

Portraits of the Pioneers: Sir Julian Huxley, FRS

Evolution and Eugenics

By John Timson



Julian Sorell Huxley (1887-1975), one of the outstanding biologists of the 20th century, was a Life Fellow of the Eugenics Society from 1925, its President 1959-62, and is the only person ever to have given two Galton Lectures, in 1936 and 1962. He was also, at various times, Professor of Zoology at King's College, London, Secretary of the Zoological Society of London, and the first Director-General of UNESCO. His scientific interests, as shown in his many publications, included courtship in birds, the biology of cancer, ants, genetics, systematics, ecology, and conservation.(1) To describe Huxley as a polymath is true but barely adequate. To few is given the inheritance,

biological and social, that was his, and he made good use of it.(2)

Although he worked in many biological fields with great success there was a central theme to Huxley's life and work: evolution. His grandfather, Thomas Henry Huxley (1825-1895), was one of the first to appreciate that Charles Darwin's theory of evolution by natural selection would transform biology and ultimately influence profoundly many other disciplines. He became Darwin's chief supporter in England, being known to the Victorian public as 'Darwin's bulldog'. At the 1860 British Association meeting in Oxford he defended evolution in an historic debate with the then Bishop of Oxford, Samuel Wilberforce. In his *Technical Education*, published in 1877, T.H. Huxley wrote "The great end of life is not knowledge but action". Julian Huxley's work for eugenics, conservation, and at UNESCO suggests that he too believed that knowledge should be put to practical use. His work may also have, indirectly, inspired one of the most enduring science fiction novels of the 20th century.

Aldous Huxley (1894-1963) was Julian's younger brother who achieved fame as a novelist, especially with his *Brave New World* first published in 1932. It seems likely that this satirical account of a possible future for the human race was, at least in part, inspired by Aldous' knowledge of his brother's interests since the literary circles in which he moved almost invariably used each other and their friends and relations as models for their fictional characters.(3) In his forward to the 1955 Penguin edition Aldous refers to a "foolproof system of eugenics" as an essential part of his plot.(4) *Brave New World* is set in a time when there has been considerable progress in the biological and social sciences but little, if any, in physics and engineering. Nuclear physics is unknown and technology is much as it was in the 1930s. However, humans are, mainly, cloned in the laboratory in the right numbers of various kinds to preserve the perceived optimum social class ratios. At a time when most writers of science fiction were fascinated by and fixated on the ideas of space travel, death rays, and similar technological wonders, Aldous Huxley was one of the few to base his future society on mankind taking control of its own evolution.

When Julian Huxley began his scientific career Darwin's theory of evolution by natural selection was a minority view among biologists. Although most of them accepted that living organisms had evolved, and few remained creationists, non-Darwinian theories of the mechanism of evolution were widely held. Exactly how evolution had occurred was the subject of much debate within the scientific community. Among the theories under discussion were Mutationism, in which single, very large genetic changes were believed to be responsible for evolutionary change, and Orthogenesis in which internally directed, non-adaptive trends were seen as being of prime importance. There were also biologists who held Lamarckian views, believing in the inheritance of acquired characters. As an evolutionary mechanism natural selection was thought

by many at that time to be contrary to the laboratory findings of the new science of genetics. More importantly, however, there was a widespread feeling that evolution was, or ought to be, directed or purposeful in some way. That it should not be simply a series of chance events in which the fittest or the most fortunate survived. Surely *Homo sapiens* was meant to be at the top of the evolutionary tree? The idea that we would not be here if evolution had taken a different route was to many unthinkable.

Huxley, however, was a Darwinist from an early age and lived to see his belief in natural selection as the prime evolutionary mechanism justified, when, in the late 1920s and early 1930s, a number of population geneticists were able to show that there is no conflict between Mendelism and Darwinism. If Darwin had read Mendel's paper, or if Mendel had had the facilities and opportunity to extend his work, the whole history of evolutionary studies might well have been very different. As it was, however, the synthesis of genetics and evolution by natural selection took time to become widely known and appreciated in the biological community.

In his Presidential Address to the Zoology Section of the British Association in 1936 entitled "*Natural Selection and Evolutionary Progress*" Huxley called for the reunification of biology around Darwin's theory of evolution.⁽⁵⁾ He showed that enough was then known about mutation, recombination, and selection to bury the non-Darwinian theories. Huxley was encouraged to expand this lecture into a book, *Evolution: The Modern Synthesis*, published in 1942.⁽⁶⁾ This massive work, containing nearly 600 pages of text, was undoubtedly his greatest contribution to evolutionary biology and it decisively restored the Darwinian view of how evolution had occurred. Although evolution by natural selection remains a theory, since it is not directly verifiable by experiment, it is still, with some modifications of detail, the only reasonable explanation of the origin of living organisms.

Huxley was a supporter of eugenics throughout his life but his view of it changed, evolved, between his two Galton Lectures, *Eugenics and Society* in 1936⁽⁷⁾ and *Eugenics in Evolutionary Perspective* in 1962⁽⁸⁾. Of course the public perception, and media treatment, of eugenics had changed dramatically in the intervening years. In 1936 eugenics was an acceptable idea to many tempered only with the feeling that perhaps we did not yet know enough about human genetics and so should proceed with caution. However, an optimistic eugenicist could reasonably expect that the science would grow in importance and public acceptance as more was discovered about our species' inherited characters. Instead, by 1962, following the Nazis' perversion of eugenics to justify their totally unscientific concept of a master race, unsurprisingly German, the word eugenics had become to many a term of abuse. All too often it was used as such by those who, having little or no knowledge of genetics, were committed to the idea that changing attitudes or the physical environment were the only acceptable ways to solve social problems.

