The Early Upper Paleolithic beyond Western Europe

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New Perspectives on the Initial Upper Paleolithic

The View from Üçağızlı Cave, Turkey

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The initial Upper Paleolithic industries of the Levant are pivotal to accounts of the origins of the Upper Paleolithic in Eurasia and that complex of archaeological traits thought to represent "modern human behavior." Technologically, initial Upper Paleolithic assemblages seem to manifest a combination of Mousterian (Levallois) and Upper Paleolithic features. Elongated flakes, blades, and points were produced from flat cores with faceted striking platforms, usually by hard hammer percussion. Typologically, the initial Upper Paleolithic falls more securely into the Upper Paleolithic, sometimes—although not always—containing distinctive type fossils (Emireh points, *chanfreins*) (Marks and Ferring 1988; Gilead 1991). However, little is known of the greater part of human behavior—from foraging to art—associated with these industries. It is therefore not obvious whether the initial Upper Paleolithic should be seen basically as a kind of evolved Middle Paleolithic with a few new tool forms, or whether it manifests other characteristics of what is often referred to as modern human behavior.

Recent work at a number of sites in Europe and Asia has greatly enriched our knowledge of the initial Upper Paleolithic. This chapter summarizes the results of two seasons of excavation at Üçağızlı Cave in south-central Turkey. In addition to data on lithic technology, Üçağızlı has produced information on foraging and the use of ornaments in the initial Upper Paleolithic, phenomena about which comparatively little is known for this region and time period.

THE SITE AND ITS STRATIGRAPHY

Üçağızlı Cave is located on the Mediterranean coast of the Hatay region of southern Turkey. Centered on the city of Antakya (ancient Antioch), the

Hatay occupies the extreme northeast corner of the Mediterranean basin (figure 8.1). The Hatay is part of the modern nation of Turkey, but topographically and ecologically it resembles the coastal Levant much more closely than it does either central Anatolia or the southern Mediterranean coast of Turkey. The area should probably be considered the most northerly extension of the Mediterranean Levant.

The site of Üçağızlı is situated on the coast about 15 km south of the mouth of the Asi (Orontes) River (figure 8.1). The surface of deposits within the cave lies at an elevation of about 17 m above current sea level. The site cave was discovered and first investigated by A. Minzoni-Deroche (1992). The current project, a joint effort of the University of Arizona and Ankara University, began with test excavations in 1997 (Kuhn et al. 1999), followed by full-scale excavation in 1999 and 2000. Üçağızlı is the remnant of a larger collapsed cave. Pleistocene sediments are preserved in two main areas: a tunnel-like chamber to the southwest and an area in front of two smaller cavities to the northeast, along what was once the back wall of the cave. Minzoni-Deroche excavated primarily in the southwestern chamber. The more recent excavations have focused on the areas to the north. Cemented deposits with Epipaleolithic artifacts are preserved high on the back wall, showing that at least 3 m of deposits were lost to erosion subsequent to the cave's collapse. Even so, around 3 m of intact early Upper Paleolithic deposits remain in the northern area. One advantage of the collapse is that Üçağızlı saw little or no post-Pleistocene occupation.

Recent excavations have exposed a north-south stratigraphic section 9.5 m long at the north end of the site (figure 8.2). The width of the trench varies from 1 to 3 m, encompassing between half and a third of the surface of intact archaeological deposits at the site. Intact deposits end just west of the excavation trench, truncated by erosion just outside the current dripline.

The archaeological sequence at Üçağızlı has been divided into eight layers (B–I), each of which has one or more subdivisions. The dominant bedding plane slopes down from south to north, and the upper layers are more steeply inclined than the lower ones. The sediments are principally geogenic red clays *(terra rosa)* mixed with varying amounts of anthropogenic sediments, especially calcite ash. Boundaries between layers are not marked by changes in sediment mineralogy but instead by sharp fluctuations in the amount of anthropogenic sediment. Layers B, C, E, and G are relatively pure red clay, containing little ash but varying quantities of artifacts and bone: layers C and G are fairly poor in archaeological material; layers B and E are richer. Layers B1–B4, D, F, and H are extremely rich in artifacts and bone and contain numerous features, such as hearths and ash dumps. Underlying the Upper Paleolithic sequence is a relatively pure clay stratum (J) and a thick layer of limestone *éboulis* (layer K), both nearly sterile. Layer I contains a very low-density Middle Paleolithic deposit.

