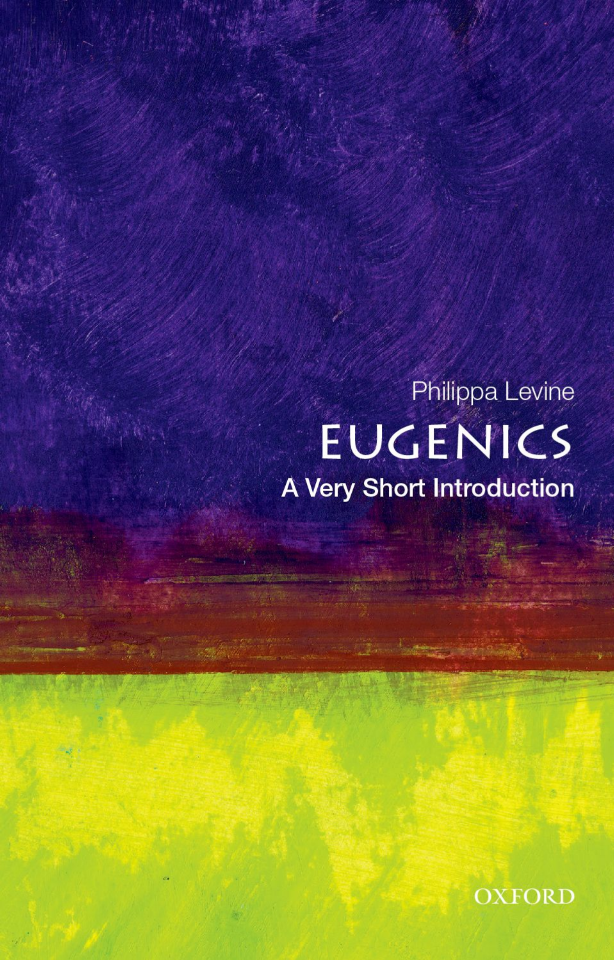

Philippa Levine

EUGENICS

A Very Short Introduction

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Eugenics: A Very Short Introduction

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Published in the United States of America by Oxford University Press
198 Madison Avenue, New York, NY 10016, United States of America.

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Library of Congress Cataloging-in-Publication Data
Names: Levine, Philippa, author.
Title: Eugenics : a very short introduction / Philippa Levine.
Description: New York, NY : Oxford University Press, [2017] |
Series: Very short introductions | Includes bibliographical
references and index.
Identifiers: LCCN 2016028410| ISBN 978-0-19-938590-4 (pbk.) |
ISBN 978-0-19-938592-8 (ebook epub) |
ISBN 978-0-19-938593-5 (online resource)
Subjects: LCSH: Eugenics—History.
Classification: LCC HQ751 .L48 2017 | DDC 363.9—dc23
LC record available at https://lccn.loc.gov/2016028410

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1 3 5 7 9 8 6 4 2

Printed in Great Britain
by Ashford Colour Press Ltd., Gosport, Hants.
on acid-free paper

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Acknowledgments

Thanks are due in particular to Nancy Toff, an amazing editor and the fastest e-mail respondent in the west, and to her unflappable assistant, Elda Granata, who was cheerful even when I was cranky. My colleagues in the History Department at the University of Texas at Austin make going to work a genuine pleasure. I cannot image a more creative, generous, and warm bunch of people; it is a privilege to work among them. The interlibrary loan and collections staff at the UT libraries have my everlasting gratitude. Profound thanks to Jack Loveridge for his work on the index, to Alison Bashford for endlessly inspiring conversation, and to Wolf Gruner and Uffe Juul Jensen, dear friends who swiftly responded to my pleas for advice.

Chapter 1

The world of eugenics

Early in the twentieth century, a powerful union of science and social policy emerged in countries across the world. Eugenics, often dubbed the science of good breeding, was a movement committed to using the principles of heredity and statistics to encourage healthy and discourage unhealthy reproduction. Throughout the twentieth century, but especially in earlier decades, eugenics played a significant role in shaping government policy and was perhaps more important in policy circles than in the scientific community in which it had its origins. Grounded in the biological and statistical sciences, eugenics hoped to improve the genetic quality of human stock and reduce human suffering by focusing on ways to control and improve reproduction. This curious mix of statistical probability and laboratory science fired the imagination of social reformers and politicians in an era in which relations between states and citizens were radically transforming.

From Latin America to the Middle East, in Europe and the United States, eugenic science surged in the early twentieth century. Research institutions dedicated to advancing eugenics were funded by the major philanthropic institutions of the day as well as by governments. Research on intelligence, hereditary disease, behaviors regarded as antisocial, family life, and reproductive control all took shape in the shadow of eugenics, which also furnished the basis of much social welfare legislation. Eugenics integrated science and social reform with its deep belief that biology held the key to bettering human society.

What began in the late nineteenth century as a set of ideas framed around still-tentative theories of heredity and statistical probability was transformed into wide-ranging practice across the globe. Eugenics was a set of both scientific and social practices, and the line between them blurred over time. By the early years of the twentieth century eugenics had moved from paper to policy. Under the broad umbrella of eugenics, physicians and psychologists, social campaigners, feminists, and politicians of all stripes found common cause in a desire to use the findings of science to create a better world. While competing visions of what constituted that better world differed profoundly, the principles that motivated eugenics often began with a well-intentioned desire for betterment. This is the paradox of a movement closely associated with a host of the twentieth century's most coercive policies. In seeking to eradicate "bad" genes and hereditary defects, eugenicists embarked on radical schemes that reinforced and often burnished existing prejudices. In the name of science and human improvement, eugenics offered biological solutions to social problems, but these solutions all too often trod a fine line between treatment and punishment.

Francis Galton, an English statistician, coined the term *eugenics* (derived from the Greek, and meaning *well-born*) in 1883. He dreamed of improving the human race by engineering human heredity, likening it to the breeding of animals, an agricultural skill that had caught the attention of his cousin, Charles Darwin. Influenced by Darwin's work on heredity and evolution, Galton set about breeding rabbits, statistically measuring intelligence, and classifying human difference in order to understand the mysteries of heredity. What these varied researches shared was a belief that the new scientific insights of the age might improve the outcome of human reproduction. By the first decade of the twentieth century, his ideas had caught on. The first social policies influenced by this nascent movement were laws prohibiting marriage among “mental defectives” and permitting their sterilization. Government commissions on hereditary diseases and mental incapacity, as well as international eugenics conferences, followed. In the first half of the century eugenics reached into many areas of life, from marriage and childrearing to criminality, from immigration to health care.

Scientific and social origins

Long before eugenics, heredity and reproduction were already topics of interest and concern. In the face of a massive population rise in the West in the eighteenth century, the English scholar and clergyman Thomas Malthus warned of the dire consequences of unchecked reproduction, which he predicted would threaten the very basis of human existence. He saw two possible brakes to overpopulation: limiting reproduction to reduce births, or catastrophes such as war and disease that increased deaths. Pursuing his thinking, the first birth-control organization in Britain, founded in 1877 and convinced that overly large families were the cause of poverty, called itself the Malthusian League. The term became immensely popular among Indian reformers interested in family limitation. A slew of neo-Malthusian organizations flourished across India in the late nineteenth and early twentieth centuries.

Scientific interest in heredity, meanwhile, was well established by the early nineteenth century, with the term *herédité* appearing in the French medical lexicon in the 1830s. The French naturalist Jean-Baptiste Lamarck argued at the start of the century that behavioral adaptations organisms made to their environments could be inherited by their offspring. Charles Darwin searched for the mechanisms governing heredity, but little in his work suggests he supported intervening in human reproduction. Scientists sought to understand how characteristics were transmitted from parents to offspring and how embryos developed. In the 1860s the plant experiments of the Moravian monk Gregor Mendel demonstrated that certain characteristics of inheritance were fixed and did not respond to changes in behavior. They were governed by natural laws that rendered some elements of inheritance dominant and some recessive. Mendel's work, which echoed Galton's skepticism that environment could alter heredity, remained untranslated and largely inaccessible until early in the twentieth century. Rediscovered, it became one of the most important elements in the new science of genetics.

It was innovative ideas in biology, such as those of Mendel, that gave eugenics a firm footing in the new century. Cell biology in particular transformed ideas of heredity. August Weismann's germ-plasm theory distinguished between somatic cells not involved in reproduction and germ cells necessary for reproduction. Germ cells, impervious to change, were transmitted unaltered and unalterable to the next generation, refuting Lamarck's idea that acquired characteristics were transmissible. The precursors to modern DNA theory, Weismann and Mendel's work created a favorable climate for the eugenic argument that only good genes were worthy of reproduction and that the bad should be discarded. Scientists continued to argue the finer details of heredity, but for the eugenics movement heredity pointed the way forward: change was possible, improvement was the goal. Human breeding could be tweaked.

Different schools of thought competed. Mendelian genetics, sometimes called "hard heredity," stressed the fixed character of genes independent of environmental influence and became the prevailing orthodoxy in the United States and Germany, while Lamarckian ideas remained strong in Latin countries, especially in France. British science was strongly Mendelian, although the statistically oriented biometry of Karl Pearson and Frank Weldon was also locally influential. Pearson and Weldon championed statistical analysis that measured correlations between traits and in families, contrasting speculative Mendelian theory with their preferred emphasis on observation and measurement.

The reach of eugenic science was long, encompassing physical anthropology, genetics, psychiatric and psychological research, criminology, and more. Twin studies (still used in behavioral genetics) were used to assess the heritability of criminality, intelligence, and disease. Galton was an early pioneer of using twins, and the Russian Jewish geneticist Solomon Levit conducted twin studies before his execution by Stalin. They were common in 1930s Germany, where Hermann Werner, a dermatologist and eugenicist, was nominated for a Nobel Prize in 1932 for his work on twins. Eugenics researchers also collected family histories, conducted anthropometric measurements of physical characteristics, and measured skulls and other human remains. They compiled pedigree charts and hereditary databases to identify heritable traits and computed statistical probabilities of inheritance. Blood-group research tried to explain racial difference, while racial anthropologists investigated mixed-race inheritance. Schizophrenia attracted considerable attention, and a plethora of ability and intelligence tests linked eugenics to psychology and psychiatry. Eugenics was thus well represented in the emerging biomedical and biological disciplines of the day as a legitimate scientific pursuit.

Although the science of heredity underlay the principles of eugenics, it was in social policy that its influence and effects proved most potent and long-lasting. Hitler's deputy, Rudolf Hess, called eugenics applied biology, and the Russian scientist Tikhon Iudin similarly spoke of it as applied science. Its reach in the first half of the twentieth century was nothing short of incredible, addressing every aspect of reproduction and shaping welfare policy, public health, and new laws. Already influential before 1914, after World War I eugenics came to be seen as a solution to problems caused by as well as revealed by the war. Many saw the four years of this devastating conflict as a eugenic disaster, killing off or crippling vast numbers of young men, raising sexually transmissible disease rates, promoting the use of alcohol, and removing women from the domestic sphere. Pro-natalist campaigns to restore or expand prewar population levels flourished as nations battered by the loss of a generation of young men promoted high fertility and even prohibited family limitation.

Eugenics and social reform

Changes in the later nineteenth century also contributed greatly to the goal of human betterment. Easier and faster travel exposed increasing numbers of people to environments and cultures unlike their own, and the growth of European imperialism encouraged classifications of superior and inferior peoples and races. The growth of cities and the spread of mechanization concentrated populations and fueled demands for wider political representation. States and governments took on increasing responsibilities for the health, education, and safety of the populace, tasks requiring counting and classification of peoples. Popular journalism, boosted by rising literacy rates and a rise in disposable income, thrived on stories of urban danger and misbehaving underclasses. Max Nordau's bestselling book, *Degeneration* (1892), captured a widespread pessimism about the future of Western civilization, as factory smoke filled the air and squalid conditions persisted. The pioneering Italian criminologist Cesare Lombroso championed a theory of hereditary degeneracy among criminals and the insane, and commentators pointing to the higher birth rates of countries such as India and China, as well as among poor whites, pictured a declining West failing to reproduce its best specimens and overrun by its adversaries. This dystopic vision quickly became a signature theme in eugenics, whose mission, then, was to stem the tide and reverse the course of degeneration by promoting the right sort of reproduction and preventing the wrong.

Varieties of eugenics

The English writer Havelock Ellis was convinced that the key to future human prosperity was what he called the "sound breeding of the race." But definitions of sound breeding varied. Eugenic policies encompassed both "positive" and "negative" practices. Both focused on reproduction, but whereas negative eugenics stressed preventing it, positive eugenics sought to increase reproduction among the fit and socially valuable. Positive eugenics aimed to encourage and increase reproduction among those without hereditary afflictions through prenatal and child care, tax incentives, family allowances, and family planning. It sought also to improve housing, sanitation, and education. This was the vision mostly embraced by liberal and radical eugenicists. A more authoritarian negative eugenics, conversely, aimed to prevent undesirable individuals from propagating, whether by confinement to an institution, sterilization, or even euthanasia. Eugenic practices ranged widely across this spectrum, attracting as a result proponents with radically different ideas. Almost all of these practices, but especially those characteristic of positive eugenics, were also often endorsed by non-eugenicists; they were not always exclusive to the eugenics movement. What set eugenicists apart was their belief that it was science, and specifically the science of heredity and genetics, that would be the key to the betterment of the human race.

This trust in the universal power of science made eugenics an international movement and not one limited to Western countries. On the contrary, one of the most interesting features of eugenics is its practically worldwide appeal. Although it took markedly different paths, it garnered attention across the globe. In some countries, especially in Latin America but also in Iran, Egypt, and the Netherlands, the emphasis was on *puériculture*, a form of positive eugenics often loosely described as Lamarckian. The eugenic obstetrician Adolphe Pinard called it a science for the conservation and betterment of humans. Encouraging reproduction and nurturing children, and focused on environmental improvement, this mode of positive eugenics was particularly prominent in Latin countries. The Latin International Federation of Eugenics Societies, founded in 1935 as an affiliation of organizations in Latin America as well as southern and southeastern Europe, distanced itself from the negative eugenic principles of the hard heredity school, stressing social hygiene, public health, and environmental change as the best eugenic paths. Some of the early Soviet eugenicists, such as bacteriologist Nikolai Gamaleia, were also strongly environmental, and in India and Egypt eugenicists showed little interest in genetics. In places where there was a desire to limit overall population growth, such as India and Hong Kong, eugenics focused mostly on birth control.

