the point that two individuals present in PPNA Jericho may have had totally opposing feelings toward a specific building. This seems especially likely in the case of the monumental buildings intended to function within wide social and political spheres.

Two principle interpretations have been applied to the monumental building activity at PPNA Jericho. Kenyon, belonging to a school of thought that regarded cultural diffusion as a fundamental mechanism in historical change, regarded the wall and tower as part of a defence system (Kenyon 1981, 6–8). She even raised the possibility that these structures were used by inhabitants of PPNA Jericho to confront attacks from those groups who later inhabited Jericho during the PPNB (Kenyon 1957, 75). Bar-Yosef, on the other hand, claimed that if the tower and the perimeter wall had been part of a defence system, the tower would have been built projecting outwards, thereby gaining strategic advantage (Bar-Yosef 1986, 158). He claimed that Kenyon's defence wall and its adjoining ditch should be understood as installations built for protection from mud flows and flash floods coming from the cliffs to the west of the site (Bar-Yosef 1986, 161). The fact that substantial amounts of earth did pile up along the western face

of the perimeter wall served as key evidence for this argument. This type of interpretation is in accordance with a central theme of Processual Archaeology, in which culture as a whole, and material culture within it, are regarded as a means by which society adapts to its environment.

Recently, Ronen & Adler (2001, 98) have suggested that the entire monumental building system in Jericho, along with other later prehistoric sites which are 'encircled with massive defence' (such as Khirokitia and Kalavasos-Tenta: Le Brun 1992; Todd 1989), should be understood as a 'defence system, albeit aimed against mythological beings and not humans'. After reanalyzing the flow pattern within the three wadis west of the site, they rejected Bar-Yosef's interpretation arguing that the site could have faced substantial flood danger only from the north and south and not from the west (where the wall is broadest). Their (intriguing) interpretation, however, that the western side was more heavily fortified because this is where 'the sun dies daily and impurity reigns high', is not supported by further evidence.

Although Kenyon's and Bar-Yosef's interpretations seem to contradict one another and operate within different frames of thought, a basic thread is common to both. Each of these interpretations regards building activities as a technological measure by which humans impose a physical modification on the material reality that preceded this building action. This physical modification is made for the benefit of an individual, an interest group or society as a whole (see Kirk 1997). Such a Cartesian point of view, in which humans observe nature, studying its laws from a detached perspective and acting in rational ways to change the surrounding reality according to their will and requirements, stands at the centre of a growing debate in humanities and social sciences.

A central criticism of this approach is that a human being's relation to the material world cannot be reduced to a detached epistemological approach, but rather is characterized by involvement and ongoing interpretation (see Geertz 1973, 3–5). Thus building operations should be seen, perhaps even more than other technological actions, as an act of involvement in the world (Heidegger 1977). The way in which an individual experiences the environment in which he or she lives is related, first and foremost, to subjective feelings such as familiarity with a dwelling place, and is not necessarily acquired through external inspection of it (Heidegger 1977, 358). In this way, the built environment exposed at archaeological sites, with the symbolism embedded within it, should be understood as having had an active and influential role in the social, economic, and political relationships of the time (Moore 1996, 1–17; see also Children & Nash 1997).

Bar-Yosef did, in fact, suggest that the tower served as a raised platform for a mud-brick superstructure (which did not survive), whose intended purpose was ritual (Bar-Yosef 1986, 161). In this suggestion, the tower and its proposed superstructure[5] are also perceived as functioning within the symbolic realm. Even here, however, some of the symbolic value of the tower itself is overlooked. It is perceived as 'intended for . . .' and not as 'functioning as . . .'.

The act of building is one type of human expression through which a given space becomes a place. A 'place', such as PPNA Jericho, integrated a specific landscape (on which the site was built) with a broad array of social activities and a web of meanings (see Relph 1993). The uniqueness of the act of building is that it intends significantly to change the physical landscape. This is particularly the case for the monumental building constructed at the site. Different building activities imposed various levels of constraint upon the movement of people within the aforementioned space, and on their ability to sense and experience it (see Thomas 1991, 41).

