Upper Palaeolithic Cultural Phase Europe – (Aurignacian, Solutrean and Magdalenian)

Introduction

The Upper Palaeolithic period in Europe and Late Stone Age in Africa are found between 40,000 and 10,000 years ago. This period overlaps and contemporaneous with the end of the Middle Palaeolithic or Middle Stone Age in some regions. During this time, our ancestors inhabited in the tropical, subtropical, temperate, desert, and arctic climates. Upper Palaeolithic industries are usually associated with anatomically modern humans (*Homo sapiens sapiens*), but some early Upper Palaeolithic sites in Europe are also contemporaneous with the last populations of Neanderthals.

A number of significant changes in stone and bone technology generally characterize the Upper Palaeolithic in European prehistory. It also roughly coincides with the appearance of fully modern humans on the continent. However, the precise nature of both the archaeological and biological changes, as well as the relationship between the two, is much debated. It is the final division of the Palaeolithic and preceding the Mesolithic. The border between the Middle and Upper Palaeolithic industries is usually defined by the common use of blade, as opposed to flake technology. Important Upper Palaeolithic sites in Europe include Lascaux, Pincevent, La Madeleine, Abri Pataud, Cro Magnon, Solutre, Chauvet and Laugerie Haute in France; El Castillo, Altamira, and Parpallo in Spain; Dolni Vestonice in Czech Republic; Vogelherd in Germany; Istallo sko in Hungary; Willendorf in Austria etc.
**Material Culture during the Upper Palaeolithic Period in Europe**

Upper Palaeolithic stone industries are often characterized by blade technologies, elongated flakes produced by soft hammer or indirect percussion, in which a punch is placed on the edge of a blade core and struck with a percussor. These blades were then made into a variety of tool forms such as end scrapers, burins, and backed knives etc. Some Upper Palaeolithic technologies emphasized bifacial points, such as the Solutrean of Spain and France, which may have been produced by soft hammer technique or by pressure flaking. In doing so small flakes are detached by directed pressure rather than by percussion. Some raw materials appear to have been heat treated to make them easier to work.

Diagnostic element of many Upper Palaeolithic traditions is an emphasis on non lithic materials for making tools, including bone, antler, and ivory. These raw materials were utilised to make a wide range of artefacts such as points, needles, spear-throwers, shaft straighteners, and harpoons. Hooked spear throwers are essentially the mechanical devices to increase the velocity and distance of a projectile. These developments represent a significant advance in hunting technology or weaponry. The small size of some points and microliths toward the end of the Upper Palaeolithic suggest the development of bow and arrow technology. The first actual bow fragments comes from the site of Stellmoor in Germany.

Several human sculptures from the Upper Palaeolithic suggest clothing such as hooded parkas, headdresses, and aprons. The development of bone and antler needles also suggests that sewed clothing was common after 20,000 years ago. The recently discovered impressions on fired clay fragments from the site of Pavlo I in Czech Republic indicate woven textiles, presumably of plant material.

Architectural features during this period are much more common than in earlier periods. The hut structures delineated by stone or bone patterns, postholes, hearth structures and other apparent activity areas such as tool making or tool using are recorded. Sites tend to be more numerous and have denser concentrations of materials, suggesting larger populations and more regular habitation of sites. Controlled use of fire with hearths sometimes lined with stones appears to be an universal trait during this period.
One of the most distinctive characteristics of the Upper Palaeolithic is the proliferation of symbolic expression in art and personal adornment. This can be seen in the naturalistic representation of animals and humans in painting and sculpture as well as in the more abstract geometric designs. A variety of media was employed for artistic expression, including use of charcoal, pigment paints, antler, bone, ivory, and clay. A variety of techniques was employed such as drawing, painting, engraving, carving, and modelling. Personal adornments manifested in beads or pendants of shell, bone, tooth, antler, ivory, and stone are sometimes numerous.

Upper Palaeolithic burials are more common and more elaborate than in the Middle Palaeolithic. Men, women, and children were sometimes interred with rich grave goods, including stone tools, jewellery, bone, antler, and ivory artefacts. Again, this suggests an important symbolic component and a probable belief in an afterlife. In other words, something akin to a spiritual belief and a religion.

