

Roles of science in eugenics

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The relationship of eugenics to science is intricate and many-layered, starting with Sir Francis Galton's original definition of eugenics as "the science of improving stock". Eugenics was originally conceived of not only as a science by many of its proponents, but as a new, meliorative science emerging from findings of a range of nascent sciences, including anthropology and criminology in the late 19th-century, and genetics and psychiatry in the early 20th-century. Although during the years between the two World Wars many central claims made by eugenicists were critiqued by scientists in these disciplines, in more recent years forms of eugenics (e.g., liberal eugenics") have been defended as an inevitable outcome of biotechnologies and respect for autonomous choice. Understanding the shifting and varied roles that science has played in eugenics requires an appreciation of the ways in which science and values are intertwined.

Science and Eugenics: The Late Nineteenth-Century

When Galton coined the term "eugenics" in his *Inquiries into the Human Faculty*, he characterized it as "the science of improving stock ... to give the more suitable races or strains of blood a better chance of prevailing over the less suitable" (1883: 24-25). Galton identified eugenics as an explicatively meliorative enterprise, one concerned with improvement of some kind within a population that contains the "more suitable" and the "less suitable". As such, the science of eugenics

presupposes questions about value: which races or strains of blood are more suitable, and which less suitable, and why?

Galton's earlier studies *Hereditary Genius* (1869) and *English Men of Science* (1874) made it clear that the more suitable "strains of blood" were those found in family lineages with high levels of social and professional accomplishment. Part of Galton's own aim was to establish grounds for the view that "talents" and "character", both thought of as mental traits of people, were subject as much to hereditary transmission as were physical traits. In pursuit of that goal, Galton both drew on, and made significant contributions to, statistical techniques for studying populations, such as regression and the analysis of covariance (Mackenzie 1981). The reliance of early work in eugenics on social statistics, measurement, and analysis, contributed to a view of eugenics as scientific.

Eugenic views of some of these "less suitable" races and "strains of blood" were incorporated directly from common perceptions of certain groups of people who represented social problems for late 19th-century Western societies: the poor, the alcoholic, the feeble-minded. These sorts of people were viewed as themselves inferior in some intrinsic way, and so responsible for the corresponding problems of pauperism, alcoholism, and feeble-mindedness. Eugenic interventions directed at them were thus seen as solutions to those problems. Eugenic family studies, beginning with Richard Dugdale's "The Jukes" in 1877, as well as hereditary views of criminality, were taken to provide a scientific basis for sexual segregation and sterilization policies, as well as for broader eugenic thinking about future generations (Rafter 1988, 2008).

The "less suitable" also included, as Galton made clear, certain "races". Here folk views that reflected nineteenth-century racist biases were incorporated into and reinforced by science, in this case the science of

anthropology. Eugenics took racial categories, such as “Black” and “Indian”, as biologically distinct kinds of people, each associated with a suit of different characteristics that made them more or less suitable for civilization and its requirements. The German term “Rassenhygiene”, introduced in 1895 by Alfred Ploetz in Germany and sometimes translated as “racial hygiene” was, in essence the term for eugenics, and came to be associated through Ploetz with the superiority of the Aryan race in twentieth-century Nazism.

Eugenics and Science Come of Age: The Early Twentieth-Century

If anthropology, criminology, and the development of social statistics provided the scientific grounding for the origins of eugenics, genetics, psychology, and psychiatry can be taken as the sciences that facilitated the transition of eugenics from the realm of ideas to social policy.

Although “genetics” was coined by William Bateson only in 1906, the idea that eugenic traits ran in families was typically underwritten by some kind of appeal to hereditary material that was passed down a family lineage. Likewise, the idea that mental defectiveness or feeble-mindedness was at the root of what made people “less suitable” was given its scientific grounding in psychology and psychiatry through the rise of psychological testing, the regimentation of categories such as “imbecile” and “moron”, and the development of formal manuals of psychiatric classification.

Much of the scientific work here was undertaken by institutions established as part of the eugenics movement. For example, the Eugenics Records Office at Cold Spring Harbor in the United States, and the Kaiser Wilhelm Institute for Anthropology, Human Heredity, and Eugenics in Berlin, Germany, both supported scientific research that collected statistics on traits putatively running in families.

Scientists at the ERO significantly expanded both the list of traits and

the kind of people that fell within the purview of eugenics, including Hebrews, Greeks, Slovenians and other ethnic and national groups as “races”, and subjecting traits such as thalassophilia (love of the sea) and rebelliousness, to eugenic analysis (Allen 1986).

The scientific credibility of both the research and research personnel were influential in policies governing immigration, education, and the lives of Indigenous people. For example, Harry Laughlin from the Eugenics Record Office was an expert witness to the committee that shepherded the restrictive Immigration Restriction Act in the US in 1924. In Canada, eugenicists with influential scientific authority included the psychiatrist Charles Kirk Clark, who linked feeble-mindedness and mental deficiency in Canada to immigration from southern and eastern Europe, and Helen MacMurchy, the first woman to graduate from medicine at the University of Toronto, who became Ontario’s “Inspector of the Feeble-Minded” in 1915.

Scientific Critiques of Eugenics

The best-known early scientific critiques of eugenics focused on the genetic assumptions made by the research undertaken by biometricians in the United Kingdom and by researchers at the Eugenics Record Office in the United States. These were challenges from within the developing science of genetics, and argued that (a) sterilization was unlikely to be an effective form of negative eugenics (Jennings 1931), (b) many eugenic traits, including most notably “feeble-mindedness” had a dubious genetic basis, with eugenic directives based on a simplistic and mistaken form of genetic determinism (Penrose 1949), and (c) racialized traits and race itself did not have the populational genetic bases that would justify the role given to them within the eugenics movement (Dunn and Dobzhansky 1946). These critiques of eugenics chiefly during the interwar years have been associated with a shift from “mainline” to “reform” eugenics

by the historian Daniel Kevles (1985). On Kevles' view, science offered a self-correction to an enthusiastic and uncritical application of biological knowledge to questions of human enhancement, leading to a form of postwar eugenics divorced from racism and genetic determinism.

Newgenics

Although emerging political critiques of eugenic practices, such as sterilization and segregation, certainly played a role in the virtual disappearance of explicit support for a science called "eugenics" following the end of the Second World War, Kevles' view provides one way to reconcile that disappearance with continuing interest in using scientific knowledge and technology for intergenerational human improvement. That interest is manifest in a variety of contemporary contexts that are sometimes characterized as new forms of eugenics, or "newgenics". These include policies aimed at containing the reproductive rates of populous countries such as India and China stemming from fears of sustainability (Connolly 2008), and advances in prenatal testing that are coupled with the practice of selective abortion, particularly of fetuses deemed likely to develop a disability (Asch 2003).

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