



## ESSAYS ON SCIENCE AND SOCIETY

# Is a New Eugenics Afoot?

The April 1998 issue of *Life* magazine ran a cover story, complete with a double-helix spanning the length of the page, boldly titled “Were You Born That Way?” The subtitle left no doubt about the answer: “Personality, temperament, even life choices. New studies show it’s mostly in your genes.”

*Life* was not alone in promoting such claims. In the past 15 years, *Atlantic Monthly*, *New Republic*, *U.S. News and World Report*, *Time*, and *Newsweek*, to mention only a few, have all carried cover stories emphasizing the contribution of genes to our social behavior. Coat-tailing on major advances in genetic biotechnology, these articles portray genetics as the new “magic bullet” of biomedical science that will solve many of our recurrent social problems. The implication is that these problems are largely a result of the defective biology of individuals or even racial or ethnic groups. If aggressive or violent behavior is in the genes, so the argument goes, then the solution lies in biomedical intervention—gene therapy in the distant future and pharmacotherapy (replacing the products of defective genes with drug substitutes) in the immediate future.

By promoting such claims, are we heading toward a new version of eugenics? Are we getting carried away with the false promise of a technological fix for problems that really lie in the structure of our society? My answer to these questions is “yes,” but with some important qualifications that derive from the different historical and social contexts of the early 1900s and the present. Examining the development of eugenics in the early 20th century, especially in the United States, can be instructive for evaluating how genetics can be used and misused in biomedicine today. Among other things, that history helps to clarify the meaning of the term eugenics in both its older and more modern usage.

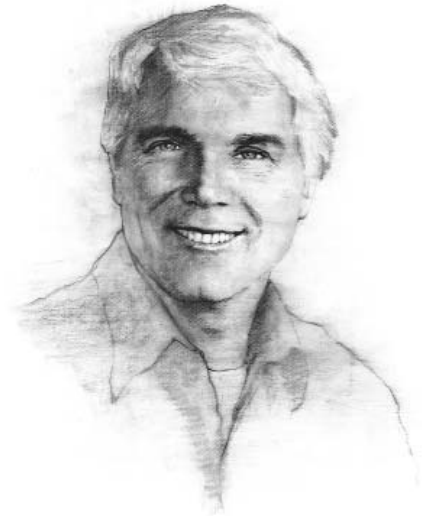
The term eugenics was coined in 1883 by the Victorian polymath Francis Galton, geographer, statistician, and first cousin of Charles Darwin. It meant to him “truly- or

well-born,” and referred to a plan to encourage the “best people” in society to have more children (positive eugenics) and to discourage or prevent the “worst elements” of society from having many, if any, children (negative eugenics). Eugenics became solidified into a movement in various countries throughout the world in the first three decades of the 20th century, but nowhere more solidly than in the United States and, after World War I, in Germany. In most cases, although not all (France and some Latin American countries were notable exceptions), eugenicists’ views were based on the theory of heredity first published by Gregor Mendel in 1866, but not fully appreciated until after 1900.

Given the wide variety of theories of heredity in vogue by the end of the 19th century, biologists were excited to find a single theory of inheritance that seemed to apply across the entire living world from peas to human beings. The most attractive feature of Mendelian genetics was that it was particulate, experimental, and quantitative. Early Mendelian geneticists adhered to the unit-character hypothesis, that is, they believed that each trait is governed by a single gene (and its alleles). By the 1920s, the majority of laboratory geneticists recognized that most traits are produced by the interaction of several sets of genes. But this nuance was lost on most eugenicists, who continued to believe in “strong heredity,” that is, a direct relationship between the presence of an hereditary determinant (now called the genotype) and the production of a relatively invariant adult trait (the phenotype).

By 1910, several human traits—such as red-green color-blindness, the A-B-O blood groups, hemophilia, and certain varieties of eye color—were found to be inherited in a basically Mendelian fashion. But eugenicists were more interested in the inheritance of social behaviors, intelligence, and personality. Proponents of eugenics carried out elaborate research programs to determine the type of inheritance these traits exhibited (dominant, recessive, incompletely dominant, sex-linked, etc.).

Eugenicists attempted to analyze the inheritance of traits by using correlation studies between relatives and family pedigree charts. The basic assumption was that



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if a trait recurred in families over several generations, it must be genetic. For example, the American eugenicist Charles B. Davenport, director of the Station for Experimental Evolution and the Eugenics Record Office at Cold Spring Harbor, Long Island, New York, constructed elaborate pedigrees for Huntington’s chorea, albinism, epilepsy, feeble-mindedness, and thalassophilia or “love of the sea” (which he found to be a Mendelian sex-linked recessive, especially prominent in the families of naval officers). Harry H. Laughlin, superintendent of the Eugenics Record Office, studied the inheritance of criminality, feeble-mindedness, and many other deleterious traits in different ethnic and racial groups. He concluded that eastern Europeans, Mediterraneans, and Russian Jews, among others, harbored a large number of defective genes in their populations. Such studies, sprinkled with anecdotes, formed the backbone of eugenic “science.”

American eugenicists also strove to disseminate the results of eugenic research to the public and to lawmakers. They supported the idea of positive eugenics, but focused most of their energies on negative eugenics. Eugenicists wrote hundreds of

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fix...”

articles for popular magazines, published dozens of books for the general (and some for the scientific) reader, prepared exhibits for schools and state fairs, made films, and wrote sermons and novels.