**Divisions of the Upper Paleolithic Period in Europe**

The classic division of the Upper Palaeolithic into Aurignacian, Perigordian (Gravettian), Solutrean, and Magdalenian traditions is based on the earliest explorations of sites in south-western France. The first definition of the Upper Palaeolithic, by E. Lartet and H. Christy in 1875, was on the basis of paleontological material.

Subsequent chronologies based on tool typologies rather than stratigraphy was developed by G. de Mortillet from 1867 to 1910. In these schemes, Mortillet initially described the Aurignacian incorporating the Perigordian as an industry with elaborate bone tools, as an early stage of the Magdalenian, but he dropped it as a separate entity by 1881. He placed the Solutrean, with its bifacially worked leaf shaped points on flakes, between the Mousterian and the Aurignacian/Magdalenian.

The importance of stratigraphy in determining the relative chronology of Upper Palaeolithic subdivisions, and the restoration of the Aurignacian to its appropriate place at the beginning of the Upper Palaeolithic, were not established until H. Breuil’s work at the beginning of the twentieth century. Basing his conclusions on the work of D.
Peyrony and others, Breuil also defined three stages within each of three Upper Paleolithic traditions: Aurignacian, Solutrean, and Magdalenian. His Lower and Upper Aurignacian corresponded to the Chatelperronian and the Upper Perigordian, respectively, while his middle Aurignacian incorporated the type industry from Aurignac.

In 1933, Peyrony introduced refinements to Breuil's scheme, the most important of which was the separation of the Perigordian from the Aurignacian and the development of five parallel stages for each tradition. The Perigordian was distinguished by the use of backing along one side of a blade to create a point; the Aurignacian was categorized by a series of bone point forms. Here we shall discuss three important traditions: Aurignacian, Solutrean, and Magdalenian.

**Culture Sequence of the Upper Palaeolithic in Europe**

The Upper Palaeolithic in Europe is often divided into two sub phases; early and late, according to climatic change. During the Early Upper Palaeolithic (40,000–20,000 BP) the climate deteriorated, with gathering speed, towards the period of maximum continental glaciation (20,000–18,000 BP). Human populations retreated to areas such as southern France etc. As the glaciation receded during the second half of the Late Upper Palaeolithic (20,000–10,000 BP) humans were able to recolonize the continent.

Apart from these general divisions, the main divisions are based on tool typology or industries. They appear in the following order: the transitional or acculturated industries of the Chatelperronian (Lower Perigordian) of France, Uluzzian of Italy and Szeletian of central Europe; the first fully Upper Palaeolithic assemblages of the Aurignacian; the Gravettian (Upper Perigordian); the Solutrean; and the Magdalenian. The Azilian tradition is usually regarded as transitional between the Upper Palaeolithic and the Mesolithic. However, we shall discuss mainly on three most important traditions known as Aurignacian, Solutrean, and Magdalenian.

**The Transition to the Upper Palaeolithic in Europe**

The site of Grotte du Renne in France revealed the following processes for the transition to the Upper Palaeolithic in Europe:

1. There was an immigration of biologically modern humans into Europe, ultimately from Africa via the Near East, perhaps around 45,000 years ago.
2. These populations brought with them many of the features considered to be Upper Palaeolithic, in the form of an emphasis on prismatic blade technology, bone, antler, and ivory manufacture, and the creation of ornaments and artwork.
3. They were contemporary with Neanderthals for a considerable period of time.
4. The Neanderthals, exposed to these new behaviours, began to imitate some of them, creating many of the mixed industries.
5. More controversially, the Neanderthals and the modern humans interbred to some extent, creating some of the skeletal material with mixed traits.
6. Biologically and culturally unaffected Neanderthals persisted longer in some areas such as the southern portion of Iberia.
7. Around 28,000 years ago, the entire continent was populated by groups practicing much the same behaviours, making similar tools, and looking more uniformly modern.