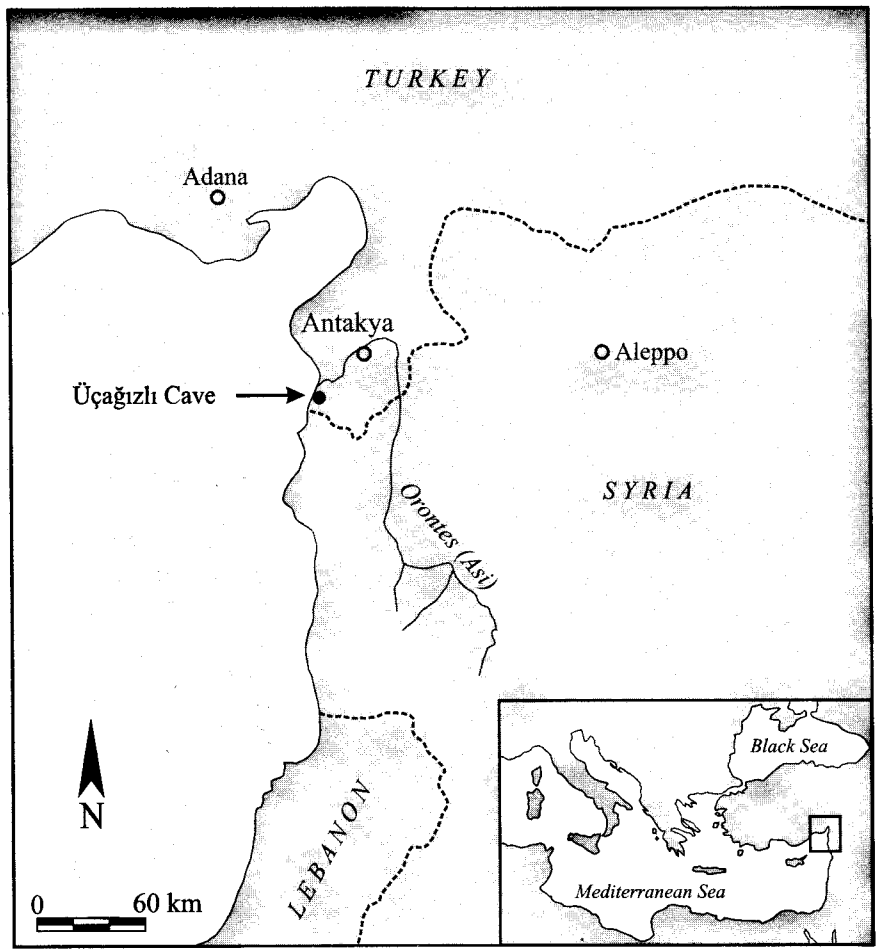

Figure 8.1. Map of the northeast Mediterranean region, showing the location of Üçağızlı Cave.

Broadly speaking, Upper Paleolithic artifact assemblages can be divided into three main groups.[1] The most recent Upper Paleolithic component is found in layers B–B4, exposed mainly at the north end of the excavated area: it was also present in the area excavated by Minzoni-Deroche in the south chamber. The materials from these layers bear a striking resemblance to artifact assemblages from layer XVI and XVII at Ksar Akil (Azoury

1. There are remnant Epipaleolithic deposits within the covered chamber on the south end of the site, but these do not figure into the current discussion, and they are not stratigraphically linked to the sequence in the northern excavation trench.

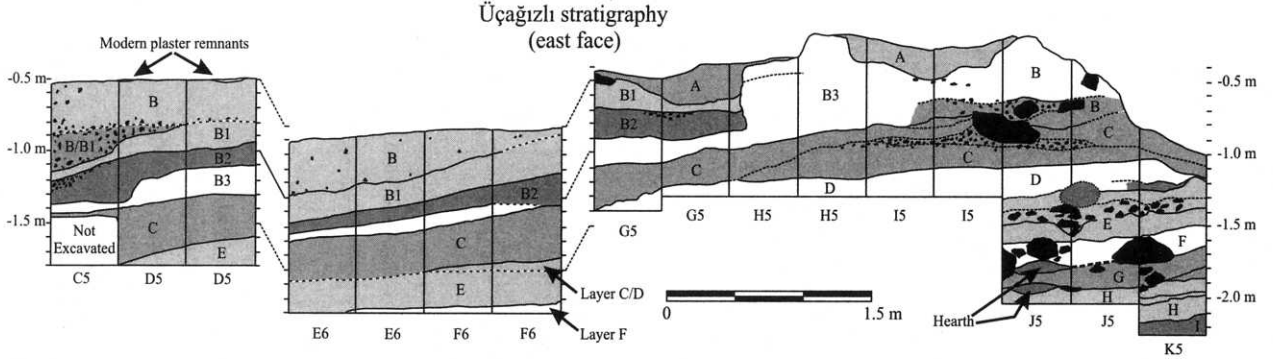

Figure 8.2. Stratigraphy of Üçağızlı Cave. Shading is schematic to illustrate stratigraphic correlations across the three excavated sections.

