



# In what sense is the Levantine Initial Upper Paleolithic a “transitional” industry?

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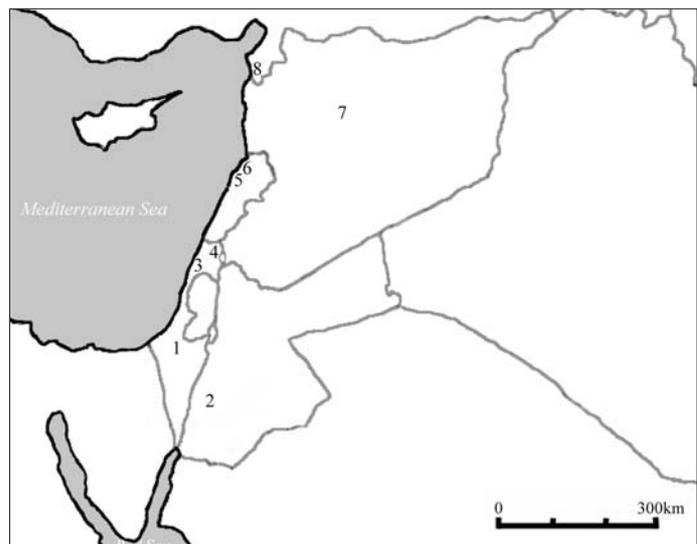
**ABSTRACT** The Initial Upper Paleolithic of western Asia is considered by many to be the prototype of a technocomplex transitional between Middle and Upper Paleolithic. Chronologically, it seemed to occupy a comparatively brief interval between Mousterian and more classic Upper Paleolithic industries such as the Ahmarian and Aurignacian. The lithic assemblages combine Middle Paleolithic (Levallois) technological elements with essentially Upper Paleolithic typological

inventories. Until recently, other elements of the stereotypical Upper Paleolithic behavioral repertoire, such as art, ornaments, and elaborate tools of organic materials, were scarcely represented. Results from research over the past two decades call for a reassessment of the chronology, geography, and behavioral correlates of the Initial Upper Paleolithic. This paper is a reevaluation of both the complex’s transitional status and the utility of categories such as “transitional”.

## Introduction

The term “transitional” is often applied to chronological, taxonomic or stratigraphic entities that seem in some way to bridge two better-defined units. In paleoanthropology the term is most often encountered in discussions of the highly contentious and widely debated Middle-to-Upper Paleolithic transition: the title of the present volume is a case in point. The very use of the term to describe an archeological assemblage can even reveal a researcher’s position on the origins of the Upper Paleolithic and anatomically modern *Homo sapiens*. Those who favor models of *in situ* behavioral and anatomical change leading to modern humans and modern behavioral patterns are more prone to describing an assemblage or a fossil as transitional. Scholars who support scenarios of a single African origin of anatomically and behaviorally modern humans tend to describe an assemblage (or a fossil) as either modern or archaic, but not as transitional.

FIG. 1— Map of eastern Mediterranean showing locations of Initial Upper Paleolithic sites discussed in text: 1. Boker Tachtit; 2. Tor Sadaf; 3. Mt. Carmel caves (El Wad, Kebara); 4. Emireh cave; 5. Beirut sites (Ksar ‘Akil, Antelias); 6. Abu Halka; 7. Umm el Tlel; 8. Üçağızlı and Kanal caves.



Although the term is widely used, Paleolithic archeologists have seldom explicitly defined what they mean by calling something transitional. Often the phylogenetic and cultural significance of an industry or assemblage is stipulated without specifying the material and contextual characteristics that make an assemblage transitional. This paper begins with a consideration of how the term “transitional” is, and should be defined. It then examines one archeological complex, the Initial Upper Paleolithic (IUP) of southwestern Asia, in light of recent research, and assesses how it does and does not fulfill various aspects of the definition.

## What makes an assemblage “transitional”?

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Obviously the intent of searching for transitional units is to identify assemblages or complexes that express direct historical or cultural-phylogenetic connections between other assemblages or complexes. In the case of the Middle-Upper Paleolithic transition in Eurasia biological phylogeny may also be implicated. However, the historical significance of a set of archeological remains is seldom self-evident. A broad but comprehensive definition is outlined below. Most or all of the elements are at least implied, and in some cases specified in other discussions of transitional industries. As such, the definition replicates current practice more than it redirects it.

