

The sacred and the mundane: domestic activities at a Late Natufian burial site in the Levant

Leore Grosman

Institute of Archaeology, Hebrew University, Mount Scopus, Jerusalem, 91905, Israel

Department of Physics of Complex Systems, The Weizmann Institute of Science, Rehovot 76100, Israel

lgrosman@mscc.huji.ac.il

Natalie D Munro

Department of Anthropology, University of Connecticut, Unit 2176, 354 Mansfield Road, Storrs, CT 06269, USA

Natalie.Munro@uconn.edu

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Abstract

Hilazon Tachtit, a small Natufian cave site in northern Israel, served first and foremost as a ritual location for the burial of the dead. Burials were found in all loci of the 30 m² occupation. At least twenty-eight individuals were buried at the site—two of them in structures that were too small for human habitation. The ritual nature of the site is supported by some aspects of material culture, including the deposition of unusual animal parts and other kinds of ‘special garbage’ in the graves. Nevertheless, the dominant activities attested by the lithic and faunal assemblages are mundane and include hunting, tool manufacture and food processing. The ritual and domestic duality of the site attests to the integration of the sacred and the mundane in everyday Natufian life and to the importance of considering multiple dimensions of material culture in the interpretation of site function.

1 Introduction

Excavations at the Natufian cave site, Hilazon Tachtit in the Southern Levant (ca 12,000 cal BP), plainly establish that it functioned first and foremost as a human burial locale with clear ritual significance (Grosman 2003). Nevertheless, this interpretation, based on the site's stratigraphy and features, describes only one dimension of the human activities undertaken there. Classes of smaller material remains such as flint and fauna instead reflect the more mundane activities that occurred at the site. Here we consider the dichotomous nature of the material record from Hilazon Tachtit by presenting a detailed analysis of the chipped stone and faunal assemblages from the first four seasons of excavation (1995, 1997, 2000, 2001). We use these analyses to document the range of domestic activities that were undertaken at the site, in particular everyday activities such as hunting, food preparation and tool use. Diverse reconstructions of the activities undertaken at Hilazon Tachtit are formed from the study of different material classes, attesting to the integration of both

sacred and mundane activities in everyday Natufian life. Likewise, the study indicates the importance of investigating the full range of material remains from a site before a comprehensive interpretation of its function and activities can be presented.

Multiple lines of archaeological evidence point to a change in the spiritual outlook of the Natufians inhabiting the Mediterranean region of the Levant ca 15,000 years ago. This shift is documented in the rise in frequency of artistic manifestations such as figurines, and stone and bone objects bearing incised patterns (Bar-Yosef 2002). Likewise, beads manufactured from marine shells, in particular *Dentalium*, frequently appear in groups, particularly in human graves, indicating a new interest in personal adornment in the form of headdresses, necklaces, armlets and belts (Belfer-Cohen 1988). Most importantly, a change in spiritual belief is indicated by the appearance of cemeteries, which are unknown in Southwest Asia prior to the Natufian (Bar-Yosef & Belfer-Cohen 2002). The location of graves at human habitation sites, investment in their preparation, and the burial

of ornaments and other artefacts with the dead implies increased organisation and institutionalisation of mortuary practice. In the later phase of the Natufian period, mortuary rites were common practice and some sites such as Hilazon Tachtit functioned primarily as cemeteries.

2 Hilazon Tachtit

Hilazon Tachtit is a small cave located on the right bank of the Nahal Hilazon in the western Galilee of Israel, some 14 km from the Mediterranean shoreline and 200 m above sea level (figure 1). The cave faces east and is situated high on a limestone cliff ca 120 m above the stream channel. Hilazon Cave comprises four tightly clustered chambers. Like other caves in the area, the dome-shaped chambers were formed by karstic activity that dissolved the hard limestone of an eroded shelf of the Upper Cenomanian

Yanuch Formation between the end of the Eocene and the Miocene epochs (Frumkin & Flischhendler 2005). To date, *in situ* prehistoric deposits have been located only in the largest chamber at Hilazon Tachtit. The interior surface of this cave is ca 100 m², with no evidence of a front terrace. The easternmost chamber was excavated during the 2000 season and a small flint assemblage was unearthed ($n = 132$). No diagnostic artefacts were found except for one arrowhead. During the 2005 excavation season, the small, western chamber was tested for cultural remains, but none were found before bedrock was reached. Future survey will test other caves in the immediate vicinity of the site.

In June 1994, TD Berger and H Khalaily conducted a surface collection on the colluvial slope immediately below the entrance of the large central chamber at Hilazon Tachtit. The resulting lithic assemblage con-