1986; Ohnuma 1988). They are characterized by well-developed prismatic blade technology utilizing soft hammer or indirect percussion. Common retouched tool forms include end scrapers and retouched and pointed blades; burins are extremely scarce. Layers G–I contain the earliest assemblages, which resemble the initial Upper Paleolithic of such sites as Ksar Akil layer XXI and Boker Tachit level 4. The intervening strata (F–C) yield materials intermediate in character between the earlier and later components. This chapter deals mainly with materials from the lowest layers, F–I.

Strata F and H are more correctly characterized as sedimentary cycles than as sedimentologically or mineralogically distinct layers. They appear to be made up of a large number of closely spaced, discrete, small-scale episodes of cultural deposition, interfingering with smaller lenses or "stringers" of red clay. Each contains numerous superimposed and partially overlapping ash lenses. Some of these show evidence of in situ burning and are probably small hearths. In other cases, the sediments, artifacts, and bones underlying the ash deposits show no evidence of heating: the latter features appear to be ash dumps rather than fireplaces. Layer G differs from F and H in that the frequency of anthropogenic depositional events is much lower. Layer I does not contain ash lenses, although there are hearths directly on top of it.

LITHIC ASSEMBLAGES

Collections from the first two excavation seasons are presented separately in the analyses and descriptions below. The 1999 sample has been studied in detail and results are essentially complete. Observations on the 2000 sample reported here should be considered preliminary.[2] In some of the tables that follow, samples from G and H have are combined: the great majority of artifacts and other material come from layer H, which is both thicker and richer.

Dorsal cortex preserved on artifacts shows that two general classes of raw materials were used at Üçağızlı. Some flints and quartzites have a very smooth, pitted, and frosted cortex typical of pebbles from high-energy fluvial contexts. There are no siliceous rocks in either primary or secondary context on the coastline around Üçağızlı today. The closest sources of pebble materials are ancient fluvial terraces located 10–15 km inland. The second group of materials consists of flints with a soft, white, chalky cortex typical of nodules derived directly from limestone or chalk bedrock. We have

2. Many of the stone artifacts from Üçağızlı Cave are coated with a calcium carbonate crust, which must be removed using a weak acid. The 1999 sample had been completely cleaned as of this writing, but the 2000 samples had not. Because some artifact edges are obscured by the encrustation, certain tool types, particularly burins and retouched flakes and blades, are likely to be under-represented in the 2000 sample as reported here.

TABLE 8.1 Typological Composition of Retouched Tool Assemblages from Üçağızlı Cave

	Layer (1999 sample)			*Layer (2000 sample)*		
Typological Category	F (*n*)	G (*n*)	H (*n*)	F (*n*)	G (*n*)	H (*n*)
A1 Levallois	**1**	**—**	**3**	**1**	**—**	**5**
A2 side scrapers and points	**6**	**2**	**7**	**5**	**1**	**1**
B end scrapers (all types)	**68**	**18**	**25**	**56**	**3**	**14**
b (indet.)	17	4	8	9	—	2
b1	20	9	10	25	1	6
b2	20	5	6	13	1	2
b4	1	—	—	3	—	—
b5	2	—	—	—	—	—

not yet succeeded in locating the original sources of these nodular flints, but it is certain that they do not occur in the immediate vicinity of the site.

In layers F–H, around half of the cortical tool blanks have pebble cortex. The percentage having pebble cortex rises to 60–75% for debitage. This suggests that the majority of in situ flint working involved pebble raw materials, but that a slightly greater proportion of flints from primary sources were used in the production of tool blanks. For comparison, in the upper layers (B–B4), more than 80% of the cortex on tools and debitage is of the nonpebble or nodular variety. The contrasts between the upper and lower layers probably reflect somewhat different raw material provisioning strategies associated with different patterns of mobility and site use (see Kuhn 1992, 1995). The representation of different kinds of cortex on tools and debitage from layers F–H may indicate that a substantial proportion of the tools were brought to the site in finished form, perhaps as part of mobile tool kits.