In Anglophone countries with high immigration rates (e.g., Britain, Canada, and the United States), eugenics became a tool for racially specific migration controls and led to a growing attention to mental and intellectual capacity. In these arenas, as well as in Germany, hereditarian versions of eugenics tended to dominate, yet positive and negative eugenics also often coexisted. Many eugenicists advocated a combination of tactics for both improvement and prevention, making any hard and fast distinction between positive and negative eugenics impossible. Sweden provides a good example: there, forced sterilization of mental defectives existed alongside a panoply of social welfare measures such as prenatal care, pensions, and child welfare. The American zoologist Herbert Jennings, writing in 1927, favored checks on the propagation of defective genes but also advised that “the war on the environmental factors must continue.” For many there was no contradiction in supporting both negative and positive eugenic measures.

National belonging

In central, southern, and eastern Europe, the Middle East, and the Americas, eugenics played a prominent role in newly independent nations. After the disintegration of the Ottoman and Habsburg empires at the end of the 1914–1918 war, developing nations hoped that eugenic improvement would enhance their global standing by improving the health and fitness of their populations. In Czechoslovakia, Hungary, and Romania, for example, physicians and scientists actively promoted a eugenic agenda, uncomfortably aware that the West viewed their countries as backward and unhygienic. Creating a biologically sound nation appealed alike to scientists and doctors looking to improve health and to politicians keen to consolidate their power. The major imperial powers, meanwhile, saw in eugenics a means of preserving their global hold, asserting their biological superiority, and controlling reproduction. In Spain, eugenicists ascribed the loss of empire and the country's diminished global influence to biological degeneration.

Those who did not conform, whether through behavior or ethnicity, disease, or defect, became problems for eugenics to solve, defined more often than not through class, racial or ethnic identification, or gender. In the new postwar nations as well as in multiracial settings, eugenics had far-reaching consequences for ethnic and racial minorities. Some ethnic minorities in eastern and central Europe manipulated eugenics for their own ends, but eugenic measures endorsed a narrow range of lifestyles, reaching their apotheosis in Hitler's view of Aryan superiority.

Eugenics and Nazism

A common misconception confuses Nazism with eugenics, seeing in the actions of Hitler's regime the ultimate expression of eugenics. While the Nazis certainly did seize on eugenics to further their aims, their wartime activities in particular moved well beyond its scope, and non-Nazi eugenicists anxiously distanced themselves. Moreover, interest in eugenics long predated Hitler's rise to power. German genetics and eugenic research enjoyed high status in the international scientific community in the early twentieth century, with its well-funded facilities and innovative research. German physicians, psychiatrists, biologists, and anthropologists studied hereditary disease, compiled mortality statistics, and campaigned for public health programs. In the Weimar era, sandwiched between World War I and the Third Reich, welfarist policies aimed at improving birthing and child health as well as preventing disease flourished. Eugenics was thus an established and legitimate wing of German scientific research with international connections. Before and after World War I, German and American eugenicists had close contact, visiting one another's institutions and translating one another's work. German proponents envied the eugenic laws already being passed in the United States and hoped to see them implemented at home.

Conservatives within German eugenics focused on race (*Rassenkunde*), and it was this element that would be especially eagerly pursued under Hitler. Already in the 1920s fields such as racial anthropology (classifying racial difference) were part of the science curriculum. When Hitler took control in 1933, he quickly enacted eugenic race laws designed to "purify" the German population, both by encouraging reproduction among those he favored and preventing it among non-Aryans. First in 1934 came a compulsory sterilization law, aimed at conditions thought to be hereditary, including chronic alcoholism. The following year he prohibited sex and marriage between German Jews and non-Jews, and between the genetically superior and inferior. Although more broadly used than elsewhere, such laws were by no means unique to Nazi Germany. Restrictive marriage laws could be found worldwide, while involuntary sterilization was routine across Scandinavia and many American states by 1935.

Eugenics continued to shape both Nazi social policies and scientific research during the war, but most of the wartime experiments on concentration camp prisoners were of no eugenic significance. Eugenic research did continue during the war, notably in Joseph Mengele's twin studies at Auschwitz and in anthropological studies of Jews; 106 Jewish families in the Polish ghetto at Tarnów in 1942 and 440 Jewish men imprisoned in a

1. A typical product of Germany's Reich Propaganda Office, this 1936 poster claimed that a family of five healthy Germans could live on the same amount of money the state needed to expend daily on one person suffering from a hereditary disease.

stadium in Vienna in 1939 were measured, photographed, and classified before being deported to the camps. It was not, however, at the center of wartime scientific research. Nazism never relied exclusively on an authoritarian negative eugenics. Plenty of positive eugenic measures encouraged Aryan reproduction via marriage loans (1933), tax rebates (1934), and child allowances (1936). Heinrich Himmler's 1935 *Lebensborn* (Spring of Life) scheme offered women pregnant with a racially pure child a discreet confinement in return for handing the child over to the state after birth; more than half the women who participated were unmarried.

In moving from the eugenic vision of perfecting or improving human stock to the creation of a master race, Nazi science quickly moved into distinctly non-eugenic territory. Eugenic ideas remained useful as supplements to this radical vision, but German scientists made what some have called a "Faustian bargain" with the Nazi state that allowed them to pursue genetic and eugenic research as long as it fed the aims of their rulers.

Who were the eugenicists?

Membership in eugenic organizations tended to be highest among the literate and professional middle classes. Eugenics appealed across the spectrum of politics, but its base was firmly among the educated and affluent. Medical professionals, psychologists and psychiatrists, scientists, lawyers, journalists, social workers, and educators as well as biologists, anthropologists, and politicians made up the bulk of the membership of eugenic societies. Well-known politicians such as Theodore Roosevelt, U.S. president from 1901 to 1909, and Alfred Deakin, three-time Australian prime minister in the early 1900s, promoted eugenics. David Starr Jordan, president and then chancellor of Stanford University in the same era, was an enthusiastic eugenicist, as were many prominent academics around the world. The founding editorial board (1916) of the American journal *Genetics* unanimously endorsed eugenics. Eminent physicians and surgeons in many countries lobbied for eugenic reforms, positive and negative, and some moved into political appointments from which they launched eugenic social schemes. Doctors were prominent in the movement everywhere, seeing in it a chance to eradicate diseases, improve mortality rates, and relieve suffering. Eugenicists were certain that diseases, such as tuberculosis and syphilis, and conditions such as epilepsy, schizophrenia, and alcoholism would respond to eugenic measures, whether coercive (e.g., quarantine and sterilization) or assistive (e.g., health and prenatal care).

Political opinion among eugenicists ran the gamut from the fascism motivating the highly particular eugenics of Nazi Germany to early Bolshevik eugenics in the Soviet Union, a science-based program of human improvement. Stalin's disavowal of eugenics in the 1930s effectively shut down Russian eugenics, but always and everywhere eugenics attracted both conservatives, who were seeking to maintain and bolster the status quo, and socialists, for whom it spelled a bright and more equitable future free of poverty and avoidable ill health. In Britain and in Scandinavia, both socialists and conservatives joined eugenics organizations, as did feminist activists. In Sweden, the influential Social Democrats Alva and Gunnar Myrdal, whose work helped shape the Scandinavian welfare state, pushed for eugenic measures to counter Sweden's low fertility rate in the 1930s. They lobbied for paid pregnancy and maternity leave, accessible child care, and the right of married women to work, but also supported curbs on the reproduction of undesirables, a good example of how negative and positive eugenics could coexist. Eugenic principles corresponded well with the growing desire for rational management of society by experts, and the movement attracted those likely to fill such positions.

Above all, eugenics was an international movement developed collaboratively at conferences and congresses and in well-respected institutes. Although they had sharp differences of opinion, researchers and advocates exchanged ideas and shared their findings. Eugenics was not a minority interest but a mainstream international science that promised not just the advance of scientific knowledge but the improvement of the human condition.

Eugenics, science, and culture

A good index of the influence of eugenics is how deeply it made its way into culture. Eugenic themes can be found in popular magazine articles, films, plays, and art. The danger of tainted heredity was a popular plotline. Wilkie Collins' novel *The Legacy of Cain* (1889) turns on whether the daughter of a murderess will inherit her mother's criminality. In physician G. Frank Lydston's 1912 play *The Blood of the Fathers*, a high-minded doctor marries a woman who, although adopted into a wealthy family, is the daughter of a murderer and a thief, "the butterfly mismate of a serious-minded man." Caught stealing diamonds, she kills herself, replicating her father's history: "She is bone of the bone, blood of the blood, and brain of the brain of an opium-eating suicide! … what chance has she to escape." The play was reviewed not only by theater critics but, unusually for a drama, in the *Journal of the American Institute of Criminal Law and Criminology*, which was more concerned with its eugenic message than its dramatic qualities.

Early science-fiction writers drew heavily on eugenics. H. G. Wells included motifs of degeneration and genetic modification in many of his novels. Utopian and dystopian novels used reproductive practices as a plotline. In Charlotte Perkin Gilman's *Herland* (1915), to focus their maternal feelings efficiently women are allowed only one child, and the unfit are prohibited from parenting. Yevgeny Zamyatin's 1921 novel *We*, translated from Russian into English in 1924, resembled Aldous Huxley's better-known *Brave New World* (1931). In both, reproduction has been mechanized and human personality is controlled in the interests of rational efficiency. Now forgotten but internationally acclaimed at the time, with theater, film, and later television adaptations in the United States, Japan, and Britain, Jean Webster's enormously popular novels *Daddy-Long-Legs* (1912) and *Dear Enemy* (1915) also took up the theme of eugenics. *Daddy-Long-Legs*, originally serialized in the *Ladies' Home Journal*, featured an orphan child anxious about her unknown heredity. As an adult in *Dear Enemy*, she reads eugenics texts, discusses intelligence tests, and advocates confinement for orphans with epilepsy, mental retardation, and deafness.

Eugenics featured often in film. *Tomorrow's Children*, a 1934 Hollywood production (released in Britain as *The Unborn*), sympathetically followed the attempt of a young woman fighting a sterilization decree issued because of her heredity. (A book of the same name, and decidedly pro-eugenic, appeared the following year, the work of the American geographer Ellsworth Huntington.) In the silent film era, both pro- and anti-eugenic films were common, and a short-lived Eugenic Film Company produced a single film, *Birth* (1917), before disappearing. More successful than its brief American counterpart in filmmaking, the Eugenics Society in Britain began making films in 1924, while in Germany a series of government-sponsored films produced between 1935 and 1937 underscored the dangers of mental retardation. American producer Ivan Abramson made a number of eugenic films, including *Married in Name Only* (1917), in which a married couple discover insanity in the groom's family and decide against having children. The film ends happily when they discover he was adopted. In 1932 Paramount released *The Island of Lost Souls*, a film adaptation of Wells' 1896 novel *The Island of Dr. Moreau*, inviting the geneticist Julian Huxley, brother of the novelist Aldous, to visit the set to approve the film's use of science.

The vocabulary of eugenics derived not just from science but from the cultures surrounding it. While scientific language provided legitimacy for its objectives and a gloss of neutrality, expertise, and professionalism, ideas culled from the broader culture gave eugenics a familiarity. One popular metaphor was that of gardening, and another had to do with blood. Politicians and scientists used the metaphor of gardening, weeding out the weak, to explain the aims of eugenics. Blood purity and the importance of ancient bloodlines were invoked widely. In Japan blood purity was a central eugenic ideal, and David Starr Jordan, in an essay in *Popular Science Monthly* in 1901, called blood "the symbol of race unity." The idea of "bad blood," a common synonym for syphilis, expressed the widespread fear of tainted blood. Blood protection laws designed to maintain racial purity were common in eastern and central Europe, especially during the Nazi era. In 1940 Romanians were forbidden from marrying Jews because, the new law explained, "Romanian blood" was "an ethnic and moral element."

Who funded eugenics?

The broad appeal of eugenics across the political spectrum and in so many cultures helped it attract financial support. In countries with a growing welfare state, public funding could be generous. Sweden established a State Institute for Racial Biology in 1922, and the Bolsheviks set up a State Museum of Social Hygiene in 1919. Under Mussolini, a formerly private charity, the Italian Institute of Hygiene, Insurance, and Social Assistance, attracted state support, while in 1920 the Prussian government established a Council for Race Hygiene to advise on eugenic questions. State support in Latin America demonstrated the growing power of the medical establishment and its determination to tackle ill health and unsanitary conditions.

Eugenics was also heavily privately funded. Francis Galton put up the money for a eugenics laboratory in 1904 and a National Eugenics Fellowship, both at University College London. When he died in 1911, Galton left a bequest to establish a professorship. Henry Twitchin, an Australian sheep farmer, left the bulk of his estate to the English Eugenics Society when he died in 1930. His interest in stock-breeding and his own family history (which he believed to be unsound) spurred his support of eugenics, which he claimed was “by far the most urgent and important work possible in human endeavour.” The society also benefitted in 1920 from a substantial donation from the Maharaja of Mysore.

Yet Europeans envied the generosity shown to American eugenics by wealthy philanthropists. The Long Island, New York–based Eugenics Record Office benefited from the considerable financial contributions of both Mary Harriman (widow of a railroad magnate) and John D. Rockefeller and was managed for most of its history by the Carnegie Institute. On the West Coast, Ezra Gosney, who made his money in the citrus business, and land developer Charles Goethe together bankrolled the California-based Human Betterment Foundation, where Paul

Popenoe promoted the involuntary sterilization of undesirables. John Harvey Kellogg (of cereal fame) was another significant sponsor, founding the Race Betterment Foundation in 1906.

American money also supported eugenics work abroad. Rockefeller Foundation money helped launch Germany's Kaiser Wilhelm Institute for Anthropology, Human Heredity, and Eugenics in 1927. Prominent psychiatrist Emil Kraepelin's work on the genetic basis of psychiatric disorders was funded by the Jewish German-American philanthropist James Loeb throughout the 1930s. Carnegie money facilitated eugenic work in South Africa and also supported a good deal of the work of the Swedish economist and eugenicist Gunnar Myrdal.