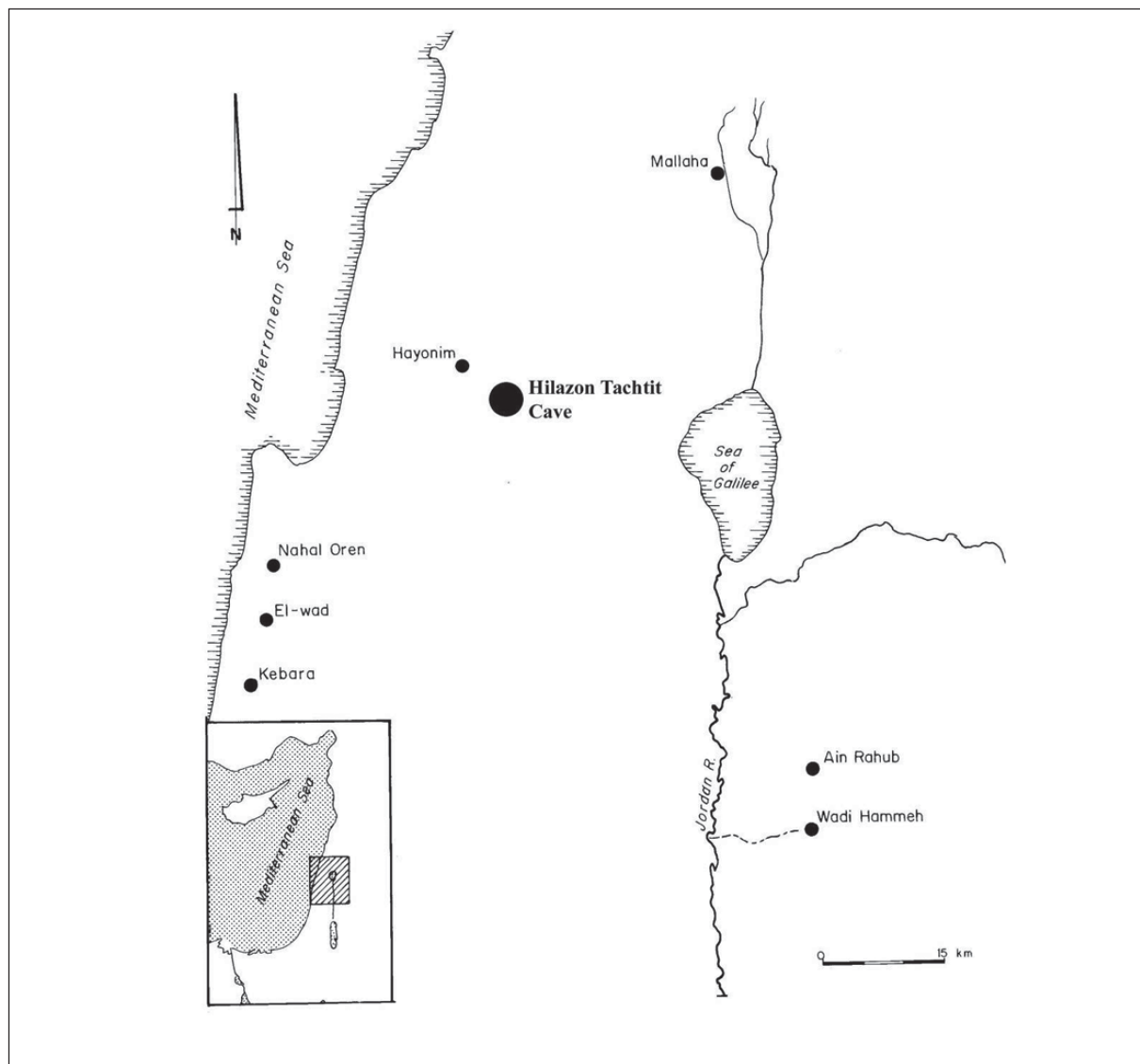


Figure 1 The location of Hilazon Tachtit in the southern Levant

tained Mousterian, Kebaran, and Natufian artefacts. Given the dominance of the latter, a systematic excavation was initiated in 1995. Under the co-direction of TD Berger (University of New Mexico) and one of the authors (Grosman), the first season of excavation was spent cleaning detritus and historical deposits from the cave. Natufian artefacts were found under the ashy historical accumulations. Since then, the authors have conducted four additional field seasons (1997, 2000, 2001 and 2005) under the auspices of the Hebrew University with the aim of exposing the complete surface of the Natufian layer (figure 2).

3 General stratigraphy

The excavation in the large chamber of the cave (44 m²) revealed two primary stratigraphic units: Layer A which is composed primarily of ashes and goat dung and Layer B, an anthropogenic layer containing the Natufian remains.

Layer A is a 1.5 m thick deposit that was created by sheep and goat herds overwintering in the cave from November to late March. The presence

of sporadic pottery fragments in Layer A indicate that this practice began in Byzantine times. The thin successive accumulations consist of compacted organic matter that breaks into large discoidal plates. These deposits were subject to annual episodes of burning by shepherds to exterminate bugs and ticks to protect the health of the animals.

The uppermost portion of Layer B is composed of a dark, 'greasy' sediment. In several places the Natufian layer was disturbed by historical levelling. Within the excavated 44 m², only a depression in the cave floor – an area of ca 30 m² – contained Natufian remains. In all other areas, the bedrock was found immediately under Layer A. The Natufian archaeological layer was excavated to bedrock in several locations within this depression, yet the full extent and thickness of the deposits are not yet known. The excavated Natufian layer contains a number of graves and two structures. Although the material remains are limited in number, at least in comparison to the finds from classic Natufian camp sites (eg, el-Wad,

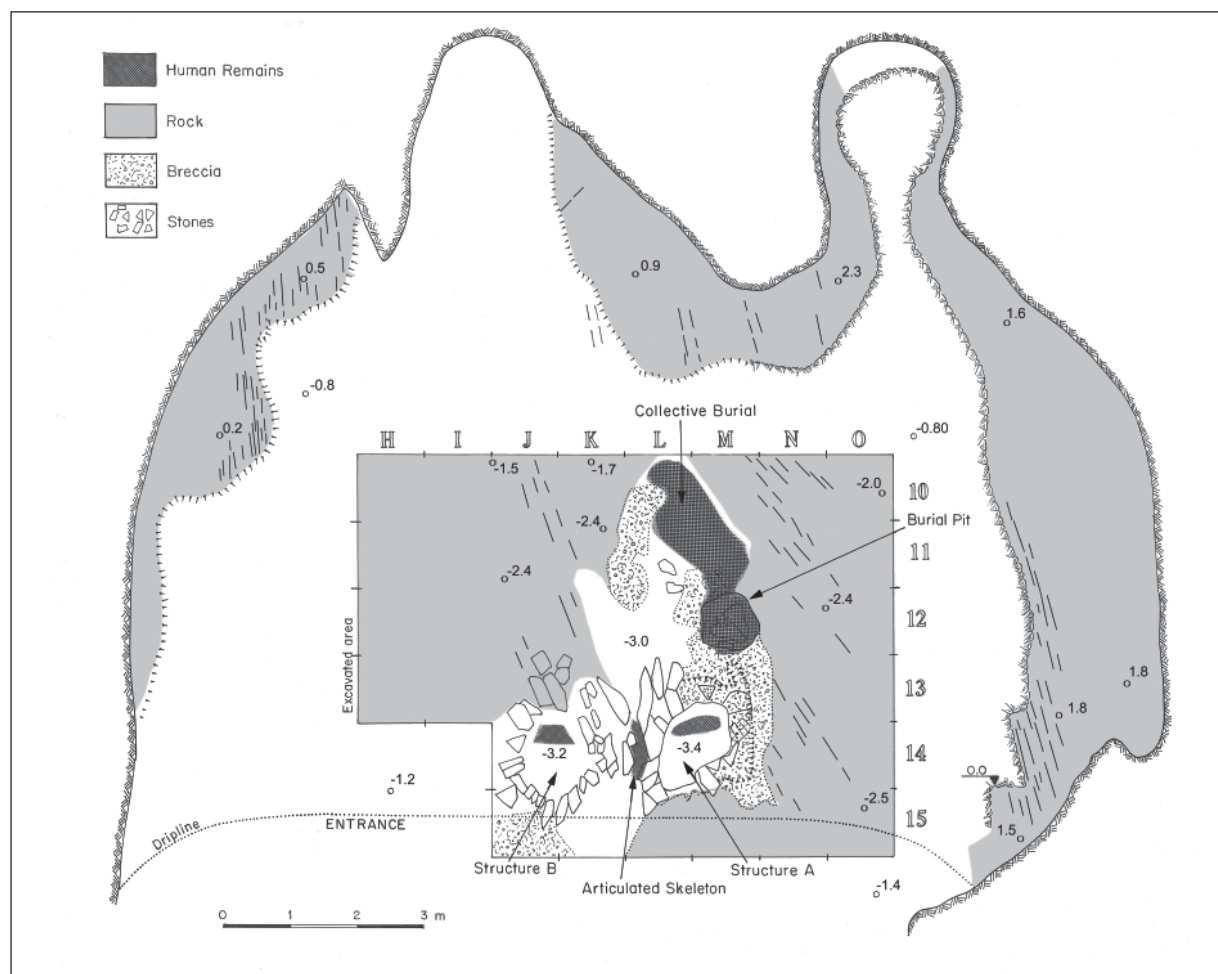


Figure 2 Site plan of Hilazon Tachtit and the excavated area

Eynan), they exhibit all of the unique characteristics of a Natufian assemblage.

Charcoal samples recovered from the structures provide three uncalibrated radiocarbon dates of 10,750±50 BP (RTT 3760), 10,530±60 (RTT4592) and 10,770±65 (RTT 4593). After calibration (INTCAL 2005) the Natufian occupation falls in the range of 12,400–12,000 cal BP which supports the lithic observations that Layer B is of Late Natufian age (see below).