Domestic and monumental building at Jericho

The building operations in PPNA Jericho can be divided into two basic types: Domestic Building and Public Building, the latter mostly on a monumental scale. At Jericho, a strong contrast can be discerned in the level of visibility of the two types of building, as the typical domestic building is constructed with its floor sunk up to half a metre beneath the surrounding surface (Kenyon 1981, 269). A further difference is the time span over which the buildings were designed to function. When monumental buildings are made of materials which disintegrate slowly (such as stone), it may be presumed that they were intended to be a permanent part of the landscape. Consequently, the symbolic essence inherent in those buildings is imposed, in some manner, on the consciousness of future generations (Bradley 1985, 9). Many different domestic building phases (29 phases in Square DI) can be identified during the time which elapsed from the erection of the tower through to the point at where it was no longer visible (Kenyon 1981, 508, pls. 242–3). The use of stone appears in domestic building only for the foundations, and in some cases entire buildings are made of mud-brick and other perishable materials.

The long period of time during which the monumental buildings functioned[6] makes the moment at which they were erected a collectively valued historical event. Concepts related to the act of construction such as 'before' and 'after',[7] would have been established in the collective consciousness[8] of those responsible for the building operations (Stage III), and of subsequent generations (until the end of Stage VIII). By contrast, most domestic buildings functioned for much shorter periods. This can be deduced from several archaeological sections in Trench I and in Area E, where 24 consecutive PPNA building phases were exposed (Kenyon 1981, 269).

In the present state of research, the monumental buildings in Jericho are the earliest evidence of activity which deviates significantly from two essential dimensions in which humans dwell. First, in contrast to earlier structures, the tower's physical dimensions greatly exceed those of a human being. Second, the fact that it was built of stone enabled it to function for a period of time far exceeding a human life-span. Its physical size and durability could be a symbol of stability itself — a very powerful symbol for a society in the process of adopting a Neolithic way of life.

Territorial claim

Society within the time-span of the Sultanian culture can not be regarded as a single monolithic body, thus conflicts emanating from opposing interests at the inter-group level can be expected. Goring-Morris and Belfer-Cohen's reconstruction of the sociopolitical reality in the Jordan Valley during the early stages of the Sultanian culture supports this suggestion:

> All the above indicate that at this particular point in time, the Jordan Valley in particular, and perhaps also the western edge of the central mountain ridge, served as a refugium for remnant Natufian (*sensu lato*) groups . . . following the end of the Younger Dryas, the population of the Jordan Valley comprised an agglomeration of vestigial Natufian communities from throughout the Southern Levant. (Goring-Morris & Belfer-Cohen 1997, 83–4)

One conflict which can be expected in such a scenario is inter-group disputes concerning the right to occupy a location with favourable living conditions (Rosenberg 1998). Key factors by which PPNA populations chose their place of residence are proximity to a water source and the existence of alluvial soils (Bar-Yosef & Meadow 1995, 70–71; Goring-Morris & Belfer-Cohen 1997, 83–4). As shown below, Jericho's location not only meets but even exceeds these criteria. Today, Ain es-Sultan is the most abundant spring in the Jordan Valley floor, from just south of the Sea of Galilee through to the Dead Sea.[9] The salinity of the water is low and its flow, compared to other springs, is consistent throughout the year. From hydrological analysis of the spring's sources, Dorrell estimated that the its flow and consistency were similar during the PPNA period. Alluvial soil is swept into the area from three wadis: Nueime, el-Mafjar and Kelt. The combination of a constant high spring-flow and the topography of a modest slope is a further advantage to the Jericho location (Dorrell 1978, 11). Under these conditions the spring flows spread over a broad surface area (and can be spread even further with relatively modest effort). Dorrell (1978, 17) suggested that such conditions, combined with the climate that prevailed in this part of the Jordan Valley, could support growing more than one cycle of cereal crops per year.

A further advantage could be the proximity of the site to desired mineral sources such as salt and bitumen near the Dead Sea (Anati 1963, 248–50; Mellaart 1975, 51). It should be noted, however, that access to these resources was probably not exclusively restricted to Jericho residents (Ronen & Adler 2001, 98).

The reconstructed climate for the beginning of the Holocene is more humid than that of today (Hovers 1997, 8–10). It can be estimated, however, that the Jordan Valley was still drier and warmer than other regions such as the Coastal Plain or the Central Mountain ridge (Bar-Yosef & Meadow 1995, 70–71). This relatively dry sub-climate (especially in a place with an abundant water supply) may be regarded as an additional advantage since it could facilitate storage.

