

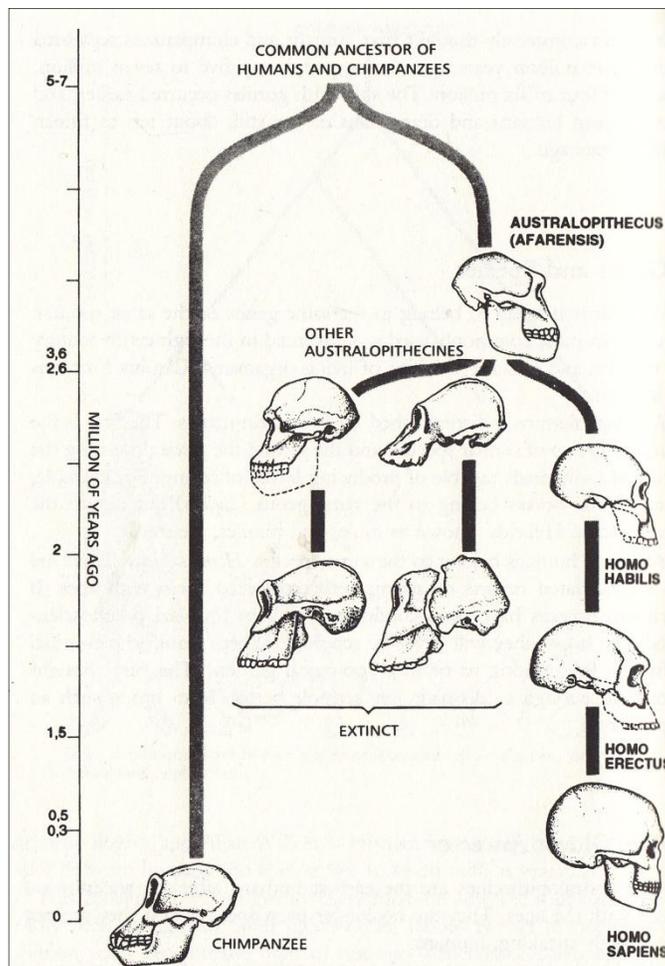
PREHISTORIC HUMANITY

The Dawn of Humanity

The scientific understanding of human evolution is based on fossil records, radiocarbon and other dating methods and, more recently, genetics and molecular biology. There is very strong scientific evidence that apes such as chimpanzees and gorillas are our distant relatives. Analysis of two important molecules, proteins and nucleic acids (DNA), has established a strong connection between humans and apes. It is generally held by paleoanthropologists that humans and chimpanzees separated about five million years ago.

The *Australopithecines* are believed to be the earliest hominids, developing from the common ancestor we share with the apes. They represent a bridge or intermediary evolutionary stage: "They are no longer proto apes, even if they are not yet, strictly speaking, human."

Figure 1. Australopithecine family tree



The *Australopithecines*, which appeared between 4 and 5 million years ago, were of several types: one branch eventually led to humans, while other branches inhabited Africa until about one million years ago before dying out. They closely resembled apes and had a cranium that was small in relation to their face with an internal volume of about 400 - 450 cubic cm. They were short in stature but erect, although their upright stance was slightly different than modern humans:

The beginning of human history is about 5 or so million years ago, when the forests of East Africa thinned, and many tree dwellers had to find new homes. Those that had no trouble holding onto their tree homes evolved into today's chimpanzees. Of those who were forced or attracted out, some did not adapt and became extinct. Others learned to live out of the trees, took up residence in the surrounding grasslands, prospered and survived, and evolved into pre-human beings. These first beings alloy human and ape characteristics . . . They began to walk upright and probably used their upright position to establish a kind of co-operative life, a sharing of child rearing and food until then unknown. (1)

Paleoanthropologists believe that *australopithecines* were the direct ancestors of the first human species. Three species of the genus *Homo* have been distinguished:

- *Homo habilis*, the oldest, dates from around two to two and a half million years ago.
- *Homo erectus* is found from roughly two million to about 300,000 years ago.
- *Homo sapiens* have been dated between 300,000 and 500,000 years ago.

Homo habilis is considered to be the first human species, with the ability to fashion tools from stone and possibly wood, and perhaps limited powers of speech. The fossil evidence has revealed a likely pattern of abilities and behaviours for our first human ancestor: "They had a progressively upright stance, increased use of tools, greater growth of the brain, and they seemed to live more cooperatively. This set of adaptations, food and tool sharing, communal life, seemed to be the theme of early hominoid development."

What makes us consider *Homo habilis* the first of our species? The braincase has grown (from 400 to 630 cubic centimeters in the million or so years separating this creature and the earliest *australopithecines* we know of). Fashioned stone tools also appear in place of the very rough pieces of stone found previously . . . Dating from two to two and a half million years ago, *Homo habilis* (which means "skilled worker, handyman") had the ability to use tools. It has recently been claimed that some of the *australopithecines* may already have known how to make stone tools. *Homo habilis*'s tools are rough. Many are just stone tips: small ones were used as scrapers and larger ones as axes and choppers. Some have been found alongside animal bones; presumably they were used for stripping meat or breaking the bones to get at the marrow. The discovery of abundant stone deposits and bones tells us that this human was a scavenger, and a meat eater. (2)

Little is known of the transition from *Homo habilis* to *Homo erectus* because there is a dearth of accurately dated and researched fossil or archeological remains. However, there is no doubt that the change is marked by further gradual growth of the brain cavity from an average of 630 cubic cm to more than 1000 cubic cm. At the same time tools became more common, more specialized and of higher quality. It is hypothesized that the development of tools was associated with brain growth:

The transformation of *Homo habilis* into *Homo erectus* entailed a series of significant, if not dramatic, coordinated developments. Our ancestors' accelerating bipedal abilities were a function of the continually increasing erectility of their anatomy. Their array of tools and weapons expanded generally with their large brain mass . . . A hunting livelihood required new forms of social cohesion among the hominoids. Hunting in packs, they were forced to evolve more effective and advanced modes of group communication, especially vocal, and group organization. Their ground existence presented whole new problems of survival; nonetheless they effectively met these challenges with new solutions, stimulating their brains into further growth. (3)

The transition from *Australopithecines* to *Homo habilis* to *Homo erectus* was marked by a series of evolutionary stages or developments in which new faculties and abilities emerged, of which language was the most significant:

There must have been several steps; the first was probably the freeing of the hands by a predominantly erect posture. Next, would come the use of tools and weapons. Third, would be communication by language. This last must be considered the decisively human step, for without it man would not be man. Skills as great as those required for making tools are possessed naturally by other animals, such as chimpanzees and beavers; or can easily be learned, as by porpoises and dolphins . . . It may be objected that all animals are able to communicate and that human speech is only a development of the grunts and groans of the forest. This disregards the special character of human speech that consists in storing impressions and reproducing them by a structured combination of sounds. There is no evidence that any animal communicates in this way or can be taught to do so . . . The anatomy of *Homo erectus* is consistent with the belief that he was capable of true verbal communication. The great step from *Australopithecus* with a brain capacity of 600 c.c. or less to *Homo erectus* with one of 900 to 1,000 c.c. or more would scarcely have been made without a mind to use and enjoy the added power that a large brain had to offer. (4)