The occupation at Hilazon Tachtit is divided into two primary areas: the structures located near the cave's entrance and the primary burial pits situated in the inner part of the cave (figure 2). Excavation of the site is still underway, thus the base of the structures has not yet been reached, and some burials still remain *in situ*.

3.1 The structures

Two structures cover an area of ca 7 m² and contain three major localities of human remains. These include the following.

- 1 A primary burial of a young adult lying directly on large stones situated between the two structures (L₁₄).
- 2 Structure A (L-M₁₃₋₁₄) – a semi-circular structure (1.2 m diameter) built from imported undressed large stones (west wall) and natural brecciated bedrock that formed inside the cave (east, north and south walls). An artificial oval cut into the breccia forms an inner deeper basin within the structure. Rich concentrations of cultural remains were retrieved from the upper levels of the structure (ca 50 cm below surface). Apart from sporadic small bones (eg, phalanges, carpals and tarsals) recovered from the upper levels, the majority of human remains were found as part of a primary burial sealed in the oval cut of the breccia under a large triangular slab.
- 3 Structure B (K-J₁₃₋₁₄) – a circular structure partially built from imported undressed stones was aligned with the bedrock slope of the cave. A primary burial was dug into a late occupation layer at the top of the structure and sealed by a limestone slab, marking the end of the structure's life. Excavation has not yet reached the bottom of the structure, but a rich fill beneath the burial indicates an earlier phase of active use.

3.2 Primary burial pits (L-M₁₀₋₁₂)

The burial pits occupy an area of 5 m² and extend to a depth of 50 cm. At this point, the area contains at least three consecutively used pits. The pits contained several individuals representing different age groups (adults, adolescents, children and infants). Many bone

elements are missing from the pits. The bones from the torso of what appears to be one individual (based on age and size estimates) were packed together in a vertical orientation in an area of only .25 m², suggesting that the remains of this body had been moved subsequent to burial. The skeleton is missing its long bones and skull. Bones originating from several hands (carpal and metacarpal) and feet (tarsals and metatarsals) were also found in articulation. Consequently, these collective graves probably form a primary burial area that was occasionally re-opened to remove skulls and long bones – elements typically found in secondary burials in the Natufian and Neolithic periods in the Levant (Kuijt 2001).

The location of Hilazon Tachtit on top of a steep, high escarpment with an excellent view of the valley as it opens to the coastal plain, the small size of the site, the construction of two structures that are too small to serve for habitation, and the large number of burials (n = 28) suggest that the site had a special function. The mere presence of burials and structural remains sets Hilazon Tachtit apart from other small (<200 m²) Natufian site. The Natufians' investment in the modification of the cave's natural surface to construct complex graves for the burial of multiple people implies that they attributed great symbolic and ritual importance to this place

4 The lithic assemblage

The lithic analysis includes the Natufian assemblage derived from the first four seasons of excavation at Hilazon Tachtit (1995, 1997, 2000 and 2001). The frequency of tools (n = 1,163; 12.6%), debitage (n = 3,569; 38.6%) and debris (n = 4,504; 48.7%) are relatively low with an overall density of only ca 200 flint artefacts per m³. Similar densities were found at the neighbouring site of Hayonim Cave, but the Late Natufian burial site of Nahal Oren exhibited much denser concentrations (Grosman et al 2006). It is clear that the constant shift of sediments caused by multiple burial phases resulted in admixture as sediments containing lithics (and other material remains) moved amongst the burials and adjacent areas. Fortunately, lithic concentrations were also found inside the structures, but outside the burial pits. The original spatial distribution was maintained in these areas.

4.1 Technological characteristics

The lithic raw material is heterogeneous with no indi-

Table 1 Frequency and percentages of lithic tools in the Hilazon Tachtit assemblage

TOOL CATEGORY	N	%
Scrapers	42	3.6
Burins	69	5.9
Awls and Borers	34	2.9
Backed Pieces	72	6.2
Truncations	64	5.5
Notches and Denticulates	174	15.0
Retouched Pieces	215	18.5
Composite tools	6	0.5
Varia	24	2.1
Non-Geometric Microlithics	328	28.2
Geometric Microlithics	135	11.6
TOTAL	1163	100.0

cations for selection of specific raw materials for manufacturing different tool types. The colour of the flint ranges from light brown to dark and reddish browns indicating a wide diversity of flint types. Most of the flint is of local origin, and consists primarily of small pebbles collected from the wadi bed immediately below the cave.

The ratio of cores to tools is 1:9 and the ratio of cores to debitage is 1:25, suggesting that local raw material was brought to the site and some tools were produced *in situ*. Yet, in general there is a preference for blade/bladelets as tool blanks: 30.7% of tools are manufactured on flakes, 63.3% originate on blade/bladelets, and the other 6% are unidentified. These counts agree with observations from other Natufian assemblages (Belfer-Cohen 1988; Belfer-Cohen & Grosman 1997; Byrd 1989; Goring-Morris 1987; Olszewski 1988). Nevertheless, the large number of scrapers and burins made on flake blanks at Hilazon Tachtit portrays a preference for flakes, at least in the macrolithic component. The frequencies of blades and flakes in the debitage agree with the early indications of a flake-based technology: 58.1% flakes and 31.3% blade/bladelets.

The cores ($n = 101$) are small and quite exhausted (average length = 4.2 cm, width = 3.2 cm, and thickness = 2.3 cm; figure 3). Nevertheless, core trimming elements appear only in low frequencies (5% of debitage) probably because of the small dimension of the original pebbles which required a short reduction sequence to produce the finished tool. Alternatively, the rarity of large cortical flakes knapped in the initial reduction phases may indicate that the reduction sequence began off-site. Ca 50% of the cores have single platforms, 11.6 % have double platforms at 90°, 18.3% have double parallel platforms, and 8.3% have three parallel platforms. Interestingly, although flakes are the dominant component of the

debitage, cores with both bladelet and flake scars predominate (68%); 25% are bladelet cores and only 7% are flake cores. Evidently, the last phase in the exhaustion of the core was the manufacture of bladelets and small flakes. Most bladelets tend to be short and squat, as noted in other Natufian assemblages (Valla 1984). Very low microburin counts indicate that controlled cutting of bladelets to a specific length was not done using this technique. Although the microburin technique was known to the Natufian knappers at Hilazon Tachtit, they did not use it to modify their microliths.

4.2 The tool assemblage

Tools with varying intensities of retouch are most common in the Hilazon Tachtit assemblage (18.5%, table 1). Slightly retouched items (with less than 1 cm of continuous retouch) were not assigned to the tool category. The high proportion of retouched tools (figure 4) likely results from the inclusion of a *posteriori* tools in the retouched category or of broken tools lacking their indicative working edge (eg., truncations, denticulates, scrapers, and others).

Notches (figure 4) were made on all blank types including microliths and are well represented in the assemblage (15%). Tools with a single notch in varying locations, awkward retouch and poor craftsmanship are the most common subtype in this category (65%, figure 4). The frequency of notches at other Natufian sites varies – at Beidha this is the largest tool class (30%), while at Hayonim Cave, it comprises only 2.9–5.2 % of the tool assemblages (Byrd 1989; Belfer-Cohen 1988). In general, there is little investment in the modification of notches, and they can be considered an ad-hoc tool type. The difference in the frequency of notches in various Natufian assemblages may thus stem from the criteria used by individual researchers to define this tool type. For example, shallow notches could be described as notches or incorporated within the 'retouched Items' group which displays great heterogeneity in types and percentages.

