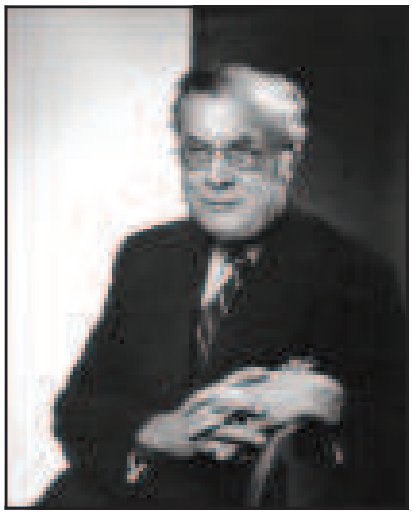
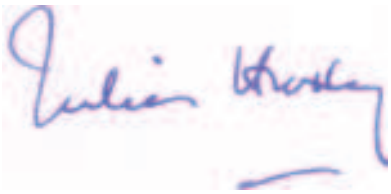
UNESCO Kalinga Prize Winner - 1953





SIR JULIAN SORELL HUXLEY, FRS

(22.6.1887 - 14.2.1975)

If I am to be remembered, I hope it will not be primarily for my specialized scientific work, but as a generalist; one to whom, enlarging Terence's words, nothing human and nothing in external nature was alien.

Julian Sorell Huxley, Memories (Autobiography), 1970.

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Thomas Henery and Julian Huxley in 1895

Sir Julian Sorell Huxley, *FRS (June 22, 1887- Febryary 14, 1975) was a British biologist, author, humanist and internationalist, known for his popularisations of science in books and lectures. He taught at the Rice Institute, Houston, Tex. (1912-16), at Oxford (1919-25), and King's College, London (1925-35). Secretary (1935-42) of the Zoological Society of London. From 1946 to 1948 he served as the first director-general of the United Nations Educational, Scientific, and Cultural Organization (UNESCO) and was knighted in 1958.*

Huxley was part of a distinguished family. His brother was the writer Aldous Huxley, and half-brother a fellow biologist and Nobel laureate, Andrew Huxley; his father was writer and editor Leonard Huxley; and his paternal grandfather was biologist Thomas Henry Huxley, famous as a colleague and supporter of Charles Darwin. His maternal grandfather was the academic Tom Arnold, and great-grandfather Thomas Arnold of Rugby School.

Early life :

Huxley was born on June 22, 1887, at the London house of his aunt, the novelist Mary Augusta Ward, while his father was attending the jubilee celebrations of Queen regnant Victoria of the United Kingdom. Huxley grew up at the family home in Surrey, where he showed an early interest in nature as he was given lessons by his grandfather. At the age of thirteen Huxley attended Eton College, and continued to develop scientific interests in the school laboritories that his grandfather had compelled the school to build several decades earlier. At Eton he developed an interest in ornithology and in 1905 obtained a scholarship in Zoology at Balliol College, Oxford.

Academic life :

In 1906, after a summer in Germany, Huxley took his place at Oxford, where he developed a particular interest in embryology and protozoa. In the autumn term of his final year, 1908, his mother died from cancer. In 1909 he graduated with first class honours, and was offered the Naples scholarship. He spent a year at the Naples Marine Biological Station where he developed his interest in embryology and development by researching sea squirts and sea urchins. In 1910 he took up a lecturing post at Oxford, but in 1912 was asked by Edgar Odell Lovett to take the chair of Biology at the newly created Rice Institute in Houston, Texas, which he accepted and took up the following year.

Before taking up the post at the Rice Institute, Huxley spent a year in Germany preparing for his demanding new job. Working in a laboratory just months before the outbreak of World War-I, Huxley overheard fellow academics comment on a passing aircraft, “it will not be long before those planes are flying over England,” cementing Huxley’s strong internationalist political views. While in Germany Huxley experienced a nervous breakdown and returned to England to rest in a nursing home. At the same time his brother Trev, two years junior, also had a breakdown, and hanged himself.

