

SECOND WORLD CONFERENCE ON THE FUTURE OF SCIENCE
EVOLUTION

Venice, September 20-23, 2006

VENICE CHARTER 2006

Participants at the Second World Conference on the Future of Science believe that evolution is a key concept for understanding the impact of scientific knowledge on human life and beliefs, and for informing the dialogue between science and society proclaimed by the Venice Charter of 2005. Evolution is fundamentally concerned with ourselves, our future, and our place within nature. In recognising evolution as a central organising concept of modern science, essential for understanding the past and future of all inanimate matter and of life itself, the Conference affirms that evolutionary research must continue unfettered, and that evolution must be taught, discussed and promoted throughout society using all effective means.

In pursuit of these aims signatories of this Charter further affirm that:

1. Evolutionary concepts are central to understanding the birth and development of the universe, the emergence and diversification of life on Earth, including human life, and the emergence and development of the human mind. Major challenges in cosmology are to understand the origins of the universe, the formation of cosmic structures from initial inhomogeneities, and the roles of dark matter and dark energy in cosmic evolution.
2. The role of cosmic evolution in making possible the evolution of life is now becoming apparent: the heavy elements necessary for life were not present in the early universe, but arose as a by-product of stellar evolution; and the first extra-solar planets – possible locations of extraterrestrial life – have only recently been discovered.
3. The best scientific explanation for the variety of life on Earth is the neo-Darwinian synthesis, in which random genetic assortment and mutation creates variation which is acted upon by natural selection and other processes. The neo-Darwinian synthesis is continually being updated and refined by discoveries in many areas including palaeontology, population biology, natural history, and developmental biology. The science of molecular genetics in particular, which has sequenced the genome of humans and a rapidly increasing number of genomes of other species, is deepening our understanding of the mechanisms of evolution and of the evolutionary relations between all living things, confirming the evidence of palaeontology that all life on Earth is related.
4. With regard to human evolution, it is now clear that numerous species of man-like apes existed on the Earth in the recent past including several species of man (*Homo*). Paleoanthropological and other evidence pertaining to the emotional and cognitive evolution of *Homo* is rapidly accumulating, and it is now possible to discern the main outlines of the emergence of language, moral instincts and the modern human mind, by natural selection and other factors within the “cognitive niche” occupied by *Homo*.
5. Particularly when applied to humans, the human mind and human intelligence, the theory of evolution continues to provoke strong opposition and is doubted or rejected by large numbers of people. Scientists therefore have a responsibility to better explain the concepts of evolution and the nature of the evidence on which the theory of evolution is based, and to counter arguments against it deriving from prior philosophical or religious doctrines. Science and faith need not be on a collision course: a careful epistemological analysis can in many cases resolve the controversies.
6. Study of the biological and cultural evolution of *Homo sapiens* helps us understand our past and illuminates our present, but cannot predict the future, as that depends, in large measure, on the choices we make. Major philosophical questions regarding our existence and destiny cannot ignore the insights that science has to offer. Science must contribute alongside other areas of human knowledge, to informing our choices and ensuring they are wise and far-sighted.