# Final Statement on Who was who, who did what, where and when

## The origin of the Prehumans and the reason of their new standing posture

After the 2013 *Via humanitatis* Symposium of this Academy, which perfectly described the main routes of the morphological and cultural evolution of Man, the aim of this workshop was, of course, not to reproduce the same topic half a dozen years later, but to present very recent and intriguing discoveries in the same fields of Paleoanthropology and Prehistory (new fossils, new artefacts, new datings), asking new questions, and to debate their possible significance. Twenty scientists from all over the world, the actual discoverers of these new data, were invited to the Vatican for two days to discuss their discoveries. This short Statement will try to summarise the conclusions emerging from these very dense forty-eight hours.

The workshop started from the beginning, by describing the three earliest Hominids ever found: Sahelanthropus, 7 million years old, from Chad; Orrorin, 6 million years old, from Kenya; and Ardipithecus, 4.4 to 5.8 million years old, from Ethiopia. These three Hominids, not described in the 2013 Symposium, give three fascinating insights into what our Miocene ancestors might have looked like: standing, walking and climbing Beings, eating fruits off the trees and roots in the ground, tropical and African, equipped with what was still a small brain, and living in some sort of open forest, bushy savannah and grasslands (a mosaic landscape a bit like the Okavango delta), probably more humid than previously thought. Their diversity, even though they share common features, is already impressive and may mean that these first Prehumans had already adapted themselves to a multiplicity of ecological niches.

The following chapter of our history is documented by the (also) very diversified world of what we call the Australopithecus-Kenyanthropus complex, found all around the African forest, in a sort of tropical concentric belt, less humid than the previous environment, going from Chad to South Africa across the whole of Eastern Africa. It's a very brilliant time, a Prehumanity that still has a double locomotion and still has a small brain, but that may have started to make tools (3.3 million years old, in Kenya) and to eat meat (cut marks, 3.4 million years old, in Ethiopia).

A change in climate, a real drought, happened around three million years ago, and with it the need for all living species to adapt to this new environment to survive. This will be the reason for the emergence in Eastern Africa and, maybe a bit later, in Southern Africa, of the genus Paranthropus, robust, still vegetarian and still with a small brain; the emergence in Southern Africa, of new Australopithecines, walking and running better but still with a small brain, and, last but not least, the emergence in Eastern and Southern Africa of the genus Homo, small, omnivorous (eating also meat), and with a clearly bigger brain. The main idea emerging from this workshop is again the incredible diversity of the Hominids living at that time, and the consecutive difficulty we have to make good diagnoses and determinations of the numerous fossils we have found. Who was who? The situation looks like a "soft" change, in the Hominid's morphology as well as in their behaviour, to achieve the right adaptation to the new, dryer climate and landscapes. The French palaeontologist and Jesuit, Reverend Fr Pierre Teilhard de Chardin, beautifully wrote about this most important time: "L'Homme est entré sans bruit!" (Man entered without a sound!) We would have loved, in our Cartesian mind, to have a clear distinction between the "Period Before Man" and the "Man Period". We may be obliged, according to the current research, to think differently. It's not a question of lack of evolutive reactivity on the part of Australopithecines, but, probably, the need for just a slight, progressive adaptability which resulted in this odd Being, called Man, capable of talking (articulated speech) and thinking "better" (Homo is supposed to know that he knows).

The genus Homo moved "quickly" (in geological terms), and reached the Mediterranean Sea (stone tools, 2.4 million years old, have been recently found in Algeria), the Middle East, the East (India), where cut marks on animal bones (2.7-2.8 million years old) have been found and identified in the sub-Himalayan region of Punjab, and, of course, the Far East. The Indian discovery (Masol) is very important but has to be confirmed – and the meat-eater using tools identified, as far as possible – before being taken into consideration. Elsewhere in Asia, stone tools, over 2 million years old, have been collected in China; Hominid remains and stone tools, 1.8 my old, in Georgia; Hominids 1.6 my old, in Indonesia. Discoveries of Homo remains in Turkey, more than 1 my old, also demonstrate something that we were expecting: Man moved from Africa to Eurasia (and back), many times, as soon as the way had been opened!

For probable paleogeographical and/or paleoclimatological reasons, Europe was reached later; stone tools, (just!) 1.4 my old, have been found in Italy and Spain, and then, Homo (erectus? heidelbergensis?) expands his territory to the north, according to the evolution of temperature and

climate (around 1.0 my in France and Britain). Another important step in the peopling of Europe is marked by a stone tool called a hand axe: 1.7 my old in Africa, more than 1 my old in Asia, 1 my old in Spain (coming through Gibraltar?) and around 0.7 my old elsewhere in Europe, till the 50° to 60° North. What we call the Neanderthal morphotype started to be recognized around 0.5 my ago at the same time (?) as the Denisova morphotype, both descending from Homo heidelbergensis. Homo sapiens, probably born in Africa, crossed the Sinai border around 0.2 my ago and moved, as his predecessors, to Asia first and to Europe (0.05 my ago), to Siberia a bit later and to America through the Bering Strait (0.03 my ago). The final paper proposed, this time unexpectedly, that Homo neandertalensis could have been the very first “painter” of the European caves!

Several reflexions came out of this last part: first of all, what we call “movements” are not, of course, deliberate migrations, but opportunistic or demographic movements or expansions. The second idea is again the very important diversity of Homo “pseudospecies”; our genus remained and probably remains submitted to environmental pressure just as its mammalian neighbours. Insular dwarfism, for instance, which is very well known in many vertebrate families (Suidae, Bovidae, Hippopotamidae, Proboscidians), was beautifully revealed as having also affected the Hominidae: Homo floresiensis, from the Indonesian island of Flores, less than 0.005 my old, and the very recently found Homo luzonensis, from the Philippine island of Luzon, of about the same age, are superb examples, among others, of genetic drift. The word *pseudospecies* employed instead of “species” means that some of the scientists of our workshop have been insisting on the role of Culture in Homo, meaning a retroaction of this new environment (cultural) on the biological one, with, as a consequence, a permanent interfecondity between all Human “species” (recent example of a Homo neandertalensis-Homo sapiens hybridation). And, to finalise the conclusions, it is important to report that some participants (not all) think that the notion of Symbol appears as soon as the first tool was made (3.3 my ago): making a tool requires the use of two stones (two shapes) and the result is a third shape, a sculpture, a creation, a symbol! Some other scientists, however, think that the goal of making a tool is only its intended function.

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