In September 1916 Huxley returned from Taxas to assist in the war effort, working in intelligence, first at GCHQ and then in northen Italy. After the war he was offered a fellowship at New College, Oxford, which had lost many staff and students in the war. In 1925 Huxley moved to King’s College London, as Professor of Zoology, but in 1927 left teaching and research to work full time with H.G. and G.P Wells on *The Science of Life* (see below).

In 1935 Huxley was appointed secretary to the Zoological Society of London, and spent much of the next seven years running the society and its zoological gardens, London Zoo and Whipsnade Park, alongside his zoological research. In 1941 Huxley was invited to the United States on a lecturing tour, and generated some controversy after stating that he believed the United States should join World War-II a few weeks before the attack on Pearl Harbor. Because of the country’s joining the war his lecture tour was extended and the council of the Zoological Society, who were uneasy with their secretary, used this as an excuse to remove him from his post. Huxley seized this opportunity to dedicate much of the rest of his life to science popularisation and political issues.

As well as his zoological research Huxley contributed theorectical works to evolutionary biology, and he was one of the many key people in the modern evolutionary synthesis. Bird watching in childhood gave Huxley his interest in ornithology, and throughout his life he helped devise systems for the surveying and conservation of birds; and wrote several papers on avian ethology. His research interests also included medicine and the then infant field of molecular biology. He was a friend and mentor of the biologist Konrad Lorenz.

Huxley coined the terms “mentifacts”, “socifacts” and “artifacts” to describe how cultural traits take on a life of their own, spanning over generations. This idea is related to memetics.

UNESCO :

In the 1930s Huxley visited Kenya and other East African countries to see the conservation work, including creation of national parks, which was happening in the few areas that remained uninhabited due to malaria. He was later asked by the British government to survey the West African commonwealth countries for suitable locations for the creation of Universities. On these trips Huxley developed a concern of education and conservation throughout the world, and was therefore involved in the creation of the United Nations Educational, Scientific and Cultural Organization (UNESCO), and became the organization’s first Director-General in 1946.

Huxley’s internationalist and conservation interests also led him to set up the World Wildlife Fund.

Humanism :

Less well known is the fact that Huxley, a Humanist was also the first president of the Internationalist Humanist and Ethical Union, and served with John Dewey, Albert Einstein and Thomas Mann on the founding advisory board of the First Humanist Society of New York.

Eugenics :

Like many biologists in the first half of the twentieth century, Huxley was a proponent of Eugenics as a method of bettering society. Huxley wrote two books critical of genetics in the Soviet Union (which he twice visited), which was dominated

by Lysenkoism, a pseudoscientific doctrine which states that acquired characteristics can be inherited. Lysenkoism was dangerous because it stopped the artificial selection of crops on Darwinian principles, which eventually led to famine. Huxley feared a similar process of genetic stagnation would occur in the human population without the aid of eugenics, which the Lysenkoists rejected.

While Huxley saw eugenics as important for removing undesirable variants from the human gene pool as a whole, he believed that races were equal, and was an outspoken critic of the eugenic extremism that arose in the 1930s. Huxley was a critic of the use of race as a scientific concept, and in response to the rise of fascism in Europe was asked to write *We Europeans.* The book, on which he collaborated with the ethnologist A.C. Haddon, sociologist Alexander Carr-Saunders and Charles Singer, which amongst other things suggested the word race be replaced with ethnic group. Following the Second World War he was instrumental in producing the UNESCO statement on race, which asserted that race is a cultural concept and not a scientific one. In particular the UNESCO statement helped destroy the idea that Jewish people form a distinct racial group-a key plank in Nazi and other ideologies that led to the Holocaust.

In the post war years, following the horrific results of the abuse of eugenics, Huxley (1957) coined the term "transhumanism" to describe the view that man should better himself through science and technology, possibly including eugenics, but more importantly the improvement of the social environment.