In his 1936 Galton Lecture Huxley considered eugenics to be a social science and, as such, much less developed than the natural sciences. This led him to suggest that the way forward at that time was to seek to improve the living standards of the poorer sections of society while, at the same time, promoting policies aimed at encouraging the reproduction of the more able and discouraging that of the less able. Unless, he reasoned, good diet, health care, housing, and education were made available to all it would not be possible to determine who should, and who should not, be encouraged to breed. A levelling of the playing field was necessary before any assessment of ability could be made since all classes contained people of high and low ability, if not necessarily in the same proportions.

In his second Galton Lecture Huxley was more concerned with the increase in mankind's genetic load caused by the growing number of those with genetic defects being kept alive by medical advances long enough to breed and the possibility of radioactive fallout producing a new crop of harmful mutations. He argued that it would be possible, and was necessary, to lighten this load by discouraging those with inherited defects from reproducing, by reducing man-made radiation as much as possible, and by slowing down the rate of population increase. These are, of course, negative eugenic policies and probably acceptable to many who would instinctively oppose anything with a eugenic label. Genetic counselling is now widely available,

at least in the developed world, and the dangers of overpopulation and excessive radiation are now well understood even if the efforts to control them are only partially successful.

Huxley's suggestions for positive eugenic policies were far more controversial. His idea of graded family allowances being used to persuade specially able parents to have more children seems unlikely to appeal to any politician seeking votes in a democratic society. He also advocated a much greater use of AID, which he called Eugenic Insemination, and the setting up of deep-frozen sperm banks containing donations by eminent men, Nobel Prize Winners for preference, from which a prospective mother could choose the qualities she particularly admired and would like for her child. Assuming, of course, that she herself could supply a set of genes of comparable quality compatible with those of the donor. Huxley hoped that many of the users of such a sperm bank would opt for intelligence and he calculated that if the mean IQ of the population could be raised by as little as 1.5 per cent this would lead to a 50 per cent increase in the number of people with an IQ of 160 or more. That, he believed, would be a considerable step towards a better society.

It would seem, on comparing his two Galton Lectures, that Huxley believed that by 1962 the levelling up of the environmental conditions he had called for in his 1936 Lecture was at least well on the way to being achieved. The National Health Service, wider educational opportunities, and the welfare state in general meant, it appears, that he believed that the time had come to move on, to try to improve the genetic constitution of the population with particular reference to raising the average IQ. His negative eugenic proposals have been widely adopted but his positive proposals have fared less well. Huxley's idea of higher family allowances for the more able has not been implemented. Indeed it is possible to argue that what has actually happened, higher allowances for single mothers, has achieved the exact opposite of Huxley's intentions. Although the use of AID has no doubt increased since 1962, his sperm bank idea has made little progress. One was set up in the United States in the late 1970s but appears to have attracted very few customers.

Huxley ended his 1962 Galton Lecture with the words "If, as I firmly believe, man's role is to do the best he can to manage the evolutionary process on this planet and to guide its future course in a desirable direction, fuller realisation of genetic possibilities becomes a major motivation for man's efforts, and eugenics is revealed as one of the basic human sciences." The Human Genome Project would seem to be a start, a major step, in the direction of the realisation of our species' genetic possibilities. Of course, what we do with this knowledge is another matter. I suspect Huxley would have wanted to use it to try to raise the average IQ of the population.

While Huxley was no doubt disappointed at the lack of enthusiasm for many of his 1962 proposals, as a life-long student of evolution he would have realised that the evolution of ideas has much in common with that of living organisms. Evolution is not a simple progression from the primitive to the advanced with natural selection sorting out the most fit as time goes by. There is a large element of chance involved with not much happening during stable times. A catastrophic event may be needed for evolution to move at an accelerated pace, as the extinction of the dinosaurs gave the mammals their chance to take over the world. It is much the same with ideas whose time has not yet come; they must survive periods when they are not generally welcome. Like the small mammals in dinosaur times they must await their opportunity.

Huxley believed that eugenics would one day be seen as the way forward for the human race even though it is currently overshadowed by 'politically correct' environmentalist theories. One day, like the dinosaurs, such theories will become extinct. This was Huxley's legacy to the Eugenics Society and the Galton Institute, a belief that eugenics would ultimately receive the recognition as a basic human science that it deserves.

References:

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- (3) Jeffery Meyers, *D H Lawrence, A Biography*, Macmillan, London, 1990.
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- (6) Julian S Huxley, *Evolution: The Modern Synthesis*, George Allen & Unwin, London, 1942.
- (7) Julian S Huxley, "Eugenics and Society" *Eugenics Review*, (1936) vol 28, p.11 - 31.
- (8) Julian S Huxley, "Eugenics in Evolutionary Perspective", *Eugenics Review*, (1962), vol 54, p 123-141. [Reprinted in Keynes and Harrison, loc. cit.]