**Aurignacian Tradition**

Named after the type site of Aurignac in the Haute Garonne of France, the Aurignacian as defined by French Palaeontologist E. Lartet and English Prehistorian H. Christy, as well as by French archaeologist H. Breuil, originally included all early Upper Palaeolithic industries. On the basis of four levels at La Ferrassie, D. Peyrony of France distinguished four successive Aurignacian sequences and added a fifth sequence on the basis of a single assemblage from Laugerie Haute of France. The five stages were distinguished by changes in bone point manufacture as follows:

(i) Aurignacian I: split-base bone points, heavily retouched blades (La Ferrassie F)
(ii) Aurignacian II: lozenge points with flattened section, diminished marginal retouch, abundant nose-ended scrapers and busked burins (La Ferrassie H)
(iii) Aurignacian III: lozenge points with oval section, fewer busked burins and nose-ended scrapers (La Ferrassie H)
(iv) Aurignacian IV: biconical points, burins on retouched truncations and a few pieces with heavy marginal or lamellar retouch (La Ferrassie H)
(v) Aurignacian V: thick, denticulate carinate scrapers, created by broader removals than in Stages I–IV, and biconical bone points (Laugerie Haute)

The relationship between the last stage and the other four is poorly understood and probably does not reflect cultural or ethnic continuity. In some French sites, split-base
bone points and marginal retouch, both possibly indicative of a simpler technology, may be associated with earlier Aurignacian horizons, while busked burins and nose-ended scrapers are more numerous in later assemblages. In general, however, the details of Peyrony’s Aurignacian scheme have not been widely supported by evidence from most sites. In particular, each stage is highly variable from site to site, with no exact counterparts to the Aurignacian III and IV at any site, apart from a generalized evolved Aurignacian.

The Aurignacian tradition covers a wide area extending over large part of Europe although very rare or absent in Russia, Greece, peninsular Italy, and western Iberia. A comparable industry often termed Aurignacian occurs in the Levant at many sites, such as Ksar Akil (Lebanon), Jabrud (Syria), Hayonim (Israel), and Mount Carmel (Israel). A few early Upper Paleolithic assemblages of Aurignacian type are found in Britain (e.g., Kent’s Cavern and Efynnnon Beuno). Some of the important Aurignacian sites are Bacho Kiro and Temnata in Bulgaria, Istallosko in Hungary, El Castillo and Arbreda in northern Spain, Abri Pataud in France, Vogelherd and Geissenklosterle in southern Germany.

The Aurignacian can be defined as an early Upper Palaeolithic tradition, dated to c. 38000–28000 BC, represented by a full blade technology and a wide range of tools, including carinated scrapers, burins, end scrapers, and blades with a distinctive scalar retouch around their margins. The Aurignacian is characterized by a rich bone industry that includes bone points and awls. Aurignacian assemblages were possibly produced solely by Homo sapiens sapiens. In France and Spain, the Aurignacian is strongly associated with the early stages of cave art.

The Aurignacian industry was first recognized in the Perigord region of France, where it succeeds the Mousterian before 35,000 BP. However, the industry seems to appear rather earlier in Central Europe, where it is associated with well crafted mobiliary art. The oldest Aurignacian in Europe dated to c. 40,000 BP has been identified in the Middle Danube and the Balkans. It seems probable that the Aurignacian is intrusive in both Central and Western Europe, and that its appearance is associated with the replacement in Europe of the Neanderthals by anatomically modern humans.

In the early stages of the Aurignacian, blades are often large and irregular and bear heavy invasive marginal retouch on both sides. Lamellar removals are used to create carinate and nose ended scrapers on thick flakes or chunks, as well as thick edged carinate and busked burins or gouges, although the latter are rare in Eastern Europe. Bladelets with semi abrupt inverse-obverse retouch on one or both edges or narrow-pointed blades and bladelets with semi abrupt to abrupt retouch on both edges are associated with certain Aurignacian traditions. The tools include end scrapers, made on the end of blades or thick flakes, tools with a chisel like end, called burins, steep, thick, carinate scrapers, nosed scrapers, and beaked burins, heavily retouched blades, often narrower in the middle than at either end etc.
Aurignacian sites are associated initially with evidence of very cold, dry conditions and are dominated by remains of large, cold adapted herd animals, such as reindeer, mammoth, woolly rhinoceros, steppe horse, and bison. Figurative carvings, especially in ivory including a male figure as well as a range of animals, are known from several very early German sites such as Geissenklosterle, Vogelherd, Hohlenstein-Stadel etc. In 1995, the oldest figurative paintings in newly discovered Chauvet Cave in eastern France were directly dated to ca. 31 Ka, within the Aurignacian time range. In addition, a funerary complex at Cueva Morin in Spain, plaques with punctations interpreted by A. Marshack as calendars, an abundance of perforated objects, musical instruments at Istallosko, Isturitz etc., and widespread evidence of long distance trade in stone, ivory, and fossil and marine shells attest to the social and cognitive complexity of Aurignacian adaptations to a much greater extent than in either the Mousterian or the Chatelperronian. Burials at Grimaldi and Cavillon on the Italian Riviera are robust but fully modern in physical type, comparable to the five individuals from Cro Magnon at Les Eyzies. From the outset, the Aurignacian shows a number of novel characteristics: a much greater importance of prismatic blade technology, new stone tool forms, a much greater and more standardized use of bone, antler, and ivory to manufacture tools, a proliferation of beads and pendants, and the production of sophisticated portable and cave art.