Table 8.1 shows a basic typological breakdown of retouched artifacts from layers F through I. The type categories are taken from Hours's (1974) typology for the Upper Paleolithic of Lebanon. Simple end scrapers, especially short forms (type B1) are the most abundant retouched tool forms. The characteristic artifact form in these layers consists of short, heavily modified end scrapers made on thick flakes or flake/blades, often with faceted platforms (figure 8.3: 6, 7, 14). Other, less abundant types include retouched blades (figure 8.3: 9), burins, and retouched pointed blades (figure 8.3: 2), although the latter are much less abundant than in the more recent layers at the site. Slightly fewer than 10% of the tools from layer H can be charac-

TABLE 8.1 (*continued*)

Typological Category	*Layer (1999 sample)* F (*n*)	G (*n*)	H (*n*)	*Layer (2000 sample)* F (*n*)	G (*n*)	H (*n*)
b6	3	—	—	1	—	1
b7	3	—	1	3	—	2
b8	1	—	—	—	—	—
b10	1	—	—	2	1	1
D burins (all types)	**4**	**1**	**7**	**6**	**—**	**2**
d1	1	—	2	—	—	—
d3a	—	—	—	1	—	1
d3b/c	—	1	1	2	—	—
d7	2	—	4	3	—	1
d8	1	—	—	—	—	—
d9	—	—	—	—	—	—
E perçoirs	**2**	**—**	**—**	**1**	**—**	**1**
F backed pieces	**4**	**3**	**—**	**1**	**—**	**—**
G truncations	**3**	**1**	**2**	**5**	**—**	**—**
H notches and denticulates (all types)	**6**	**2**	**4**	**1**	**—**	**3**
h1, h2	2	1	2	1	—	1
h3	4	1	2	—	—	2
I pointed blades (all types)	**9**	**3**	**1**	**6**	**3**	**3**
i2	8	3	1	6	3	3
i3	1	—	—	—	—	—
Blades with Aurignacian retouch	—	—	—	—	—	—
i4	1	—	—	—	—	—
J retouched pieces and pièces esquillé (all types)	**32**	**12**	**14**	**20**	**1**	**3**
j1 + j6[1]	25	9	11	15	1	2
j2	—	—	—	—	—	—
j3	1	—	—	—	—	—
j5	6	3	3	5	—	1
K multiple tools	**5**	**4**	**1**	**2**	**—**	**—**
M nongeometric microliths	**2**	**—**	**2**	**—**	**—**	**—**
Tool fragments	**2**	**4**	**1**	**—**	**—**	**—**
Total	**145**	**50**	**67**	**104**	**8**	**32**

NOTE: Category totals shown in bold. —, No types found.

[1]Type J6, representing blades and flakes with partial retouch on one or both edges, was added to the type list for this study.