Homo erectus ushered in a new phase of human evolution marked by a rapid increase in brain size, more advanced tool-making, and significant strides in social cohesion and complexity. Their development allowed them to gain a much greater control over their environment than earlier generations of human beings:

They cooked in pots, handled fairly advanced tools, and worked animal skins – all bespeaking a higher culture. They lived in an ice age and could construct shelters. They invented clothing, used fire, and helped prepare for the characteristic human life: living in groups, being able to survive in new worlds, and adapting those worlds to them. Fire probably extended the day, giving more time for work; and since fire is attractive, it is possible that groups of *H. erectus*, huddled around a fire, were the first to use their larger brains to introduce language. Life challenges alone were probably not enough to inspire the astonishing rapidity of brain growth. There must have been another reason. There was great growth in the brain: that of *Homo habilis* ranged from 600 - 750 cubic centimeters; whereas *H. erectus*'s cranial capacity ballooned to between 775 and 1,225 cubic centimeters (the modern range is 1,000 to 1,400 c.c.). This development occurred well before organized society or language, and long before technology. It is an amazing spurt in growth in the most complicated structure in all biology. (5)

Both the *Australopithecines* and our early human ancestors originated in Africa. Once they left the forest for the adjoining tropical grasslands they encountered a world inhabited by a wide range of plant and animal species. "Archeological evidence, as well as findings from ethnology, comparative anatomy, and psychology, makes a near airtight case for our earliest anthropoid ancestors' forest existence. As pre-humans ventured down out of the trees their bipedal capabilities began to develop, and they were able to supplement their diet with new nutrients obtained by ground feeding."

There is general consensus among paleoanthropologists that our original human ancestors eventually migrated from the savannahs of Africa in northerly and easterly directions, marking the beginnings of the great human journey: "Humans first appeared in east Africa millions of years ago, and from there spread throughout the world in what could only have been astonishing journeys of heart-break, adventure, exploration and endurance. What is less well known is that this journey forth from Africa seems to have occurred more than once. It was undertaken by different species of humans at different times."

Human beings evolved in Africa from a variety of hominid species over a period of a few million years. The first humans to leave the African continent were *Homo erectus* (upright man), who migrated northeast about 2 million years ago when present-day deserts were grassland. The early hunters are thought, at least at first, to have been driven by changes in climate – drought conditions – to follow migrating animal herds. Over time they colonized the Middle East, southern Russia, India, the Far East and Southeast Asia. *Homo erectus* fossils have been dated in Georgia to 1.8 million years ago and in Java to 1.6 million years ago. (6)

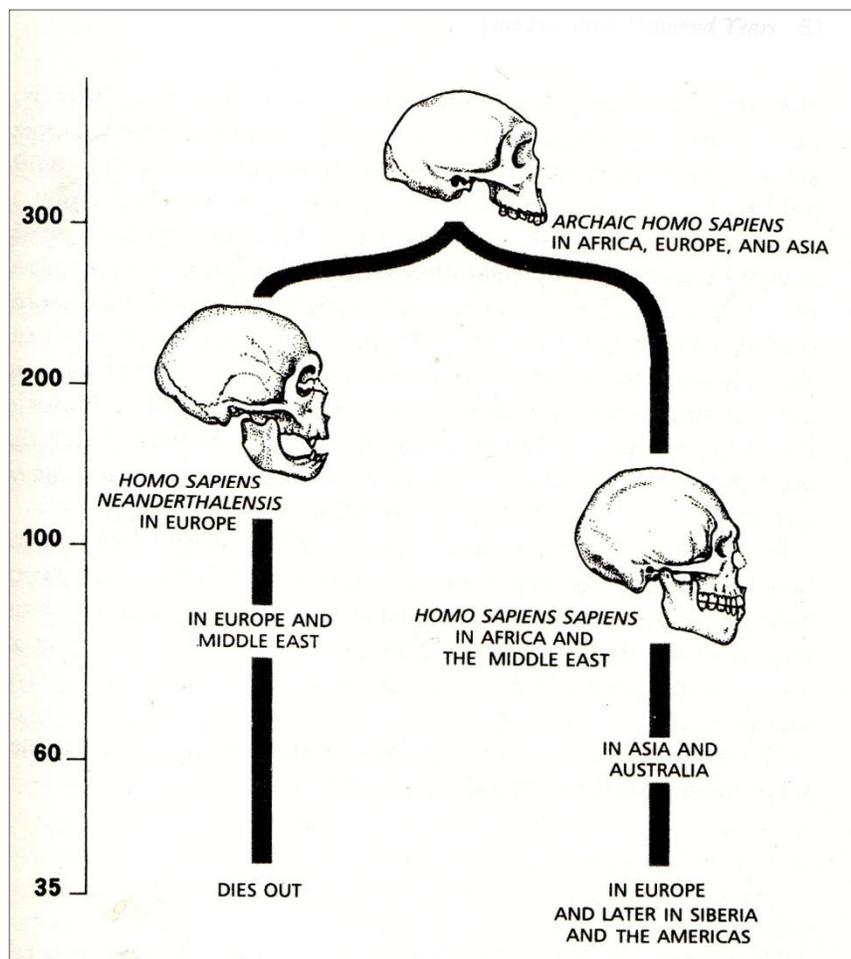
The colonization of Asia, Europe, and virtually all of the Old World by *Homo erectus* occurred over a period of hundreds of thousands of years. The expansion was probably made possible by increased intelligence and superior tools and motor skills. Their appearance in these new lands marks a significant turning point in human evolution:

This complex group constitutes evidence of the first true men – able to communicate by speech, make and use instruments and live in colonies for shelter and protection from their enemies. In various transitional groups *Homo erectus* lived through the period of the Mindel glaciations and the immensely long interglacial of Mindel-Riss. It is almost certain that he had techniques of constructing shelter and, by some means, learnt how to prepare and use animal pelts to protect himself from the damp and cold. It appears that around 1,000,000 years ago the main transition was completed and *Homo erectus* dominated the field of action – true man. (7)

The Emergence of Modern Man

The development of the human species proceeded through a number of stages, culminating in *Homo sapiens*, the first truly recognizable precursors of the modern human being.