1) Obviously, any transitional assemblage should be chronologically and stratigraphically intermediate between Middle and Upper Paleolithic. Roughly speaking, they should occupy the period between roughly 50 000 and 35 000 BP, depending on the region in question. Uninterrupted stratigraphic sequences are uncommon, so a good deal depends on radiometric dates. Due to inherent indeterminacy in radiocarbon dates from this time period and current limits on precision and applicability of other methods (uranium-series, luminescence dating), temporal overlap with both earlier and later industries is to be expected.

2) Transitional assemblages should show either a mixture of features typical of Middle and Upper Paleolithic or features that are intermediate. Preferably both are present as a simple mixture of elements may reflect mechanical mixing as well as processes of behavioral evolution. Some characteristics, such as art or ornamentation, may be recognized only on the basis of presence and absence. Other features, especially technologies of blank production, are more likely to show intermediate forms. We should not expect that all dimensions of behavior changed in unison: it seems to be well established that the Middle-Upper Paleolithic transition, however it occurred, was mosaic in nature (Kozłowski, 1990).

3) It is not sufficient that an assemblage be technologically or typologically intermediate between Middle and Upper Paleolithic. Historical links are also important. It is therefore important that the characters of a transitional unit demonstrate derivation from local Middle Paleolithic, and that they presage local Upper Paleolithic. Generic features, such as Levallois technology and/or prismatic blades are not sufficient, as these alone can only demonstrate some connection with earlier or later industries somewhere. In order to demonstrate an *in situ* transition, the assemblage in question must be linked to specific, derived features of earlier and later industries in the same region. The point about local continuity is an important one. We are relatively sure that

the Upper Paleolithic developed out of a Middle Paleolithic or Middle Stone Age pattern somewhere: the question is, where, and in how many places did this occur.

4) By definition, a transition is a relatively short-lived condition bridging two more stable or long-lasting states. To be true to the name transitional industries should represent relatively brief spans of time.

## **The Initial Upper Paleolithic: history and characteristics**

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The Initial Upper Paleolithic (IUP) of southwest Asia is in many ways a prototypical transitional industry bridging the Middle and Upper Paleolithic. It was identified early in the 20th century (Neuville, 1934), and archeologists such as Garrod immediately noted the apparent mixture of Middle and Upper Paleolithic characteristics (Garrod, 1951-52). For many prehistorians (Azoury, 1986; Gilead, 1991) the appearance of Middle and Upper Paleolithic technological features in early assemblages from sites such as Boker Tachtit, El Wad and Ksar 'Akil were enough to justify naming them "Transitional". Others have argued that this terminology is overly presumptive. The assemblages in question could well represent something locally intermediate between Middle and Upper Paleolithic but this should not be stipulated in a name. The more neutral term Initial Upper Paleolithic (or IUP) (Marks, 1990) is preferred.

Although the IUP was first documented more than 50 years ago comparatively few stratigraphically sealed assemblages are known. The early excavations at Emireh cave in the Jordan Valley (Garrod, 1955) and El Wad on Mt. Carmel (Garrod and Bate, 1937) simply do not provide sufficient stratigraphic resolution. Interestingly, the IUP is fairly scarce in the southern Levant, even in the rich karstic zones such as Mt. Carmel. It is somewhat better represented in the northern Levant, especially along the Mediterranean coast. Several sites in and around Beirut, Lebanon, contained very substantial IUP deposits. These include the deeply stratified shelter of Ksar 'Akil, the master Upper Paleolithic sequence for the eastern Mediterranean region (e.g., Azoury, 1986; Bergman and Ohnuma, 1987; Ohnuma, 1988) as well as Antelias Shelter (Copeland, 1970; Copeland and Hours, 1971) and Abu Halka. Some distance to the north, Üçağızlı cave, in south-central Turkey, replicates the lower part of the Ksar 'Akil stratigraphic sequence, from late Middle Paleolithic through early Ahmari, including a substantial IUP component (Kuhn et al., 1999, 2001). The nearby site of Kanal cave (Bostanci, 1968; Kuhn et al., 1999) once contained a similar sequence. In the arid zone the best-known and best-studied IUP site is Boker Tachtit in the Negev desert (Marks, 1983). Tor Sadaf, a recently discovered site in the Wadi Hasa, Jordan, contains extremely rich IUP and early Ahmari (Upper Paleolithic) deposits, unfortunately without clear stratigraphic breaks (Coinman and Fox, 2000). In northern Syria, the *Paléolithique intermédiaire* at Umm el Tlel (Boëda and Muhesen, 1993; Bourguignon, 1998) generally resembles the IUP from arid inland areas farther south. An industry resembling the IUP has also been reported from at least one site in North Africa (Vermeersch et al., 1994), though information about these finds is currently quite limited.