Eugenic education

Universities in many countries encouraged both eugenic research and teaching, creating social biology or hygiene departments as well as introducing eugenics into medical, biological, and social science curricula. Twenty-five percent of German medical schools included courses in eugenics by 1914, and in Estonia it was taught in both the medical and the theological faculties. W. E. Castle's 1916 college textbook, *Genetics and Eugenics*, went through four editions in fifteen years. The National Education Association, the largest teachers' organization in the United States, recommended in 1921 that "it is as much the duty of educators to assure through educational procedures that individuals shall be well born as that they shall be well read." By the late 1920s, more than 375 U.S. colleges and universities as well as many high schools had incorporated eugenics into the curriculum, and most high-school textbooks endorsed eugenic principles. Courses in social biology were on the curriculum well into the middle of the twentieth century; at Indiana University the entomologist-turned-sex-researcher Alfred Kinsey offered an immensely popular biology course on marriage and the family, starting in 1938. In Germany, race hygiene courses were a common offering at universities even before Hitler came to power; after 1933 teaching racial science became mandatory. Eugenic morals, aimed primarily at girls, were often part of the curriculum, both to inculcate domestic values and to help prevent early pregnancy. In Burma, hygiene was a compulsory subject in girls' schools from the 1920s, and in England girls were educated in various aspects of what at the time was called "mothercraft," including child care, needlework, and cookery. The French Family Code of 1939 mandated that population issues be taught in French schools, and morals classes for French schoolgirls were introduced in the 1920s.

Religion

Eugenics accommodated a broad range of not only political opinion but also religious belief. Not surprisingly, the different forms eugenics took mirrored religious fault lines. Fundamentalist Christians disavowed evolutionary theory and saw divine purpose as all-encompassing. Along with Catholics, they regarded human interference in reproduction as sacrilegious and strenuously opposed eugenics. Other Judeo-Christian denominations were more mixed in their reception, and the close historical association of Protestantism with state religions may have influenced a more open acceptance of state eugenics in Protestant countries.

In a series of national conferences on race betterment during World War I, the Americans John Harvey Kellogg and Congregationalist minister Dwight Hillis presented eugenics as a species of Christian redemption. Some priests even found ways to practice eugenic principles. Walter Sumner, dean of an Episcopal cathedral in Chicago, made headlines in spring 1912 when he announced that he would marry only couples who presented health certificates confirming they had neither communicable diseases nor mental or physical abnormalities. The policy had the blessing of his bishop and found favor among liberal Protestant leaders and Reform rabbis.

2. Fitter Families contests, popular in interwar America, handed out medals to high-scoring families in eugenics competitions. These medals bore the biblical phrase "Yea, I have a goodly heritage" (Psalms 16:6).

Eugenicists sometimes yoked their beliefs to religious principles. Medals handed out at Fitter Family contests by the American Eugenics Society quoted from Psalms 16: "Yea, I have a goodly heritage." The Russian eugenicist Nikolai Kol'tsov was far from alone in imagining a eugenic religion comparable to the major religions when he addressed the Russian Eugenics Society in 1921. Galton shared this dream, and George Bernard Shaw declared in 1905 that "nothing but a eugenic religion could save civilisation." In his 1936 Galton lecture Julian Huxley predicted that eugenics would be "part of the religion of the future." The British psychologist Raymond Cattell created a rational religion he called "Beyondism" combining eugenics and evolutionary theory, which advocated allowing the poor and the sick to die, cutting off aid to poor countries, and halting immigration. This was a markedly different approach than that found among the many religious adherents to eugenics who stressed the social responsibility of ecclesiastical institutions, and who tended to be from the liberal wings of various religions.

Catholic doctrine remained staunchly opposed to many eugenic policies, and organized Catholic campaigns often helped defeat or prevent eugenic measures. Before 1930 liberal Catholics committed to social justice attempted accommodations, but the 1930 papal encyclical *Casti Connubii* (On Christian Marriage) broke those links. This lengthy declaration of Catholic marriage doctrine, dismissed by the British *Eugenics Review* as a "defiant return to mediaevalism," condemned civil authority for arrogating to itself powers that were God's alone. Forbidding artificial contraception as well as sterilization, the decree also called on the state to relieve the needs of the poor, intervening on the social issues that had attracted reform-minded Catholics to eugenics. Yet aspects of eugenics could shape Catholic practice, with some priests discreetly counseling their parishioners to avoid marrying into "undesirable" families. The English Catholic scholar Thomas Gerrard and the Italian Franciscan friar Agostino Gemelli argued that in claiming, promoting, and controlling selection in marriage, Catholic teaching was by definition eugenic. The French Jesuit René Brouillard declared in 1930 that "Catholic morality does not condemn all eugenic science."

Judaism's relationship to eugenics was complicated by the widespread and virulent anti-Semitism of the early twentieth century. Both eugenicists and Jews nonetheless often upheld the Judaic ban on interfaith marriage as a eugenically successful principle sustaining racial purity. Redcliffe Nathan Salaman, a Jewish doctor turned geneticist, published articles in the early 1900s on heredity and the Jews, and the German-Jewish geneticist Richard Goldschmidt was an outspoken advocate of eugenic sterilization to prevent unfit births. Jewish scientists were active in eugenics in many countries, and anti-Semitism was by no means integral to eugenics. Among Zionists dedicated to the regeneration of Jews, many understood Judaism in biological terms, embracing eugenic principles. Manuals aimed at Jewish mothers in Mandatory Palestine recommended eugenics as a science that would help them care properly for their babies.

Islamic beliefs, like Catholic doctrine, asserted that divine power was God's alone; humans could not alter what Allah had created. Family planning to create stable families of pure lineage, and abortion in the first four months of a pregnancy, were in some instances permissible. Islamic views could accommodate some but by no means all eugenic practice, but eugenics, though not unknown there, was never embraced to any significant degree in the Islamic world.

In Judeo-Christian cultures, proponents of eugenics recognized that support from religious leaders would secure them greater acceptance. In their early twentieth-century college textbook on eugenics, Paul Popenoe and Roswell Johnson devoted a whole chapter to religion and eugenics, claiming that although every religion could accommodate eugenics, Christianity was its "natural ally." Advocates sometimes wooed willing promoters from various churches. The American Eugenics Society held a eugenic sermon competition. In England, the dean of St. Paul's Cathedral, William Inge, enthusiastically promoted the cause both at home and abroad, speaking at the international Eugenics Congress in New York in 1921. Yet in almost every denomination there was ambivalence about both the principles and methods of eugenics. For every William Inge or Walter Sumner, there was an equal number of skeptics alarmed by the principles and practices of eugenics, and its unavoidably secular judgments about life and death. Conservative and liberal theologians and clerics alike often found the precepts and practices of eugenics offensive, and the absence in Catholic strongholds of eugenic practices that prevented or ended conception points to the power that religion exerted over a movement grounded in a secular understanding of the human condition.

Resistance to eugenics

Opposition to eugenics was apparent from the very beginnings of the movement. Galton's *Hereditary Genius* sold poorly, and reviews of it were mostly unfavorable. The early twentieth-century surge of work in genetics helped revive interest after this faltering start, but among scientists, and particularly geneticists, a vocal node of criticism grew, especially from the 1930s. As understandings of human heredity became more sophisticated, geneticists were increasingly critical of eugenic assertions about heredity. Fundamental to their objections was that eugenics oversimplified the mechanisms of heritability, mistook phenotype (an organism's observable physical characteristics) for genotype (genetically inherited instructions that shape phenotype, what we now call the genome), and relied on faulty understandings of what planned breeding could realistically achieve. Eugenic thinking continued to rest on an increasingly questionable assumption that children would inherit the traits of their parents wholesale, and policies of segregation and prevention were designed specifically around this belief.

By the 1930s, this understanding of heritability came under fire from scientists around the world who pointed out that a simple correspondence in which like produced like had little scientific basis, and that inheritance was instead complex and polygenic—that is, shaped by more than one gene. Even where a degree of change was possible, that change would be very slow if the defect were recessive, and research increasingly indicated that individuals could carry gene markers for various inherited conditions but not themselves suffer from them.

While some were troubled by what they saw as a simple-minded use of science, others disliked aspects of eugenic politics. In 1936 Harvard anthropologist Earnest Hooton, whose own work would later be decried as racist, declined to be on the advisory board of the American Eugenics Society, objecting to what he saw as a "mixing up" of "racial discrimination and eugenics propaganda." Zoologist Herbert Jennings charged that eugenicists generally regarded their own racial and national characteristics as superior, an opinion shared by the British geneticist Lancelot Hogben, who condemned the snobbery and class arrogance of eugenicists. Yet all of these men had ties to eugenics at some point in their career. Although Hooton declined a seat on the society's board, he remained a subscribing member. The eminent Danish geneticist Wilhelm Johanssen's criticisms of the science behind eugenics did not prevent him from joining an international eugenics commission in 1923, or from agreeing to serve a year later on a governmental committee on castration and sterilization. Almost all of those who criticized eugenics in the 1930s had aligned themselves with varying degrees of enthusiasm to eugenics in earlier decades. Many scientists who had earlier supported eugenics remained ambivalent in their critiques, supporting some of the principles of the movement even as they began to question its scientific grounding.

Some, like Hogben, were consistent and vocal in their opposition. The Norwegian anatomist Otto Lous Mohr (imprisoned by the Nazis in 1941) and the British geneticist Lionel Penrose were consistent critics, their opposition fed by their research as well as their political beliefs. Some criticized eugenics as a popularization of science, oversimplifying theoretical population genetics with the easy and false notion that there were identifiable genes for such traits as intelligence, criminality, and alcoholism that could be bred in or out in a seamless fashion. Mohr shared with many a conviction that not enough was known about the workings of heredity to make negative eugenics acceptable.

While scientists mostly focused on the flawed understanding of heredity at the heart of eugenics, other critics dismissed it as elitist, racist, and increasingly antidemocratic in its condemnation of those of weak inheritance. The Italian economist Achille Loria questioned the eugenic equation of prosperity and success with "good" genes, rejecting this association of poverty with biological inheritance. Labor organizations saw eugenics as an attack on their constituents. Sometimes those affected fought back: parents went to court to have children returned from state custody, and inmates in custodial institutions often refused to comply with rules or attempted to escape.

Some critics saw in eugenics a disturbing future. The philosopher Bertrand Russell warned that those who rebelled against eugenic ideas might themselves become targets for sterilization. Others foresaw a world akin to that in Huxley's *Brave New World*, where humans were bred for the convenience of the state. The English writer G. K. Chesterton, an outspoken critic, spoke of "Eugenic contempt for human rights" and "that creepy simplicity of mind with which the Eugenicists chill the blood." Yet in many instances, especially where positive eugenics dominated, support came from the political left (e.g., in Scandinavia, Poland, and Britain). Resistance was as varied as the movement itself; there were sharp differences both in eugenic practices and in condemnations of them.

Some opponents have dismissed eugenics as a pseudo-science that attracted extremists, but the reality is far more complicated. Were the movement that simple, it would perhaps have been short-lived and more limited, and it was anything but. Not only do we still find ourselves facing ethical arguments over reproduction and heredity today, but the huge reach of this movement—throughout the Americas and Asia, across Europe, and in the Middle East as well as the Pacific and parts of Africa—and its persistence in science and in social policy throughout the twentieth century, even after the defeat of Nazism, dictate that we take it seriously.

Chapter 2

Eugenic intelligence

Nothing was more important for eugenicists than intelligence. Long before he coined the term *eugenics*, Francis Galton's early work had centered on the heritability of genius, which he defined as "an ability that was exceptionally high, and at the same time inborn." In *Hereditary Genius* (1869), he used statistical methods to trace the lineages of men he considered eminent, concluding that their mental ability was largely inherited. He compared the frequency of eminence among first-degree, second-degree (grandfathers and grandsons; uncles and nephews), and third-degree (great-grandfathers; first cousins) relations to the frequency of eminence in the general population. Finding that eminent men exhibited greater frequency of eminence that declined over degree of relation, he concluded that it must be an inherited quality.

Galton's metrical approach and his interest in intelligence foreshadowed the new world of intelligence testing that emerged early in the twentieth century. Reason had long been seen as differentiating humans from the animal world, but its unequal distribution intrigued many. In eugenic thinking, intelligence was the key variable. A means to measure intelligence and identify feeble-mindedness was central to the policies that eugenics promoted. The idea that both intelligence and mental disorders were inherited prompted eugenic interest in measuring and classifying intelligence.

Defining and classifying feeble-mindedness

Although not new in the early 1900s, the term *feeble-minded*, rarely used today, gathered tremendous momentum at the end of the nineteenth century. It described a large and worrisome population, less disabled than the idiot or the imbecile (widely used terms in the medical and psychology communities of the time) but nonetheless subnormal. The definition adopted in Britain in 1908 described the feeble-minded as "capable of earning a living under favourable conditions" but not of "competing on equal terms . . . or of managing himself and his affairs with ordinary prudence." In 1910 the American Association for the Feeble-Minded proposed a three-tier classification of the feeble-minded: *idiots*, with a mental age less than two; *imbeciles*, with a mental age between three and seven; and a new term, *moron* (from the Greek *moros*, meaning dull or foolish), for those with a mental age between eight and twelve. In the early twentieth century, the deaf, mute, and blind also were categorized frequently as mentally disabled.

Intelligence and the changing social milieu

As people thronged the cities seeking work, fears about the social consequences of poverty grew. Slums proliferated and work prospects were often uneven and irregular, factors that made poverty visible and inevitable. At the same time, states assumed ever greater responsibility for education, gradually implementing mandatory school attendance to at least age eleven. The marked difference in children's performance at school precipitated work designed to distinguish, classify, and cater to their different needs.

Another characteristic of early twentieth-century statecraft was the slow but steady move toward wider political representation, feeding a debate about the readiness and intelligence of first-time voters. New political formations emphasizing social engineering and welfare for the common good provided fertile soil for eugenics. Mandatory schooling was only one of its elements: public health, child labor laws, slum clearance, marriage regulations, and public assistance programs were among the topics now on the political agenda. Confident that science could help solve social problems and create an informed and responsible citizenry, officials found in eugenics solutions to seemingly intractable social problems. It was in this context that intelligence, or its absence, acquired a new significance, aided by the fact that children were now gathered in classrooms where they could be observed, measured, and classified.