Figure 2. Family tree of *Homo sapiens*



For more than a million years the human evolutionary impulse was embodied in *Homo erectus*, who slowly developed a range of adaptive capacities to meet the challenges and possibilities of the external world:

Following the pattern of human evolution, whereby development appears to come in stages, there is no trace of real progress until the appearance of a new species of hominid – *Homo erectus* – about one and a half million years ago. *Homo erectus* had a larger brain – it eventually grew to 80 percent of a modern human's. His height increased too, to about five feet, and he added tools such as headaxes and choppers to the repertoire of his ancestors. He apparently made use of fire, although he probably did not know how to create it. (8)

The transition from *Homo erectus* to *Homo sapiens* marks a decisive turning point in human evolution as the rate of physical, cognitive and social transformation accelerated in response to increasing brain size. One of the consequences was the increasing complexity of tools and hunting weapons. "The use of tools not only demands a certain level of intelligence; it also tends to develop intelligence. Confronted with some problem that might be solved by tools, the tool-user considers the various possibilities and exercises his mind."

Recently, a find was unearthed in Germany which has forced archeologists to re-assess their views on *Homo erectus*. A set of 400,000 year old wooden spears, carved with flint from a spruce trunk and beautifully weighted for throwing proves that *Homo erectus* possessed the patience and skill to fashion them, and show that they could plan for the future and hunt cooperatively. These achievements, however, represent the gamut of skills which *Homo erectus* mastered – although he lived successfully for around a million years, weathering ice ages and migrating widely. The emergence of what is known as Archaic *Homo sapiens* brought little change at first in tool manufacture. But his brain was now as large as modern man's – and apparently identically structured . . . The reasons for the development of man's brain appears to be a loose correlation between the physical development of hands, allowing tools to be made, and the greater brain capacity which tool-making required. (9)

Although the boundary between different evolutionary classifications is often imperceptible and there is probably a certain degree of overlap between species, paleoanthropologists generally agree that between 300,000 and 500,000 years ago *Homo erectus* began evolving into early *Homo sapiens*, sometimes referred to as archaic *Homo sapiens*:

The first remains of our species have been dated between three and five hundred thousand years ago. *Sapiens* may have existed alongside *Homo erectus* for a while, but we cannot be sure. With archaic *Homo sapiens* the braincase quickly reached its final capacity of about fourteen hundred cubic centimeters on average. This has remained much the same ever since, with a slight difference between men and women (most probably due to the difference in average weight and stature) but

with enormous individual variations . . . During human evolution we see a dramatic growth in brain volume, most probably linked to improvements in certain intellectual capacities, such as understanding how to make tools and use language in an increasingly complex manner. *Homo sapiens* seems to have always had much the same brain size. The shape, however, has changed, and for this reason the *Homo sapiens* of three hundred thousand years ago is known as archaic *Homo sapiens*. In archaic skulls, the heavy, arched brow ridges and thick bones remain, while the face still protrudes somewhat like an ape's. (10)

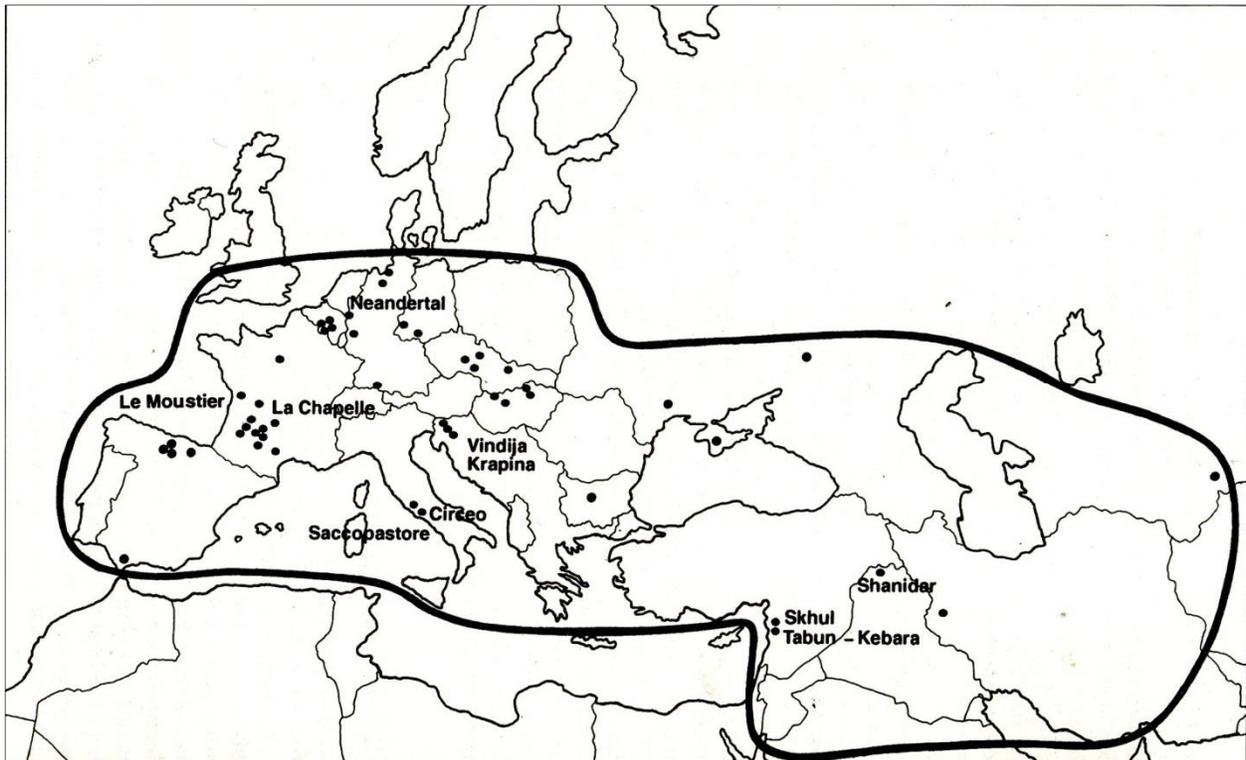
The fossil and other evidence from a variety of archaeological sites provides some general information about *Homo sapiens*:

- The remains of archaic *Homo sapiens* have been found in North, South and East Africa, throughout Europe (except Scandinavia) and in South and Southeast Asia. "The earliest humans have been documented to have first appeared in Europe only about 350,000 years ago, although recent findings might point to a much earlier arrival."
- Use of tools: "Toward the end of the archaic *sapiens* period, the old Acheulean method of tool-making, which had been used for more than a million years, gradually began to be replaced. The new Mousterian technique we associate with *Homo sapiens* takes over from the old Acheulean one. There is a much wider range of these tools, and they show signs of careful retouching and maintenance."
- *Homo sapiens* were hunter-gatherers and there is evidence of hunting weapons dating from 400,000 years ago.
- By 300,000 years ago, the human brain had essentially reached its present size and over the next 100,000 – 200,000 years the most primitive, ape-like features disappeared.
- Although the role of speech in human evolution is largely speculative, the evidence from fossil records suggests that early *Homo sapiens* may have been capable of complex articulation of sounds. "The creation of language whereby man could come to reflect and think about the universe was one of the most important moments in the whole of our history."
- There is some evidence that our earliest ancestors conceived of some sort of afterlife. "The oldest surviving indications of funerary customs have been found in China, in the form of about six skulls, belonging to Peking man, who flourished some 600,000 years ago. They suggest that the early form of man had already begun to speculate on the possibility of existence after death."