A unique item in the Hilazon assemblage is a subtype of notched tool termed 'alternating notches on parallel sides' (7.1%). The parallel notches on these tools have been retouched on the proximal edge and resemble the proximal end of a Neolithic arrow head.

Endscrapers comprise only a small part of the Hilazon assemblage – 3.6 % (table 1). Simple endscrapers manufactured on flakes predominate

(26%). The scraper category possesses great morphological heterogeneity due to the high percentage of scrapers that could not be classified in the available sub-categories (Varia – 9.7%; based on Hours' [1974] type-list). The working edge of most endscrapers is found at the distal end. Lateral re-touch occurs in low frequencies.

Burins have long been considered a special tool class used primarily for engraving or grooving relatively hard materials such as bone, antler, wood, ivory, or stone. Recent use-wear studies emphasise the fact that burins were used to manufacture bone tools (Yamada 2000). At Hilazon Tachtit burins were uncommon (5.9%) and correspond to the relatively small bone tool assemblage at the site (35 tools). These counts,

however do not accord well with other Natufian burial ground assemblages such as Hayonim Cave and Nahal Oren which have high percentages of burins that were likely connected with activities related to burial (Belfer-Cohen 1988; Grosman et al 2006). Burins requiring the smallest amount of modification are most common in the Hilazon assemblage (dihedral burins on natural breaks – 49.3%). Generally the burins were made using a single blow, and 70 % of them are manufactured on flakes. Most of the burins are distal and the impact scar is often found on the dorsal surface and can not be seen when the burin is turned over.

The majority of the backed pieces are manufactured on blade blanks and comprises 6.2% of the tool assemblage. Forty-three per cent of backed blades are

