The Differences Between Upper Paleolithic and Epipaleolithic (Environment, Settlement Patterns, Subsistence, Technology)

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Environment of Levantine Upper Paleolithic Period

The evidence of paleoclimates of late Paleolithic period indicates that during this period climate fluctuated. Little evidence currently exists about the climate conditions 55 to 40 Thousand years ago (henceforth kya) when the transition between the middle and upper Paleolithic period occurred. Although the upper Paleolithic climate was probably wetter than the present, it is still drier than Early and main 'Wurm'. The climate of Upper Paleolithic in the Levant*corresponds to the late part of oxygen stage 3 which was fairly dry between 45-32 kya. The arid climate occurred between 23-22 kya in the Levantine upper Paleolithic. It seems to correspond to the early part of oxygen stage 2. The climate of Upper Paleolithic period between 32-22 kya was drier than the period between 45-32 kya and even the present. The last climate fluctuation of upper Paleolithic began around 24-22 kya and ended around 14-13kya. It is the last stage of the Levantine upper Paleolithic period which was the drier and colder than early and middle Paleolithic period [(1)].

Subsistence Resources of Levantine Upper Paleolithic

The core area, Mediterranean Zone is the most humid part of the south of Levant. It extends along the coast and Galilee-Judean mountains (al-Jalil- al-Khalil) . Most of the main Upper Paleolithic sites such as Kebara, El-wad, Qafzeh, Erq el-Ahmar and Hayonim are located in the core area. The Transjordan is separated from the core area by Jordan valley. The Transjordan of Gilead is considered to be the second part of the Mediterranean zone.

A recent research has shown that the vegetation area of the marginal region of the southern core area is sparse and consists mainly of bushes. It indicates that the southern core area has a low average rainfall in comparison

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with core area. The core area has large quantity of vegetation which suggests that core area is subsistence's gatherers. The vegetal role of the hominin diet of the Upper Paleolithic period is unknown.

Insufficient macrobotanical remains exist in the Upper Paleolithic sites in the Levant except some vegetal remains of charcoal samples from few sites such as El-Wad E and D, central Negev and south of Sinai. Olive, oak and Tamarix which have been identified at El-Wad. Analyzing charcoal samples of the Upper Paleolithic central Negev sites indicate that six Pistachia, three Olea and two Tamarix trees have existed in this region. Few samples of woods of pistachia and quercus have been found in southern Sinai. Pistachia, other nut trees and fruits probably formed the main subsistence resources for Levantine Upper Paleolithic people. Limestone tools, such as the ones found in these sites, may have served as one of the tools used to gather them. However, the poor archeological record of vegetal remains is the main reason behind limited vegetal Levantine Upper Paleolithic studies [(2)].

Meat was the most resources of Levantine Upper Paleolithic inhabitants. Hunting of medium and large ungulates played significant role during the Upper Paleolithic period in the Levant. Archeological mammalian fauna record is the most evident, it indicates that the meat formed the main resource of staple in Upper Paleolithic inhabitants. For Instance, cervids such as red deer, fallow deer and deer, bovids such as (ibexes, cattle and gazelles), and the equids, such as (horse and onager). Moreover, core area has more ungulate species than the marginal area. Very few bone assemblages of fish, reptiles, snails, smaller mammals were preserved in Upper Paleolithic sites. Mollusks form Levantine Upper sites such as Qafzeh, Erq el-Ahmar suggested that they were eaten [(3)].

The Distribution of Levantine Upper Paleolithic Sites

The Numerous upper Paleolithic sites are significantly higher in the south of Levant than the north. Also, the distribution of southern Levantine Upper Paleolithic sites is varied. There are a few significant Upper Paleolithic site in comparisons with earlier and late periods. Seven
caves inhabited in northern Jerusalem (al-Quds) are of upper Paleolithic origin as compared to eighteen caves of the Middle Paleolithic period. The results of the survey of 232 km2 of Mt.

Carmel(Kurmul) indicate that there are five Upper Paleolithic sites, all of them in caves comparable to 72 sites of the Middle Paleolithic period, only 12 in caves. The abundance of the
Middle Paleolithic sites belongs to the intensive Levallois technique which is easily recognized.
Negev and Sinai sites vary in size, but they are considered quite small. For instance Lagaman
sites are"16-117 m2 and the largest in situ remnant is 26 m2." Another reason for the lack of recognition of UP sites is the inaccessibility of visible features. Hearth and ashes are not as
recognizable as their "shallow and oval pits" are difficult to decode whether they are modern or not[4].