The Neanderthals

Homo sapiens neanderthalensis followed archaic *Homo sapiens* in the evolutionary tree. From Africa they migrated north to Europe between 200,000 and 300,000 years ago. Archaeological evidence indicates that about 60,000 years ago they were present east of the Caspian Sea and in the Middle East at sites in Israel. They eventually disappeared completely about 30,000 to 35,000 years ago.

Figure 3. Maximum spread of Neanderthal settlements



Physically, they were taller than their ancestors, heavily muscled with prominent brow ridges and a protruding face. Their actual brain size was similar to that of modern humans. The Neanderthals' facial features are quite primitive compared to modern humans and there is no particular resemblance between Neanderthal skulls and modern Europeans:

The Neanderthals' braincase is the same size as a modern human's and sometimes even a little bigger. However, the skullcap is longer and lower, making the forehead considerably shorter. The face is long, and has a wide nose and weak chin. The bones show that these people were very strong. A strange feature, particularly noticeable among the elderly, is pronounced wear on the outer edges of the incisors. This is clearly not inborn, and would seem to be caused by the use of the incisors to

grip materials, maybe cord and so on, when making tools. Interestingly, this type of wear is still found among the Eskimos, albeit to a much lesser extent. (11)

The popular notion of the Neanderthals – that they were very primitive and even grotesque-looking compared to modern humans – is a misconception based largely on artistic depictions of their appearance showing thick skulls, low brow foreheads and ape-like features. In reality they evidenced many signs of a relatively advanced culture, adapted to their very challenging environmental conditions:

They had an organized society, even ceremonies; one we know of is a ritual burial in an elaborate grave 60,000 years ago. It was found in a cave near what is now Shanidar, in northern Iraq. This and other evidence of ritual would seem to indicate early expressions of a spiritual life. Neanderthal cranial was as much as 1,500 cubic centimeters, larger than today's average. Culturally, they were far advanced and lived in genuine societies. Having appeared during the Ice Age, Neanderthals adapted to the cold and constructed better clothing, shelters, and more complex tools. As their level of social organization advanced, not surprisingly, archeology has found that violence and warfare became a distinct element in their lives, just as in ours. (12)

Many of the characteristic features of Neanderthal life have been revealed through centuries of archeological investigation and research:

- They were hunter-nomads and meat from large animals (bison, ox, cows, horses) was their staple food.
- They generally lived in caves but some open-air sites have been found, often close to water sources. "Though the Neanderthals were primarily cave dwellers, they constructed huts where natural lairs were not to be found, thus initiating additional demands upon the spatial (or patterning) and logical functions of their brains, undoubtedly an important impetus to right/left brain specialization."
- Tools were typically fashioned from stone and wood, rather than bone or ivory. "In addition to knives, scrapers, punches, and many other tools, spears have been found, including a wooden one still embedded in an elephant's side."
- Evidence suggests that *Neanderthals* used animal skins and leather for clothing and constructed rudimentary shelters for protection from the elements.
- There are suggestions of some sort of social hierarchy and organization with distribution of labour and specialized hunting and gathering behaviours.

- Archaeological evidence also suggests that for physiological reasons (possibly related to the development of the larynx), *Neanderthals* were unable to articulate speech sounds in the way that modern humans can.
- The importance of hunting in the life of Neanderthals may have led to magical beliefs and rituals to enhance the success of the hunt.
- Markings on certain stones suggest that Neanderthals followed and measured the movements of the sun and moon.
- Certain Neanderthal sites show evidence of some form of animal worship or magic. "The first example of a Neanderthal Bear Cult sanctuary was found in the Swiss Alps, 8,000 feet above sea level, where the skulls of cave bears and a number of femurs were found arranged in a recognizable pattern facing the entry."
- Some discoveries suggest that they cared for the elderly and sick. "There seems no doubt that Neanderthal man made the advance into altruism. He protected at least some older or weaker members of his society. The skeleton of a forty year old man (extreme old age for early man) has been discovered which dates back 60,000 years showing signs that he had been severely incapacitated from birth, and must have been kept alive by his group."
- Neanderthals engaged in ritual behaviour, including burying their dead. "By 120,000 B.C., there are indications that Neanderthal man may have had some involvement in a skull cult, involving rituals and ceremonies, showing that they had thought at least to some extent about life and death – and had conceived some notions about a world beyond."

Over a vast period of hundreds of thousands of years the life of Neanderthals remained within a narrowly circumscribed range of activities and behaviours:

Neanderthal man appeared on the scene up to two hundred thousand years ago – well before the arrival of Cro-Magnon man, our own progenitor. Neanderthal man disappeared a mere 30,000 years ago. So – amazingly – the span of Neanderthal's existence – around a hundred and seventy thousand years – may have been nearly double that of our own to date. Yet this type of man, with a general intelligence which appears to be at least as high as our own (if anything, his brain was heavier) reached a plateau of culture about 100,000 years ago, where he remained. In many ways his story is the most puzzling evolutionary mystery we have yet seen. He was expert at making stone tools by the Levallois method – which required chipping at a piece of stone on a block with a degree of hand to eye co-ordination, and an ability to conceive of and plan the finished tool. He learned to bind these to wooden shafts, to make

short spears for throwing. He lived in social groups and dominated Europe and South West Asia for thirty thousand years. He buried his dead – there are traces of what appears to be a skull cult which stretches across Europe. (13)

There has been a great deal of scientific speculation about the reasons why *Neanderthals* seemed to stagnate in an evolutionary sense, leading to their eventual extinction. In the words of John G. Bennett: “One notable deficiency of Neanderthal was his apparent lack of artistic feeling. This is particularly striking in view of his immediate successors. Once again we have the question: why did men with brains fully equal in size to our own, show so comparatively little initiative to develop tools and no apparent creativity in art?”

Though ice ages came and went, Neanderthal man failed to develop beyond this point for a hundred and seventy thousand years. Again, we see a complete lack of the irresistible urge towards development that has characterized later *Homo Sapiens* history. Towards the end of his existence, there are signs that Neanderthal man made rather pathetic attempts to copy the newer *Cro-Magnon* peoples in some of his practices: using red ochre as a kind of ritual decoration for example. In his final years it became obvious that he needed to innovate to survive; for example, to develop a wider variety of tools. However, despite evolutionary pressures, he did not seem able to make the necessary development. Eventually, he died out, apparently from forces of competition. His paucity in adjustment has led some observers to conclude that he lacked some basic function of mind; possibly the ability to integrate different spheres of specialised intelligence. For example, if they could not combine the areas of social and technical intelligence, workers making tools would be less likely to gather together in groups performing a simultaneous social function, where information about tool-making might be exchanged. (14)

Until about 40,000 – 50,000 years ago both Neanderthals and modern man (*Cro-Magnons*) co-existed in Europe. These two separate peoples differed in head shape and their use of tools. Some archeologists and anthropologists believe that Neanderthals eventually became modern humans, while others posit that they died out from pressure from *Cro-Magnons* who spread from the Middle East and elsewhere to Europe and replaced them. The second hypothesis seems more likely, as recent genetic research shows that Neanderthals are not the direct forebears of modern humans because their genome profiles are significantly different.

