

# LESSONS IN GENETICS AND EUGENICS

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## **DNA: The Secret of Life**

James D. Watson with Andrew Berry

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*Reviewed by Leslie Jones*

In his *Inquiries into Human Faculty* (1883), Sir Francis Galton deplored the suffering and waste of life contingent on evolution by natural selection. As regards man, he advocated more merciful and rational methods of selection. Yet Galton also acknowledged the "...present imperfect knowledge of the limitations and conditions of hereditary transmission." This disjuncture between the ambitious goals of eugenics and its earlier exponents' limited understanding of how heredity worked is explored in James Watson's new book. Published on the fiftieth anniversary of the discovery of the double helix, *DNA: The Secret of Life* is a manifesto for a new, libertarian eugenics based on our enhanced understanding of heredity.

## **EUGENICS: A RETROSPECTIVE**

*DNA: The Secret of Life* commences with a chapter that purports to be an objective history of eugenics but has the contentious title "Beginnings of Genetics: From Mendel to Hitler." Watson recalls that in 1948, when he first came to Cold Spring Harbor, the location of the Eugenics Record Office, nobody would use the "E word" and that human genetics had "a major public relations problem" because of its previous association with eugenics. This is something of an understatement.

The author's critique of eugenics consists of two main elements. First, he questions its scientific status. He has some particularly harsh words for one of his predecessors as director of the Cold Spring Harbor Laboratory, the biologist Charles B. Davenport. In 1910, Davenport established the Eugenics Record

Office nearby and appointed Harry H. Laughlin as its superintendent. Mendel's laws had been rediscovered in 1900, and Davenport applied Mendelian analysis to the pedigrees that he assiduously constructed.

Had Davenport confined his research program to such simple traits as albinism and Huntington's disease, Watson would have no complaint. These traits are caused by a particular mutation in a particular gene and are barely affected by the environment. But Davenport also applied Mendel's laws to complex behavioral traits, such as alcoholism, that are affected by many genes and by environmental factors. In Watson's judgment, Davenport's research was "deeply flawed." The author also maintains that because the science driving eugenics was "bogus," it became a vehicle for the racial and social prejudices of its supporters.

However, Rushton (2002a) has examined the archives at the Cold Spring Harbor Laboratory and the Laughlin archives in Missouri. He acknowledges that many of the behavioral traits that interest scientists, notably intelligence, are not transmitted as "unit characters" in simple Mendelian fashion but are inherited polygenically. He nevertheless insists that Davenport's research orientation was scientific. He also points out that the heritability of human behavioral traits, as posited by Davenport, is beyond question. Professor Lynn (2001) concurs. He notes that Davenport discovered that a single dominant gene causes Huntington's disease. Lynn concludes that despite the errors of certain eugenicists, notably psychologist Carl Brigham's inference from the U.S. Army Tests that the Alpine and Mediterranean races are genetically inferior to the Nordics, eugenics was predominantly scientific. And Resta (1998) remarks that the two major clinical genetics journals in the United States continue to employ the Davenport pedigree style.

The academic world is currently tyrannized by political correctness, in Watson's opinion. Ironically, the second element in his critique of eugenics, the exegesis of its "horrendous...consequences," illustrates this contention. The author uncritically endorses Kevles's canard as to the links between American eugenics and the Nazi Holocaust. Kevles (1995) claims that Laughlin's influence ensured the passage of the Immigration Act of 1924 that restricted immigration from Eastern and Southern Europe. The tragic unintended consequence of this act, according to Watson, was the abandonment of German Jewry to its fate.

Kevles and Watson discern a further connection between American eugenics and the Nazis. They argue that the German sterilization law of 1933 was based on the model elaborated by Laughlin (as did Laughlin). *En passant*, Professor Watson makes a pointed reference to the latter's expertise in chicken breeding.

Daniel Kevles, Watson's principal source on the history of eugenics, states, "The Nazi horrors discredited eugenics as a social program." He thereby conflates eugenics and German National Socialism. Yet although there were contacts between the American, British, and German eugenicists (Mazumdar, 1998), the eugenics movement was always pluralistic, to quote Rushton's apt description (Rushton, 2002a). Support for eugenics spanned the ideological spectrum, despite Watson's attempts to associate it exclusively with the "white supremacism" of Madison Grant and the "racist ranting" of Hitler.

Lynn (2001) disputes the responsibility of the German scientific eugenicists, let alone their American counterparts, for the "final solution." Self-evidently, compulsory sterilization in the United States was a far cry from genocide. The conflation of eugenics and the "final solution" also involves assigning what Rushton (2002a) calls "guilt by remote association." Witness Watson's observation that Laughlin received an honorary degree from Heidelberg University in 1936 and his gratuitous comment that Laughlin "had his fans among the Nazis."

Somewhat fittingly, Watson has himself become a victim of "guilt by remote association." Despite his forthright condemnation of Hitler's program of medical killing, Watson has been accused of emulating the Nazis! His zealous advocacy of extensive genetic screening and of a woman's right to abort a fetus with "deleterious genes" reminded the president of the German Federal Chamber of Medical Doctors of the concept of "life not worth living" (*lebensunwertes Leben*), as employed by the Nazis but elaborated before 1933 by the jurist Karl Binding and by Alfred Hoche, professor of psychiatry at Freiburg.

## NATURE AND NURTURE

Although Watson does not deny the influence of nurture, he is struck by its limits. These are most dramatically expressed in cases of profound genetic disadvantage. He cites the example of boys with severe Fragile X syndrome. Boys affected are mentally retarded and can suffer from a distressing range of behavioral problems. Medicine can do nothing to help them. In *The Lives to Come*, Philip Kitcher eloquently describes the "unending anguish" of their parents.