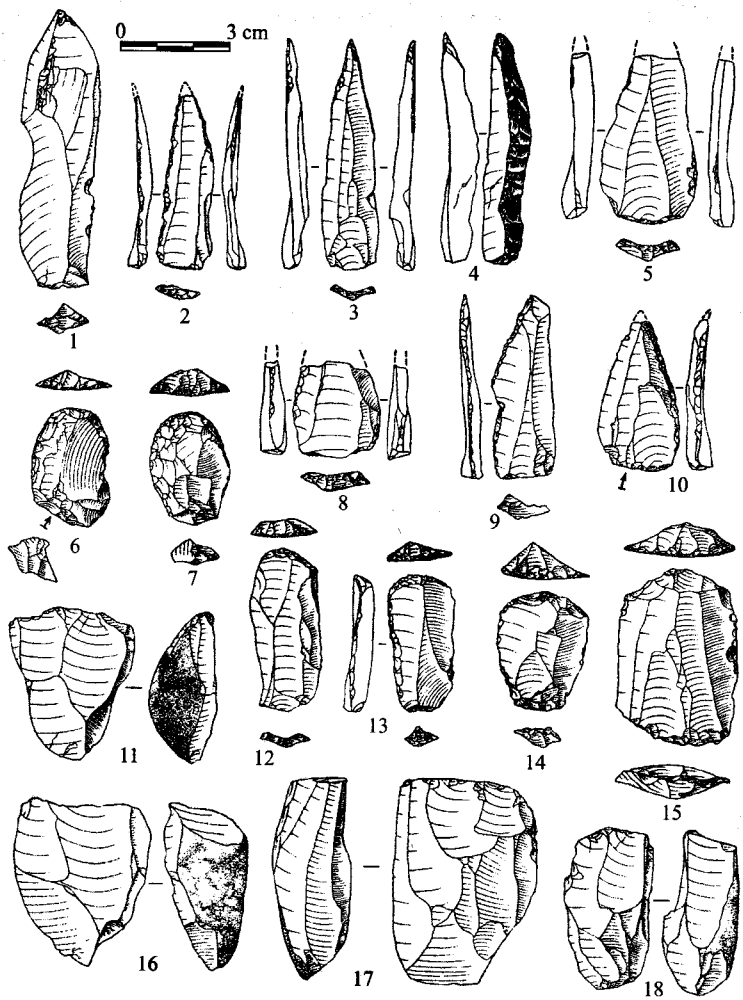

Figure 8.3. Artifacts from layers F–H at Üçağızlı Cave. Drawn by Kristopher Kerry.

terized as Levallois points and blades (figure 8.3: 5, 8). The "type fossils" of the earlier initial Upper Paleolithic—*chanfreins* and Emireh points—are not present at Üçağızlı. A few specimens (figure 8.3: 3) could be classified as Um el Tlel points (Boëda and Muhesen 1993): elongated Levallois points or blades thinned at the base by dorsal removals prior to detachment from the core.

Even the earliest assemblages at Üçağızlı show an appreciable laminarity. In layer F, blades outnumber flakes in both tool blanks and the larger deb-

TABLE 8.2 Tool Blank and Debitage Counts from Üçağızlı Cave

Artifact	*Layer (1999 sample)* F (*n*)	G (*n*)	H (*n*)	*Layer (2000 sample)* F (*n*)	G (*n*)	H (*n*)
Tool blanks						
Flakes	29	11	13	26	4	13
Blades and bladelets	54	12	19	21	0	12
Other forms	13	5	4	5	1	1
Indeterminate	51	22	33	12	0	3
Unretouched (> 2.5 cm)						
Flakes	106	24	139	—	—	—
Blades and bladelets	126	23	111	—	—	—
Other forms	62	10	73	—	—	—
Indeterminate	59	11	88	—	—	—
Unretouched (> 2.5 cm)						
Flakes	431	41	532	—	—	—
Blades and bladelets	92	8	115	—	—	—
Other forms	61	14	166	—	—	—
Indeterminate	384	101	965	—	—	—

NOTE: —, No data.

itage. In layers G and H, there is a more even mix between flakes and blades (table 8.2). As would be expected for an initial Upper Paleolithic assemblage, platform faceting is common. Of the unretouched pieces and tool blanks from layer F, roughly 43% have faceted or dihedral butts: the proportion of faceted and dihedral platforms is even higher among the tool blanks in layers G and H (69% and 54%, respectively) (table 8.3). Technological indicators suggest that most blank production was by hard hammer percussion. Platforms, whether plain or faceted, tend to be large and deep, and most flakes and blades have well-developed bulbs of percussion. However, a small but significant number of specimens possess punctiform or linear butts, contracting butts, and relatively flat bulbs of percussion, often considered indicative of soft hammer or indirect percussion. The crested blade technique was used, and most crested blades are unidirectional (e.g., figure 8.3: 4).

Core forms are surprisingly varied (table 8.4), although most have only one striking platform (figure 8.3: 11, 16, 17). The majority of cores would have yielded elongated products, either Levallois points or blades, elongated flakes, or true blades. Nonetheless, core forms range from flat, uni- or bidirectional specimens with faceted striking platforms, resembling Levallois blade or point cores, to true prismatic cores. The variety of core forms and platform types in layers F–H at Üçağızlı may indicate that more than

TABLE 8.3 Counts of Platform Types on Tool Blanks and Debitage from Üçağızlı Cave

	Layer (Retouched Tools)			*Layer (Unretouched > 2.5 cm)*		
Platform Type	F *(n)*	G *(n)*	H *(n)*	F *(n)*	G *(n)*	H *(n)*
Cortical	3	0	0	18	2	16
Plain	27	8	13	98	22	132
Dihedral	8	6	6	39	5	35
Faceted	22	12	13	59	18	97
Punctiform/linear	9	3	3	38	2	19

NOTE: Based on 1999 sample only.

one basic method of blank production was used. This would be consistent with Azoury's (1986) assertion that two distinct approaches to blade manufacture were used in the earliest layers at Ksar Akil. However, it is also possible that the minority of blades that appear to have been produced by soft hammer or indirect percussion in fact represent one end of a range of variability in products of a single basic *chaîne opératoire.* Additional technological analysis and artifact refitting should help to resolve this question.