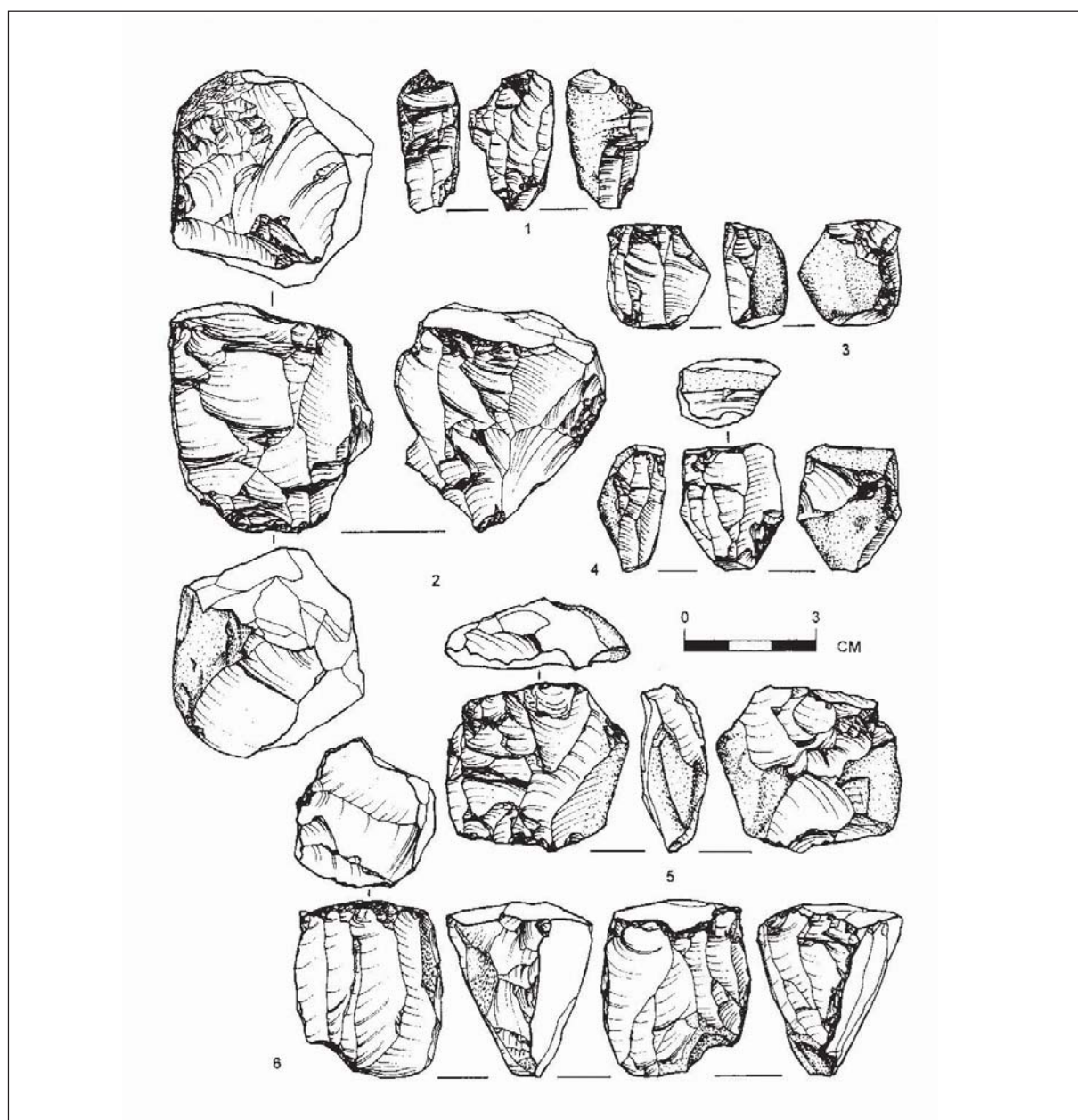


Figure 3 Typical lithic cores from Hilazon Tachtit

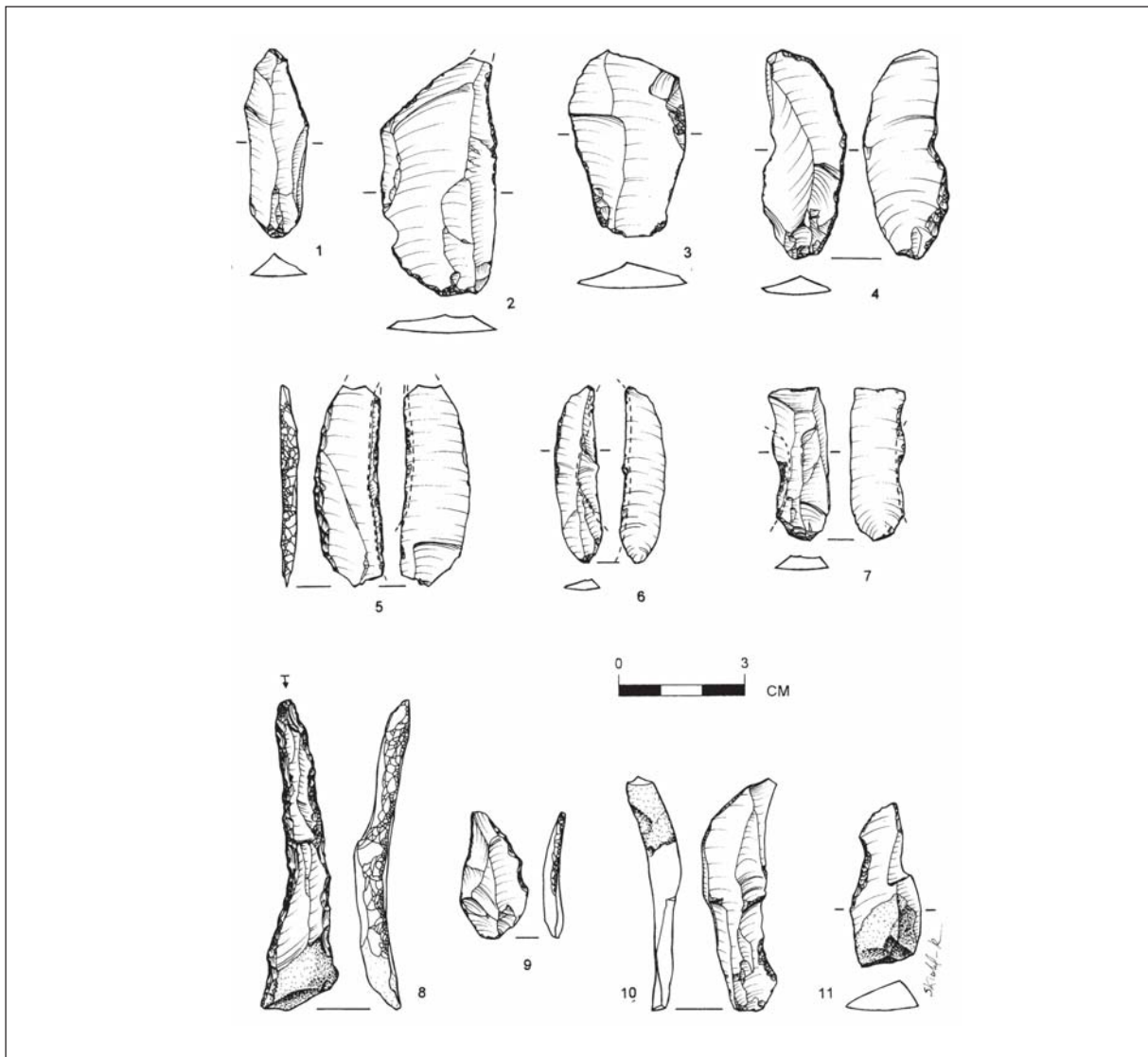


Figure 4 A selection of tools from Hilazon Tachtit: 1–4: retouched tools; 5–7: sickle blades; 8: pick; 9: awl; 10–11: retouched notches

sickle blades. Only items with visible sheen were defined as sickle blades although other blades have a similar shape and dimensions (figure 4). It is quite possible that these other blades were used as sickles for only short periods and thus did not acquire the characteristic lustre. There is high variability in the degree of sheen coverage, from the whole lateral surface to sporadic dots on some tools. On the whole, sickle blade manufacture is homogeneous and highly standardised, the blanks are mostly well made blades.

With few exceptions (eg, backed blades and picks) the macrolithic tools show no evidence for standardisation within each tool category. Homogeneity is found only in the shape of the working edge. Minimal effort was invested in modifying the macrolithic blank. The high percentage of retouched items and notches demonstrates low energetic investment in secondary

modification.

Geometric and non-geometric microliths, in particular backed bladelets and geometrics (lunates), are a major component of Natufian assemblages (figure 5). Forty per cent of the Hilazon Tachtit tool assemblage is comprised of microliths, the majority of them broken (72%). Only complete or nearly complete tools were assigned to the geometric category. Nevertheless, some of the broken microliths likely also belong to this category. Because we could not be certain, they were assigned to the non-geometric category. The non-geometric category is dominated by pieces with abruptly retouched bladelets that may be broken lunates. Finely-retouched bladelets are the second most common type (13.5%) and form a heterogeneous group with substantial variation in the intensity, location and quality of retouch. Together,

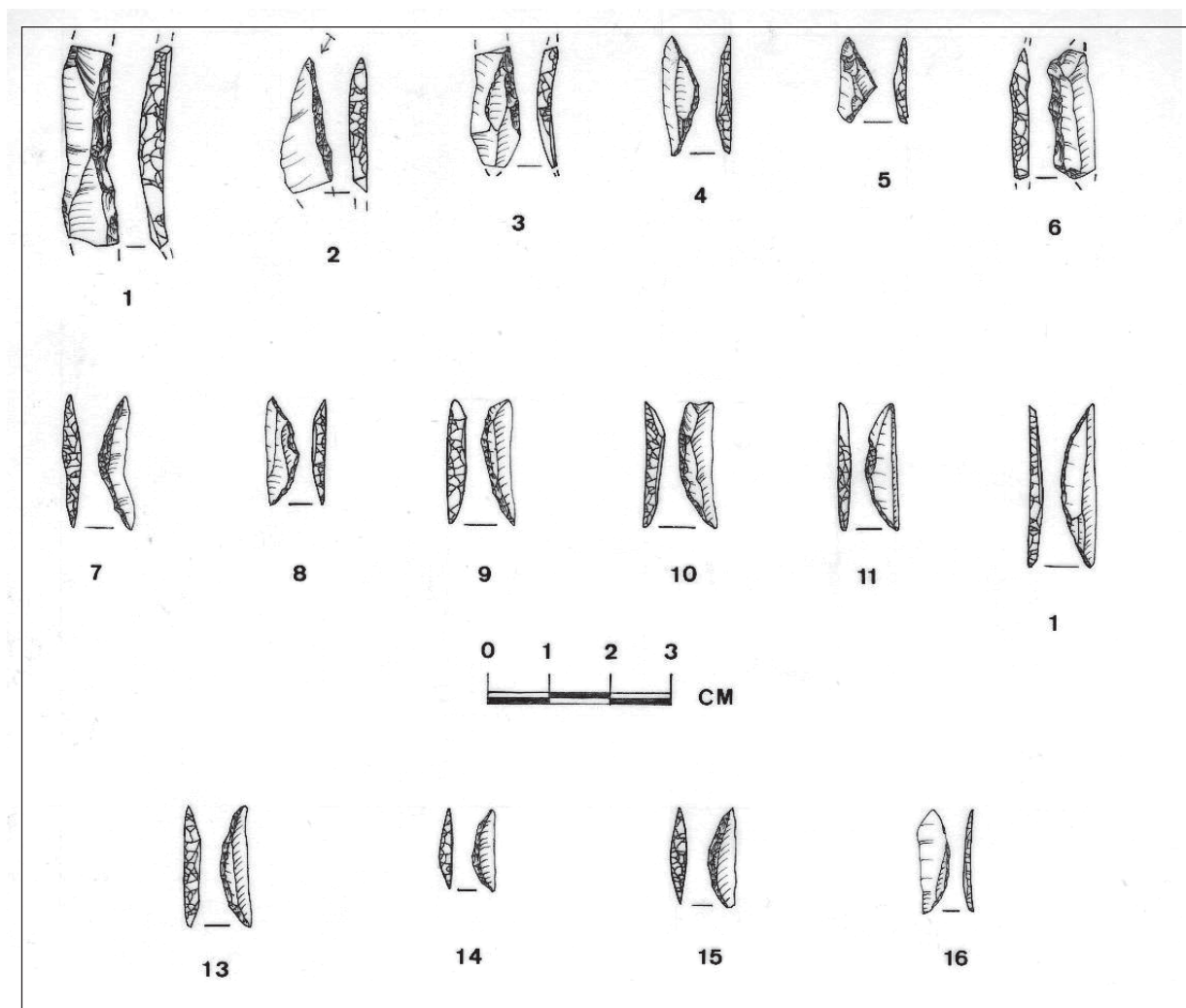


Figure 5 A selection of lunates from Hilazon Tachtit

the complete geometric forms comprise 10% of the tool assemblage.