**Solutrean Tradition**

The Solutrean, also known as Solutrian, is an Upper Palaeolithic tool tradition or industry of c. 21,000–16,000 BC, characterized by leaf shaped or foliate points made by using pressure retouch or delicate percussion retouch. Solutrean points are among the finest examples of Upper Palaeolithic industry. The tradition is named after the site of Solutre (Saone and Loire), but largely understood from the phases identified at Laugerie-haute rock shelter. The earlier Solutrean is concentrated in southwest France but later Solutrean assemblages appear throughout much of Western Europe.

The Solutrean is characterized by several forms of thin, leaf shaped points, shaped by distinctive flat, highly invasive unifacial and bifacial retouch. Superficial resemblances between these points and leaf shaped Mousterian points, the abundance of flakes, and the relative paucity of Solutrean bone working led to the placement of the Solutrean stage between the Mousterian and the Aurignacian by G. de Mortillet in 1881.
In 1912, H. Breuil made a sequence for the French Upper Palaeolithic, with a three-stage Solutrean phase or Lower, Middle, and Upper or I, II, and III between the Aurignacian and the Magdalenian. A fourth stage, Proto-Solutrean, was added subsequently to distinguish the basal Solutrean at Laugerie Haute, with its generalized use of flat retouch without specialized point types, from the later stages. Breuil's four stages were themselves distinguished by different forms of pressure flaked stone points based on the Laugerie Haute sequence.

The points may be clearly divided into:
(i) Proto-Solutrean: marked by the emergence of flat-faced (unifacial) points
(ii) Early Solutrean: with developed flat-faced points
(iii) Middle Solutrean: with classic bifacial finely flaked laurel leaf points (during this phase the Solutrean industry increased its geographical range considerably)
(iv) Final or Late Solutrean: with shouldered or notched foliate (or willow leaf shaped) points

The bone tools of this tradition is not as varied and developed as in the succeeding Magdalenian, although the later Solutrean is marked by the invention of the perforated needle. The distinction between the latest Solutrean and the early Magdalenian is a rather artificial construct. The assemblages are often similar and increasingly the radiocarbon dates from sites seem to overlap.

The open air archaeological site of Solutre in the Ardeche region of eastern France was chosen in 1869 as the type site of the Solutrean tradition. Located at the base of a cliff and reexcavated during the 1960s by J. Combier, Solutre contains archaeological industries identified as Mousterian, Lower Perigordian (Chatelperronian), Aurignacian, Upper Perigordian (Gravettian), Solutrean, and Magdalenian. The Upper Palaeolithic levels contained faunal remains of horse, reindeer and bovid, whose spatial associations suggest repeated use as an ambush site or butchering station.

Antler hafts or sleeves, present at some sites suggest improvements in hunting technology during this period. Although worked bone is rarer in the Solutrean than in the preceding early Upper Paleolithic industries, eyed needles are characteristic of the final stages. In Spain, where the point types corresponding to Protosolutrean and Solutrean I are absent.
The earliest Solutrean industries of Spain are characterized by bifacially worked leaf shaped points. The final stages exhibit shouldered points, hollow base laurel leaf points, and bifacial barbed and tanged arrowheads. Important sites of Spain include Parpallo in Valencia and La Riera in Cantabria. Baked bladelets and burins are also more common in the later Spanish industries than in south-western France during the Final Solutrean.