Homo Sapiens Sapiens or Modern Man

Homo sapiens sapiens are anatomically indistinguishable from today's humans and represent the last and most complex development of the human species, possessing mind, memory and creativity. They are also sometimes referred to as *Cro-Magnons*, after the name of the site in which some of their most archeologically significant skeletons and remains were discovered.

Both Neanderthals and *Homo sapiens sapiens* were once believed to be direct descendants of *Homo erectus*. However, that belief has been supplanted by new genetic findings: "Most scientists now hold that modern humans evolved not from *Homo erectus* and their many descendants, but from a later species who originated in Africa about 150,000 years ago and spread subsequently around the globe, replacing archaic humans in each location with little genetic mixing." But new evidence also suggests our own DNA profile shows that some *Homo sapiens sapiens* interbred with Neanderthals.

A decisive turning point in human evolution is marked by the presence of *Homo sapiens sapiens* in Africa and their subsequent migration to other parts of the world:

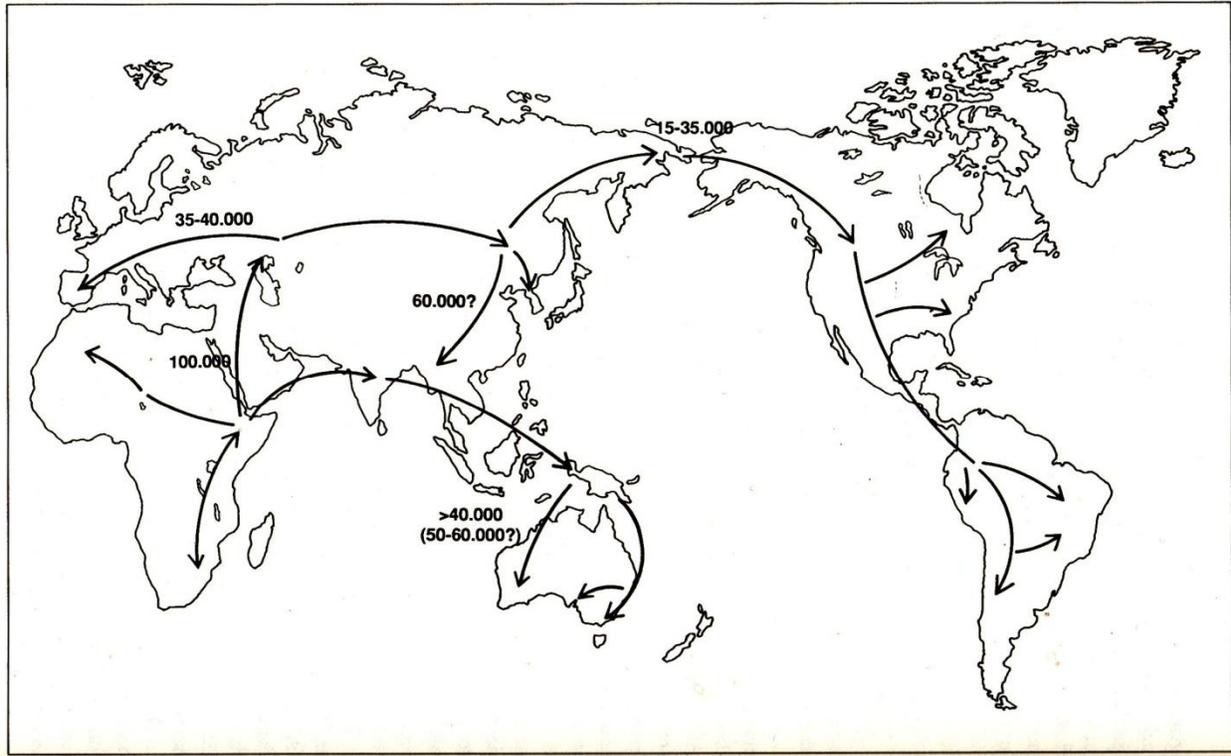
Modern human beings emerged as a single small population about 200,000 years ago in Africa, and there is both archeological and paleoanthropological evidence that suggests *H. sapiens* remained stable for approximately 100,000 years. Between 80,000 and 60,000 years ago, however, there was a dramatic expansion of certain genetic lineages in the African population at the same time there was a striking change in technology and culture. *Homo sapiens* do not appear to have changed physically in this period, but they began to produce many more types of unambiguous symbols and new forms of tools. After this cultural and technological shift, these modern humans began to leave Africa about 60,000 years ago. As humans spread across the globe, their material and symbolic culture grew richer. By 40,000 years ago, *Homo sapiens* were sculpting from stone, painting the walls of caves, and creating a greater variety of musical instruments and jewellery, and ritually burying their dead. (15)

Distinct *Homo sapiens sapiens* skeleton remains date from 75,000 to 130,000 years ago in South Africa and about 100,000 years ago in Israel. They appear around 40,000 years ago in Europe where they apparently replaced the *Neanderthals*. Subsequently they spread throughout virtually the entire world:

Homo sapiens sapiens then starts to appear everywhere. Within sixty to seventy thousand years, the species reaches every corner of the globe, manifesting an ability to adapt to the most varied environments and also – let it be said – possessing a strong spirit of adventure. In China, there is a *sapiens sapiens* relic more than sixty thousand years old. Modern humans seemed to have reached Australia and New Guinea during this time, and to do so they must have used seaworthy vessels . . . In Australia, a fossil that is generally accepted as a modern human being dating back thirty-five to forty thousand years has been found and also sites from fifty-five to sixty thousand years ago. Modern humans came late to Europe. The earliest traces we have are from eastern Europe, around thirty-five to forty thousand years ago. The chronological pattern of finds suggests that they came from the East. In much the same period, we find the last evidence of Neanderthal presence. Modern humans subsequently moved into the colder regions of Asia. This was undoubtedly an extremely difficult conquest, because Siberia is one of the coldest

places on earth. Cultural and very probably biological adaptation, too, were needed to survive in this climate. From Siberia they journeyed to America, at least fifteen thousand years ago, but perhaps earlier, presumably taking advantage of the fact that the shallow waters of the Bering Strait became dry land during the last Ice Age when part of the ocean's waters was absorbed by huge polar glaciers. (16)

Figure 4. Expansion of *Homo sapiens sapiens* throughout the world



As *Homo sapiens sapiens* emerged as the most dominant, innovative and creative species on earth, the actualization of the latent potentiality of completing the human evolutionary journey became a real possibility:

The archeological picture changed dramatically around 40-50,000 years ago with the appearance of behaviorally modern humans. This was an abrupt and dramatic change in subsistence patterns, tools and symbolic expression. This stunning change in cultural adaptation was not merely a quantitative one, but one that represented a significant departure from all earlier human behavior, reflecting a major qualitative transformation. It was literally a "creative explosion" which exhibited the "technological ingenuity, social formations, and ideological complexity of historic hunter-gatherers." This human revolution is precisely what made us who we are today. (17)

Many aspects of the life of *Homo sapiens sapiens* have been revealed through archaeological research throughout the world:

- The brain size of *Homo sapiens sapiens* was similar to *Neanderthals*, but the shape of their face was different and, more importantly, the “physiological apparatus for producing a great range of sounds expanded and the palate enlarged, which allowed greater precision in speech.”
- Although continuing to live in caves, they modified the interiors to attain a greater degree of living comfort, including, for instance, hearths. But they also constructed tents and huts for shelter.
- Clothes were made from the skins and furs of the animals they hunted and they invented the needle to sew garments. The level of sophistication of their clothing rivals that of today: “Three occupants of a burial site to the north of Moscow show signs of complete clothing, including hoods, shirt, jacket, leg wear, and moccasins.”
- It is likely that various forms of body adornment were used by both males and females. Personal adornment took the form of ivory and bone pendants, necklaces, bracelets and leg bands made of shells, animal teeth and beads.
- The tools used by *Homo sapiens sapiens* in South Africa and Israel were very similar to archaic *Homo sapiens* and the *Neanderthals*. But about 50,000 years ago modern humans adopted a new, more diverse style of tools (called *Aurignacian*) and employed them when they migrated to Europe. “The range of Aurignacian tools is wider and more varied than the earlier ones. There are many types of instruments with precise shapes and recognizable uses, implying a higher degree of specialization. There are tapering stone chip blades with fine edges and very sharp cutters and scrapers. Ivory, horn, and bone are employed as well as flint.”
- Decorative and other artefacts were fashioned out of stone, wood, bone, antler and ivory. There is evidence that certain goods such as flint, shells, skins and tools were traded with other human groups, and there was likely a sharing of knowledge and techniques for making these artefacts.
- Hunting techniques became more refined with the development of the bow and arrow and the spear, and there is evidence that the first fishing tools in the form of hooks and harpoons appeared. Hunting strategies became more sophisticated as they carried out complicated, multi-stage efforts. In some instances, through ritual magic, they were able to predict animal behaviour and patterns by imagining themselves in the place of their prey, thereby anticipating their movements.

- Human burials were accompanied by ritual and ceremony, and burial sites typically contained a variety of symbolic grave objects and artefacts.

Homo sapiens sapiens showed a great interest in the natural world around them. "Cro-Magnon man was interested in the sun and moon because he was sensitive to their rhythms, and experienced them as living forces." Archaeologists have discovered evidence that the phases of the moon were symbolically represented by markings on certain bone artefacts. It has been speculated that recording the cycles of the sun and moon on bone was an early form of a calendar, useful for anticipating the changes of season, predicting the behaviour of prey, or informing pregnant women of their due date for childbirth. The ability to closely observe and draw conclusions from the natural environment allowed them to adapt to changing circumstances and difficult environmental challenges.

With *Homo sapiens sapiens* language reached a more refined level with a greater vocal range and complexity of speech. Increased language ability accelerated the pace of evolution, enabling them to plan, organize and cooperate more efficiently. Anthropologists have hypothesized a relationship between language and the use of tools: "The great local diversification of tools coincided with the spread of humans. Linguistic diversification was probably simultaneous and took place for the same reasons: independent evolution in communities that were cut off from one another."

It has been suggested that the metamorphosis of rudimentary speech into language set the imagination free and opened the door for abstract thinking: "He not only speculated that abstract forces governed the world, but asked himself what actions on his part would influence them. And he formulated a wide range of solutions, which in turn brought about such revolutions as art, mythology and magic."

It seems evident that it was now, at the very start of human history, that he conceived of the idea that there are forces beyond the physical world which may influence and be influenced by man – which has remained with us in one form or other until today. His earliest use of art demonstrates it to have been associated with his new way of thinking. Not as a mere ornament, but as an attempted solution to a problem that he was beginning to see in magical terms. If there were unseen forces governing important matters, like the progress of the hunt, how could he come to dominate them? . . . What does seem certain is that man had made the leap beyond the natural world he could see around him. He had come to the conclusion that there were some forms of invisible forces governing the natural order. And he had made the further deduction that actions of his own might in some way come to influence them for his benefit. (18)

The world view of *Homo sapiens sapiens* was likely shaped by 'magical' beliefs and rituals, often related to hunting. Writer Colin Wilson speculates along these lines:

We find Cro-Magnon man practising hunting magic, which must have given him a new sense of control over nature, as well as over his own life. He may well have regarded his shamans as gods, as primitive man of a later age regarded his priest-kings as gods. Magic was early man's science, since it fulfilled the basic function of science, of offering answers to basic questions. He was no longer a passive animal, a victim of nature. He was trying to understand, and where important questions were concerned, he felt he *did* understand. (19)

About 40,000 years ago *Homo sapiens sapiens* made an extraordinary cultural and creative developmental leap: "As well as learning to think representationally and to depict creatures he saw around him, man had also begun to express himself symbolically, breaking out of the confines of the natural world. This date, rather than the time when early man reached his full brain capacity in terms of size and shape, is the one at which one can say that he became entirely human."

The tangible manifestation of the revolution is seen in art. It was the first time that art in any form had been seen. When it did arrive, it appears to have done so virtually overnight, without any visible evolution of artistic ability. By 30,000 years ago it had spread across the world as a universal attribute of the human mind. It took many different forms: carved ivory figures (for suddenly man had discovered how to work with ivory and bone), cave art, 'tallying sticks' for keeping records of hunts. There were naturalistic representations of every conceivable type of animal. There are signs that this advance was connected with the way he was thinking: there was an explosion of tool culture at the same time. It must have been the equivalent of the Renaissance and the Industrial Revolution all happening at once. Furthermore, at the same time as he made the leap to depicting creatures from the world around him, man also made a further jump – he created fantastic figures of creatures that nobody had ever seen – juxtapositions, such as a boar's head on a man's body. This hinted at a well-developed mythology to accompany the images. (20)

At this pivotal time in human evolution, artistic creativity abounded and took many forms, expressing a deep connection with the forces of the natural world. It is apparent that much of the art had magical and religious functions. "The extraordinary fidelity and beauty of the animal studies show that the artists were inspired by reverence and communion with nature and with the beasts among and upon whom they lived."