These characteristics probably made the immediate area of Jericho a desirable location for the general population of the Jordan Valley. The sociopolitical scenario at the beginning of the Sultanian (Goring-Morris & Belfer-Cohen 1997, 83–4) whereby various groups from different sub-regions of the Southern Levant assembled in the Jordan Valley, may have become a breeding ground for conflict. There is the further factor that these groups were in a process of growing sedentarization and integration (each being a problematic process by itself). It may be assumed that the group which finally took control of the Ain es-Sultan spring and the area adjacent to it would have had to take an active and effective role in intensive power discourse.

One essential for such a group was to transmit a message of their intention and ability to occupy this area in the long term. Using the terminology of Rosenberg's (1998) musical chair model for the beginning of agriculture; this kind of action, within the final stages of the Epi-Paleolithic period, can be considered as a decision to 'cheat' or 'refuse to get up'.

According to Renfrew (1976), megalithic structures in Neolithic Western Europe were used as territorial markers. The monumental building of PPNA Jericho could have served a similar purpose for the group that finally occupied the Jericho area. If the perimeter wall did, indeed, fully encircle the settlement, it can be deduced that the spring, the centre of life in this area, was included within the enclosed area (Bar-Yosef 1986, 161). The spring's outlet in this period was indeed west of its present location (near Area H), about 50 m from the tower (Dorrell 1978, 11; Bar-Yosef 1986, 161). There is no reason to assume that, in such a context, an act meant to claim a long-term hold on an area with such favourable conditions, would be accepted without any opposition (see Bradley 1997, 10–16). Thus a group aspiring to make such a claim would have had to act within a symbolic sphere probably embedded in a wider ideological framework (see Giddens 1979, 190–97). This kind of action, designed to establish a desired power structure, is no less efficient in the long term than direct action through physical force.

The action intended to provide legitimacy for a long-term occupation in the area of the spring will have taken place at a relatively early stage of the Sultanian culture. Of the 31 building phases identified in the area of the tower (in Square DI) up to the point it was covered, only two phases preceded its erection. In the first phase, no substantial building activities were identified (Kenyon 1981, 19). Carbon 14 samples collected from Stage IV in the Tower area (no samples were produced from Stage III), support the claim that the monumental building was erected in the initial phases of the Sultanian culture (*c.* 8000 bc – un-calibrated) (Burleigh 1981; 1983; Bar-Yosef 1986, 157). It is interesting to observe that in different areas in Europe, the appearance of megalithic building also corresponds to the onset of a Neolithic occupation or even shortly precedes a full-fledged Neolithic way of life (Thomas 1991, 180–87; 1996, 129–33; Patton 1993, 33–68; Bradley 1997, 9–11, 34). In regions such as Brittany, the earlier stages of megalithic building are characterized by upstanding menhirs. The same visual element is found in the Jericho tower. Standing stones are used by different cultures as markers of territorial ownership or of territorial borders (Parker-Pearson & Ramilisonina 1998, 310–11). The stability reflected by stone structures transmits a message concerning long-term intentions to hold on to the desired territory. The centrality of the spring as a stable life source within the area of the site, may explain why the monumental building at Jericho was erected within the site itself, unlike Neolithic Western Europe, where megalithic buildings are often constructed between territories. It is also interesting to note that in PPNA Mureybet and Jerf-el-Ahmar, both public and domestic buildings were embedded in the ground (Cauvin 2000, 39–48; Stordeur 2000, 2). The fact that the Jericho tower contrasts with the traditional PPNA building style may show that the act of laying claim to specific locations was perceived as more crucial by Jericho's inhabitants than by PPNA communities along the Euphrates.

Heidegger's (1977, 325–30) investigation of the origins of the term 'building' further supports this claim. Heidegger showed that in many dialects (though all of his examples are taken from Indo-European), the early meaning of the term 'building' was affiliated with 'staying in place'. The tower, as a building that does not facilitate dwelling or other 'useful' purposes (in the western meaning of the term), can be seen as 'building for the sake of building' or as a monumental building erected to demonstrate 'staying in place'. The town wall, even if it did not enclose the site on the east, can be seen as further physical manifestation of holding a given territory.