The most salient feature of the IUP is the combination of Middle Paleolithic and Upper Paleolithic features in methods of blank production. Early on, evidence for this was seen in the high frequencies of blanks resembling Levallois points and blades, mixed with what appeared to be more classic hard-hammer prismatic blades. Several authors have suggested the term Levallois-leptolithic to describe this sort of phenomenon in the Levant

and elsewhere (Kozłowski, in press; Svoboda, in press). Extensive refitting of cores from the site of Boker Tachtit (Marks, 1983; Volkman, 1983) later showed that a variety of production trajectories, none of them classically Levallois, could produce the mixture of blank forms observed in IUP assemblages. A somewhat different technological variant, again not Levallois *sensu stricto* is present at Umm el Tlel (Bourguignon, 1998). The presence of extensive platform faceting, near-exclusive reliance on hard hammer percussion, and the production of many broad, flat, pointed blades, does distinguish the IUP from contemporary and later Upper Paleolithic assemblages in the region and suggests a direct derivation from a Middle Paleolithic technological base. On the other hand, evidence for use of the crested blade technique is reported from virtually every IUP site, even on cores that yielded “Levallois” end products.

Typologically, the IUP seems to be more typical of the Upper Paleolithic. Classic UP tool forms, such as endscrapers and burins dominate most assemblages, although generalized tool forms such as sidescrapers and denticulates may be relatively common as well. Endscrapers and burins are also relatively common in laminar Early Levantine Mousterian assemblages from sites such as Tabun and Ain Difla (Jelinek, 1981; Lindly and Clark, 1987), albeit dating to more than 90 000 BP. Many IUP assemblages contain unique artifact forms that are found in neither the late Mousterian nor the subsequent Upper Paleolithic. Emireh points, triangular flakes or Levallois points with extensive bifacial thinning along the base, were first recognized at the sites such as Emireh and El Wad caves (Garrod, 1951-1952), and for many years the IUP was referred to as the Emiran (Bar-Yosef, 2000). IUP assemblages from Ksar ‘Akil and other sites in the Beirut area contain large numbers of chamfered pieces (Azoury, 1986; Copeland, 1970; Ohnuma, 1988). These two distinct artifact forms may have distinct geographic distributions, with Emireh points being more widespread. The great majority of Emireh points known come from open-air sites in both the southern and northern Levant (Marks, 1983; Copeland, 2000), while chamfered pieces are known mainly from cave sites, suggesting that there could be a functional distinction as well. Neither of these type fossils is abundant in some IUP assemblages, such as those from Üçağızlı cave, Umm el Tlel, Tor Sadaf, and Ksar ‘Akil layer XXI.

For many years little was known about the IUP beyond the nature of lithic technology, and it seemed that other elements of the stereotypical Upper Paleolithic/modern human behavioral repertoire, such as bone and antler tools, art and ornaments, were absent. Only features of core technology and tool forms linked the IUP to the later Upper Paleolithic. On the other hand it was not clear whether the absence of other kinds of artifacts was a true reflection of prehistoric behavior or simply a function of poor preservation (and sometimes recovery). We have begun to learn more about non-lithic features of the IUP record in recent years, and it emerges that several other elements of the Upper Paleolithic/modern human behavioral “cannon” are indeed present. Initial Upper Paleolithic layers at both Üçağızlı cave and Ksar ‘Akil contain assemblages of beads and pendants made from modified marine shells numbering into the 100s: beads are present in even the earliest post-Mousterian levels at Ksar ‘Akil (Altena, 1962; Kuhn et al., 2001). These materials attest to the existence of a fully developed tradition of ornament-making, one that continued into the subsequent Ahmarian. A small number of bone tools, such as awls and simple points, have also been found at Üçağızlı cave. To date no art objects have been recovered but these are exceedingly scarce in the eastern Mediterranean throughout the Paleolithic prior to the Natufian. It is difficult to generalize about diet and economy as preliminary faunal reports are available for only two sites, Ksar ‘Akil and Üçağızlı cave. However, it is interesting that species inventories at both sites are heavily weighted towards medium and large terrestrial herbivores even

though both sites are located quite close to the modern coastline (Hooijer, 1961; Stiner et al., 2002).