The rise of elementary schooling paralleled increasing fears of degeneration across Europe. The new wave of Progressivist politics in western Europe and the United States was in part a reaction to anxieties emerging in the 1890s that civilization was sinking under the weight of an increasingly uncultured and unschooled population. One of the most potent concerns was that the educated classes were less fertile than those low on the social scale, a phenomenon sometimes dubbed the "Darwinian paradox" in that the least successful in the population were reproducing the most. Galton and his followers tracked a negative correlation between social and reproductive achievement. Across the West fears that the fecundity of the underclasses was outstripping that of the elites chilled many, as did an unease with the vigorous growth of Asian populations in China, India, and Japan.

For eugenicists this differential reproduction was serious cause for alarm. It promised a systematic decline in reproduction among the "better" classes, exactly the dystopia their plans were intended to counter. A sense that the best classes would be swamped by the ignorant and the unintelligent and that family size declined with intelligence played a major role in the formation of social policy. One of the main arguments for intelligence testing was a strong belief that mental defectives, as they were known at the time, enjoyed high fertility. It was out of these beliefs that a new category was born: the moral imbecile who was unable to distinguish right from wrong and for whom punishment was thus no deterrent. The classification was quickly assimilated; Tasmania's Mental Deficiency Act of 1920, one of a cluster of similar laws worldwide, included a category of "moral defectives."

Fecundity mattered at a time when many regarded intelligence as hereditary. Richard Dugdale's analysis of the "degenerate" Jukes family, prompted by family patterns he noticed during his prison inspections in New York state, was published to great acclaim in 1877. Although Dugdale saw environmental as well as hereditary factors at work, eugenicists interpreted his findings as proof of the biological threat posed by the underclasses. If intelligence was an inherited quality rather than something that could be nurtured and developed, then it followed that the high fertility of the undesirables would lead to a diminution in the brain-power of society. In 1888, G. E. Shuttleworth, an asylum superintendent in the north of England, told the Royal Commission on the Blind, the Deaf and the Dumb that the "most frequent cause of idiocy is . . . ill-assorted marriages." It was a short step from there to a belief in the promiscuity of mental defectives. Broods of impoverished children, often illegitimate, were bad enough, but this was also a time when the stigma attached to sexually transmissible diseases was at its height; the casual sexual habits of the feeble-minded would spread syphilis and gonorrhea as well, with consequences through the generations. While these views of hereditary afflictions would be challenged by geneticists in the 1930s, earlier in the century explanations like this offered seductively simple solutions to perceived social ills. The significant growth of the school population offered an opportunity to test these theories and, from a policy perspective, to take steps to stem decline.

3. Without the photographer's handwritten caption (**"Feeble-minded in Cripple School, Henry St."), the viewer would see only a typical early twentieth-century classroom scene in New York City.**

The origins of intelligence testing

The range of work on intelligence was staggering. The U.S. government first began collecting intelligence data in the 1840 census by counting the "deaf, dumb, blind and insane" as a separate category duly divided by race. Before the century was out, a number of enterprising scientists had established laboratories to measure intelligence. At London's International Health Exhibition in 1884, Galton's Anthropometric Laboratory tested some nine thousand volunteers, measuring head size and reaction time along with sight, hearing, and color sense. A decade later, at the World's Columbian Exposition in Chicago, a popular psychology exhibit offered mental tests to fairgoers. The American psychologist James McKeen Cattell tested reaction time, strength of hand squeeze, pain sensitivity, memory, and the ability to differentiate the weight of objects among one thousand “pre-eminent” men. Édouard Séguin, studying children’s intelligence first in France and then in the United States, introduced nonverbal tests of cognition in the 1860s, and in Germany Hermann Ebbinghaus determined children’s ability using sentence-completion exercises. The English psychologist Charles Spearman distinguished general from task-specific intelligence in his influential two-factor theory. It was within this dynamic new field of psychometrics, the measuring of the mind, that the modern intelligence tests associated with eugenics emerged.

Alfred Binet, the French psychologist widely regarded as the originator of the modern intelligence test, was, however, an anti-hereditarian who was asked by the French authorities to create a mechanism to help children who were failing in their classes. Despite the initial intent to help struggling children, intelligence testing quickly became a potent means to weed out, segregate, and control the fertility of those diagnosed as feeble-minded. Early twentieth-century intelligence testing measured not only genius, as had Galton and Cattell, but the defective, and what the tests seemed to show was the dangerous prospect that a large class of feeble-minded would reproduce themselves carelessly, diluting the population. A. F. Tredgold, one of the leading British psychologists involved in psychometric testing, estimated in 1908 that one in every 248 Britons was suffering from what he called amentia (mental deficiency), and of those the overwhelming majority were feeble-minded.

The new generation of tests, applied at first only to children, relied on age-specific achievements: what could be expected of children and at what age. Binet began work on this in 1889, collaborating from 1891 with fellow psychologist Théodore Simon. Fascinated by the development of his own daughters, Madeleine and Alice, Binet collected data on the age at which children acquired particular skills. In order to get at native intelligence rather than training, the two men set out to avoid what they regarded as school-specific abilities, focusing instead on tasks such as naming body parts, providing missing words, memory, ability to repeat and follow directions, as well as social interactions. The first test, introduced in 1905, comprised thirty progressively complex tasks. The revised 1908 version organized the tasks by the age at which the normal child could complete them. The results yielded a score indicating a child's mental progress.

Testing goes mainstream

Binet and Simon's scale was rapidly translated into many languages and was in use in Germany, Italy, and Belgium shortly after publication of the first test. Henry Goddard used an English translation of the Binet-Simon test at the Vineland School (founded in 1888 as the New Jersey Home for the Education and Care of Feebleminded Children) in 1908. By the 1920s psychometric testing was in use, if locally and spottily, in Switzerland and the Netherlands; across North America; and in Spain, Brazil, the Soviet Union, Czechoslovakia, India, and South and East Africa. The intelligence quotient (IQ), devised in Germany in 1912 by William Stern, quickly became the standard descriptor of intelligence. Both the Binet-Simon test and the IQ were further revised in 1916 by Stanford University's Lewis Terman, a member of the American Eugenics Society. The resulting Stanford-Binet test is still in use today, now in its fifth revision.

In Colombia psychiatrist and politician Luis López de Mesa was using Terman's test by 1917, and it was available in translation in Peru and Chile in 1920. Psychologist Fan Bingqing introduced testing in China in 1916, and it reached Japan in 1908 with later adaptations such as the Suzuki-Binet (1930) and the Tanaka-Binet (1947) exercising considerable influence. Norway and Finland began testing in 1913, and a Swedish translation of the Binet-Simon scale appeared a year later. The scale was translated into Turkish in 1915 and Lithuanian in 1927, and was brought to Brazil in the 1920s by New York-trained psychologist Isaías Alves. Psychology laboratories in the major Indian cities began experimenting with intelligence testing in 1915. Presbyterian missionary C. Herbert Rice's doctoral dissertation at Princeton in 1925 was a "Hindustani Binet-Performance Point Scale," and another American missionary, David Herrick, began testing children in Bangalore in the early 1920s. Tests in Urdu, Bengali, Tamil, and Telugu were in use by the end of the decade. Missionaries also helped create the Fiji Test of General Ability in the 1930s, and a Zulu translation appeared in 1911. Testing started in Mexico in 1918 and was widespread by the 1930s in asylums and also in schools, where it was administered by the Ministry of Public Education as part of a post-revolutionary interest in child development.

It was, ironically, in their native France that Binet and Simon's work took a back seat. Medical professionals, wedded to clinical diagnosis involving close patient–doctor relations, remained skeptical of its value. Juvenile courts in France began using intelligence tests in 1920, but they did not become widespread until the Vichy regime of the 1940s began testing schoolchildren at ages six and fourteen, at the urging of Nobel laureate surgeon and eugenicist Alexis Carrel.

Enthusiasm for intelligence testing was strongest in the United States. In 1895 the American Psychological Association had set about standardizing the testing of physical and mental measurement. These pioneering tests largely measured basic skills such as handwriting and arithmetic but provided a ready-made culture of testing. By the time Goddard introduced the Binet-Simon test, first at Vineland in 1908 and then in a local public school district in 1910, the principle of testing was already well established. It was on the basis of these early pilot studies that he made his frequently repeated claim that at least 2 percent of American schoolchildren "can never equal their normal fellows."

4. A question from the Binet-Simon test, this was the first of three questions that asked the test-taker to identify the prettier face. Answers were scored right or wrong, leaving no room for personal taste.

Binet and Simon never planned to offer a test with general applicability; their aim was to identify children in need of special education and help them make the most of their abilities. Binet insisted that used alone the tests were inadequate, given the complexity of human intelligence. The demand, however, was such that the 1911 version, issued shortly before Binet's untimely death at the age of fifty-four, extended the scale to the adult population. Before long, the 1911 test was widespread not just in schools and juvenile institutions but also in prisons and police courts, although children remained the primary focus of testing before World War I.

By the early 1920s there were more than forty different intelligence tests on the market. Textbook publishers, ever keen to extend their sales, issued books detailing every aspect of the tests. One manual, published in 1917 for use in Philadelphia's public schools, advised noting the subject's attitude; that way the survey might characterize "general intelligence, general behavior disposition, and general appearance." In one question aimed at children, the subject was shown two faces in profile and asked which was the prettier. (The same faces were used in South Asian versions of the tests in the 1930s, despite the clear aesthetic difference in cultures.) Adults were asked to distinguish between idleness and laziness as well as to summarize prose read aloud to them. The manuals advised rigid adherence to correct answers, making no allowance for cultural difference. Terman had eliminated the test results of foreign-born children in order to mitigate the effects of environment and education, but as their popularity soared such differentials in testing usually were overlooked. And although many of the tests did not involve language, the instructions always did, disadvantaging not just non-native speakers but those whose environments did not privilege verbal exchange and communication. Among the revisions made by Terman, presumably as an index of socialization, was the gauging of obedience, which in an era of heightened concern with juvenile delinquency had potentially serious consequences for young test-takers.

Mass application

The tests in use in the 1910s were time-consuming and expensive instruments requiring individual testing, which took twenty to twenty-five minutes to administer. One of Terman's students, Arthur Otis, developed a multiple-choice version of the mental scale that could be administered to large groups. This new mass testing was first tried in the Army in 1917 when the United States entered World War I. Binet and Simon had proposed testing French conscripts as early as 1909 but that project never got off the ground, making the U.S. Army the first major site of adult intelligence testing. Wartime conditions offered unprecedented opportunity with the massing of young adult men. Robert Yerkes, president of the American Psychological Association and a member of the American Eugenics Society, led the Army intelligence project. Another group, headed by Walter Dill Scott, best known for his work in business psychology, conducted aptitude tests designed to improve military efficiency.

Using Terman's claim that IQ numbers could predict vocational success, the intelligence testers offered the Army help in assigning recruits to suitable units. In 1917, a team of forty psychologists administered tests to more than eighty thousand Army recruits, and by the end of that year, and despite skepticism in some military quarters, Yerkes and his team garnered approval to test all new recruits. By the time the program came to an end in January 1919, more than 1.75 million soldiers had taken one of two tests, Army Alpha or Army Beta, closely resembling the Stanford-Binet model but in a multiple-choice format.

The authors insisted that the tests were largely independent of the environmental conditions of those they tested and were therefore objective indicators of innate intelligence. Army B, designed for illiterates and non-native speakers, asked subjects to draw paths through mazes, fit geometrical forms together, and find missing elements in pictures such as tennis courts shown without nets. Army A, for literates, had eight timed sections, each with between eight and forty questions, and included word pairings, number sequences, arithmetical problems, the rearrangement of scrambled worlds into comprehensible sentences, and the explaining of analogies. One question asked, "Washington is to Adams as first is to –?" Another required determining whether "Denim is a dance, food, fabric, drink." The Alpha test also included an information test and a "practical judgment" test. The whole thing took less than an hour to administer, and scores were converted into mental ages and a grade scale (A–E). This exercise in military psychology paved the way for the wide-scale mass testing that still characterizes the American educational system. Not only did it offer legitimacy from an official body, but it pioneered a cheaper mass product that did not require hands-on work with every test subject. Although the Army declined to continue testing after the war, the team created a National Intelligence Test in 1919 with the help of Rockefeller money. It was soon adopted by universities and businesses as well as schools and courtrooms. Within a year of publication, more than half a million copies had been sold.

The first analysis of the huge military datasets compiled between late 1917 and early 1919 appeared in a large volume issued by the National Academy of Sciences in 1921. The findings were broken down by place and race, but the most striking conclusion was that the average white American recruit had a mental age of thirteen. Terman had reported similar results in 1916, finding that 50 percent of the 104 adults he tested scored twelve to fourteen years in mental age, but the scale of the Army testing made the results seem far more conclusive. In 1923, Carl Brigham, another active eugenicist and creator of the Scholastic Aptitude Test (SAT), used the Army dataset in his *A Study of American Intelligence*. His analysis emphasized racial difference. He too found the average recruit to be of low intelligence but stressed that immigrants, especially from southern and eastern Europe, scored lower than native-born white Americans, and that African Americans scored on average lowest of all, with a mental age of ten. Intelligence, by these measures, correlated strongly with race.

Brigham's work was not without its critics. The prominent anthropologist Franz Boas pointed out the cultural biases shaping the tests, as did a number of prominent African American scholars. Martha MacLear at Howard University was unpersuaded that the tests reliably measured general intelligence, while Horace Mann Bond cleverly showed that the results could just as easily point to the impact of environmental as of hereditary factors. Brigham's work nonetheless found a sympathetic reception among eugenicists as scientific proof of their claims that a large class of subnormal people were breeding, diluting intelligence across the population. Small wonder that in 1924 Lewis Terman could proudly claim that intelligence tests had "become the beacon light of the eugenics movement."

Education and segregation

Hereditarians believed that feeble-mindedness was irremediable, an incurable condition that required constant supervision and care especially to prevent reproduction. The principle of custodial care was recommended increasingly by eugenicists, though specialized institutions predated eugenics. In Switzerland, Germany, the United States, and England, schools for the feeble-minded had existed since at least the 1840s. In Britain, the Egerton Commission of 1886 recommended state financing for special schools with compulsory attendance to age sixteen for the blind, deaf, and mute as well as idiots and imbeciles. By the late 1890s there were more than thirty schools for the feeble-minded. In 1913, to the great delight of the British eugenics movement, for which it was a signal victory, a Mental Deficiency Act empowered local authorities to confine the feeble-minded who had no visible means of support, those with criminal convictions, those who were illegitimate, or those who were pregnant and living on poor relief. Acts such as these became common in the early twentieth century. Britain's act served as a model throughout the British Empire: South Australia and New Zealand passed similar laws that year, Tasmania in 1920, South Africa in 1916, and Alberta (Canada) in 1919.