For the author, the slow learner is another example of the limits of nurture. He disputes the theory that poverty is the cause of low IQ. As he observes, no amount of extra tuition will enable a slow learner to excel. Children will inevitably get left behind if we assume that all individuals have the same potential for learning. James Watson does not mention A. R. Jensen by name but he is evidently familiar with his work. By taking ability differences into account, Jensen (1998) contends that educators could design far more effective programs of education.

Like Jensen, Watson believes that scientific knowledge, however unsettling, is better than ignorance. An understanding of the biochemical basis of individual differences in mental ability would be a boon to educators, in Watson's view. He underlines the importance of Robert Plomin's research at the Institute of Psychiatry, University of London. Using a painstaking method called quantitative trait loci, Plomin has compared the DNA of samples of very bright children with DNA from samples of children with average IQ. On chromosome 6, he has found at least 4 genes or DNA segments that affect IQ (Miele, 2002). Watson recalls that in America Plomin encountered so much opposition to his work that he "decamped" to England.

As Galton (1883) observes, the nurture-nature controversy has arisen because man "is so educable an animal." Concerning their relative weight, Watson complains that Galton only paid lip service to the effects of environment. In *Hereditary Genius* (1869), Galton claimed that talent runs in families. But Watson maintains that in Galton's day, the son of a judge was much more likely to be a judge than was the son of a peasant. In similar vein, several contemporary critics of *Hereditary Genius* thought that Galton had ignored the social disadvantages that hinder many a "mute inglorious Milton" (Soloway, 1995). They also disputed Galton's claim that talent will always out. Not surprisingly, Galton subsequently turned to twin studies as an alternative method of ascertaining the relative contributions of environment and heredity.

Writing in *The Times* in June 1873, Galton opined that because Negroes lack self-control and foresight they are unable to sustain the burden of civilization without "external guidance." Today, in contrast, the almost obligatory view is that there are no significant behavioral differences between racial groups. In *The Blank Slate*, Steven Pinker says that a genetic explanation for the average black-white IQ difference in the United States is unnecessary. As Rushton (2002b) pithily remarks, "This book sweeps blank slate orthodoxy into the dustbin of history. One only wishes Pinker had used a wider and stiffer broom."

Where does Watson stand on this vexed issue? According to Cann and Wilson's analysis of mitochondrial DNA sequence variation, all living humans share a common ancestor who lived merely 150,000 years ago. This estimate was independently corroborated in a separate study carried out under the auspices of Luca Cavalli-Sforza, at Stanford, by tracking the lineage of the Y chromosome. Watson infers that there has simply not been enough time for geographically separate populations to diverge significantly and that race specific differences are very limited. In one passage, he agrees with Cavalli-Sforza (1997) that they are confined to skin color and body shape.

This conclusion, however, is hard to reconcile with Watson's comments on the IQ deficit of African-Americans and the global superiority of the average IQ of East Asians. Unlike Pinker (2002), Watson does not automatically assume

that these racial differences in mental ability *must be* exclusively cultural. He suggests that Herrnstein and Murray's thesis that these differences probably have a genetic component requires further investigation.

### TOWARD A EUGENIC UTOPIA?

In any random group of a thousand men, some would be "...crippled, insane, idiotic, and otherwise born incurably imperfect in body or mind" (Galton, 1883). Watson is no less struck by "the cruel arbitrariness of genetic disadvantage and defect, particularly as it blights the lives of children." As he remarks, a child who dies of Tay-Sachs is a victim of natural selection.

Professor Jensen points out that negative eugenics is currently practiced throughout the world through genetic counseling, amniocentesis, and DNA testing for genetic disease (Miele). Like Jensen, Watson is a supporter of *laissez-faire* eugenics. This term, coined by the philosopher Philip Kitcher (1996), denotes the application of genetic knowledge and biotechnology that is strictly subordinated to the needs and wishes of the individual. State-controlled eugenic programs that curtail personal reproductive choice are anathema to Watson. He regards eugenics and feminism (in particular, the right to abortion on demand) as naturally complementary, since women bear the immediate consequences of genetic defects in their offspring.

Genetic enhancement is the improvement of a child's intelligence and personality by inserting suitable genes into the fetus soon after conception. Watson believes that it is both desirable and eminently feasible. He dismisses the notion that what is natural is best.

Francis Fukuyama, for one, fears that genetic enhancement could destroy our already fragile sense of a common humanity (Pinker, 2003). Other doomsayers envisage an immutable genetic caste system. They emphasize the existing unequal access to medical resources and claim that selfishness and nepotism are hardwired into human nature. Watson suspects that "the dark passage of the eugenics movement" encourages this visceral opposition to genetic enhancement.

Yet regardless of these reservations, Watson believes that genetic enhancement will inevitably arise on the foundations of an existing biotechnology that cannot be suppressed. Lynn (2001) likewise argues that in the market economies, the demand for the eugenic use of biotechnology will eventually become irresistible, given the understandable wish of couples to have children with desirable genetic characteristics. Like Lynn, Watson predicts that authoritarian states such as China will have no compunction about using embryo selection and the techniques of gene therapy to increase the intelligence of their populations and thereby enhance their power.

Qua history, *DNA: The Secret of Life* is flawed. How does it rate as futurology? Pinker (2003) has underlined the frailty of most technological predictions, including those transformations deemed “inevitable.” Watson acknowledges the risks and dangers of gene improvement and Pinker discerns here a major obstacle to its development. What parent, he demands, would accept a small risk of retardation in the hope of achieving a moderate amount of improvement? Because humans are selfish and nepotistic, genetic enhancement is arguably undesirable. And because parents love their children, contra Watson it may not be inevitable.

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