It can be estimated that, in the context in which these buildings were erected, the energy invested in their construction was meant to be considered (and was probably perceived) by external groups as some sort of costly signal. Indeed, after a long period characterized by relative mobility, a group aspiring to sedentism in a desired sub-region, thereby preventing other groups from accessing resources, needs to perform an energetically-costly operation so as to manifest this intention (see Rousseau 1992 [1754], 43–5). The magnitude of such an operation and the energy invested in it may be directly linked to the magnitude of the change in the power structure established by this action (see Knight 1999, 228–35). In the early phases, the settling group might indeed, have lacked justification and legitimacy (through e.g. ancestors, etc.) for realizing this intention.

The monumental building operations at Jericho made considerable changes to the local landscape. By visual manipulation, they enabled a new interpretation of the landscape, and of the living order within it. Although the only Natufian traces found

at Jericho are ascribed to the early Natufian period (Kenyon 1981, 268; Bar-Yosef 1986, 157), it can be assumed that in the later Natufian, the fertile area around the flowing spring was also significant in the collective consciousness of groups visiting this area. The monumental building erected during Stage III interfered with the former system of meanings ascribed to the spring and its immediate surroundings (see McMann 1994, 533–6; Thomas 1996, 129–33). A focal aim of the action (embedded within a new, broader, ideology) performed by one of the groups living in the Jordan Valley in the early phases of the Sultanian culture, was to establish a long-lasting hold on an area rich in resources.

Society and building

The specific location of burial practices in PPNA Jericho provides a means by which its complexity can be deciphered. 25 out of the 272 PPNA individuals identified were interred in what can be termed special contexts. Non-adult burials were found in all of these special contexts (Cornwall 1981, 403–4; Kenyon 1981, 23–4, 38, 40, 50). This implies that inherited components, such as family genealogy, were influential components within the social persona of a given individual.[10] We can therefore conclude that, although attributes such as differential provision of grave goods or distinct concentrations of wealth items were not identified in the PPNA layer, there was nonetheless some kind of differential power structure.

Another expression of growing social complexity can be found in the division of two of the PPNA buildings into two parts. Banning & Byrd (1989, 156–8) suggested that the rise in the number of internal spaces within the various types of buildings built throughout the Neolithic period may reflect a growing complexity in social structure. These aforementioned buildings may reflect the advent of this process.

We can therefore imagine an individual or a small group leading the community, during a time of economic change, towards a growing asymmetry within its power structure. The decision to place burials within the tower and beneath the enclosures, may testify that social advantages, such as asymmetry in prestige and power, had been achieved by controlling the redistribution of accumulated food supplies.

Building monumental stone structures, along with the huge investment of energy it involves, can become a collective project — something that contributes to the group's social unity (Parker-Pearson & Ramilisonina 1998, 310). It can be assumed, however, that at the turn of the eighth millennium BC, elements of the Epi-Palaeolithic system in all likelihood would still have had much influence. Thus the building of monumental structures was probably viewed with suspicion and lack of enthusiasm by various elements in society. An unprecedented building style, one that is visually prominent and is in total contrast to the accepted building traditions of the time, could be construed an unnecessary deviation from, or even as defiance against, generally accepted world views (like the Sin of Pride resembling the moral in the Tower of Babel biblical story[11]).

Furthermore, it is reasonable to assume that, when gathering and hunting were still a basic component of the economy of Jericho's inhabitants, negative attitudes may have developed towards extra labour which exceeded basic subsistence requirements to such an extent. As noted by scholars who investigated occurrences of intensification of labour within present-day hunter-gatherer societies: 'strong possibility of resistance exists if demands are felt to be onerous' (Bender 1990, 252; see also Arnold 1993, 86–9; Webster 1990). Thus the proposal for monumental buildings may well have provoked opposition.

Those who initiated the erection of monumental buildings could control how members of the group carried out their daily routines, thereby influencing the way in which they experienced and understood the world around them and their place within it (see Bradley 1997, 1–35). The perimeter wall, for example, would have helped to create contrasts such as inside vs. outside, culture *vs* nature, or us *vs* them (especially for those born after its completion). Thus, it can be presumed that this structure emphasized and sharpened constructs of 'otherness' both from nature[12] and from neighbouring groups (see Hodder 1990, 297–300).

The monumental buildings of Jericho could be used to establish control over ritual knowledge. A process of reduction in both physical and visual access to the interior of the tower can be discerned. The entrance was never spacious and did not allow for convenient observation of the interior. It became narrower, however, when Wall CA was built (in Stage IV; see Fig. 2). This wall was part of the enclosure built in Square DII (Kenyon 1981, pls. 242–3). Entering the building now became almost impossible, with only a narrow passage ('trap door' in Kenyon's term: Kenyon 1981, 6). In Stage VIA the entrance was completely sealed, after the insertion

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and burial of twelve individuals (Kenyon 1981, 33–4, pls. 242–3).