Although the technological differences between layers F, G, and H are subtle, there is some indication that a different suite of activities is represented in layer H. The tool:debitage ratio in layer H is roughly 0.03:1, much lower than for any other layer at the site. By way of comparison, the ratio for layers F and G are 0.11:1 and 0.23:1, respectively. Proportions of retouched pieces in the uppermost layers are even higher. The unusually large proportion of unretouched pieces and debris suggests that the layer H assemblage was characterized by more in situ manufacture than was true of other stratigraphic units at the site.

Technologically, the assemblages from layers F–H at Üçağızlı most closely resemble later manifestations of the initial Upper Paleolithic. The single closest match is Ksar Akil layer XXI (Azoury 1986; Ohnuma 1988), which preserves the Levallois-like blade technology of the lower levels but contains few if any *chanfreins.* Azoury (1986) reports much higher frequencies of Levallois blanks for Ksar Akil layer XXI, but this probably reflects somewhat different analytical criteria. The *Paléolithique intermédiaire* of Umm el Tlel (Boëda and Muhesen 1993; Bourguignon 1998) is another possible match, although a detailed description of the assemblage has yet to be published. Looking farther afield, Bohunician assemblages from central Europe present similar technological features with an essentially generic inventory of Upper Paleolithic tools forms (Svoboda and Škrdla 1995), although in the

TABLE 8.4 Counts of Core Forms from Üçağızlı Cave

Core Form	*Layer (1999 Sample)*			*Layer (2000 Sample)*		
	F *(n)*	G *(n)*	H *(n)*	F *(n)*	G *(n)*	H *(n)*
Tested	0	0	0	0	0	0
Disc-unifacial	0	0	1	0	0	0
Unidirectional Levallois	3	1	1	0	1	0
Bidirectional Levallois	0	1	1	0	0	0
Single platform flake/ blade core	6	2	6	2	1	0
Opposed platform flake/ blade core	3	0	0	0	0	0
Single platform prismatic blade core	1	1	2	1	0	0
Opposed platform prismatic blade core	0	1	1	2	0	0
Bipolar core	0	0	1	0	0	0
Amorphous core	0	0	4	3	0	0

Bohunician, cores tend to be bidirectional rather than having a single platform as at Üçağızlı.

FAUNA

Faunal remains from layers F, G, and H are extremely well preserved, although the cemented, clay-rich matrix makes it difficult to extract the bones in their original conditions. Large terrestrial herbivores were the dominant prey both in terms of numbers of specimens (NISP) and amount of meat represented. The most abundant taxon is *Capra* (probably *Capra aegagrus*), followed by fallow and roe deer *(Dama dama, Capreolus capreolus).* Both wild cattle *(Bos aurochs)* and pig *(Sus scrofa)* are also present, although in much smaller numbers. Remains of terrestrial small game, such as birds, tortoises *(Testudo graeca)* and small carnivores (e.g., *Vulpes* sp.) are much less common. The earliest layers at Üçağızlı contain very little evidence for the use of marine foods. Shellfish of the types most often used for food in the more recent deposits (*Monodonta* sp., *Patella* sp.) are very rare in layers F–H.

The predominance of terrestrial game in such close proximity to the sea may simply be testament to a very rich terrestrial environment. Local topography could also have made Üçağızlı a particularly suitable base for the hunting of terrestrial herbivores. The drainages closest to the site are short and

extremely steep, with high, nearly vertical walls. With such a box canyon-like configuration, the valleys would have been well suited for ambushing or corralling prey. Even so, shellfish and other marine resources are much more common in the later Upper Paleolithic layers (B, B1–B4, C) at the site. The scarcity of shellfish and marine resources, along with the predominance of caprids, suggest that layers F–H may have formed when conditions were relatively cold and dry and sea levels correspondingly low.