The density of sites and the increasing elaboration of engraved, sculpted, and painted blocks and cave and rock shelter walls, as well as the possibly ceremonial nature of the largest and thinnest stone points, may reflect social intensification due either to crowding or to more scheduling of resource use within defined territories. The faunal remains from French sites are dominated by reindeer, with some later assemblages reflecting local increases in exploitation of ibex and horse. In Spanish Solutrean sites, ibex, red deer, and horse are the most common mammalian species, and resource intensification is reflected in large numbers of mollusc shells. Human remains from several sites are morphologically similar to those from Combe Capelle. Solutrean images are distinctive in the widespread use of large bas reliefs of animals at the sites of Roc-de-Sers, Charente, and Foureanau-Diable of Dordogne and of painted and engraved plaques of Laugerie Haute and Parpallo.

Magdalenian Tradition

The archaeological record of Western Europe during much of the late glacial period is dominated by the Upper Palaeolithic culture known as the Magdalenian. The Magdalenian is characterized by abundant blades and bladelets, numerous burins, and particularly large numbers of backed bladelets that probably formed insets in composite tools. Accompanying these stone tools are a series of bone points, initially smooth, but later carved to have one or two rows of barbs. These latter are considered to be harpoons, with points that would detach upon impact and remain in the wound. Further this tradition is distinguished by abundant evidence of economic innovation, complex social interaction, and elaborate artistic and ritual activity.

The Magdalenian is named after the type site of La Madeleine, a rock shelter located in the Vezere valley, commune of Tursac, in the Dordogne of France. It was originally termed as the Age of the Reindeer by E. Lartet and H. Christy, the first systematic excavators of the type site, in their publication of 1875. The Magdalenian sites also contain extensive evidence for the hunting of red deer, horse and other large mammals present in Europe towards the end of the last ice age. The tradition was geographically widespread, and later Magdalenian sites have been found from Portugal in the west to Poland in the east.
The open-air Magdalenian site of Verberie, situated on a low terrace in the floodplain of the Oise River in the northern Paris Basin has revealed two hearths that appear to have been the focus of activities. Both are shallow basins lined and surrounded by rocks and slabs. Stones and bones are distributed around these hearths, forming clear concentrations. Stone working was aimed primarily at the production of blades, bladelets, and tools using locally available high quality flint. The primary tools include burins, end scrapers, perforators, truncated blades, and baked bladelets. Many of the tools show evidence of having been hafted in bone handles. Microwear analysis indicates that the bladelets were primarily used not only in projectiles but also for cutting meat, and that scrapers were used in the working of hides.

Economic activities during the Magdalenian remain much the same as they were during the Solutrean. Reindeer continued as the major prey, but horse increased in frequency and a number of other species regularly occur at many sites suggesting a diversification of big game hunting. Small mammals, fish, and birds played a small role in the subsistence during the earlier Magdalenian.

During the later Magdalenian, however, a number of changes occurred. Reindeer and horse continued as the major prey, but now were supplemented by fewer other large mammals. Instead, small mammals, birds such as ptarmigan and grouse, and fish all began to occupy a larger role in the diet.

During the earlier Magdalenian, small backed bladelets became common and may indicate the development of bow and arrow technology. Although the earliest definite evidence of arrows is not found until the end of the late glacial period, these small stone artifacts were doubtless set into wood or bone shafts as part of composite projectiles.

Some important Magdalenian sites are Verberie, Pincevent and Etiolles in the Paris Basin, Guillassou, Le Cerisier, Plateau Parrain, and Le Breuil in the Isle Valley of France, Champreveyres and Monruz on Lake Neuchatel in Switzerland, Schussenquelle, Gonnersdorf and Andernach in Germany which have yielded structural remains of the Upper Palaeolithic period.