The geometric microlith category is dominated by lunates (88%), followed by small percentages of triangles and rectangles. Nearly all lunates, 'the fossil *directeur*' of the Natufian period, are abruptly retouched and backed. The chronological subdivision of the Natufian into Early and Late phases is primarily determined by the proportion of different types of lunates. Lunates shift from elongated forms with Helwan retouch in the Early Natufian to short, backed forms in the Late and Final Natufian (Valla 1984). The lunates from Hilazon Tachtit (11–30 mm) match the lengths for the Late (14–21 mm; el-Wad B2, Hayonim Terrace Upper, Mallaha Ic) and the Final Natufian (12–14 mm; Mallaha Ib, Nahal Oren V, and Fazaal IV; Valla 1984). Most of the lunates from Hilazon Tachtit are between 12 and 20 mm long and are distributed throughout this range. Nevertheless, the average length is at the

high end of this range (18.7 mm). Unlike the length measure, the widths of the lunates are narrowly distributed (3–5 mm). The average length of the lunates from Hilazon Tachtit falls at the upper end of the range. Still, the high frequency of backed lunates fits well within the Late Natufian subdivision. The near absence of Helwan retouch on lunates in the lithic assemblage confirms the assignment of Hilazon Tachtit to the Late Natufian phase.

5 The faunal assemblage

Several indicators can be used to distinguish faunas discarded following mundane activities such as food preparation and consumption from those of ritual or other non-subsistence purposes. Food refuse results from the removal of meat, bone fat and other edible products from the skeleton. This results in the disarticulation of skeletal elements, bone breakage, and the production of defleshing

marks and impact fractures on bone surfaces (Lyman 1994 and references therein). In contrast, skeletal remains disposed after non-food use are most often articulated, complete or broken only after deposition, and lack defleshing cutmarks.

The faunal assemblage from Hilazon Tachtit recovered up to and including the 2001 excavations comprises 3,382 identifiable specimens. Of these, 2,544 are identified to genus and species. The remaining fraction ($n = 838$) is identified to broad taxonomic categories based on body size (ie, small, medium and large mammals, birds, and ungulates). Nearly half of the elements identified to body size ($n = 374$) are classified as small ungulates. Because mountain gazelle (*Gazella gazella*) is the only small ungulate identified in the assemblage, the small ungulate and gazelle assemblages are combined into a single gazelle category for the purposes of this study.

5.1 Macroscopic preservation

The fine macroscopic condition of the Hilazon Tachtit fauna is attested by the recovery of delicate bone tissues including complete bird elements and the spongy cancellous bone of gazelle fawns. Likewise, there is low incidence of damage on bone surfaces. Weathering is observed on 59 elements (1.8%), only two of which were weathered beyond Behrensmeyer's (1978) stage 2, while a mere 17 elements (0.5%) exhibit rodent gnawing. Light root etching was the most common damage type, but affected only 4.1% ($n = 139$) of the assemblage. Light weathering and moderate root etching indicate that bones did not sit long on the site's surface, but were rapidly covered by cave sediments where they came into contact with the active soil layer. Five instances of polish resembling digestive etching and 4 punctures potentially created by carnivore teeth indicate that few if any animals were transported to the cave by birds of prey or carnivores. Furthermore, the disarticulation, distribution and fragmentation of the bone assemblage indicate that other factors such as natural death or fluvial action were not responsible for the accumulation of the assemblage (see below).

Classic evidence for human damage such as cutmarks and impact fractures are also rare at Hilazon Tachtit. Cutmarks were observed with the naked eye on only 0.4% of all bone fragments and 0.8% of the gazelle assemblage (n with cutmarks = 16). Likewise, impact fractures, produced when fresh cortical bone is struck by a hammerstone, were observed on only

11 gazelle long bone shafts (8.1% of gazelle long bone shaft fragments). These numbers are low even for Mediterranean Palaeolithic and Epipalaeolithic assemblages which exhibit small frequencies of cutmarks in general (Bar-Oz 2004; Bar-Oz & Munro 2004; Martin 1994; Rabinovich 1998 a, 1998b). Finally, 4.1% ($n = 139$) of the assemblage is burned. Because black staining (probably manganese) is common in the upper layers at Hilazon Tachtit, burning was assigned conservatively. Hearths were not present at Hilazon Tachtit and burned bone is not concentrated in any given area suggesting that bones were burned during cooking and then dispersed in the fill following deposition.

Despite the dearth of bone surface damage, the gazelle assemblage from Hilazon Tachtit is highly fragmented (average fragment size = 2.72 ± 1.58 cm). Trampling and human processing are common culprits of bone fragmentation in archaeological sites. While trampling is expected to preferentially break bones with poor structural resistance to mechanical loading and low mineral density (ie, spongy cancellous bone and bird bones), human processing preferentially fragments adult long bone shafts to access nutritious marrow. Humans may also intentionally fragment adult cancellous bone to extract grease – but grease production is rarely practiced in the absence of marrow extraction. Thus, unlike trampling, human processing is not expected to act on bone density. A comparison of gazelle bone survivorship against bone density (using Lam et al's [1998] BMD1 density values for caribou) reveals no significant density-mediated bias in the Hilazon gazelle assemblage ($r_s = .183$, $n = 28$, $p > .05$). Human processing is supported by low completeness values for adult gazelle long bone shafts (2.8%; MNE = 35), especially in comparison to delicate juvenile gazelle (25.0%; MNE = 12) and partridge (44.4%; MNE = 25) long bone shafts. The fact that marrow-bearing bones are much more fragmented than bones containing little or no marrow, despite higher bone density, excludes trampling and strongly favours human processing of bone as the major formation agent of the Hilazon Tachtit assemblage.

5.2 Relative taxonomic abundance

Faunal specimens were identified to the most specific taxonomic category possible with the aid of the comparative collection in the Department of Ecology, Systematics and Evolution at the Hebrew University

in Jerusalem. The relative abundance data are based on NISP counts. The Hilazon Tachtit assemblage is divided into three major taxonomic groups including ungulates (35.7%), carnivores (3.9%) and small game (60.4%; table 2). Small game includes those taxa that were captured by humans but weigh less than 3 kg.