ORNAMENTS

Perhaps the most remarkable finding to date from layers F–H at Üçağızlı Cave concerns the association of ornaments with initial Upper Paleolithic stone tool assemblages. More than one hundred perforated shell beads or small pendants were recovered from these layers in the 1999 and 2000 excavation seasons (table 8.5). The most common ornamental species, *Nassarius gibbosula* and *Columbella rustica,* are typical omnivorous or predatory gastropods of the Mediterranean littoral zone. Another gastropod species, *Theodoxus jodani,* inhabits fresh or brackish waters, such as the mouth of the nearby Asi (Orontes) River. The great majority of these specimens were perforated by punching a small, irregular hole near the rim or lip of the shell. Beach wear (abrasion) is not uncommon on ornamental shells, but evidence for perforation by predatory mollusks is rare (table 8.5).

Ornaments are part of that suite of derived Upper Paleolithic features that are sometimes described as representing modern human behavior (Mellars 1989; Klein 1995). In general, ornaments are scarce in the early Upper Paleolithic of the Levant. Moreover, they have not been widely reported in association with initial Upper Paleolithic industries, although they are present throughout the sequence at Ksar Akil (Altena and von Regtern 1962; Kuhn et al. 2001). Thus the question naturally arises: Do these ornaments actually belong in the layers where they were found, or have they migrated down through the sediment column from more recent layers?

Several facts convince us that the shell beads found in layers F–H were deposited at the same time as the rest of the archaeological contents of these levels. As table 8.5 shows, the species composition of the ornament assemblage from layers F–H differs from more recent strata. *Nassarius* dominates the earliest ornament assemblages, whereas *Columbella* is more common in layers C–E, the next highest strata in the sequence. The two taxa are quite similar in size and shape, and there is no reason to think that *Nassarius* shells would have more readily migrated through the sediments. Likewise, the extreme scarcity of typical food species *(Patella* and *Monodonta)* in layers F–H argues against massive intrusion of shell ornaments from overlying deposits, as it is unlikely that beads would have moved around while fragments of food shells remained stationary.

TABLE 8.5 Distribution of Ornamental and Food Shells at Üçağızlı Cave

	Layer						
Taxon	B	B1–4	C	D	E	F	G/H
Ornamental taxa (%)							
Marine gastropods							
Columbella rustica	33	44	41	50	63	22	7
Nassarius gibbosula	50	44	29	50	25	64	88
Other species	6	4	6	10	2	5	0
Marine bivalves							
Glycymeris sp.	3	3	0	0	2	0	
Other species	5	2	0	0	—	0	
Fresh/brackish water gastropods							
Theodoxus jordani	3	3	21	2	10	0	0
Other species	<1	0	0	0	0	—	0
Total NISP	385	481	70	6	48	50	58
Damage incidence (%)							
Perforated	74	77	81	68	90	74	0
Mollusk-predated	6	3	3	0	0	0	3
Food taxa (%)							
Patella sp.	87	80	87	68	77	100	75
Monodonta sp.	13	20	12	32	23	0	25
Cerastoderma sp.	<1	<1	1	0	0	0	0
Total NISP	2255	2092	117	22	31	3	4

NOTE: All values except total number of identified specimens (NISP) are percentage NISP. —, No data.

RADIOMETRIC DATES

AMS radiocarbon dates from layers F–H are presented in table 8.6. Layers G and H yielded six determinations. Four of these range from around 39,000 to 41,000 BP, overlapping at just over one standard deviation. These earlier dates would seem to provide the most reliable age estimates and are probably equivalent to roughly 41,000–43,000 calendar years BP (see Kitagawa and van der Plicht 1998a). The two more recent dates from layer H, ranging from 33,000 to 35,600, are likely to have resulted from sample contamination or else to have been made on fragments of charcoal that had filtered down from overlying layers. Layer F has yielded two AMS radiocarbon dates, between 34,000 and 35,000 BP. Because no earlier determinations have been obtained from layer F, we cannot rule out the possibility that these determinations reflect the actual age of the deposits. Given the stratigraphic sequence at the site, it would be surprising to find that layers F–H spanned more than 5000 years, however.

TABLE 8.6 AMS Radiocarbon Dates from Layers F–H at Üçağızlı Cave

Layer	*Age (BP)*	*Lab Number*
F	34,000 ± 690	AA 35260
	35,020 ± 740	AA 37624
G	39,100 ± 1500	AA 37626
H	35,670 ± 730	AA 35261
	33,040 ± 1400	AA 37623
	38,900 ± 1100	AA 27995
	39,400 ± 1200	AA 27994
	41,400 ± 1100	AA 37625

NOTE: In all cases, material dated was charcoal.