Levantine Upper Paleolithic Technology

Technology had varied phases in Levant during Upper Paleolithic period. The first
Phase is initial Emiran or initial Upper Paleolithic period. It is a representative of the Levantine
Middle to Upper Paleolithic transition (45-38 kya). Emiran assemblages sites are Boker Tachtit ,
umm-el Tlel, Ksar Alkil Rockshelter and Üçağizli cave. Unidirectional prismatic blade core
technology and Levallois are represented Emiran assemblages. The second phase is the Early Ahmerian (38/37-25 kya). It is derived from Erq el-Ahmar site in the Judean Desert [5]. Southern Levant such as Qadash Barnea, Lagama, Boker and Erq el Ahmar E/F sites, and Northern Levant
such as Kebara E, Ksar Akil XX, Qafzeh E/D, Umm el-Tlel and Yabrud II are represented in early Ahmarian. The differences and similarities between diversities of Ahmerian assemblages are the significant issues in both southern and northern Levant. Currently, the principle association ofAhmerian assemblages is not just having definite type, but also within Ahmerian contexts.

The third phase of Levantine Upper Paleolithic is classic Levantine Aurignacian (32-26
kya). Many sites of classic Levantine Aurignacian are to the North or central Mediterranean Levantsuch as Ksar Akil VII, yabrud II/1-4, Hayonim D, el-Wad D, Kebara D(I-II) and el-

Queiseir sites. Atlitian represented the fourth phase of Levantine Upper Paleolithic (± 27 /26 kya). Northern Mediterranean Zone such as ksar Akil VI, Megd, el-Wad C, Nahal Ein Gev I, Fazael IX and Khiam E sites represented the "Atlitian" entity.

Unnamed flake-based entities represented the fifth phase of Upper Paleolithic period. Unnamed flake-based is considered late upper Paleolithic entity. The site distribution of these entities are situated in the arid zone of the Levant such as Har Horesha I, Arqov/Avdat (Ein Aqev/Boker C), Qadesh Barnea, Qseimeh II, Ramat Matred/Har Lavan and Shunera XV in the Negev and Sinai. Numerous unnamed flakes are primarily involved in the Levantine Aurignacian tradition, such as the Arqov/Avdat industry.

Another phase of Levantine Upper Paleolithic technology is Masraqan (late Ahmarian) (22-16 kya). This phase of technology is shared between the Late Upper Paleolithic and Epipaleolithic industries. Most of those industries sites , but not all, are situated in Ksar Akil III- IV, Umm el- Tlel, Meged, Ohalo II, Fazael X, Masaraq e-Na'aj, Nahal Sekher 122, Ein Aqev East (D34), Azariq XIII, Shunera XVI, Lagama X, Wadi Sudr 6, Azraq 17 trench 2, Ain el-Buhira, Yutil el-Hasa. These sites represent the marginal regions of the Levant. Because the Masraqan entities were retained as Early Ahmarian, they were designated as late Ahmarian.

Masraqan assemblages are characterized with having bladelet production and multiple reduction strategies (bladelets). These bladelets comprise of high frequencies of narrow, finely retouched tools. Radiometric dating most of these assemblages directed to the Upper Paleolithic to the Epipaleolithic transition. The last phase of Upper Paleolithic is Nebekian (22-20 kya). The evidence of stratigraphic and radiometric indicated that Nebakian entities were coeval with the Masraqan. Generally both of them indicated the early phase of Epipaleolithic. The sites which indicate the existence of these assemblages are Yabrud III, Uwaynid 14 middle, Uwaynid 18 upper and Jilat VI lower in the Azraq basin, Tor al Tareeq in wadi Hasa, Wadi Humerian, Jebel Fatma and Tor Hamar and also Wadi Madamagh in south Jordan. " The Nebekain is characterized by the production of narrow bladelet blanks, the initiation of intensive backing and the habitual application of the microburin technique" [(6)].

Levantine Epipaleolithic Period

The Epipaleolithic (final Paleolithic) is documented in North Africa and southwest Asia The term of Epipaleolithic has used to indicate to microlithic assemblages (post glacial Mesolithic industry)[7]. The term of Epipaleolithic indicates also to pre-pottery Neolithic. Not many sites of Levantine Epipaleolithic have been discovered. Similarly, most discovered sites of the Levantine Epipaleolithic were derived from the southern Levant. There are shared characteristics between Late Upper Paleolithic and Early Epipaleolithic assemblages. However, the absolute date of late Upper Paleolithic assemblages indicate that they are earlier than the earliest Epipaleolithic assemblages. Kebaran, Geometric Kebaran, Mushabian and Natufian have significant cultural complexes that refer to the Epipaleolithic period [8].