The ungulate assemblage is dominated by the mountain gazelle (*Gazella gazella*; 94.0%) and followed distantly by wild boar (*Sus scrofa*; 1.9%) and wild cattle (*Bos primigenius*; 0.9%). Fallow deer (*Dama mesopotamica*), red deer (*Cervus elaphus*),

and an unidentified Equid are represented by only one or two bones respectively. Foxes (*Vulpes vulpes*) are the most common carnivore (45.0% of carnivores), while six elements (5.0%) are identified as *Canis* sp and fall into the size range of both small wolves (*Canis lupus*) and what have been argued to be early domestic dogs (*Canis familiaris*; Tchernov & Valla 1997). The jungle cat (*Felis chaus*; 12.5%), and three Mustelids including pine marten (*Martes foina*; 9.2%); polecat (*Vormela peregusna*; 1.7%) and badger (*Meles meles*; 0.8%) round off the carnivore assemblage.

The tortoise (*Testudo graeca*) is not only the most common small game animal (84.6%), it is by far the most abundant species in the Hilazon Tachtit assemblage, comprising close to half of the total NISP (45.4%). Partridge (*Alectoris chukar*; 4.7%) and hare (*Lepus capensis*; 5.1%) are numerous, but trail distantly behind the tortoise in overall abundance. The remaining birds include a few species of Falconiformes (*Buteo buteo*, *Accipiter nisus*, and unidentified species; 1.8% of small game); an unidentified owl (<1.0%), waterfowl (*Anas platyrhynchos* and *Fulica atra*; <1.0%); and pigeons (*Columba livia*; <1.0%). All remaining bird elements are not diagnostic to species and are assigned to more general body size categories. Likewise, small fish vertebrae (<1.0%) were recovered, but lack diagnostic features.

Despite the diversity of species represented at Hilazon Tachtit, gazelle (30.0%) and tortoise (45.4%) dominate the assemblage. The faunas from other Late Natufian assemblages in the Mediterranean zone, such as Hayonim Terrace and Hayonim Cave, have similar compositions (Munro 2004). Early Natufian assemblages in the Mediterranean region (ie, el-Wad Cave, Hayonim Cave), however, contain substantially higher relative proportions of hare and partridge. Abundant tortoises indicate that hunting pressure was not sufficient to deplete local tortoise populations, despite the low rate of population turnover for this species (Stiner et al 1999, 2000). Clearly, occupation at Hilazon Tachtit was not intensive. The abundance of gazelles at Hilazon Tachtit supports a much broader long-term trend toward the use of small ungulates at the expense of medium and large ungulate that begins in the Upper Palaeolithic. This pattern likely reflects long-term human population growth and the gradual depletion of large mammal populations on a regional scale over thousands of years in the Mediterranean Levant rather than local

Table 2 NISP of identified animal taxa in the Hilazon Tachtit assemblage

TAXON	NISP
UNGULATES	
Equid	1
Cervid	7
<i>Dama mesopotamica</i>	2
<i>Cervus elaphus</i>	1
<i>Bos primigenius</i>	8
<i>Sus scrofa</i>	21
<i>Capra</i> sp.	8
<i>Gazella gazella</i>	644
Small Ungulate	375
Medium Ungulate	11
Large Ungulate	6
Huge Ungulate	2
UNGULATE SUBTOTAL	1086
CARNIVORES	
Carnivora	26
Musetlidae	4
<i>Felis chaus</i>	15
<i>Canis</i> sp.	6
<i>Vulpes vulpes</i>	54
<i>Vormela peregusna</i>	2
<i>Martes foina</i>	11
<i>Meles meles</i>	1
CARNIVORE SUBTOTAL	119
SMALL GAME	
<i>Testudo graeca</i>	1536
Pices	22
<i>Lepus capensis</i>	93
Medium Aves	42
Large Aves	13
Huge Aves	3
Falconiformes	25
<i>Accipiter nisus</i>	1
<i>Buteo buteo</i>	6
<i>Alectoris chukar</i>	87
<i>Coturnix coturnix</i>	1
Strigidae	1
<i>Anas platyrhynchos</i>	1
<i>Fulica atra</i>	1
<i>Columba livia</i>	7
SMALL GAME SUBTOTAL	1839
BROAD TAXONOMIC GROUPS	
Large Mammal	6
Medium Mammal	205
Small Mammal	127
BROAD TAXONOMIC GROUP SUBTOTAL	338
GRAND TOTAL	3382

hunting pressures (Stiner 2005; Stiner et al 1999).

5.3 Gazelle mortality data

Gazelle mortality data indicates the preferential culling of both young adult and adult individuals at Hilazon Tachtit. Unfortunately gazelle teeth are too few to provide statistically meaningful age profiles. Nevertheless, the teeth do indicate that gazelles from a full spectrum of ages were culled, including fawns, older juveniles and young and prime-aged adults. The wide range of juvenile ages represented, suggest a year-round rather than a seasonal culling practice. More detailed gazelle mortality data can be constructed using epiphyseal bone fusion data. Although all elements are represented by at least a few foetal or newborn specimens, unfused epiphyses from bones that fuse before gazelles reach 10 months of age are relatively uncommon in the assemblage (20% of first phalanx, and 0% of distal tibia and calcaneum are unfused). In contrast, more than half of the epiphyses of elements that fuse between 12–18 months of age when gazelle near full body size, are unfused (50% of distal radius;

68% of distal metapodial; and 78% of distal femur epiphyses). The high number of older juvenile gazelles is in line with those recovered from the Early and Late Natufian deposits at Hayonim Cave (Munro 2004) and from other Natufian sites in the Mediterranean zone (Bar-Oz 2004; Davis 2005). The hunters at Hilazon Tachtit, however, were more selective than those from Hayonim Cave who also hunted high proportions of fawns under the age of 6 months. The proportion of juveniles in a living population increases with human hunting pressure, since heightened mortality raises the rate of population turnover (Caughley 1977). The high proportion of juvenile gazelles at Hilazon Tachtit and Natufian sites in general, thus likely reflects increased hunting pressure, again at a regional scale, rather than local imbalances between human population size and resource availability across the Mediterranean Levant (Munro 2004). The occupants at Hilazon Tachtit only occasionally hunted fawns, however, indicating that although regional hunting efforts were sufficiently substantial to impact prey populations, predation was sustainable.

5.4 Tortoise taphonomy

A minimum of 23 tortoises (NISP = 1536) are represented in the Hilazon Tachtit assemblage. The tortoise shell is comprised of a number of interlocking bone elements that usually separate into individual segments following decomposition, even if the shell was deposited intact. Nearly all of the tortoise fragments recovered from Hilazon Tachtit were disarticulated when recovered, although a few pieces remained in articulation and many could be refitted. Most segments are broken (73%). Repeated medio-lateral spiral fractures across articulated segments of the anterior plastron provide strong evidence for repetitive processing (figure 6). Several anterior plastrons with the same characteristic break were recovered in articulation, while others had disarticulated following deposition, but revealed the same pattern when refitted. Breakage of the anterior plastron allows the removal of the meat from the tortoise shell while leaving the carapace intact. The carapace could then be curated for other uses – including deposition in human graves. Routine breakage of the tortoise plastron provides good evidence for human consumption of tortoises, although compaction and trampling after deposition was likely a major cause of breakage in most other elements.