Apparently, by blocking the entrance, the tower ceased to function. It is possible, however, that additional social significance was attributed by inserting the burials (see Cauvin's (2000, 118) comparison of Jericho's tower to the 'house of the dead' at Cayonu). The archaeological data does indeed reveal that the structure continued to exist for several generations after the passage was sealed. New groups of enclosures (Stages VII–VIIA) were built in Square FI, with a clear spatial association with the tower (Fig. 3). Furthermore, in Stage VIII the tower experienced some rebuilding (Kenyon 1981, 42).

Thus, it seems that even after blocking, the tower still functioned as an object with potent symbolic meaning. The burial and subsequent sealing of the tower entrance can be interpreted, then, not as the termination of its use, but as an addition to its symbolic meanings coupled with a growing restriction on the ability to learn of these meanings (see Tilley 1993, 80–82). Any individual, other than those who initiated or controlled the monumental building would have been aware of his or her limited ability to fully comprehend the various implications embedded in the tower as a physical and social structure.

We may conclude that in the chronostratigraphic sequence exposed in Trench I, a progressive restriction of an individual's possibilities of acquiring knowledge can be discerned. This process can be interpreted as a further expression of the growing political power of those who had been able to bring about the extensive building enterprises.

Delayed return system

The shift in the immediacy of return for the investment of energy in subsistence activity is usually addressed as a binary opposition, e.g. immediate *vs* delayed return societies (Woodburn 1980; 1982); non-storing *vs* storing societies (Testart 1982). One must not, however, overlook the length of the delay period between investment and return (see Ingold 1983). Institutions managing stored material need to bestow upon themselves the impression of stability, and this is itself influenced by the length of this time-interval. The longer the delay, the greater the need to portray stability. Furthermore, the less the familiarity between the depositor and the management of storage, the greater the need to portray stability. The tower may have functioned as a metaphor for that stability, in the context of lengthening delays between investment and return in PPNA Jericho.

Kislev (1997, 228–9) points out that the rise in cereals, to the point at which they become the central component within of the PPNA floral assemblages, can be explained as a general change in consumption habits.[13] He claims that this change is expressed by moving from the storing acorns for use during winter and cereals for use during summer, to a system in which cereals are stored for a longer period of up to a year (Kislev 1997).

In moving to year-round storage functioning, the granary becomes a permanent buffer between production and consumption. The magnitude and centrality of the storage activity at PPNA Jericho suggests that some kind of permanent social institution was managing the storage and withdrawal. Operating on a year-round cycle, the economic and social value of this institution was no longer in flux. Access to a crucial part of the subsistence resources was now under constant social control and was increasingly dependent on fulfilling long-term obligations embedded within the social sphere.

Some kind of demonstration was needed to affirm that the institution in which an individual's or group's produce was deposited would indeed still be there at the future time when the promised return was due. The massiveness and stone composition of the tower and, principally, its construction during an early stage of the Sultanian culture, could have been harnessed to portray such a sense of stability. Furthermore, the fact the tower was a humanly-made structure enhanced its ability to act as a metaphor for the stability of a socio-economic institution.

It is interesting to note that similar institutions in modern society — banks — with their delayed-return mechanisms (Bird-David 1992, 31–4), choose to provide a sense of stability by adopting massive and towering structures for their management and control centres.

The tower was erected before the enclosures. No evidence of enclosures or obvious storage facilities was found elsewhere on the site.[14] The enclosures were built in such a way that they encircled the tower (physically embracing it, almost blocking its entrance: Kenyon 1981, pls. 242–3; Figs. 2 & 3). These lead us to posit a link between the function of the enclosures and what was signified by the tower. Thus the tower itself could have played an active part in lengthening the gap between investment and return.