Kebaran Culture

Kebaran sites are situated "along the edges of Jordan Rift" [9]. The climate in the northern Levant during 17-12,500 kya in the Kebaran complex was cold and dry, while the climate in the upper part of southern Levant was cold and wet. Reconstruction of climate condition was based on analysis of alluvial wadi terraces in the Levant [10]. The climate condition play significant role particularly in southern Levant. The pattern settlement, seasonal mobility was based on the local climate factors in southern Levant. For in stance, hunter- gathers in arid zone had probably occupied the highland land in the spring/ summer, and occupied lowland in the fall/winter. The same pattern probably occurred in Kebaran hunter-gathers. Dry and cool during Kebaran conducted Kebaran hunter-gathers to use Logistic strategy, to occupy highland in the spring/summer to avoid dry and cool weather, and occupy lowland which had low temperature during the fall/winter. Nevertheless, the logistic strategy is not the only mobility strategy used by upper Pleistocene hunter-gathers. Different strategies are probably used, depending on palaeoclimatic changes [11].

Industry of Kebaran lithic tool is produced from a reduction of single-platform cores. This process of single-platform cores reduction produces bladelets. The size of these bladelets is usually less than 12mm and narrower. These bladelets were constricted to diverse types of microlithics by fine semiabrupt retouch. The main microlithic types of the different assemblages had within them sifting quantitative dominance. There is difference between early and late Kebaran assemblages. The Early Kebaran assemblages have a large variability compared to the Late Kebaran assemblages which is not straight,

short back of bladelets. The late Kebaran bladelets are known as Jiita or Kebara points. Other types of late Kebaran lithics are micropoints. They have curved and pointed backed bladelets, and different microgravettes. There are several types of Kebaran lithics but they have been found only in a limited area of east of the Jordan river (Yabrud III, 3; Ein-Gev I-II, Wadi Madamagh) such as Falita point ("Gravette-like backed blade"). There is little evidence of microburin use in Kebaran assemblages, except at a few sites (Nahal Hadera V and Jaita II) where microburins were used from the production of triangles. A little spatulas, burnishers and bone point have been recognized in Kebaran sites. These tools were shaped closer to upper Paleolithic industries. Marine shell assemblages were used in Kebaran sites. Mortars, basalt bowls and pestles have been found in Kebaran sites [(12)].

Nebekian

Rust (1950) identified Nebekian lithic tools at Yabrud Shelter III in levels 6-7. However, the Nebekian was represented as an early phase of Kebaran until it was re-energized in the 1990s. These assemblages dated back to proximately between 24,0-21.8 kya. The most characteristic Niebekian lithic tools are arch-backed pieces with oblique truncations , narrow and symmetrically curved. Bladelets were the most frequent use of microburin for truncation. Nebekian lithic tools represent initial use of the microburin technique in the levant. The east of the Jordan is the main place where found Nebekian assemblages [(13)].

Qalkhan Qalkhan artifacts were identified by Henry (1995) at Tor Hamar and other sites of Wadi Qalkha in the southern Jordan. Qalkhan point is the artifacts of Qalkhan assemblages, a "steeply backed scalene triangle with a concave basal truncation". Microburin technique have been used to create Qalkhan point. Distribution of Qalkhan lithic tools appeared in southern Jordan and Syria (Yabrud III and El Kowm). This distribution suggests a link between lithic tools and activities in steppes - desert habitats. Other sites are mainly known from southern Levant such as Nizzanan assemblages [(14)].

Geometric Kebaran complex in the Levant

Geometric Kebaran entity has been derived from Kebaran. Geometric Kebaran assemblages dated based on C14 dates, and mostly in the southern Levant. These assemblages dated back to 14,500-13/12,800 kya. The distribution of geometric Kebaran is similar to that in Kebaran. Geometric Kebaran were also propagated at Negev, Sinai, and Syro-Jordanian deserts. High frequencies of

geometric Kebaran's blades and bladelets are shaped into microlithic trapeze-rectangles. Early geometric Kebaran microlithic types are narrow trapeze-rectangle compared to late geometric Kebaran assemblages which have wide trapeze-rectangle. The last stage of geometric Kebaran microlithics was dominated by triangle. Geometric Kebaran hunter-gathers used also microburin technique. In the Kebaran tradition, marine shells were still used in Geometric Kebaran. Other tools such as bowls, cup-holes and pestles were also found at Geometric Kebaran sites within the Mediterranean belt [(15)].