Eugenicists also worked assiduously to establish eugenics-based legislation in the United States. Laughlin was appointed "Expert Eugenics Witness" to the House Committee on Immigration and Naturalization in 1921. His prison and hospital data were critical in convincing the Committee that America's germ plasm was being weakened by mixing with the lower quality genes coming from southern and eastern Europe, the Balkans, and Russia. This led to passage of the Johnson-Reed Act in 1924, which restricted immigration from these regions. Laughlin and others also lobbied at the state level for the passage of eugenic sterilization laws, which would allow individuals in state institutions to be forcibly sterilized if they were judged to be genetically defective. Over 35 states passed, and used, such laws. By the 1960s, when most of these laws were beginning to be repealed, more than 60,000 people had been sterilized for eugenic purposes. In Germany, the National Socialists used Laughlin's model as one of the bases of their sweeping sterilization law of 1933, which ultimately led to the sterilization of over 400,000 people.

It would be wrong to think that eugenics had no critics. Numerous objections to eugenic claims were raised by scientists and laypersons. However, most scientific criticism came only after the mid-1920s, stimulated by the crude comments by some eugenicists and restrictionists during the immigration debates. Herbert Spencer Jennings at the Johns Hopkins University, strongly criticized Laughlin's means of gathering his prison and hospital survey data. Thomas Hunt Morgan, at Columbia University, criticized the failure of eugenicists to define traits like feeble-mindedness or criminality. He also pointed out that where traits were clearly influenced by social conditions, it was impossible to make any claims for a specific genetic influence, even if it were there. The anthropologist Franz Boas, also at Columbia, claimed that eugenics was racism disguised as science, and journalist Walter Lippmann exposed the fallacies of I.Q. tests, used to argue for a genetic basis for intelligence.

None of these criticisms seemed to deter the eugenicists, who continued to flourish through the mid-1930s in the United States, but funding sources began to move their philanthropic dollars elsewhere; the Carnegie Institution of Washington closed the Eugenics Record Office in 1939. At the same time, eugenics took on a new life in Germany under the Nazis after 1933.

What was the context in which this eugenics movement developed? How and why did it become so popular, and how does that context compare with our own? And finally, what are the similarities and differences between eugenics in the early 1900s and the situation today?

The period from 1880 to 1920 was one of rapid social, economic, and political change in many Western countries, particularly the United States. It was the period of rapid industrialization, urbanization, the ascendancy of agribusiness over the family farm, and the growth of a militant labor movement. Urbanization increased the visibility of alcoholism, prostitution, and degeneracy. The period was punctuated by a series of major depressions roughly every decade from 1873 onward, and by a tendency toward monopolization. Industrial leaders could not predict and plan effectively because of the randomness of the cycles.

One major response to these problems was Progressivism, a movement that began in the industrial sector. Its ideas were used to address the root causes of economic and social problems in all aspects of society. Eugenics fit perfectly with Progressive ideology. Eugenicists were scientifically trained experts who sought to apply rational principles to solving the problems of anti-social and problematic behavior by seeking out the cause, in this case poor heredity. The best schooling and social training—like the best soil—was of no avail if hereditary constitution was defective. Eugenicists were to be the "managers" of the human germ plasm, in the progressive spirit, and would take control of human evolution. Eugenicists often portrayed themselves as efficiency experts, helping to save society millions of dollars by sterilizing defectives so that the state would not have to care for their offspring. In both the United States and Germany, such economic arguments were central to eugenic propaganda. In Germany, where economic conditions in the depression era of the 1930s were considerably worse than elsewhere, saving the state money became one of the dominant themes in eugenic arguments for euthanasia, when even supporting those who were sterilized became too expensive.

What does this historical account tell us about our genetic and reproductive decisions today, at a time when hopes are high for the application of new genetic technology to both medical and social problems? Is a new eugenics afoot?

The early 20th-century eugenics movement was a product of a particular economic, social, and scientific context: a highly transitional period in American economic and industrial expansion, the ad-

vent of a new genetic paradigm, and the ideology of rational management by scientifically trained experts. As historian Sheila Weiss has emphasized, there was enough logic to the eugenic argument—saving the hard-pressed taxpayer the burden of supporting masses of supposedly defective people—to give it popular appeal. For a segment of the biological community, it provided career opportunities that could be justified as the application of their science directly to the solution of social problems. For the wealthy benefactors that supported eugenics, such as the Carnegie, Rockefeller, Harriman, and Kellogg philanthropies, eugenics provided a means of social control in a period of unprecedented upheaval and violence. It was these same economic elites and their business interests who introduced scientific management and organizational control into the industrial sector.

I would argue that we are poised at the threshold of a similar period in our own history and are adopting a similar mind frame as our predecessors. A "bottom line" mentality is rapidly becoming our guidepost. It is unlikely that we will see a return to blatant demands for sterilization, but the requirement of antifertilization medication for continued welfare benefits in the U.S., and bitter anti-immigration sentiment in southwestern U.S. and Europe are haunting reminders that we are not immune to the prejudices of our predecessors. In 1994 (*The Bell Curve*) we saw the resurrection of claims that there are genetic differences in intelligence between races, leading to different socio-economic status. Claims about the genetic basis for criminality, manic depression, risk-taking, alcoholism, homosexuality, and a host of other behaviors have also been rampant in scientific and especially popular literature. Much of the evidence for such claims is as controversial today as in the past.

We seem to be increasingly unwilling to accept what we view as imperfection in ourselves and others. As health care costs skyrocket, we are coming to accept a bottom-line, cost-benefit analysis of human life. This mind-set has serious implications for reproductive decisions. If a health maintenance organization (HMO) requires in utero screening, and refuses to cover the birth or care of a purportedly "defective" child, how close is this to eugenics? If gene or drug therapy is substituted for improving our workplace or school environments, our diets and our exercise practices, how close is this to eugenics? Significant social changes are expensive, however. If eugenics means making reproductive decisions primarily on the basis of social cost, then we are well on that road.