The body-part representation of tortoise body parts

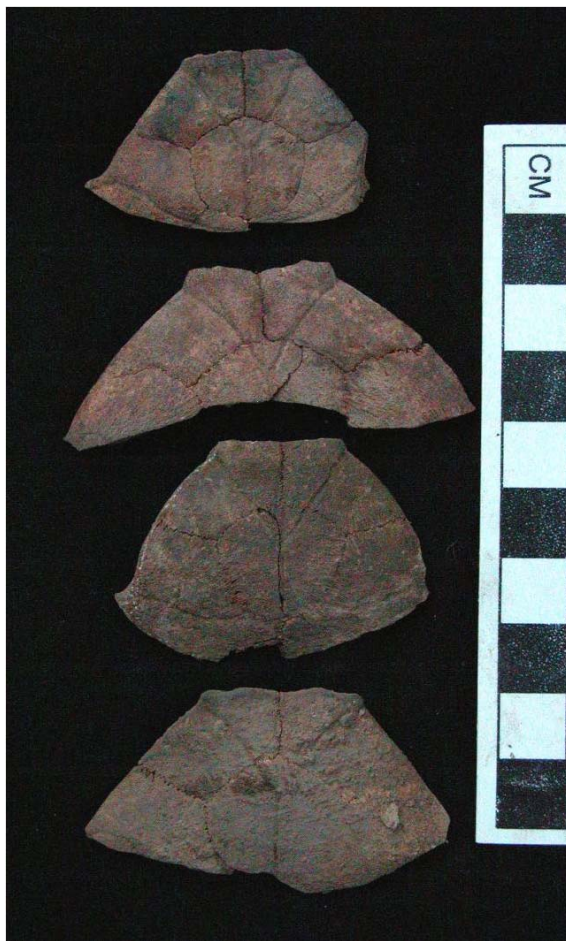


Figure 6 Examples of repeated human-inflicted breaks across the anterior segments of the tortoise plastron

at Hilazon Tachtit (carapace = 65.5%, plastron = 17.1%, limb bones = 17.4%) closely matches the natural distribution of body-parts within a complete skeleton (carapace = 60.8%, plastron = 12.2%; and limb bones = 27%). The pattern indicates that complete tortoises were brought to the site and discarded there. The presence of complete articulated tortoise shells ($n=10$) in one human grave suggests that complete tortoises or tortoise shells may have also played a role in burial practices (see below). The interment of complete tortoises in human graves may contribute to the representation of the full spectrum of body parts at Hilazon Tachtit.

6 Discussion

The flint and faunal assemblages from Hilazon Tachtit are typically Natufian and represent a broad spectrum of every day activities, albeit on a smaller scale than the larger Natufian occupation sites in the Mediterranean zone. The absolute date and attributes of the microlithic tools indicate that the assemblage is Late Natufian in age, though the average length of the lunates is at the high end of the Late Natufian range. Every day activities are reflected in several aspects of the lithic assemblage. First, all tool categories are represented in frequencies typical of other larger Natufian sites (Salibiya I, Belfer-Cohen & Grosman 1997; Nahal-Oren, Grosman et al 2006, etc), indicating that a variety of tasks was carried out on site. Also, minimal effort was invested in modifying the macrolithic blank as indicated by the high proportion of *a posteriori* tools (eg, retouched tools and notches). Second, the raw materials used for tool manufacture were collected from the wadi below the cave—confirming that the Natufians were using local environments rather than visiting the area only for specific burial activities. Finally, burins have long been thought to be a special group of tools (Barton et al 1996); in particular, it has been argued that they appear in high frequencies at sites with special functions. At Hayonim Cave, where graves are numerous, burins are present in unusually high frequencies (22%). At Hilazon Tachtit, however, burins are present in smaller numbers and do not reflect the special status of the site.

The majority of the fauna from Hilazon Tachtit exhibit multiple lines of evidence for food use. Most importantly, the vast majority of skeletal parts are disarticulated and highly fragmented, in particular those areas that encompass large stores of bone fat. The full representation of the body-parts of common taxa

indicate that these animal were hunted locally and transported as complete carcasses back to the site. Taphonomic damage such as breakage patterns, cutmarks and other surface damage indicate that Natufian faunas were both butchered and consumed by humans (Munro 2004). Finally, mortality analysis and taxonomic abundance say more about the intensity of local site use and regional hunting pressure than they do about special activities and ritual practice. In summary, the flint and faunal assemblages clearly indicate that human visitors to Hilazon Tachtit engaged in the same types of every day activities that characterise larger Natufian occupation sites albeit on a more restricted scale. These people thus made use of local environments to collect the raw materials required for sustenance at the site while engaging in special ritual activities there.

Despite the strong evidence for domestic activities at Hilazon Tachtit, elements of the faunal and flint records also support the interpretation that Hilazon Tachtit served first and foremost as a special location designated for human burial. In particular, the tortoise assemblage from Locus 1 indicates that in addition to basic subsistence functions, animals played two additional roles directly related to sacred ritual events. The recovery of both anterior tortoise plastrons with repeated human breaks (figure 6) and intact carapaces from the grave in Structure A suggests that tortoises were consumed immediately before they were deposited in the graves, likely as part of the burial ritual. This point is supported by the recovery of the remains of other types of 'special garbage' from the graves in Structures A and B during the 2005 and 2006 excavation seasons. By 'special garbage' we mean the broken remnants of rare animals and artefact classes (eg, groundstone). For example, at least 30 broken cattle bones are associated with the grave buried in Locus 1. The cattle remains are distributed throughout the fill immediately surrounding the burial, both at the same depth as the human skeleton and immediately below it. Cattle appear only very sporadically in all other contexts at the site ($n = 8$). The clustering of the cattle remains, their spatial association with the human grave and the strong evidence for human bone breakage suggest that this animal(s) was either consumed in an event potentially associated with the human burial or that these rare animal bones were curated after earlier use and intentionally buried. Second, animals were intentionally interred in human graves as associated objects. The com-

plete tortoise carapaces (n=10) associated with the grave in Structure A clearly fit this scenario.

The dichotomous nature of the flint and faunal assemblages from Hilazon Tachtit combined with the special role of the site attest to the clear integration of sacred and mundane activities in everyday Natufian life. On the mundane level the evidence speaks of the ordinary activities of the people who visited the site, namely hunting and gathering, the butchery and consumption of animals and the manufacture of tools. On a sacred level, it was a place where special rituals took place, in particular the burial of the dead. The primary burial pits which were later reopened for the removal of human bones suggest that funeral events may have been scheduled at a pre-arranged time. The disposal of waste produced by the everyday activities that must have accompanied special burial events resulted in the mixture of both mundane and sacred garbage in the archaeological deposits. Clearly, the making of a sacred place involves exchange between the sacred and the mundane. The sacred, if it is culturally embedded, must always make use of materials that can otherwise be used for mundane purposes. In addition, we suspect that different forms of spiritual practice seek to include the everyday and the ordinary, such as eating near a new burial often as part of the ritual practice itself. Moreover, the duality in the burial area likely partially exists because the Natufians had not yet formalised their waste disposal

practices (ie, garbage was probably disposed where it was produced). Higher rates of secondary garbage disposal begin only in the Pre-Pottery Neolithic A period, as one of long-term responses to sedentary living (Hardy-Smith & Edwards 2004). Nevertheless, even in later periods, the duality between sacred and mundane is maintained in sedentary societies. People travelling to sacred places still utilised their everyday support system even when they were far from home (Carmichael et al 1994).

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