The Mushabian assemblage

The Mushabian cultural entity emerged during the Middle Epipaleolithic period. These assemblages are originally related to North Africa. The Mushabian technotypological assemblages have been found in north of Sinai and Negev. The Mushabian is roughly traced back to 14-12,800 kya as Geometric Kebaran. This date is based on radiocarbon and stratigraphic dates. Lithic assemblage of the Mushabian industry is different from Geometric Kebaran industry. Microburin technique is the main characteristic of the Mushabian industry. This technique is used to procure an oblique snap. The technique exhibited on several types of microliths. For instance, in the arched backed bladelets and La Mouillah points. This technique was used knowingly on a smaller degree in the Kebaran industries. During the culminating phases in the Sinai and Negev, obliquely truncated backed bladelets that originated and/or adopted from the prevalent Levantine lithic period was seen in the Mushabian lithic industry. While similarities from the Levantine lithic period exist, the bladelets were clearly Mushabian, as it was created using the microburin technique. Further, a similarity to the Mushabian tradition is seen in the curved truncation of the assemblages as compared to the straight design of its Geometric Kebaran counterpart.The naming of the Late Mushabian assemblages, which were named "Negev Kebaran"and more recently referred to as "Romonian" is clearly unnecessary as new technological and typological connections from earlier Mushabian which is recognized by archeologists studying in the area [(16)].

Natufian Culture

The Natufian represented the sedentary hunter-gathers culture in the Mediterranean Levant. The Natufian culture is roughly traced to between 12,800/500-10,500 kya [(17)]. The Natufian culture is considered a new social system which emerged in the southern Levant. This culture is subsequent to

Geometric Kebaran. The greater typological and technological technique of Early Natufian (lower layer) is heterogeneous in comparison with those from late Natufian. The flintknappers of the Natufian culture that were involved in the residential movements of Geometric Kebaran foragers resided together. In this homogenizing process, the knapping process takes an extended period of time [(18)].

Sickle blades and elongated picks industry are types of tools that existed during the Natufian assemblages. The stone tools of this period are also made with limestone, basalt along with sandstone. The tools that were prominent pounding tools included (mortars, pestles, bowls, mullers, and heavy-duty scrappers). In the Natufian bone industry, the elaborate decorations and richness as seen in jewelry is observed. Hunting tools, jewelry and other common tools are commonly discovered in this area [(19)].

The group identification of the early Natufian settlements was sustained because of different reasons. For example, while lunates were produced in every known site, the microburin technique was practiced only in some sites [(20)]. Natufian jewelry is quite extensive. Keeping one group identity also includes many distinctive body decorations, e.g: pendants and necklaces that exist along with engravings on stone (lime stone slabs). These pedants were made from limestone, greenstone, bone and teeth and marine life (mollusks)[(21)].

The Late Natufian (10-10,500/10,300 kya) is with no doubt the least researched segment of the Natufian sequence, as this period is the least excavated/studied. It is interesting to note that the Natufian economy dealt with climate change, a dry spell, with its people becoming more mobile unit. The dry region did not limit them; their movement details an interesting cultural sequence [(22)].

The main differences between Upper Paleolithic and Epipaleolithic

Significant climatic fluctuations persisted throughout the Upper Paleolithic [(23)]. Such unstable conditions favored behavioral adaptations suitable for a variety of environments. Circulating mobility represents such a strategy in that under all ecological circumstances it ensures that resources will not become depleted and that unforeseen environmental changes can be easily dealt with by moving to a new patch of resources. Likewise, circulating mobility was common among Upper Paleolithic hunter-gatherers.

Epipaleolithic climatic conditions were more stable. This means that resources were more predictable which allowed Epipaleolithic humans to adopt a radiating mobility strategy where large logistical camps were occupied for greater periods of time. As typically happens, increased sedentism resulted in higher populations and a need for resource storage facilities. These larger populations were able to be maintained by developing new food procurement strategies such as small-scale agriculture. The shift to food production was coupled with the development of new technologies such as microlithic and microburin, and made a new feature of stone such as Mortar and pestle during Epipaleolithic period.

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***Levant is the name of countries that lie on the eastern border of Mediterranean Sea**

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الاختلافات بين العصر الحجري القديم الأعلى والعصر الحجري الوسيط

(البيئة، أنماط الاستيطان، القوت، التكنولوجيا)

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المستخلص

يسلط البحث الضوء على الاختلافات بين حقبة العصر الحجري القديم الأعلى، وحقبة العصر الحجري الوسيط اعتماداً على دراسة البيئة، وأنماط الاستيطان، وموارد العيش (مصادر القوت) ، وصناعة الأدوات الحجرية في منطقة البحر المتوسط ميدان العمل البحثي . وعنت الدراسة بأهم وإبرز خصائص تلك الحقبة الممتدة بين أواخر العصر الحجري القديم الأعلى، والعصر الحجري الوسيط . وأهم أوجه الاختلاف بينهما . كما يعرض البحث لحالة المناخ في المنطقة، وأهم مصادر الغذاء، وطبيعة التنوع الصناعي في تلك المنطقة.