As the early researchers realized, the Levantine IUP appears to be of the correct age and in the right stratigraphic position to be transitional between Middle and Upper Paleolithic. The Initial Upper Paleolithic at Ksar 'Akil, Antelias, Umm el Tlel, Üçağızlı, and El Wad is stratified between Mousterian and more classic early Upper Paleolithic (Ahmarian or Auri-gnacian) layers. Radiometric dates are relatively scarce. Two radiocarbon determinations from layer 1, the bottom of the sequence at Boker Tachtit fall around 46 000 and 47 000 BP, which is considered a minimum age (Marks, 1983). More recent luminescence dates from the upper layers suggest a commensurate age, although as would be expected somewhat older than the radiocarbon determination (A. Marks, personal communication 2001). Based on extrapolations from dates much higher in the sequence Mellars and Tixier estimate the earliest IUP at Ksar 'Akil was deposited between 50 000 and 45 000 years ago (Mellars and Tixier, 1989). Dates from more recently excavated sites tend to be more recent chronologically as well. The *Paléolithique intermédiaire* layers at Umm el Tlel have yielded radiocarbon determinations of ca. 34 000 BP and TL dates of around 36 000 BP (Boëda and Muhesen, 1993). The three IUP layers at Üçağızlı cave have provided a series of (uncalibrated) radiocarbon dates ranging from roughly 35 000 BP (in layer F) to 41 400 BP at the bottom of layer H (Kuhn et al., 1999; Güleş et al., 2002). Given both potential problems with contamination and apparently low levels of atmospheric <sup>14</sup>C during this time interval it is likely that all reported radiocarbon dates for Initial Upper Paleolithic layers underestimate the true ages by several thousand years (Kitagawa and Van der Plicht, 1998; Beck et al., 2001). It is also worth noting that the later dates for the IUP in the northern Levant overlap by several thousand years the earliest Ahmarian dates from Kebara, Boker A, and the Lagaman sites in the southern Levant (Bar-Yosef, 2000, p. 129).

Because there are few sites with long sequences spanning the late Middle and Early Upper Paleolithic, questions of relationships between the IUP and cultural entities on either side of it can be addressed at only a few sites. Marks and colleagues have made a strong case for continuity and gradual technological change across the four layers at Boker Tachtit (Volkman, 1983; Marks, 1990), culminating in fully developed Upper Paleolithic in layer 4. However, the plausibility of direct continuity with the late Mousterian hinges on the identification of Boker Tachtit layer 1 as Middle Paleolithic. This determination is based almost entirely on core technology, as the typological makeup of the retouched tools is virtually identical across the entire sequence. The very laminar assemblages and elongated Levallois products from Boker Tachtit do not closely resemble the late Levantine Mousterian from sites such as Kebara and Amud, which are characterized by short, broad Levallois points and flakes (Bar-Yosef, 2000; Tostevin, 2000). Unfortunately, there appears to be a stratigraphic hiatus between the Mousterian and IUP at Ksar 'Akil (Azoury, 1986; Marks and Ferring, 1988) and Üçağızlı cave, making it impossible to examine the resemblance between the earliest Upper Paleolithic and the terminal Mousterian in those cases.

At the other chronological extreme, most researchers agree that the Initial Upper Paleolithic developed directly into the early Ahmarian, an assertion that seems to be well supported by the gradual changes in technological indicators at Ksar 'Akil (Azoury, 1986; Bergman and Ohnuma, 1987). Results from recent work at Üçağızlı cave and Tor Sadaf (Fox and Coinman, in press) are consistent with the apparent continuity at Ksar 'Akil. Increasing standardization of blade production, with a gradual shift from Levallois-like methods to more classic prismatic blade manufacture utilizing soft hammer or indirect percussion, mark the transition to the Ahmarian.

## Transitional in what sense?

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Reviewing the findings summarized above in terms of the criteria outlined for transitional assemblages, the following five points emerge:

- The technological features which originally led researchers to term the Initial Upper Paleolithic as ‘transitional’ remain one of the most salient and consistent aspects of the industry. On the other hand, refitting studies and evidence for the use of the crested blade technique show that IUP blank production technology already represents a significant departure from Levallois *sensu stricto*.
- Typologically, the IUP falls clearly into the Upper Paleolithic range, sometimes with distinctive type fossils absent from both earlier and later complexes.
- Findings from sites with good organic preservation (Üçağızlı and Ksar ‘Akil) indicate that classic Upper Paleolithic elements such as ornaments and bone tools are indeed present. Ornaments may even be very numerous.
- It seems to be well established that over time the IUP did in fact develop *in situ* into the Ahmarian, a long-lived Upper Paleolithic complex.
- Evidence for derivation from local Middle Paleolithic is less certain. Marks and colleagues make a solid case based on evidence from Boker Tachtit. Regionally, however, the IUP represents a major technological departure from local late Mousterian industries (Tostevin, 2000). For the most part, its Middle Paleolithic features are generic rather than being locally derived.
- Chronologically, the Initial Upper Paleolithic falls in the correct position. However, if the few existing dates are taken at face value it appears that the IUP lasted as long as 10 000 radiocarbon years, perhaps much longer. This is a greater span of time than was occupied by the Levantine Aurignacian, and approaches the known range for the early Ahmarian, with which it also overlapped in time.

So to what extent is the Initial Upper Paleolithic transitional in the Levant? The answer depends on the weight assigned to the various criteria. For the most part the Levantine IUP is not intermediate, but corresponds fully with conventional definitions of the Upper Paleolithic *sensu lato*. It retains some characteristics from the Middle Paleolithic (i.e., features of Levallois technology) but these are quite generalized. The limited number of dates currently available further indicate that the IUP was not transitory, but a long-lasting technological pattern, one that exhibits an internal evolutionary dynamic of its own. Whether or not the Levantine Initial Upper Paleolithic demonstrates a direct historical link between Middle and Upper Paleolithic hinges on whether it is in fact derived from some variant of the late Levantine Mousterian. At the present time the answer to this last question rides on alternative interpretations of the sequence from a single site, Boker Tachtit.

Part of the difficulty in coming to a clear conclusion about the evolutionary status of the IUP may stem from how questions about transitional industries are asked. In approaching the problem typologically, in terms of units such as Middle Paleolithic, Upper Paleolithic, and transitional, we may at best be fostering ambiguity, at worst forcing a particular conclusion. A rapid transition might never achieve the stability sufficient to be identified as a distinctive industry or complex. On the other hand, in trying to slot “transitional industries” between Middle and Upper Paleolithic we create two more transitions between the putative transitional unit and whatever lies to either side: each of these new transitions in turn becomes problematic. The Châtelperronian is a case in point: it seems clearly derived from

a distinctive variant of the late Mousterian (the MTA B), but may not have direct historical links with later Upper Paleolithic industries such as Aurignacian (Bordes, 1972; Mellars, 1996, p. 409-410; Reynolds, 1990; Kozłowski, in press).

Resolving the long-standing historical and evolutionary issues surrounding the evolution of modern behavior and the origins and spread of anatomically modern humans in Eurasia will require more than just careful scrutiny of “transitional” industries. It will necessitate a major change in how research questions are structured. As evolutionary biologists and paleontologists have learned, inherently typological classificatory systems are poor analytical tools for investigating what are, potentially at least, continuous and gradual evolutionary processes. It is the nature of typological approaches to impose the appearance of discontinuity, and make it more difficult to ascertain whether change was in fact gradual or abrupt (e.g., Clark, 1997).

At the most general level, one could begin by approaching the problem as one of charting continuous variation or change in specific domains of behavior rather than sequences of industries. This would have the advantage of making discontinuities or periods of very rapid change all the more evident. Second, it would be beneficial to approach the problem by examining individual elements of culture or behavior independently. Just as individual genes in the same genome do not share the same history, elements of the same culture complex do not necessarily form an indivisible whole. Third, it is vital to at least try and separate cultural traits with high adaptive value from essentially neutral traits. The latter are more likely to reflect purely historical processes (including migration and acculturation), whereas the former are subject to various external influences and are prone to evolutionary convergence. Finally, it is important to begin from locally distinctive or derived features of the late Middle Paleolithic, and to look for the origins of locally distinctive features of the later Upper Paleolithic. Generic traits, such as Levallois technology, prismatic blades, flakes, or sidescrapers, cannot be used to demonstrate historical continuity or discontinuity.

I do not mean to imply that conventional chrono-typological units — Middle and Upper Paleolithic, Aurignacian and Mousterian — should be abandoned. Quite the contrary, they can be useful shorthand descriptions of sets of features that commonly occur together in particular times and places. However, the fact remains that they impose a structure on the archeological record that is not conducive to resolving questions about evolutionary processes. In other words, the continuing ambiguity over what is or is not truly transitional is to some extent a consequence of looking for a category of “transitional assemblages” in the first place.

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