The outburst in creativity in the visual arts was amazing. Weapons, ornaments and other objects were engraved or beautifully carved in high relief – usually with animal figures – and numerous pieces of bone, ivory, antler and stone have been found embellished in the same way. There must also have been models in clay and paintings long vanished, and certainly a wealth of exquisitely carved wooden objects. At a few sites, carvings have been found on the walls of inhabited caves or rock-shelters – notably the magnificent horses of Cap Blanc – but

by far the greater part of the surviving parietal art is deep in the recesses and underground caverns of the French and Spanish caves. Here, the best of the life-like sculptures and paintings of animals – so vital in movement and expression – rival anything of the kind that has since been achieved. Within at most twenty thousand years, man accomplished incomparably more than in the preceding eight hundred thousand. (21)

Higher Intervention in the Evolution of Humanity

Throughout history certain esoteric teachings have indicated that the evolution both of the earth and of humanity are directed by a superior level of intelligence and consciousness. In *The People of the Secret*, Ernest Scott argues that biological evolution and human history are directed by a hierarchy of Intelligences who are the agents of the process of evolutionary transformation:

History is not the equilibrant of chance and hazard. It does not just happen. The script for the long human story was written by intelligences much greater than man's own. Certain gains and goals for mankind – and for the biosphere of Earth – must be attained within certain intervals of Earth time. These gains are essential for the balance and growth of the solar system of which the Earth is a part. The solar system may itself be subject to a similar pressure in the interests of the galaxy of which it is a part. The direction, speed and end of this process is "the Will of God." The Will of God is the aspiration of Divinity that the universal process shall proceed in a certain way to a certain end while leaving open the possibility that it may elect to proceed quite otherwise to quite else. Very high intelligences direct the evolution of the universe in an attempt to ensure that the Divine aspiration shall be realized. These intelligences are coercive in proportion as their material is unconscious. They are persuasive in proportion as their material is conscious. (22)

In his book *The Masters of Wisdom*, John G. Bennett, a student of Gurdjieff, concurs with the proposition that the evolution of life on earth may be guided by intelligent forces:

The picture shown to us by the history of the earth is that of a slow but accelerating transformation from lifelessness to life, from primitive sensation to a developed consciousness. The transformation has gone forward uncertainly and even precariously, but the result is already a marvel. We see the amazing adaptation of life to the nature of the planet, of one form of life to another. We see the utmost ingenuity of construction, we see beauty, and we see the lay of a vast cosmic spirit. If all this came into existence blindly by the working of mechanical laws and accidental combinations, it is a double marvel. If we look at it as an achievement

of a great intelligence, we must be ready to bow before it and acknowledge that it is incomparably greater than ours. (23)

The concept of Higher Intelligences is reflected in the creation myths of numerous cultures throughout history. Many religions believe in the existence of “superhuman powers that intervene within the natural order.” In the various traditions these higher-order entities are known as Devas and Asuras (Hinduism and Buddhism), Angels (Christianity), Jinns (Islam) and others.

Bennett has coined the term ‘Demiurgic Intelligence’ to describe “a level of being superior to man in consciousness and creativity” that acts as an instrument of the Divine Will in order to nurture and guide the evolution of life on earth within the framework of natural laws:

The task is to bring into existence beings capable of providing the earth with a soul, by achieving such a degree of mutual love and such wisdom as to be able to act as one and yet retain their individual freedom. Mankind today represents an early stage in the accomplishment of this task. The very high Intelligence I am postulating is neither human nor divine. It is neither perfect nor infallible, but its vision and its powers far transcend the wisest of mankind. I shall call it the Demiurge, from the word used in Athens to designate “worker for the people,” the artisan or craftsman who provided the *demos*, citizens of Athens, with the instruments of well-being and culture. The word was taken over much later by Aristotle to stand for the Great Artificer, the power that creates and maintains life on the earth. It was natural to think of the Great Artificer as the prime mover, the transcendental source from which all existence flows. (24)

The Demiurgic Intelligence is said to stand between the life-giving, creative power of the sun and the gradual evolution of nature on planet earth. “The intelligence of the Demiurgic Powers transmits the creative plan that originates in the sun and is responsible for regulating the operation of universal laws and initiating the processes of life. It is only when the Demiurge enters into nature that it has a means of action.”

The guiding hand of the Demiurgic Intelligences can be seen throughout nature in the form of certain inherent qualities. “The Demiurge reveals to us not only the purposeful drive toward higher levels of being but also the joy of life and the love of play.”

- *Progress*: Life has evolved in a definite direction towards the emergence of conscious creative beings.
- *Interdependence*: All life is interwoven in bonds of mutual dependence.
- *Beauty*: Beauty is an attribute of the Higher Intelligence which creates beauty because of love of beauty. “The Demiurge is an artist and poet, and our art and our poetry are gifts which enable us to share beauty with others.”

- *Play*: Play is timeless and has no past and no future. "Play is creation in the present moment; it is fulfillment that has no tomorrow."

According to Bennett there is an element of freedom of action on the part of the Demiurgic Intelligences within the broad constraints of the 'Divine Plan.' "Intelligent Guidance means the creative activity by which the evolution of life on the earth is helped towards the foreordained Plan. When translated into terms of events and history, the goal appears as Destiny and when Destiny is understood as the form of the future, it is to be accepted as a Goal."

The quintessence or central characteristic of the Demiurgic Nature is Creativity. Now creativity implies spontaneity and spontaneity requires freedom. The Demiurgic Nature is not to be regarded as a passive instrument whereby the Divine will is inexorably and impeccably put into execution; but rather as a Creative Intelligence with an immense freedom of action. This freedom is conditioned by foreordination, that is, by the total requirements of the Plan and Purpose – in the present case the evolution of free responsible beings on the earth. But within these limits we postulate an indefinite number of possible paths of realization. Working in the hyparchic future, the Demiurgic Intelligences can interfere with patterns of destiny but not with the Plan of Creation. (25)

In this sense the Demiurgic Intelligences act with impeccable intentions based on a great cosmic perspective in order to execute the Divine Plan, but they are not infallible: "The whole of Existence is fallible because it is limited by conditions that make the full realization of its potentialities impossible. There is nothing in the scheme of the cosmic order that requires that the Demiurgic Intelligences should be exempt from error."

Bennett provides a five-fold hierarchical schema to describe the refinement of energies which accompany evolutionary development and the role of the Demiurgic Intelligences in this process:

1. *Vital* energy connected with food and its transformation and associated with the basic 'germinal life force' of nature. This corresponds to our animal nature.
2. *Practical* energy such as the acquisition of skills and adaptive behavioural patterns. This is the initial level of intervention and guidance by the Demiurgic Intelligences.
3. *Sensitivity* and the emergence of attributes such as curiosity, self-assertion, sexual diversification and selection. The use of these energies reflects a further refinement in human potentiality under the direction of the Demiurgic Intelligences.
4. *Consciousness* and an enlarged perspective encompassing an awareness of the biosphere and all of life. At this level the action of the Demiurgic Intelligences is through telepathic contact of a higher order.