A similar transition to longer-delayed-return probably occurred at other sites assigned to the Sultanian Culture without the use of monumental building. The population size at Jericho, however,

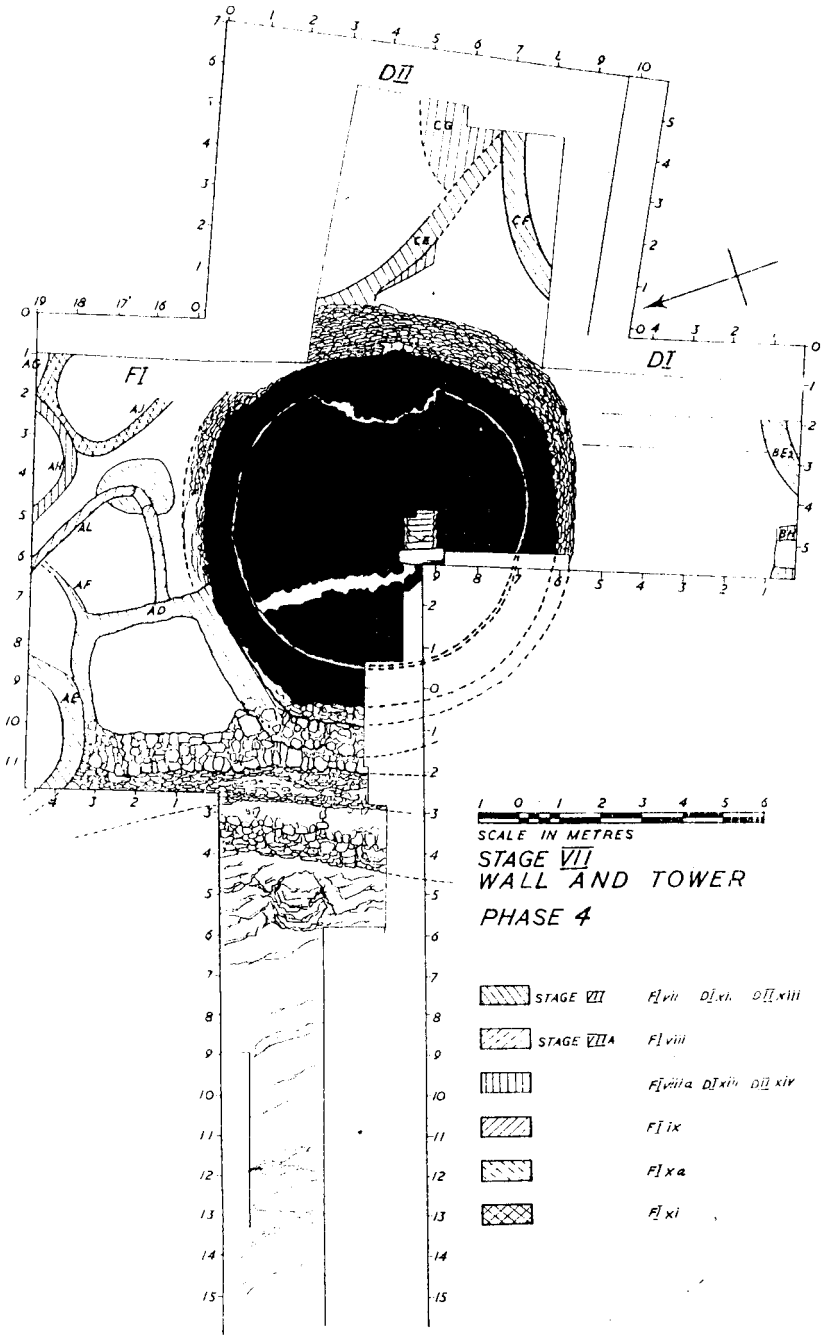

Figure 3. *PPNA Jericho, Trench I, Stage VII. (From Kenyon 1981, pl. 209; reproduced with the permission of the Council for British Research in the Levant.)*

was significantly larger than that of most other sites. Thus social obligations at Jericho might have been characterized by a low degree of familiarity and greater alienation. Furthermore, a larger portion of the community (such as those engaged in operating the prestige items network) may have been partially exempt from basic subsistence activities. The distribution of stored food was therefore complicated and more sensitive than in a society in which all members were involved in subsistence activities. Consequently, those in charge of the distribution had to use powerful symbolic instruments to establish a long-lasting socio-economic system.