Public life and Science Popularisation :

Huxley discovered the lucrative business of popular science writing after publishing articles in newspapers. In the late 1920s he was introduced to book writing when asked to collaborate on two projects, a textbook of animal biology with his Oxford colleague J.B.S. Haldane, and by H.G. Wells on a definitive nine-volume set of popular science books on biology, *The Science of Life.* Other notable publications include *Essays of a Biologist* and *Evolution : The Modern Synthesis.*

In 1934 Huxley collaborated with Alexander Korda to create the world's first natural history documentary, *The Private Life of the Gannet,* on the Pembrokeshire coast, for which they won an Oscar for best documentary.

In later life, he became known to an even wider audience through television and radio appearances. In 1939 the BBC asked him to be a regular pannelist on a Home Service general knowledge show, *The Brains Trust,* in which he and other panelists were asked to discuss questions submitted by listeners. The show was commissioned to keep up war time morale, by preventing the war from "disrupting the normal discussion of interesting ideas". He was a regular panellist on one of the BBC's first quiz shows, *Animal, Vegetable, Mineral ?,* in 1955.

In his essay "The Crowded World" published in *Evolutionary Humanism* (1964), Huxley was openly critical of Communist and Catholic attitudes to birth control, population control and overpopulation. Based on variable rates of compound interest, Huxley predicted a probable world population of 6 billion by 2000. The United Nations Population Fund marked 12th October 1999 as **The Day Of 6 Billion.**

Huxley had a close association with the British rationalist and humanist movements. He was an Honorary Associate of the Rationalist Press Association from 1927 until his death, and on the formation of the British Humanist Association in 1963 became its first President, to be succeeded by AJ Ayer in 1965. He was also the first President of the International Humanist and Ethical Union. Many of Huxley's books address humanist themes.

The Vision of Julian Huxley :

Huxley was a far more innovative thinker than is generally recognized today, even by humanists. Although he was one of the foremost biologists of his time, his most important contributions had to do not primarily with genetic evolution but with that of culture, and with the interrelationships between the two processes. Today we are accustomed to the concept of interactive, feedback systems; and to scientists at the forefront of physics, engineering, neuro-and cognitive-psychology and evolutionary theory conceptualizing their theories in terms of these. But few of the people concerned are aware that it was Julian Huxley who laid much of the

groundwork for this type of thinking. He did this by spelling out the critical evolutionary role of "emergence" : The process by which an accumulation of quantitative changes could somehow set the stage for the triggering of seemingly qualitative transition in the nature of patterns of interaction.

Huxley was perhaps the first evolutionary theorist to recognize the reality and causal significance of human society and culture : a reality which materialism - by the very nature of its premises - is forced to ignore. He concluded 'that in the future it would be cultural factors, rather than biological, which would determine the direction for evolution.

As for Huxley's belief that evolution is progressive in nature, he did employ the concept, but in a carefully defined and limited way.

Huxley was maintaining that humankind must attempt to achieve a unity of knowledge. According to him, the only potentially universal type of knowledge is scientific, in the broad sense of resting on verified observation or experiment, it follows that this unity of knowledge will only be attained by the abandonment of non-scientific methods of systematizing experience, such as mythology, superstition, magico-religious and purely intuitional formulations. He then went on to list the most important ideas on which the unified system must be based. These were : (1) the unity of nature, as opposed to all forms of dualism; (2) all nature as process, to be explained by evolution rather than any static mechanism; (3) evolution as directional, but only in the sense that it generates greater variety, complexity and specificity of organization - even though this may often lead into dead-ends; (4) evolutionary advance as defined in terms of the realization of new possibilities in nature; and (5) an evolutionary view of human destiny, with humankind recognized as the chief instrument of further evolution, as against all theological, magical, fatalistic or hedonistic views of destiny.