Eugenicists pressed for the creation of "colonies" where the feeble-minded could live out their days under supervision, and where the sexes could be segregated to prevent further births. Long-term segregation was based on the belief that mental weakness was inherited and thus incurable, and that a mere few years of special schooling was inadequate. In *Being Well-Born* (1920), the American zoologist Michael Guyer advanced the argument that "little can be done" for the feeble-minded "beyond making them as happy as possible and developing the limited gifts they have been given by nature." What was important, he thought, was "sufficient permanent supervision to prevent all possibility of procreation." This, he claimed, made both economic and common sense.

Institutional confinement rose sharply in the 1910s and 1920s. The first American state to enact a commitment law was Illinois; it was passed unanimously in 1915. Other states quickly followed suit to permit the involuntary institutionalization of the feeble-minded. Legislation in Britain in 1899 had encouraged but did not require education authorities to provide special schooling for "defective and epileptic children," but by 1914 the law mandated it. The Langdon Colony, established in the south of England in 1938, was typical of these institutions: it had eighteen wards and was designed to accommodate almost a thousand patients, strictly segregated by sex. What began in the United States as the Virginia State Epileptic Colony in 1910 expanded to house the feeble-minded. By 1926, it had almost nine hundred inmates. Often removed from large centers of population, such institutions generally required manual labor from their inmates, with men assigned to farm and shop labor and women to kitchen and laundry work. Supporters of the colony movement claimed that

The New Jersey State
Village for Epileptics
at Skillman

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5. These maintenance tags belonged to the New Jersey State Village for Epileptics at Skillman, founded in 1898 and closed in 1998. Close to Princeton, the village was erected on farmland purchased by the state and was similar to the colonies and other institutions where reformers confined those deemed unable to live in society.

inmates enjoyed the menial tasks to which they were set, arguing that the rhythm and discipline was beneficial for the feeble-minded. At the World's Fair in 1904 an exhibit highlighting institutions for the feeble-minded presented inmates' crafts and handiwork, a show of thriftiness as well as utility. One of the popular living exhibits displayed students from deaf and dumb schools at their lessons, shining examples of the virtues of eugenic segregation policies.

Moral danger

Intelligence testing appeared to confirm a high degree of feeble-mindedness among criminals, paupers, alcoholics, and prostitutes. Goddard claimed in 1913 that three-quarters of all criminals and half of the prostitutes, paupers, and drunkards in the United States were feeble-minded. Binet tests administered in juvenile reform schools, he claimed, revealed feeble-mindedness in up to 80 percent of inmates. Three years later Terman asserted that while "not all criminals are feeble-minded ... all feeble-minded are at least potential criminals. That every feeble-minded woman is a prostitute would hardly be disputed by anyone." Cyril Burt, the leading psychologist in interwar Britain and a convinced hereditarian, agreed, also emphasizing a high correlation between socioeconomic standing and intelligence. By these measures, poverty and immorality were biological rather than social in origin. Tredgold claimed that close to 20 percent of the feeble-minded in Britain were in workhouses, the unpopular last resort of the poor, and he found a family history of drunkenness in 46.5 percent of his feeble-minded sample.

This analysis made feeble-mindedness the actual cause of undesirable social behaviors. Terman's explanation was simple. Moral judgment required high-level thought. "Morality," he wrote, "cannot flower and fruit if intelligence remains infantile." If delinquency, poverty, illegitimacy, and disruptive behaviors were inextricably part of the makeup of the feeble-minded, their exclusion from normal society was a logical step. The pronouncement of Oliver Wendell Holmes in support of Carrie Buck's sterilization in the 1927 Supreme Court case *Buck v. Bell* pithily summed up the popular hereditarian view: "Three generations of imbeciles are enough."

Family pedigree studies tracking feeble-mindedness supported such claims. In *The Kallikak Family: A Study in the Heredity of Feeble-Mindedness* (1912), Henry Goddard traced two branches of a family whose patriarch had, in an unguarded moment, fathered a child with a woman the book calls "the nameless feeble-minded girl" before marrying an upright Quaker woman. While the generations that ensued from his formal marriage flourished, those from his premarital encounter degenerated. In extravagant prose Goddard listed the successes of the respectable and the excesses of the problem descendants, giving his family a name derived from the Greek words for good (*kalos*) and bad (*kakos*). He claimed that the two branches of the family lived "in practically the same region and in the same environment," so only heredity and not external conditions could account for the striking divergence in their histories. Nature, not nurture, dominated.

The moral inadequacies of the feeble-minded branch of the Kallikaks highlighted the eugenic links drawn between morality and intelligence. The increasing use of the term *moral imbecile* underscored this association, and mental testing included questions aimed to assess moral reckoning as part of intelligence. The comprehension test for Year IV children in the Stanford-Binet series asked questions such as "Why do we have houses?" By Year VII the questions emphasized moral judgment: "What's the thing for you to do when you have broken something which belongs to someone else?" From the early 1910s, many western European nations experimented with tests of moral sense, especially among children. While these were not always specifically eugenic tests, their construction owed much to the contemporary eugenic craze for testing as well as to its insistence on the relationship between intelligence and morals.

The principle of heredity that informed eugenic understandings of intelligence made reproduction the linchpin of their solutions. Coupled with the emphasis on moral weakness, this invariably led to considerable divergence in the treatment of men and women. The feeble-minded woman was regarded as both overly sexual and morally incompetent. Though institutionalized in smaller numbers than men, women were often confined for far longer periods on the grounds that they were morally endangered and vulnerable. Assessments of their intellectual capacity routinely rested on their sexuality, so women who had children out of wedlock, sexually active teenage girls, and women sex workers were likely to be classified as feeble-minded, their "unrespectable" behavior proof of their diminished capacity. Women were also generally deemed less likely to excel intellectually; when women scored higher than men, test questions were often adjusted to drop their scores. When measuring high intelligence, however, women were excluded altogether, and neither Galton nor James Cattell included women in their studies of intellectual eminence. Cattell argued in *Popular Science Monthly* in 1903 that because a woman departed "less from the normal than man," fewer were eminent, a view challenged by Leta Hollingworth and Helen Woolley, among the earliest women psychologists in the United States. In *The Mental Traits of Sex* (1903), Woolley, who pioneered studies of gender difference, understood gender differences as a product of socialization rather than innate. Eugenics supporters on the whole, however, considered women's reproductive capacities their most important attribute; intelligence mattered far more at the lower end of the scale since its lack was seen to increase female fertility.

Race and intelligence

Racial stereotypes were as potent as those around gender, and there were abundant claims that some races were innately of a higher intelligence. In interwar Japan, intelligence tests were used in the 1920s to prove the ethnic superiority of the Japanese. Kan'ichi Tanaka's tests on a variety of Asian peoples set out to demonstrate the greater intelligence of the Japanese. Australian psychologist Stanley Porteus devised a maze test for use in Aboriginal populations who had little or no skill in English. Before he left Australia to replace Goddard at Vineland in 1918, Porteus tried out his test on aboriginal students at a South Australian mission station. They scored at significantly higher levels than delinquent white youths, yet writing about his data years later in 1933, and conflating African and Australian origins, he stubbornly maintained that "The man in the street would no doubt wonder that there could be any question with regard to negro inferiority," adding that "the scientist must not feel averse to siding with the popular view if the facts points that way." Mainstream American psychologists persistently racialized their findings. Terman reported that his "dull-normal" group (scoring slightly too high to be classified feeble-minded) were preponderantly "Mexicans, Indians, or negroes."

Another popular theory, that of arrested development, claimed that African achievement levels dropped below those of Europeans at puberty. Psychologists throughout Africa claimed to find a significant drop in black achievement when children reached puberty. In South Africa, already racially divided before the advent of apartheid in 1948, mental testing of white and black children began during World War I. Testing of white South African children was under way in Natal and in the Transvaal by 1915, and after the war the U.S. Army Beta tests were widely used in testing black Africans. In 1929, the National Bureau of Educational and Social Research, with financial support from the Carnegie Corporation in the United States, began to develop mass testing instruments, but the results were invariably interpreted selectively. When white children did poorly, the results were ascribed to environment, while low scores among South African black children were deemed hereditary.

Just as some psychologists challenged claims of higher male intelligence, there was no shortage of challenges to these racial distinctions. In a series of important articles in the mid-1930s, educational psychologist George Isidore Sanchez laid out the folly of using IQ tests developed for English speakers to evaluate Mexican Americans. The Canadian psychologist Otto Klineberg's 1935 book *Negro Intelligence and Selective Migration* used the higher scores of African Americans in the North compared with those of white Southerners to demonstrate the effects of environment, challenging hereditary analyses and claims that blacks were naturally of low intelligence.

The critics

Gender and race were not the only grounds for criticism of the new science of intelligence. The influential Italian educationalist Maria Montessori, after some initial interest, rejected the practice, although she supported segregation of the feeble-minded. Her change of heart regarding testing points to the parallel growth of theories of early childhood education in the early twentieth century, which offered a strikingly different understanding of children's intelligence. Like Montessori, the Swiss educationalist Jean Piaget ultimately rejected the principles behind intelligence testing. He collaborated with Théodore Simon on standardizing intelligence tests in 1920 but later came to doubt their value. Henry Goddard and Carl Brigham also disavowed a purely hereditary understanding of intelligence in the 1920s. Goddard recanted much of what he had earlier argued, while Brigham backed away from the racial stratifications on which he had earlier insisted. Both moved in the interwar years to acknowledge environmental influence. In 1922, Walter Lippman, on his way to an influential career as a journalist and political commentator, launched a detailed attack on Army testing, calling the movement a fad and arguing that the truly persuasive correlation was between test scores and how many years schooling the test-taker had. His refutation of the ability of tests to measure inherent intelligence led him to a sharp exchange with Lewis Terman, who remained wedded to testing, the main basis of his very successful career.

Empirical studies often contradicted eugenic findings. A study initiated by the Scottish Council for Research and Educational and Population Investigation in 1932 measured IQ in nine thousand schoolchildren born in 1921; in 1947 the experiment was repeated with those born in 1936. A random sample (known as the Binet 1,000) were followed into adulthood to track fertility, wealth, and occupation as well as intelligence in an attempt to measure the frequency and distribution of mental defectiveness and also to correlate fertility and intelligence. The study found no decline in national intelligence; on the contrary, the second generation scored higher than their elders. In some instances, test-takers themselves undermined the integrity of the tests.

Findings and objections such as these could negatively affect the reception of the new culture of testing. In Britain only about half of all local education authorities agreed to the use of intelligence tests, often because of teacher opposition. Army officers generally regarded their own assessments of troops as superior, and many did not regard intelligence as the most valuable trait in a soldier. There were legal challenges too. A New York State Supreme Court judge refused in 1916 to accept the results of intelligence testing in his courtroom, complaining about their “standardizing” of the mind. In the San Francisco Juvenile Court Mary Kohler, who had worked for Terman as a student at Stanford, challenged the use of his IQ tests as a tool for diagnosing young women in the court system. Sun Benwen in China questioned the accuracy of measurement; while accepting the basic premise that intelligence was a measurable entity, he questioned the quality and accuracy of testing.

In the 1930s an increasing body of work took aim at the hereditary arguments that lay behind the policies of confinement and sterilization of the feeble-minded. British scientists Lionel Penrose and Reginald Punnett doubted that the cleansing process that segregation aimed to achieve was possible. Herbert Jennings' genetics research in the United States demonstrated that no single gene could simply and directly produce another generation of feeble-minded or indeed of geniuses; inheritance was instead complex and polygenetic (controlled by more than one gene). Geneticists had established that mental retardation, as a recessive rather than a dominant trait, would not appear in their offspring unless both parents carried the gene.

Divisions among psychologists, psychiatrists, and educationalists could result in abrupt policy changes. In Mexico, where Lamarckian eugenics dominated, Rafael Santamarina, the psychologist supervising school testing, rejected the American hereditarian model, choosing the French Binet-Simon scale, with its attention to supporting special-needs children, over its American counterparts. After he left his position, American tests, especially multiple-choice ones, were introduced and hereditarian thinking in educational matters took over. The USSR meanwhile moved in the other direction. As Stalin consolidated his hold, ideas of biological heredity were increasingly unacceptable, as they undercut both the principle of equality and the ideal of amelioration. Intelligence tests went from widespread use in the early years of Bolshevism to outright ban in 1936.

Despite this hearty resistance to eugenic theories of intelligence, testing exercised considerable influence in a diverse range of places, but generally over a surprisingly narrow slice of society. It was sexualized women and criminal men, drunkards and paupers, who were overwhelmingly singled out as dangerous. It was immigrant and minority populations with their alien ways who scored poorly, harbored diseases, and were too irresponsible to care about whether they transmitted them. And, of course, it was these same populations whose reproductive histories were under scrutiny for polluting the gene pool to produce an endless stream of degenerates of low intelligence. It was thus that, in the eugenic mindset, intelligence and reproduction were the two basic issues to be tackled.

Chapter 3

Eugenic reproduction

Driven by the dream of improving humanity down the generations, the management of reproduction was the core activity for which eugenics strived. Although they had many different visions, eugenicists all agreed that their central task was to create for the future a fitter world through healthier reproduction. That task began almost everywhere with marriage, one of the earliest and most widespread of eugenic crusades, and was designed to prevent the spread of diseases such as syphilis and tuberculosis and of hereditary defects, both physical and mental. Laws mandating premarital exams to detect diseases or hereditary conditions and laws preventing certain classes of people from marrying both proved popular.

Connecticut passed the earliest eugenic marriage law in the United States in the mid-1890s, and by 1929 twenty-nine states had banned marriage among the mentally ill and retarded. Nineteen states also required couples to undergo tests for sexually transmissible diseases before marriage. Eugenic marriage regulation was truly a global movement, arriving in Switzerland in 1907, Turkey in 1930, and Argentina in 1936. Japanese marriage policies in the 1930s and 1940s aimed to prevent the transmission of hereditary diseases, while Mexico's 1917 Law of Family Relations barred alcoholics, syphilitics, and the insane from marrying. From the 1920s couples in Iran were required to obtain a certificate of wellness prior to marriage, and France mandated premarital medical examinations in 1939. By the mid-1930s laws had been adopted throughout Scandinavia. Under Stalin, the USSR prohibited marriage between mentally ill patients or between close relatives and also required couples to disclose their medical history to one another before marriage.