Protection purposes

The encircling wall could also have been used for defensive purposes not significantly different from those proposed by Kenyon. The fact that a substantial amount of earth piled up along the western face of the perimeter wall is not disputed (Bar-Yosef 1986; see also Kenyon 1981, pl. 236). Thus its construction must have contributed to solving problems caused by mud flows and flash floods. The same problem, however, was also faced by inhabitants of other PPNA sites in the Jordan Valley (e.g. Netiv-Hagdud: see also Ronen & Adler 2001). No trace of such a wall has yet been found at any of these other sites. Furthermore, if such floods were perceived as such a crucial problem, then we would expect the settlement to have been built on a longitudinal east–west axis, rather than a north–south one. In this way, a significant reduction of exposure to direct flows from the cliffs to the west would have been achieved. In other words, earth piling up on the outer face of the wall is not necessarily sufficient to decipher its main use, or to ascribe its purpose to protection from mud flows and flash floods.

The many enclosures revealed at Jericho may indicate that unprecedented storage activity took place. Such volume of storage could have made it an attractive target for hostile actions (see Mellaart 1975, 51). Traces of an extensive fire in the immediate area of the tower, were identified in Stages VIA and VIIIB (Kenyon 1981, 32, 48). As Kenyon points out, the traces in

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Stage VIA are probably of the burned material stored in the enclosure at Square DI. An extensive fire was also identified in Stage IX of Trench I (Kenyon 1981, 58); traces of a similar event were identified in Area E (Kenyon 1981, 284**;** see also Stordeur (2000, 2) for Burnt Public Buildings associated with storage in PPNA Jerf-el-Ahmar).

It is possible, therefore, that the high volume of storage created a need for improved control of movement into and out of the site. Building the perimeter wall, even if it was not closed from the east, enabled significant improvement of such control.

The imposition of ideology with its accompanying power structure 'from the top down', may become ineffective in the long-term (Giddens 1979, 190–97; Hodder 1990, 38). The fact that constructing the perimeter wall was indeed to the benefit of the entire community, as a solution for the flood problem, enabled those who had initiated its building to promote the general necessity of monumental construction. This act of building could enable its advocates to achieve political goals that would otherwise have been difficult and complex in the context of the eighth millenium BC.

Conclusions

The claims presented here support the idea that the monumental building that took place in PPNA Jericho actively functioned in several spheres. In Stage III, the monumental buildings functioned mainly at the inter-group level — establishing a hold over an area blessed with abundant resources. Once such a hold had been achieved, the buildings played a greater role (from Stage IV onwards) in regulating the socio-economic life and power structure within the intra-group sphere. This phase included, among other things, the institutionalization of the increase in production which had already begun in the former stage, as well as the growing prominence of long-term delayed-return obligations within the socio-economic system. As noted above, an expression of this transition can be found in the construction of the enclosures and in positioning them so they physically embrace the tower. The Tower with the enclosures surrounding it played an active part in broadening the gap between investment and return. The use of a perimeter wall as protection from mud flows and flash floods may have been used as an excuse, and eventually, as a justification for a power structure that became less socially equal.

The favourable living conditions in the Jericho area was one of the factors leading to the development of an extensive population at the site. A sedentary life-style with increasing density, can lead to the need for a political element with the authority to solve local disagreements and regulate access to essential resources (Bender 1978, 210–14). The lack of clear evidence of personal wealth accumulation may indicate that in the case of Jericho, such a political factor derived its power from the ability to redistribute a significant share of the group's total production, rather than from its accumulation.

The occupants of PPNA Jericho experienced their existence differently from those living at other sites, despite the fact that they were within a similar cultural framework. One key difference was a much sharper concept of what was to be found outside the perimeter wall: the 'other'. The time-perception of Jericho's inhabitants, living alongside monumental buildings, which predated their birth and would surely continue existing long after their death, was also different to that of inhabitants of other settlements.

A prominent structure like the tower, built soon after the beginning of the Sultanian settlement at Jericho, could have been perceived as a signifier of this historical event. Thus, the life span of a specific individual was constructed as part of a wider historical chain. The fact that a protruding physical testimony to a collective historical point in time, was present in the daily lives of the site's inhabitants, could significantly contribute to a growing linear perception of time. The building enterprises at other PPNA sites were more temporary and do not significantly exceed the chronological and physical dimensions in which humans dwell. The regulation of economic relations at these sites was performed primarily at the inter-personal level.