5. *Creativity* and freedom of expression in which the Divine Will or Universal Spirit is made manifest through individuals with the potential to develop a permanent soul. At this stage the Demiurgic intelligences have prepared the ground for the final and highest attainment of humanity – universal, unconditional *Love*.

Bennett offers a conjectural description of the Demiurgic Intelligences' influence on human development and evolution. He suggests that the initial intervention occurred millions of years ago with the *Australopithecine* species in the form of shaping certain skills and behaviours related to survival through, for example, the introduction of primitive tool-making and hunting strategies.

The next stage of evolution involved *Homo erectus* who, in addition to possessing the energy of sensitivity, was now endowed with mind and consciousness. *Homo erectus* acquired a mind capable of learning, leading to the advent of communication and social organization. Tool-making skills and behavioural patterns of adaption to the environment were greatly enhanced from the level of the earlier *Australopithecines*. The Demiurgic Intelligences also taught them the use of fire and an expanded variety of diet. "The progress of *Homo erectus* towards the fuller possession of a human mind was more psychological than anatomical and that is why it cannot be discerned from the study of fossils alone."

The transition to *Homo sapiens* was accomplished, under the guiding hand of the Demiurgic Intelligences, by the development of speech and communication. This marked a turning point in human evolution as speech became an expression of mind and consciousness. "The key to the use of mind is speech, which acts as the prime instrument of teaching and the transmission of knowledge. The essential character of human speech is that it can make connections beyond the limits of the actual present moment."

The advent of creativity in *Homo sapiens sapiens* marked a new stage in human evolution. The Demiurgic Intelligences influenced certain selected individuals by endowing them with superior knowledge and powers. These early 'magicians' were precursors to the shamans of later generations. "This was the first man who had all of the characteristics of man as we know him. He could speak as we do; he could enjoy creative fantasies and translate them into action; and he could become aware of past and future and understand that events could occur beyond the reaches of the senses."

The presence of creativity must have resulted in a far greater diversification of behaviour patterns. Life that had hitherto been dominated by food, sex and self-preservation was complicated by new impulses: intellectual curiosity and the need to understand himself and his world, the urge to express and to fulfil himself, the desire for power and perhaps even for possessions, and the need to find new kinds of relationships reaching towards a social structure – these and other characteristic human impulses – must all have entered *Homo sapiens sapiens* with the advent of creativity . . . Corresponding with this came the presentation to his consciousness of the destiny of man to become responsible for the governance of the whole

Earth. To present to the human mind – laden with the traces of a million years of semi-animal existence – the theme of human destiny, must have been an almost impossible task. Yet man was creative, and what he could not understand could yet enter his awareness by the direct communication with Intelligence. The Guides were responsible for the delicate regulation of man's awakening. In their hands, was a large part of the balance of success and failure. Man was not yet directly connected with the source of Love which could enable him to come of himself to an understanding of man as destined for union with his Source. Between him and the Cosmic Purpose came the link of the Universal Will, operating through the Demi-urgic Intelligences. (26)

References

- (1) Robert Ornstein *The Evolution of Consciousness* (New York: Prentice Hall Press, 1991), p. 34.
- (2) Luigi Luca Cavalli-Sforza and Francesco Cavalli-Sforza *The Great Human Diasporas* (Cambridge, Massachusetts: Perseus Books, 1995), p. 42.
- (3) Stuart Litvak and A. Wayne Senzee *Toward a New Brain: Evolution and the Human Mind* (Englewood Cliffs, New Jersey: Prentice-Hall, 1986), p. 31.
- (4) J.G. Bennett *The Dramatic Universe (Volume 4)* (London: Hodder and Stoughton, 1966), pp. 192-193.
- (5) Robert Ornstein *The Evolution of Consciousness* (New York: Prentice Hall Press, 1991), pp. 36-37.
- (6) "The Human Journey" <http://www.humanjourney.us/ancestors2.html>
- (7) J.G. Bennett *The Dramatic Universe (Volume 4)* (London: Hodder and Stoughton, 1966), pp. 187-188.
- (8) "The Role of 'Primitive' People in Identifying and Approaching Human Problems" (Tunbridge Wells, England: The Institute for Cultural Research, 1988), p. 4.
- (9) "The Role of 'Primitive' People in Identifying and Approaching Human Problems" (Tunbridge Wells, England: The Institute for Cultural Research, 1988), p. 4.
- (10) Luigi Luca Cavalli-Sforza and Francesco Cavalli-Sforza *The Great Human Diasporas* (Cambridge, Massachusetts: Perseus Books, 1995), p. 45.
- (11) Luigi Luca Cavalli-Sforza and Francesco Cavalli-Sforza *The Great Human Diasporas* (Cambridge, Massachusetts: Perseus Books, 1995), pp. 50-51.
- (12) Robert Ornstein *The Evolution of Consciousness* (New York: Prentice Hall Press, 1991), p. 37.
- (13) "The Role of 'Primitive' People in Identifying and Approaching Human Problems" (Tunbridge Wells, England: The Institute for Cultural Research, 1988), p. 5.
- (14) "The Role of 'Primitive' People in Identifying and Approaching Human Problems" (Tunbridge Wells, England: The Institute for Cultural Research, 1988), p. 6.
- (15) "The Human Journey" <http://www.humanjourney.us/ancestors.html>

- (16) Luigi Luca Cavalli-Sforza and Francesco Cavalli-Sforza *The Great Human Diasporas* (Cambridge, Massachusetts: Perseus Books, 1995), p. 56-57.
- (17) "The Human Journey" <http://www.humanjourney.us/ancestors3.html>
- (18) "The Role of 'Primitive' People in Identifying and Approaching Human Problems" (Tunbridge Wells, England: The Institute for Cultural Research, 1988), pp. 8-9.
- (19) Colin Wilson *From Atlantis to the Sphinx* (Boston: Weiser Books, 2004), p. 196.
- (20) "The Role of 'Primitive' People in Identifying and Approaching Human Problems" (Tunbridge Wells, England: The Institute for Cultural Research, 1988), p. 7.
- (21) J.G. Bennett *The Dramatic Universe (Volume 4)* (London: Hodder and Stoughton, 1966), p. 238.
- (22) Ernest Scott *The People of the Secret* (London: Octagon Press, 1983), pp. 230-231.
- (23) John G. Bennett *The Masters of Wisdom* (Santa Fe: Bennett Books, 1995), p. 17.
- (24) John G. Bennett *The Masters of Wisdom* (Santa Fe: Bennett Books, 1995), p. 16.
- (25) J.G. Bennett *The Dramatic Universe (Volume 4)* (London: Hodder and Stoughton, 1966), p. 257.
- (26) J.G. Bennett *The Dramatic Universe (Volume 4)* (London: Hodder and Stoughton, 1966), pp. 251-252.