Julian Huxley, A Theistic Religionist :

Julian Sorell Huxley (1887-1975) had a distinguished ancestry. His paternal grandfather was the Darwinian Thomas Henry Huxley (1825-1895); his maternal great grandfather was Thomas Arnold (1795-1842), headmaster of Rugby. His father Leonard, was a classics master of Somervifle College, Oxford, founded a girls' school at Godalming in 1902.

After schooling by a governess until the age of ten, he became a day-pupil in the Hillside Preparatory School, London where he found delight in natural history. At thirteen he developed a lifelong interest in bird watching, particularly upon entering Eton with a scholarship, where he started a bird watching diary. At eighteen, he received a scholarship in zoology at Balliol College, Oxford. After reading about the life of Pasteur, he was inspired by the scientific method. When he was twenty-one he won the Newgate Prize in poetry but used the award to purchase a microscope. The following year he obtained a B.A. with a first class in zoology : since that year also marked the Darwinian semicentennial, he resolved to continue his own studies in the Darwinian spirit. He received a one-year scholarship at the Naples Biok*cal Station, where he investigated sponges. His results were published in the Royal Society's *Philosophical Transactions.* In 1912 he was appointed - Assistant Professor and Chairman of the Biology Department of the new Rice Institute in Houston, Texas. Four year later, he returned to England during World War I.

After serving in the Army Service Corps and then in Intelligence, Huxley was made a Fellow of New College, Oxford and Senioi Zoology Demonstrator. He married a Swiss governess, Juliette Bailor. A year later, he joined the Oxford Expedition to Spitsbergen; he always enjoyed mountaineering. In 1925 he was made Professor of Zoology at King's College, London, and the next

year was given a three-year appointment as Fullerian Professor at the Royal Institution. At forty, together with H.G. Wells and his son C.P. Wells, he published the *Science of Life.* In 1927 he resigned from King's but retained an honorary lectureship there.

As a member of the Colonial Office Committee on Education, he went to East Africa in 1929 to survey the biological education and nature conservation there. Subsequently, he made a number of lecture tours in the U.S. and received an Oscar for his documentary film, "The Private Life of the Gannets". At forty-eight he accepted the Secretaryship of the London Zoological Society. In 1939, with Professor C.E.M. Joad, *et alia,* he conducted the Brians Trust program for the British Broadcasting Company (BBC) on "Scientific Research and Social Needs," thus becoming a national figure.

In 1944, he visited West Africa for the Commission on Higher Education in the Colonies. The following year he attended the bicentennial of the Russian Academy of Science, where he heard a lecture by the quack geneticist Lysenko. He served on the Hobhouse Committee on National Parks. In 1945 he was appointed Secretary and then elected Director General of the new UNESCO (replacing the proposed UNECO) for a two-year term. He was not a good administrator in this political position, although UNESCO profited greatly by his enthusiasm and broad knowledge, as well as by the loyalty of his staff. At the end of his term, he retired to Hampstead. At seventy-one he was knighted. He gave an address on "The Evolutionary Vision" at the Darwinian Centennial at the University of Chicago, where he was a Visiting Professor. He died at the age of eighty-eight.

Huxley was fond of nature-and solitude. He was early impressed by Wordsworth's line on Tintern Abbey : "I have felt a presence..." He recognized the need to preserve natural beauty and to promote architectual beauty, as well as to conserve natural resources. he exhibited great versatility, and showed a marked concern for human welfare, as illusrated by the following sampling of his activities. In 1924 he gave three lectures at Rice on "The Outlook in Biology", which dealt with the relation of science and humanities, and later, in 1952, became the President of the British Ilumanist Association. In 1935 he published a book entitled *Science and Social Needs,* and was also the first President of the Association of Scientific Workers. Earlier, he had attended the World Population Conference. In 1956 he received the Lasker award of the Planned Parenthood Association in America. Although he favored the development of atomic bombs-under surveillence of the United Nations-he was among the first to oppose the proliferation of nuclear weapons.