The relationship of the Jericho community to those of other sites in the Southern Levant remains an elusive issue. Did the dominant social element within Jericho exercise active political control over other communities (rather as city-states had satellite settlements)? Such a scenario would agree with Hodder's argument (1990, 293; 1992, 242) that achieving dominance over other groups was a beneficial outcome, for a given group, of moving towards a delayed-return economy. If this was the case, we must ask through what mechanisms inhabitants of other sites could be subjected (actively and effectively) to the authority of this dominant social element in Jericho. Goring-Morris & Belfer-Cohen (1997, 84) have suggested that the size of Jericho's population could have been a significant factor within the general PPNA mating system. If we take into ac-

count that the reproductive and productive spheres are bound together by social mechanisms such as bride service, bride wealth and dowry (e.g. Goody 1973), it seems probable that demographic size could have played a significant role in broader economic and social contexts. Further excavation at Jericho and other PPNA sites will surely contribute to better comprehension of this subject and of other issues raised here.

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Danny Naveh
Department of Sociology and Anthropology
University of Haifa
Mt Carmel, Haifa, 31905
Israel
Email: dnave@study.haifa.ac.il

Notes

1. The volume excavated at the PPNA layer of Jericho is significantly greater than at most other PPNA sites.
2. For summary of the various building phases within the PPNA strata, see Kenyon 1981, 1–18; Bar-Yosef 1986, table 1, fig. 2.
3. The last of the enclosures built in Stage IV ceased to function in Stage VIA, after it was burnt. New enclosures were built around the Tower in Stages VII and VIIA.
4. The erection of monumental buildings at the site was not a single event. Additions and renovations to maintain the structures were carried out for as long as they were in use (Kenyon 1981, 18–42). Intensified production could not therefore have ceased with the completion of the initial stage of the monumental building (Stage III), but rather would have continued throughout the occupation of PPNA Jericho.
5. The existence of a drainage channel leading from the staircase exit, along the roof, to the tower's northern edge (Kenyon 1981, pl. 7) casts doubt on the possibility that such a superstructure had in fact existed. See Kenyon's (1981, 22) description concerning the water flow in this channel. In her opinion, this drainage channel was designed to prevent rain water from flowing down the staircase.
6. The uncalibrated radiocarbon dates obtained from the western trench may indicate that those buildings did not function for more than a few centuries (see Bar-Yosef & Gopher 1997, 251). It should be noted, however, that calibration of these dates (by Oxcal-3.5 computer program) shows that their period of use was significantly more prolonged. For example, the calibrated radiocarbon dates from Stages IV–VIA fall within a range of about 500 rather than 200 years. Dates of uncertain credibility, such as those older than 8000 BC or those falling close to the early PPNB have not been included in this calibration.
7. Thomas (1991, 29) offered a claim of this kind regarding Neolithic and Early Bronze megalithic structures in Europe.
8. As a shared awareness of an event, rather than a necessarily shared interpretation of it.
9. Hashemite Kingdom of Jordan - Department of Research and Investment - Hydrology Division 1966, 8–112; Hydrological Service of Israel - Water Commission 1997, 17–149.
10. This argument would still be valid if we exclude infants from these figures due to the concern that infants may not have gone through the initiation ceremonies necessary to become an integral part of society.
11. No example of monumental building preceding this is known in the prehistoric record of the southern Levant. Furthermore, no building operation of such a scale is known in the archaeological record of the following 2500 years. In this context, it is interesting to note that like Jericho's PPNA Tower, the mythical Tower of Babel (Genesis 11, 1–9) was also said to have been erected in a valley. The initiative to erect the Tower of Babel is specifically mentioned as part of building a city, which might imply the existence of a perimeter wall (at Jericho, both the Tower and the perimeter wall were, indeed, built at the same stage in what seems like the same construction initiative). One should not rule out the possibility that the unique and unprecedented political occurrences at PPNA Jericho are echoed in the literary motifs of this biblical story.
12. Or more precisely, what Western culture terms 'nature' (e.g. Descola 1996, 86).
13. Sillen & Lee-Thorp (1991, 400–401) point out that the carbonate component in Late Natufian diet was relatively limited compared to that of the Early Natufian and Sultanian diets. This is based on examination of Strontium/Calcium (Sr/Ca) ratios within human bones from burials assigned to these cultures.
14. As long as enclosures in the Tower area are in use.

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Author biography

Danny Naveh is a research student at the Department of Anthropology, Haifa University, Israel. His research interests include neolithization processes and gender relations in prehistoric societies of the southern Levant. His research over the past two years has focused on economical and epistemological changes within present-day hunter-gatherer societies.