The earlier set of AMS radiocarbon dates from layers G and H at Üçağızlı Cave fit reasonably well with standard estimates for the age of the initial Upper Paleolithic and transitional industries in the Levant and with the few available radiometric dates (Mellars and Tixier 1989; Bar-Yosef 2000). Because the difficulties of calibration and sample contamination are compounded as radiocarbon determinations approach the limits of the technique, it is unwise to place too much importance on differences between dates in the range of 40,000 radiocarbon years BP. Nonetheless, the age estimates for layers G and H at Üçağızlı are consistent with the idea that this is a relatively late manifestation of the initial Upper Paleolithic. The dates from layer F are more problematic. They seem too recent, but there are currently no grounds for rejecting them. If they prove to be correct, they would greatly extend the temporal range for the initial Upper Paleolithic, implying considerable temporal overlap with more classic Upper Paleolithic industries (Ahmarian, Aurignacian) in the Levant (see Phillips 1994; Bar-Yosef 2000).

DISCUSSION

At one time it appeared that the Levantine initial Upper Paleolithic represented a short-lived hybrid transitional interval between the local Mousterian and more classic Upper Paleolithic industries such as Ahmarian and Aurignacian. It now appears that similar kinds of assemblages have a very wide geographic distribution. Early Upper Paleolithic assemblages with Levallois-like methods of blade production dating to approximately the same time range (about 45–36 ka) are now known to be distributed from central Europe to the Altai Mountains (Demidenko 1989a; Svoboda and Škrdla 1995; Ginter et al. 1996; Derevianko et al. 2000c; Gladilin and

Kozłowski 2000a), perhaps extending even to Mongolia and northern China (Brantingham et al. 2001). Either very similar kinds of hybrid technologies developed independently over a vast portion of Eurasia, or the technological phenomenon that unites these diverse archaeological occurrences (a form of blade production with many features of the Levallois method) propagated widely from a single source (Tostevin 2000). If all of these occurrences represent parallel in situ developments out of an indigenous Middle Paleolithic base, their synchronous appearance over such a broad spatial scale is remarkable. If, on the other hand, they represent the spread of a specific population or set of technological procedures, current archaeological knowledge does not provide an obvious answer as to what advantage the initial Upper Paleolithic way of doing things might have afforded.

Radiocarbon results from excavations at Üçağızlı, although preliminary, bear on the questions of the evolutionary significance of the initial Upper Paleolithic. To date, there has been very little direct evidence for the ages of initial Upper Paleolithic deposits in the Levant. In combination with near-infinite dates from Boker Tachtit (Marks 1983b), AMS radiocarbon dates from layer H at Üçağızlı indicate that the initial Upper Paleolithic lasted at least 5000 (radiocarbon) years. If the assemblage from layer F can indeed be considered to fall within the definition of initial Upper Paleolithic, and if the current dates hold up, then it may have lasted twice as long. This is not what we expect of a short-lived transitional phase. The picture of the initial Upper Paleolithic that emerges is that of a discrete and long-lived entity showing a remarkable degree of technological, if not typological, continuity and a broad distribution.

Another puzzling aspect of the initial Upper Paleolithic derives from the lack of information about aspects of behavior other than those associated with lithic technology. For the most part, such assemblages lack features, such as bone or antler tools, ornaments, and art objects that differentiate the Upper Paleolithic sensu lato from the Mousterian. However, it is has never been entirely clear whether the absence of these features from the archaeological record indicates that they were absent in the past as well. The best-known sites were either excavated in earlier eras, when recovery techniques were not up to today's standards (e.g., Ksar Akil, Antelias), or are open-air localities, where organic preservation is poor (e.g., Boker Tachtit). The scarcity of art, ornaments, and bone tools could be genuine, but taphonomic factors and recovery techniques could play a major role in their deficit as well.

It is now clear that at least one of the features of so-called modern human behavior was indeed in place with the initial Upper Paleolithic. At Üçağızlı and Ksar Akil, shell beads are abundant in even the earliest layers (Kuhn et al. 2001). In the northern Levant, at least the initial Upper Paleolithic is more than just a kind of late Mousterian assemblage with blades, end scrapers, burins, and Emireh points or *chanfreins*. In this part of the Mediterranean

basin at least, the practice of using material culture as a medium of communication was well established by 40,000 years ago, perhaps considerably earlier. Whether similar artifacts will be found in other regions, and whether the Levantine initial Upper Paleolithic will eventually be shown to include other distinctive features of the Upper Paleolithic remains to be seen.

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