In Switzerland, France, Spain, Belgium, and Germany, Magdalenian traditions with highly developed bone and antler technology, including barbed harpoons, backed microblades, and, in the latest sites, geometric microliths, were widespread between ca. 17 and 12 Ka. Most of the painted caves in France and Cantabrian Spain are associated with this tradition and probably reflect large scale regional interactions among bands of hunters.
Majority of the known portable art objects from Western Europe has been found in Magdalenian sites. Ornaments were manufactured in profusion, utilitarian tools were decorated with great care, and special art objects were created in abundance. Using bone, animal teeth, imported shells and fossils, and the increasingly scarce mammoth ivory, beads and pendants were made for necklaces and ornaments on clothing. Among the decorated tools are spear throwers intricately carved with three-dimensional figures of animals, bone spatulas with carved designs, and sandstone lamps with engraved geometric decorations on their handles. Other, more enigmatic objects include elaborately carved perforated antler batons, incised antler rods, sculptures and figurines of ivory, clay, bones, and stone, engraved fragments of animal ribs and shoulder blades, intricately decorated and often perforated bone discs, and engraved stone plaquettes.

The two major classes of motifs used in the portable art are animals including humans and abstract or geometric designs. Although they are less common than geometrics, the animals are the most striking. Among the designs found on the carved spear throwers, several animal motifs have been identified such as a leaping horse, two horses, horse heads, two fighting ibexes (headless), an ibex or fawn defecating, accompanied by birds, a reindeer, an ibex, a muskox, a standing bison, a galloping bison, a bison licking its flank, a mammoth, a hyena, two birds, three birds, three fish, a salmon, and two salmon etc.

**Upper Palaeolithic Cave Art**

The term cave art is especially used to describe the paintings and engravings on the walls of caves and rock shelters. The important cave of Altamira in Spain was discovered as early as in 1879 and since then a series of caves have been opened up and recorded, from Lascaux in 1940 to Chauvet cave which was recently discovered in December 1994.

The techniques adopted by Palaeolithic artists include drawing and painting with fingers, sticks, charcoal in red and often in ochre and black, sometimes with manganese dioxide; engraving and incision; low relief in the living rock or clay; and mixtures of all these approaches. Sometimes the surface of the rock is lightly cleaned or prepared before the work is executed, and artists often made use of naturally smoother areas of wall and natural alcoves or panels. As part of the composition or to accentuate a feature, natural bulges in the rock or the line of cracks or crevices have also been used.

Two characteristics of cave art stand out, first is the subjects of Palaeolithic art which are primarily individual animals, particularly the larger mammals of the
Palaeolithic environment. There are virtually no depictions of vegetation or landscape, and only a few and rather dubious depictions of insects; there are relatively few depictions of smaller mammals, fish and birds. The second characteristic is with some famous exceptions, the art is a collection of depictions of individual animals. The depictions on any given panel may be gathered together in loose composition, or may be arranged in a way that seems to be deliberately balanced; but in some scenes there has been an attempt to associate animals with each other. To relate them by perspective or by scale or to introduce any sense of narrative are rare. Famous exceptions to this generalization include the scene of swimming deer at Lascaux.

The animals in Chauvet, representing the fauna of the middle Rhone Valley in that period, include woolly rhinoceros, lion, mammoth, reindeer, horse, aurochs, bear, ibex, leopard, and an owl; there are also numerous handprints, signs, and sets of red dots. Evidence for the renewal or reuse of lion, reindeer, and rhino by the later addition of anatomical parts to the original animal such as legs, heads, backs, horns, etc., as well as a later outlining of an animal form or an over marking with signs have been observed. These represented modes of images have been used throughout the later West European Upper Paleolithic, modes of animal use have been documented in France, Italy, Germany, and Spain. Some of the depicted animals at Chauvet were probably seasonally migratory reindeer, bison; the bear in hibernation; and other species like rhino and horse are depicted in their summer pelage.

Conclusion

A marked technological change is seen during the Upper Palaeolithic Cultural phase. The flake industry of Mousterian tradition of Middle Palaeolithic is replaced by the blade and burin industry along with bone industry during the Upper Palaeolithic period. Thus Upper Palaeolithic man introduces other raw material i.e. organic materials in addition to lithics (inorganic material). The Upper Palaeolithic has been classified into many sequences and sub-sequences. Here our main concern is on the Aurignacian, Solutrean, and Magdalenian tradition only. With the introduction of new technology, Upper Palaeolithic people manufactured varieties of tools and weapon.