These principles could sometimes meet with resistance. The Catholic establishment and the Brazilian left blocked prenuptial health checks in Brazil in the 1920s, the political activists because they saw them as an attack on the poor. Checks were adopted only when Getúlio Vargas became president in 1930. Eugenicists could never muster sufficient support to pass a law in Greece, nor in Czechoslovakia, Poland, or China, countries with markedly different political structures and cultural attitudes. Portuguese eugenicists, among the earliest and most extensive proponents of such laws, were disappointed when their 1908 bid to ban marriage among alcoholics and those with tuberculosis, heart problems, syphilis, leprosy, or epilepsy failed.

Yet another strand of marriage law prohibited unions across racial lines. European colonies often had such regulations. In the United States only the District of Columbia and nine states permitted interracial marriage, and such laws remained in effect until the 1967 *Loving v. Virginia* Supreme Court decision. Perhaps the most notorious racial marriage law was Germany's 1935 Blood Protection Law forbidding marriage between Germans and non-Germans, passed along with another law requiring premarital health tests. Together they cemented the Nazi state's clear understanding of a eugenic reproductive policy designed to remake Germany through biology. Although racial marriage laws predated eugenics and existed even where eugenics was not a driving force, they were taken up eagerly by many in the eugenics movement and yoked to beliefs that less favorable characteristics would be more easily inherited by the offspring of such unions.

Encouraging reproduction

Incentives to reproduce were among the most common of positive eugenic schemes, designed to secure healthy and stable population growth among the fit. Argentina, with the lowest birthrate in Latin America, pioneered maternity leave for women in 1934 and two years later established a state body devoted to birth and childrearing, which included a department of eugenics and maternity. Countries as diverse as Japan, Italy, France, Germany, Turkey, Finland, and the USSR experimented with "birth bonuses" to ensure that financial concerns did not hinder couples from having large families. In wartime Japan families earned twenty yen for every newborn after 1941. The Polish Eugenics Society campaigned for tax breaks for large families, a measure implemented in Nazi Germany—though only for Aryan families. In 1921 William MacDougall of Harvard University suggested tying wages to family size, paid for by a national fund.

Countries with radically different politics offered medals of motherhood to women with large families; France, Germany, and the USSR were among the countries issuing them in the 1930s. In Finland women with four or more children received a special diploma, while Japan rewarded those with more than ten children. Encouragements to reproduce almost always involved the glorification of motherhood. In Iran eugenicists declared that women who did not breastfeed were traitors to the nation. The Soviet Union glorified the fecund mother, tightening divorce laws in the 1930s to keep couples together. In Israel women were urged to have large families to help build the new nation, both before and after the country acquired statehood in 1948.

Eugenic marriage counseling centers were a new and important element in the campaign for fit marriage. In Japan hopeful singles used such centers to file a health profile and seek good matches as well as advice on a range of marital and health issues. Eugenics organizations in India offered correspondence advice on marital and reproductive questions. Eugenic counseling services could be found in Estonia, Lithuania, Switzerland, and the Netherlands from the 1920s. Health exhibitions and fairs spread eugenic education in Germany and Switzerland as well as in the United States. In California Paul Popenoe, founder of the American Institute of Family Relations, took to the airwaves and print media in the 1950s to get the message across. His long-running and perennially popular *Ladies' Home Journal* column "Can This Marriage Be Saved?" extended Popenoe's reach nationwide. Couples appeared on his television show to air their marital grievances and seek his advice, which invariably counseled women to defer to their husbands.

Reproduction and positive eugenics

The emphasis on maternal and infant health also known as *puériculture* ushered in maternalist welfare policies, including access to medical aid, pre- and postnatal care, financial help, and child protective services. In the 1920s prenatal clinics across Europe and the USSR, as well as in China, Iran, and Australia, catered to pregnant women as part of state attempts to foster healthy motherhood. Belgium established a National Eugenics Office in 1922 to attend to the welfare and protection of children. Bohemia (Czechoslovakia) established an infants' protective commission in 1908, and Australia introduced maternity allowances in 1912. In 1921 federal funding helped create three thousand child and maternal health care centers in the United States. This scheme lasted eight years, and only Massachusetts, Connecticut, and Illinois never participated. In Mexico, home health visitors offered poor women prenatal care beginning in 1926, and school nurses attended to the health of their children. While these innovations offered those of limited means access to health care and sometimes cash bonuses to help their families, they also reinforced women's maternal role.

Sanitation and hygiene were integral to these positive eugenic measures. School and home hygiene and personal cleanliness were central planks in public health campaigns in eastern Europe, the Americas, and elsewhere. Sanitation and eugenics went hand in hand in Latin America, where doctors saw a pressing need for disease eradication and improved hygiene. Campaigns targeted housing quality, accessible health care, and the elimination of syphilis and tuberculosis; the Polish Eugenics Society began life as the Society for Fighting Venereal Disease and Prostitution. By 1918 many Australian states required doctors to report cases of sexually transmitted disease to public health officials, and Australia was also in the vanguard of quarantining, along with New Zealand and the United States, as a way to identify and segregate immigrants with communicable diseases.

One immensely successful venture was baby contests, which were often specifically eugenic affairs focused on heredity and health. They were popular in the early twentieth century in Africa and the Caribbean, Latin and North America, Turkey, and Japan, to name just a few. Trophies, ribbons, and sometimes cash prizes awaited the winners. In France the magazine *La culture physique* organized these competitions, claiming that the strongest parents produced the healthiest babies. "Better Baby" contests were a feature at agricultural state fairs in almost every American state by 1914. Most were aimed at white Americans and in some instances were restricted to them. In Indiana, an elaborate Better Babies Building at the state fair, constructed with state funding, offered lessons in scientific motherhood. Pamphlets on the topic were available for women to read while their babies were being tested.

The popularity of these contests led in the United States to more ambitious "Fitter Family" contests, a popular feature at state fairs by the 1930s and largely the domain of the American Eugenics Society. These were elaborate affairs consisting of a battery of physical and psychometric tests as well as urinalysis and blood tests. Contestants detailed their education, occupation, religious affiliation, nutrition and exercise habits, and the health of prior generations. Demand for these competitions was high despite the considerable time it took to complete the array of required tests. The prizes were generally medals, with articles featuring the family appearing in local newspapers and in eugenic publications. Sinclair Lewis parodied the contests in his 1925 novel, *Arrowsmith*, where a decidedly un-eugenic family replete with epilepsy, alcoholism, and other traits considered hereditary wins the event, with the collusion of a pompous eugenicist doctor eyeing political office.

The reproductive and hygiene goals of eugenics were broadcast in exhibitions and mass media. As part of a social hygiene campaign Berlin hosted an infant care exhibition in 1906 to show working-class mothers how to care for their children. The YMCA in China used cartoons, slideshows, and films to educate parents, and in Japan hygiene exhibitions starting in the early 1880s had enduring appeal. Eugenicists turned to magazines, radio, and television to broadcast their message. Cuban obstetrician José Chelala Aguilera hosted a magazine column and a radio show on social medicine in the 1940s, similar to Popenoe's efforts in marital guidance in the United States. In countries where state-sponsored eugenics focused on maternal and infant welfare, health providers were often the front-line messengers, emphasizing eugenic motherhood as women's responsibility.

Positive eugenics, however, did not have universal appeal. Critics feared that a pro-family emphasis would encourage reckless breeding and that welfare measures would prolong the lives of the unfit at the expense of society. In 1930s Germany, the *Minderwertigen* (inferior; worthless) were dubbed "useless eaters," meaning they did not earn their keep and were a burden on the state. But the Nazis were not alone in assigning an essentially monetary value to human lives: French physician Sicard de Plauzoles formulated an equation in the 1920s to determine the value of individuals by subtracting the cost of their maintenance from their productivity. Eugenic proposals everywhere were trumpeted as cost-saving measures. Yet pro-natalist campaigns designed to stimulate a higher birthrate had little effect in most places either on expanding the population or on improving infant mortality. The new focus on childrearing, however, created new and sometimes controversial opportunities for eugenics.

Sex education

Eugenic sex education, understood as the promotion of fit families, was a crusade favored by some eugenicists, who saw it as a health issue with national ramifications. They claimed that sexual ignorance hindered eugenic reproduction, sapping sexual vitality through masturbation, the spread of sexually transmitted diseases, and the birth of unfit progeny, and that proper sex education would inspire responsible reproduction. Sex education campaigns always faced a tough battle against a broad opposition consisting of concerned parents, religious authorities, and purity campaigners who feared sex education would encourage premature sexual activity.

Campaigns for sex education were not limited to eugenics supporters, and indeed they were often split on the issue, but in many places eugenicists were in the forefront of the movement for formal sex education in schools. In Mexico and Argentina both eugenics organizations and feminist groups pushed for sex education. Mexico's compulsory sex education and marital health programs, introduced in government-funded schools in the interwar years, had the support of doctors, educational professionals, and the Mexican Society of Eugenics. The Institute of Sexology in Cuba ran a regular sexual advice column, written by a physician, in its popular magazine *Sexología*. In Catalonia, anarchist-eugenicists claimed that sex education would liberate the working class and give them access to knowledge they had long been denied. The Australian YMCA sponsored an event in

1916 on the teaching of "sex hygiene" to a mixed (men and women) audience, working with the eugenicist sex educator Marion Piddington, who, in the 1920s, published a guide advising mothers on how to teach their children about sex. In general, eugenic sex education promoted the obligations and responsibilities associated with sexual activity, stressing the importance of healthy reproduction and sexual continence and discouraging masturbation, premarital sex, and reckless behaviors. This generally cautious and conservative tone was not enough, however, to quell opposition, and sex education remained a controversial topic and never one of the really prominent aims of eugenic reform.

Artificial insemination

Another controversial idea within the broad eugenics movement was artificial insemination. Charlotte Perkins Gilman had envisioned asexual reproduction in her Utopian novel *Herland* (1915), and eugenicists took up the project after World War I when the loss of young men killed in the fighting seemed to threaten the building of families. English eugenicist Herbert Brewer coined the term *eutelegenesis* in 1935: "[I]nstead of reproduction being the blind consequence of an animal mating, it is an act of deliberate creativeness to which animal life holds no parallel," he declared. Artificial insemination by homologous donor (which used the sperm of a woman's partner) had been tried in the mid-nineteenth century. The newer method of artificial insemination by donor (AID), developed initially to deal with male infertility by implanting the sperm of a third party, was boosted by fears over wartime losses.

The eugenic intent of these ideas is best observed in the work of New York gynecologist Frances Seymour, who advocated AID for couples deemed eugenically sound. His National Research Foundation for the Eugenic Alleviation of Sterility, founded in 1935, required IQ tests for prospective parents. In 1932 in

Daedalus, or Science and the Future, the radical geneticist J. B. S. Haldane envisioned an "ectogenetic" future in which embryos were grown outside the uterus as a way to improve human stock. American geneticist Herman J. Muller (who won a Nobel Prize for Medicine in 1946) proposed, in *Out of the Night* (1935), active scientific intervention in reproduction "to rear selectively—or even to multiply—those embryos which have received a superior heredity." Many in the British intelligentsia in particular, including the novelist C. P. Snow, Julian Huxley, and George Bernard Shaw, admired Muller's plan. Despite this support, AID, like sex education, remained a minority position within eugenics, never becoming one of its high-profile campaigns.

Birth control

Birth control, by contrast, was a dominant concern. Birth-control technologies had improved in the nineteenth century with the vulcanization of rubber, allowing more effective and less intrusive barrier methods. The introduction of foaming spermicides in the 1920s further increased their reliability. In *Out of the Night* Muller praised birth control as liberating for women and for society, but while the science had advanced, there were considerable roadblocks to distribution and sale of these items. States increasingly claimed the right to manage reproduction for the national good, but this did not always translate into freely available contraception. In fact, where pro-natalism dominated, the opposite was often true: bans on advertising and on sales were common, and birth-control advocates faced prosecution for disseminating either information or actual devices. Japan prohibited the advertising of contraceptives in 1914, and Germany banned contraceptive advertisements during World War I. France outlawed both the sale and advertising of contraception in 1920, as it ramped up a campaign to repopulate after the war. Under Mussolini, distributing birth control was a state crime in Italy. Australia and the United States implemented laws to restrict the distribution of literature on birth control, while Canada had prohibited birth control as well as abortion earlier, in 1892. The Soviets legalized the sale of contraceptives in 1923 but then secretly withdrew all supplies in 1936, effectively banning them again, as Stalin swung to a pro-natalist policy. Across Latin America birth control remained mostly illegal throughout the twentieth century. Wartime conditions almost everywhere led to tighter controls. In Korea birth-control laws that had been relaxed in 1919 reverted to a ban at the start of the Sino-Japanese war. When Hitler came to power in 1933, birth-control clinics throughout Germany were shut.

Birth control did, however, become the most characteristic representation of eugenics in places where economic and social advancement depended on reducing family size. In India, contraception was increasingly available to affluent city-dwellers and was seen as a sound means of breeding a better India. Hong Kong's first birth-control clinic (1936) served poor women in the colony. Although privately run, it had the tacit approval of the colonial government, which was sensitive to the burgeoning population of this small colony. Elsewhere the argument of quality over quantity helped birth-control activism gain traction among eugenicists. It was, in part, a belief that the island had an unfit surplus population that prompted the legalization of birth control in Puerto Rico in 1937.

Women used birth control whether or not it was legal, but the development of specialized clinics helped them do so more easily. In Scandinavia birth-control clinics were common by the mid-1920s. Aletta Jacobs gave free spermicidal pessaries to poor women at her clinic in Amsterdam in the 1880s, though a law of 1911 banned the advertising of contraceptives in the Netherlands. In the United States and Britain, privately funded clinics existed years before the medical profession lent support. Marie Stopes opened her first clinic in north London in 1921, but it would be another nine years before the main doctors' association, the British Medical Association, advocated that doctors provide their patients with birth-control information. The American Medical Association did not follow the lead of its sister organization in Britain until 1937. Britain's Anglican bishops, at their annual conference in 1930, cautiously sanctioned some use of birth control, choosing a deliberately vague endorsement that it was acceptable if practiced "in the light of Christian principles." The first clinic in Bombay (now Mumbai) opened in a working-class district in 1935, with clinics also opening in Calcutta (Kolkata) in that same year.