In 1920 Huxley did some research of metamorphoses of axcolotls that made headlines. At thirty-three he began his sernipopular writing on science and society. At forty-one he joined the Society for Psychical Research, but failed to rind any proof of communication with departed spirits. With Gavin de Beer he published *Principles of Experimental Embryology* (1934). At forty-eight he gave the Royal Institution Christmas Lectures on "Rate Animals and the Disappearance of Wild Life". His forte was publication, particularly popularization. At fifty-five he published *Evolution, the Modern Synthesis.* A year later, as his grandfather had done fifty years earlier, he delivered the Homanes Lecture on "Evolutionary Ethics". **In 1953 he received the Kalinga prize for popular science and the Royal Society Darwin medal for his contributions to the theory of evolution.**

Huxley believed in the uniformity and unity of nature, but above all, in the continuous development of a single, ultimate world-substance. Evolutionary naturalism was his basic hypothesis; evolutionary humanism, his thesis-that is, man as the one and only agent for realizing life's further progress. Nevertheless, he claimed, "I consider myself to be a religious man, though I do not subscribe to a

theistic interpretation of the religious spirit." This conclusion is based upon his own definition of religion, viz. "the reaction of the personality as a whole to its experience of the universe as a whole," particularly to "a man's holding certain things in reverence" and "his feeling and believing them to be sacred." He admitted however, that there will probably always be a conflict between naturalistic science and theistic religion.

Huxley's own confusion can be traced back to the indefiniteness of his religious heritage and the amorphism of his own religious education. His maternal great grandmother was mildly liberal and low-church orthodox. Her son, his grandfather, left the Anglican Church twice to become Roman Catholic. Another son, Matthew Arnold, upset people with his own critical faculty, despite a moral temperament and strong religious leanings. Julian claimed that his paternal grandfather, Thomas Huxley, a self-classified agnostic, was actually religious in view of his sense of reverence. As a child, Julian was wont to attend church only on festive occasions such as Christmas or Easter. He did admit, however, his enjoyment of the Eton chapel services, probably because of the prevelant atmosphere of awe and reverence.

In the reading of an essay by Archbishop William Temple, he was stimulated to study philosophy and religion so that he read much along this line. He was particularly impressed by his aunt Mary Augusta (n6c Arnold) Ward's "Robert Elsmere" (1887) with its emphasis upon social mission and its dismissal of 'legendary miracles.' His thinking about religious humanism was actually triggered in Colorado by his reading of John Morley's challenging comment, "The next great task of science will be to create a religion for humanity." In 1928 he published *Religion With Revelation,* which was amplified in 1956.

Works of Julian Huxley- A Gifted Exponent of Science:

- Essays of a Biologist (1923)
- Animal Biology (with J.B.S. Haldane, 1927)
- Religion Without Revelation (1927, revised 1957)
- The Tissue-Culture King (science fiction, 1927)
- The Science of Life (with H.G. & G.P. Wells-1931)
- Scientific Research and Social Needs (1934)
- Thomas Huxley's Diary of the Voyage of H.M.S. Rattlesnake (1935)
- We Europeans (with A.C. Haddon, 1936)
- The present standing of the theory of sexual selection. In G.R. de Beer (Ed.), Evolution : Essays on aspects of evolutionary biology (pp. 11-42). Oxford : Clarendon Press (1938)
- The Living Thoughts of Darwin (1939)
- The New Systematics (1940)
- Evolution : the Modern Synthesis (1942)
- Evolutionary Ethics (1943)
- Touchstone for Ethics (1947)
- Man in the Modern World (1947) eBook (http://www.archive.org/details/Man In The Modern World)
- Heredity, East and West (1949)
- Evolution in Action (1953)
- Biological Aspects of Cancer (1957)
- Towards a New Humanism (1957)
- New Bottles for New Wine (1958)
- The Humanist Frame (1962) elaborated to Essays of a Humanist (1964) elaborated Evolutionary Humanism
- From an Antique Land (1966)
- The Courtship Habits of the Great Grebe (1968)
- Memories (2 vol., 1970 and 1974)