In 1916 the first birth-control clinic in the United States, directed by Margaret Sanger, opened for business in Brooklyn, New York. Leaflets printed in English, Yiddish, and Italian drew large crowds of women, but within ten days Sanger and her associates had been arrested and the clinic shuttered after Sanger twice tried to reopen it.

The earliest organizations dedicated to promoting birth control predate eugenics, and their principles often clashed with those of eugenicists whose support was limited to preventing birth among the eugenically unfit. Eugenic opponents of birth control saw it as morally degenerative, unyoking sex from procreation and encouraging promiscuity. There were also those for whom the issue was less about morality and more about who was employing contraceptive methods. The first generation of British and American eugenicists feared that contraception was diminishing family size among the affluent, a suspicion upheld by statistics showing that it was overwhelmingly among the well-off that birth rates were dropping. In reducing births among the fit, contraception was thus anti-eugenic in its consequences even as it could help deplete the birth of the unfit. By the 1930s, under a new generation of leadership sensitive to changing public opinion, eugenics organizations all over the world began to champion the principles of birth control. In Latin countries, where the influence of Catholicism was generally strong, vocal opposition, mostly on moral grounds, persisted but many people nonetheless practiced family planning as best they could, and they continue to do so today in the face of opposition from the Vatican.

Feminist eugenicists often stressed the value of birth control in preserving maternal health. If women could space their pregnancies, they argued, both they and their progeny would be fitter. It was the prospect of constant impregnation that made Margaret Sanger call pregnancy biological slavery. Supporting eugenic principles was certainly a way to expand support for feminist ends, but many feminists, concerned with racial hygiene, also genuinely believed that eugenics was a force for good. For Sanger, birth control not only relieved women of relentless pregnancy but also reduced the incidence of unfit births. Writing in 1921, she claimed that "the most urgent problem today is how to limit and discourage the over-fertility of the mentally and physically defective."

Abortion

Like contraception, abortion was an option to which women often turned regardless of its legal status, and there were similar disagreements within eugenic circles as to its role in the management of reproduction. Both moral ambivalence and eugenic pro-natalism restricted abortion, and far more countries forbade than permitted abortion. In the early twentieth century, abortion laws were often tightened. Penalties for both the woman seeking a termination and for the provider were strengthened in, for example, Korea (1912), France (1923), Turkey (1926), and Italy (1935). Spain increased the penalty for abortion in the 1940s, and in Nazi-occupied France it became a capital offense. Under Lenin, abortion was briefly legal in the USSR, but it was once more outlawed in 1936 in an effort to expand the population.

At the same time, however, toleration of abortions carried out for eugenic reasons—a classic example of negative eugenics—grew. Although Hitler had criminalized abortion in 1933 in an attempt to raise the birthrate, by 1935 the law permitted termination of defective fetuses as long as the woman agreed to a concurrent sterilization to prevent another compromised fetus. Scandinavia and Switzerland imposed a similar requirement. Across Europe eugenic abortion, when a hereditary condition might be passed on or when fetal problems had been spotted, was increasingly acceptable, becoming law, for example, the canton of Vaud, Switzerland (1931), Poland (1932), and Latvia (1933).

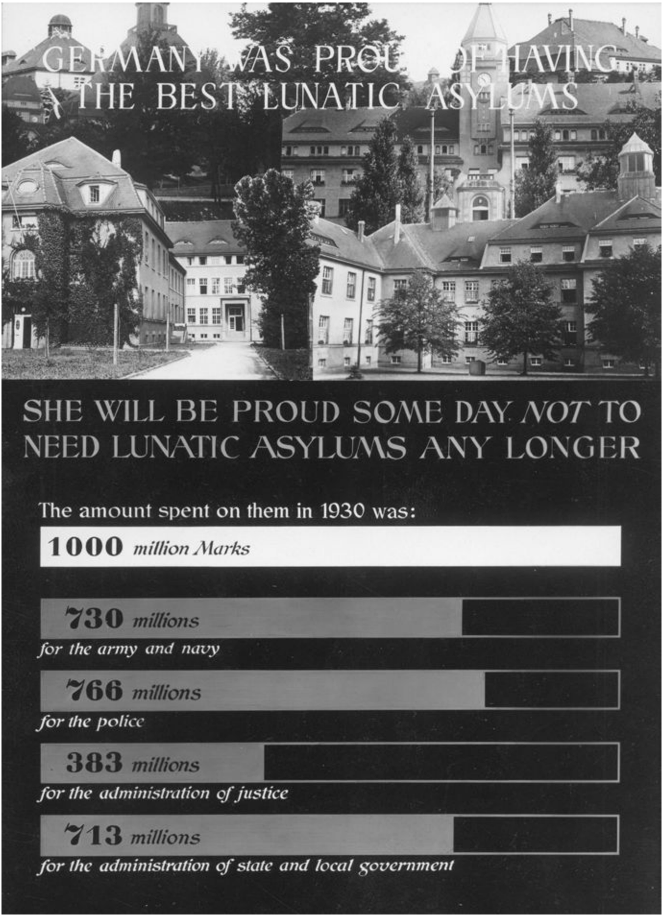
A recommendation from the Norwegian Medical Association to legalize abortion in cases of economic or social hardship (noneugenic abortion) was under consideration when the Nazis occupied Norway in 1940, and the law that subsequently did pass in 1943 permitted only eugenic abortion. Japan was alone in permitting abortions in cases of social or economic peril to a woman's health. The 1948 Eugenic Protection Law, despite its name, permitted eugenic protection committees to authorize abortions on these grounds. In a highly unusual move, Japan abandoned any need for permission in 1952, freeing women to seek terminations as they wished. This was the first of the liberalizing laws on abortion that, in the 1960s and 1970s, became more common, losing their association with eugenics as they became associated instead with greater rights of self-determination for women.

Euthanasia

Misgivings similar to those against abortion dogged euthanasia policies, which many thought carried the same fundamental moral risks as abortion. Supporters distinguished between voluntary euthanasia chosen by the terminally ill and involuntary killing of those deemed unworthy. Ohio and Iowa both debated but did not pass euthanasia laws in 1906. The Iowa bill promoted euthanasia for the terminally ill, and to allow parents of the "hideously deformed or hopelessly idiotic" to terminate their child's life, a distinctly eugenic reasoning. Eugenic and non-eugenic euthanasia captured public attention. Around the same time Chicago obstetrician Harry Haiselden made public his eugenic rationale for withholding treatment for babies born with deformities. In the 1910s Haiselden deliberately sought publicity for his actions, even playing himself in a 1917 silent film, *The Black Stork*, which chronicled his actions. In 1920, Karl Binding and Alfred Hoche's *The Permission to Destroy Life Unworthy of Life* (1920) advanced the idea of ending the lives of the worthless and unproductive and rapidly became the gospel of eugenic euthanasia.

Few countries, however, were willing to venture so far. Even Hitler waited until 1939 to initiate the Aktion T4 forced euthanasia program aimed largely at the mentally handicapped and developmentally disabled, despite pressure from the Nazi medical lobby to do so earlier. A German euthanasia law drafted in the early 1930s had failed, and no law legalizing the practice was ever passed in Germany. Nonetheless, between 1939 and 1941, when the T4 scheme officially ended, some seventy thousand people had been euthanized, mostly inmates of hospitals and institutions. Among them were at least five thousand children, whose parents were often given false information about their deaths. Officially halted under pressure from the Catholic Church and the public, the killings did not stop; they merely went underground, becoming part of the broader wartime killings. Many of the T4 staff transferred to the concentration camps at Belzec, Sobibor, and Treblinka, where their expertise in mass murder was welcome. In Lithuania and Estonia, inmates of psychiatric institutions were given diminished rations and literally starved to death, tragic personifications of the propaganda around "useless eaters" unable to earn their bread.

While the German policy was, and remains, widely reviled, eugenic euthanasia did have advocates elsewhere. The renowned American neurologist Foster Kennedy, although opposed to euthanasia for the terminally ill, called nonetheless in 1942 for euthanasia of "Nature's mistakes." In a case of very bad timing,



6. Curated by Bruno Gebhard of the German Hygiene Museum in Dresden, the exhibition *Eugenics in New Germany* toured the United States between 1934 and 1943, highlighting Germany's race hygiene program and the eugenic measures implemented by the Nazis. This panel spoke admiringly of the savings on asylum costs achieved by new laws intended to prevent conception among the unfit.

Kennedy advocated a eugenic form of euthanasia even as Germany was actively pursuing it against those deemed enemies of the state either because of their racial or religious origin or because of their heredity.

Eugenic sterilization

Equally controversial, but with far more widespread success than euthanasia, was the use of sterilization, both forced and voluntary. It remains the most widely recognized of the negative eugenic measures. Advocates distinguished among eugenic, therapeutic (for the sake of health), and contraceptive sterilization. Some eugenic sterilization laws applied to those considered sexually perverted; California permitted the sterilization of "moral degenerates" as well as "sexual perverts showing hereditary degeneracy." Sterilization, especially early on, was often known as asexualization (a term that could also connote castration, used less often but by no means unknown), and one of its earliest uses was to curb masturbation. In 1899 Harry Sharp began using vasectomies to manage masturbation among inmates at the Jeffersonville Reformatory in Indiana, where he was a prison doctor. Sharp's experiment was a precursor to Indiana's law of 1907, the first to legalize involuntary sterilization in the United States. Doctors in many places were already discreetly using sterilization to manage epilepsy and other conditions and to prevent the feeble-minded from procreating. In Argentina, where sterilization was never legal despite strong support in the medical and legal communities, it was nonetheless common in mental institutions, as was the case prior to legalization in places such as the United States, Sweden, and Finland. Finland began sterilizing asylum inmates in the early twentieth century, and in Switzerland, psychiatrist Auguste Forel sterilized violent patients in the 1880s and claimed to have used the procedure to cure a fourteen-year-old girl of hysteria. Those confined in institutions were particularly vulnerable, since sterilization was frequently a precondition for release. Eugenic sterilization was aimed principally at those deemed feeble-minded or cognitively disabled. Epilepsy, hereditary deafness or muteness, schizophrenia, alcoholism, or a diagnosis of psychopathy could prompt sterilization. Its implementation was based on a belief that there was a single Mendelian character capable of being bred out by sterilizing those who carried the gene.

In the interwar years, most sterilization was eugenic, and a great deal of it was not voluntary. The most notorious sterilization law, both for its coercive nature and for the sheer number of sterilizations performed under its authority, was that enacted shortly after Hitler's rise to power. The 1933 Law for the Prevention of Hereditarily Diseased Offspring created genetic health courts to adjudicate sterilization orders, under which at least 375,000 people were sterilized. Although what was popularly known as the "Hitlerschnitt" (Hitler's cut) officially focused on hereditary conditions and deformities, mixed-race children, Jews, and Gypsies were also often sterilized. Germany was not the only country where forced sterilization was racially targeted: Sweden sterilized nomadic *Tattare* people, and in parts of the United States racial minorities were more likely than white Americans to be sterilized.

The German law, though, used much more vigorously, had significant precedents, most notably in the United States, where more than thirty state laws legalized eugenic sterilization between 1907 and 1937. California, Connecticut, and Washington passed laws in 1909; Iowa, Nevada, and New Jersey (approved by then governor and future U.S. President Woodrow Wilson) in 1911; and New York in 1912. In New Jersey and Iowa constitutional challenges invalidated the new statutes. In some states the law was barely used: there are no recorded surgeries in Nevada and a mere thirty in Arizona. Many of these laws remained on the books until the 1970s and 1980s, and sterilizations were occurring throughout that time, long after the end of World War II. The most aggressive use of the laws occurred in California (more than twenty thousand sterilized), Virginia (eight thousand), and North Carolina (almost seven thousand). Kansas, Michigan, and Georgia sterilized around three thousand people each. Upwards of one hundred thousand were sterilized across Scandinavia; all the Scandinavian nations had sterilization laws by 1938, though they all insisted that their voluntary practice bore no relation to the coerced sterilizations in nearby Germany. The Scandinavian statutes enjoyed wide support across the political spectrum, and while they all emphasized patient consent, doctors could legally sterilize those lacking the capacity to consent.

The passing of sterilization laws was the product of years of eugenic lobbying. Finland, for example, first considered the possibility in 1912. In Germany sterilization of the feeble-minded had significant support well before Nazism emerged. The influential anthropologist Eugen Fischer had proposed sterilizing Germans of mixed race in the 1920s, and there had been both local and national attempts to legalize sterilization from 1913; just months before Hitler came to power, a sterilization bill was under consideration in the German Parliament, while the Protestant Inner Mission, a loose affiliation of German churches, had endorsed the principle of voluntary sterilization in 1932.

Although the United States, Germany, and Scandinavia were the most prominent nations to implement eugenic sterilization, they were far from alone. The two westernmost provinces of Canada, Alberta and British Columbia, passed legislation (in 1928 and 1933), as did Japan (1948), Estonia (1937), and the canton of Vaud in Switzerland (1928). In the Mexican state of Veracruz the governor Adalberto Tejeda launched a mixed package of positive and negative eugenic measures in 1932 with the aid of Rockefeller money. Alongside venereal disease control, *puériculture*, and disease eradication, Tejada legalized the sterilization of the mentally ill and retarded. Nations across the globe—Poland, Romania, Britain, the Netherlands, China, Australia, and even pro-natalist France—seriously considered sterilization laws, prompted by eugenic lobbying.

Two polls conducted in the United States in 1937 found broad approval. *Fortune* magazine reported that 66 percent of those it polled supported existing sterilization laws, while a Gallup poll found 84 percent in favor of sterilizing the chronically mentally ill. An editorial in the *New York Times* in 1933 questioning the science animating the new German sterilization law defended the parallel U.S. policy as harmless and humane. The first issue of Romania's *Eugenics Journal* in 1927 included a commissioned article by one of the architects of American sterilization policy, Harry Laughlin. The White House Conference on Child Health in 1930 convened by President Herbert Hoover promoted eugenic sterilization as vital for American well-being. Support came from across the political spectrum.

There was, however, always and everywhere a large and active opposition. Much of it came from the Catholic Church, but the Church was not the sole source of protest, and nor were all Catholics opposed. Even among enthusiastic eugenicists, many remained unconvinced that this was a wise policy; in the United States Charles Davenport, otherwise an ardent supporter, favored segregation over sterilization. It was his colleague Harry Laughlin, superintendent at the Eugenics Record Office, who lobbied hardest for the policy. While the Latin International Federation of Eugenic Societies, established in the mid-1930s, regarded sterilization as too great a sacrifice of individual interests, many sterilization advocates in Latin countries argued the case. Among them were the well-known eugenicists Charles Richet in France, Renato Kehl in Brazil, and Ioan Manliu in Romania.

Sterilization and the courts

Opponents of sterilization won victories in American states as diverse as New York, Oregon, Indiana, and Nevada, though they were often short-lived. In Oregon, for example, four years after a successful repeal referendum in 1913, legislators passed another sterilization law only struck down in 1983. Elsewhere the ban persisted, as it did in Nevada. But it was in Virginia, in the eastern United States, where the debate played out in the courts most significantly.

Institutional sterilizations in prisons and asylums were already common in Virginia before the passing of a sterilization law in 1924, though their legality had been challenged when, in 1917, George Mallory sued Albert Priddy, superintendent of the Virginia State Colony at Lynchburg, for sterilizing his fifteen-year-old daughter, Jesse, and his wife, Willie. Priddy won the case but, burned by the experience, was keen to test the constitutionality of the 1924 law. In June of that year, Carrie Buck, eighteen years old and recently delivered of a child, joined her mother as an inmate at Lynchburg. The Bucks were a poor white family, typical of the class of Virginians likely to be sterilized. Elsewhere, in North Carolina and California, for example, racial minorities often formed a disproportionately large proportion of those sterilized, but in Virginia, underprivileged and poorly educated whites were the principal target of the legislation.

In Priddy's eyes the simultaneous detention of mother and daughter in the Colony was proof of hereditary feeble-mindedness and of moral delinquency. He set out to demonstrate that Carrie's daughter, now in the care of Carrie's own foster parents (whose nephew's rape of Carrie had impregnated her), was also feeble-minded. Carrie and her sister Doris were the daughters of a woman who in 1920 was confined to the Virginia Colony, classified with a mental age of around eight. Carrie was deemed to have a mental age of nine, and before long Doris was likewise diagnosed as feeble-minded and sent to the Colony. We know little of Carrie's father, Frank. Emma Harlow married him in 1896 and stayed married to him until his death. Although the hospital records of her confinement all correctly describe Emma Buck as married, she was described in court as an unmarried mother.

This kind of inaccuracy typified the court proceedings, and much of the testimony against the Buck women was hearsay and rumor about the family. The evidence against Vivian, Carrie's baby, consisted of a Red Cross nurse who could say only that at eight months the child seemed "not quite normal." Carrie's court-appointed lawyer in the case, Irving Whitehead, was a friend of Priddy and an even closer friend of Aubrey Strode, the opposing counsel. Arthur Estabrook, the star expert witness in the trial and one of the most prominent eugenicists of the day, examined baby Vivian, Emma, and Carrie, interviewed relatives, and told the court he had detected a "defective strain" inherited via the mother, Emma. A written deposition from Harry Laughlin, who met none of the Bucks, upheld Estabrook's conclusion, calling Carrie the "potential parent of socially inadequate or defective offspring," quoting from the Model Sterilization Law he had written a few years earlier. There was no mention during the trial of the rape, nor were the foster parents brought to the stand. In short, the case was stage-managed by Priddy, Strode, and their backers, all of whom fervently believed that eugenic sterilization was a critical social and biological tool.

Winning the case at the state level was not the point for the proponents of Virginia's sterilization law, however. Their aim was to craft a case that could not be appealed, and to do that meant crafting one that could and would be upheld by the U.S. Supreme Court. The result of the state trial was, thus, a foregone conclusion. Carrie's sterilization was upheld as legally valid, but it was time to move the case to the highest ground. Among the Supreme Court justices who would hear the case were two who were sympathetic to the eugenic cause, Chief Justice William Howard Taft and Oliver Wendell Holmes Jr. It was Holmes who wrote the unusually short opinion of the court in the *Buck v. Bell* decision of 1927. (Bell took over as superintendent of the Colony after Priddy's death from Hodgkin's disease in 1925.) Holmes' opinion is widely regarded as among his weakest; it was derivative as well as unusually brief. Only one justice dissented, the Catholic Pierce Butler, and he wrote no opinion of his own. Holmes argued that the sacrifice involved in forgoing a family paled in comparison with that which soldiers risked in battle, and that those who sapped the coffers of the country by their inadequacy could not be allowed to swamp the fit. If vaccination could be enforced to stem disease, then preventing hereditary unfitness was also proper in his reasoning. Carrie Buck was duly sterilized in October 1927 and was released from the Colony; her sister Doris was sterilized shortly thereafter. Duly rendered unable to conceive, their supposed hereditary menace was contained.

The Supreme Court decision freed states with existing laws to expand their programs and energized more states to pass similar laws. News of what was happening in Germany in the 1930s did nothing to deter the pace of sterilization in the United States. The 1927 decision closed the door on the key legal arguments of the opposition. The Court did not condemn the practice as cruel and unusual punishment, and Priddy and his backers, having learned from the Mallory trial, carefully ensured that due process was not violated. Holmes dismissed the argument that in applying the law only to the institutionalized, the equal protection clause of the Fourteenth Amendment was being ignored, the very point that had shut down the New Jersey sterilization law some years previously.

Opposition to sterilization

While the misgivings of geneticists played no part in the legal gaming of the 1920s, a good number of them voiced uncertainty about the capacity of sterilization to reduce hereditary defects in the population. Japanese geneticist Komai Taku regarded it as worthless. American biologist Raymond Pearl estimated that it would take around a century to resolve defects through a sterilization program; less optimistically, British geneticist Reginald Punnett calculated the time needed at eight thousand years.

Most critically the Hardy-Weinberg principle, a mathematical proof of the frequency of alleles (forms of a gene) in populations, already well known among population geneticists in the 1910s, definitively demonstrated the ineffectiveness of sterilization in reducing the incidence of mental disorders. Although it played no role in the Supreme Court decision of 1927, that proof shaped the growing opposition to involuntary sterilization among scientists.

Doctors were at the forefront of eugenic sterilization campaigns, but many remained skeptical or ill at ease with it. The American Medical Association cast doubt on the science behind eugenic sterilization. The editor of its journal, Morris Fishbein, challenged the science in a *New York Times* article in 1935, citing a British report issued the previous year that had questioned the scientific basis of the surgery. That report recommended that sterilization be available to those who felt their family history warranted it, but flatly rejected coercive practices. The lack of support from the British Medical Association, the strong opposition mustered by British Catholics, and the antipathy of the Labour movement all contributed to the rejection of a sterilization law in Britain. Class opposition was strong in Japan, too, and even in the United States. Attorney Jacob Landman was not hostile to all sterilization but, writing in *Scientific American* in 1934, he warned against its use as a class weapon. “It is not true,” he wrote, that “janitors and garbagemen … are necessarily idiots and morons” any more than that “college graduates … and people in ‘Who’s Who’ … are necessarily … superior … parents.”

Religious opposition was strong, and none was more important than that of Catholicism, revitalized after the 1930 papal decree, *Casti Connubii*, which reconfirmed Catholic opposition to birth control as well as sterilization. In Ohio, Catholic opposition killed the sterilization lobby as it did in the eastern Canadian provinces; British Columbia and Alberta, where sterilization laws did exist, had only small Catholic populations. In 1937 Pope Pius XI issued a public rebuke of the Nazi sterilization law, and in 1930 the

French physician Jean Piéri, author of a book on the church and eugenics, declared sterilization to be un-French, antithetical to Catholic doctrine and French pro-natalism. A year later the Italian Penal Code condemned the practice. The liberal American Catholic John Ryan called sterilization “probably the shallowest proposal that has ever been made in dealing with a social problem.” Yet Catholic opposition failed to halt the enactment of a sterilization law on the American-controlled island of Puerto Rico where, in 1937, sterilization passed into law alongside birth control. The Catholic lobby did force a legal test case but to no avail; coerced as well as voluntary sterilization was declared legal and Puerto Rican women became frequent test subjects for new contraceptive methods.

Gender and sterilization

Around 85 percent of sterilizations in North Carolina, where they were conducted between 1929 and 1977, were of women. In Puerto Rico, almost 17 percent of women of childbearing age had been sterilized by 1955. In Vaud, around 90 percent of those sterilized were women, a trend consistent with the reproductive role eugenics assigned to women.

In the case of men, it was sometimes not cognitive capability but criminal convictions that prompted sterilization. Men convicted of sex offenses, including homosexuality, were often sterilized, and in Oklahoma a 1935 law to sterilize thrice-convicted felons inspired a small group of male prisoners to seek its overturn. Like the Buck case, this went to the U.S. Supreme Court in 1942 as *Skinner v. Oklahoma*. The court ruled that the law violated equal protection requirements by exempting white-collar felons and those with fewer than three convictions, but it did not question the constitutionality of sterilization.

More controversial than birth control or sex education, sterilization was also more successful. The coercive qualities of negative eugenics were often more effective than positive eugenics, whether at law or in communities. Paul Popenoe claimed in *The Forum* in 1935 that "the State has the right to protect its own interests by compulsory sterilization if necessary." In many places, that sentiment inspired politicians, public health officials, obstetricians, and many others to lobby not just for the principle of compulsory sterilization but more broadly to demonstrate the overwhelming interest of the state in the matter of reproduction. It was this, above all, that secured the successes eugenics did enjoy and made it so visible even where it failed to establish a legal foothold for its policies.

Chapter 4

The inequalities of eugenics

The goal of eugenic fitness was intended, at its most utopian, to improve lives, to help eradicate disease and disability, and to foster productivity. This vision of a healthy happy future was one reason why so many on the political left were drawn to eugenics even as it also appealed to conservatives. For those who dreamed of a socialist future, eugenics held out the promise of a better life for the poor and downtrodden secured through applied science.

In practice, however, eugenics mostly reinforced rather than dissolved existing class prejudices. It was frequently the poor and ill-educated as well as minorities whose reproductive capacity and lifestyle came under attack, and it was women's sexuality rather than men's that was closely policed. The disparity between falling birthrates in the developed world and rising rates elsewhere also created racial inequalities in eugenic policies. To the eugenic eye, the poor and the nonwhite were breeding too much, well-off European and American whites not enough. Reproductive fitness was being undermined as those considered unfit outbred their superiors. Class, gender, and race differences were thus all central eugenic concerns.

Race hygiene and the idea of the nation

The term *race hygiene* (*Rassenhygiene*), used mostly in Europe in the early twentieth century, was synonymous with eugenics. The

German biologist Alfred Ploetz coined it to describe his vision of a medically centered eugenics aimed at preventing degenerative hereditary factors from weakening nations. Race could mean many things and was often used rather vaguely and grandiosely. It could connote superficial physical differences among people in diverse locations, but it often simply meant the human race. In the early twentieth century, it was also frequently used in place of the word "nation." Maintaining the purity or strength of the race was hailed as a national duty, a vital means to keep the nation safe from threat. The geneticist and eugenicist Fritz Lenz claimed that the "central mission of all politics is race hygiene."

In Britain, such ideas found expression in a call to "national efficiency." A 1904 government committee found that military recruits among the poor were physically unfit. In a nation with a huge empire, an inadequate military was cause for alarm, opening the door for eugenics as a solution to a problem of national importance. In eastern and southeastern Europe, the political upheavals of World War I and its aftermath meant that many people in newly formed nations found themselves cast suddenly as ethnic minorities experiencing discrimination. For example, in Latvia, created as an independent nation in 1918, eugenicists aimed to reduce the "inferior" non-Latvian population to strengthen the "purity" of the race. Under Nazi occupation in the 1940s, an active regimen of euthanasia boosted this mission. When Ploetz and his colleagues established the first formal eugenics organization, the Society for Race Hygiene, in Berlin in 1905, their stated goal was to protect and improve the nation. Within a few years there were moves to restrict membership to the "white races," and more radical members lobbied to limit it exclusively to those of Nordic stock; the winning compromise in 1909 was the exclusion of those not considered white. The category was slippery: Jews and Slavs were initially admitted to membership, though by the 1930s they would be pushed out of this and other eugenic organizations in the region.

All these ways to understand race framed the nation not just in cultural or social terms, but biologically. Nations in this racial and eugenic reading had identifiable physical characteristics amenable to biological and biomedical solutions to strengthen their borders and boundaries. And in defining the nation biologically, it was easy to justify not only racial but gender discrimination, given the central role of reproduction in both eugenics and in nation-building.

Gender

In 1915 the Argentinian pediatrician Enrique Feinmann claimed that "Woman will be the good fairy of the new era. Her nursery of human beings will be an immense blooming garden, and the children . . . will populate the earth as men, to make it better and more beautiful." This overblown prose carried a clear message about women's role as mothers not just to their children, but to society, the nation, and the future: it was through their reproductive function that women best served their countries. The dominant eugenic view of women was as caregivers best suited to life at home raising children while men engaged in paid work to support their families, although eugenic feminists like Margaret Sanger hoped that managed reproduction would free women from perpetual domestic drudgery.

While birth control could spell greater freedom for women, eugenics mostly promoted the idea that women's biological functions were primary. In Finland, the prohibition of night work for women early in the twentieth century was hailed not as a social improvement but as an important eugenic measure. The American novelist Charlotte Perkins Gilman spoke of the "measureless racial importance" of women as "makers of men," while in Yugoslavia the military doctor Vladimir Stanojević in the 1920s called on women to "sacrifice and consecrate" themselves. To do otherwise, these lofty ideals implied, was to put oneself ahead of the nation and its needs. At the opposite end of the spectrum, breeding mindlessly and carelessly exposed the nation to the threat of degeneration. Despite eugenic campaigns for access to safe and reliable contraception in some places, the chief effect of eugenics on women's lives was to promote maternalism in fit populations and prevent it among the unfit, rather than to offer women independent choices around marriage, family, and reproduction.

The encouragement to breed for the health of the nation—the basis of positive eugenics—was a potent force in places as diverse as Romania and the Belgian Congo, Egypt, France, and Argentina. It was achieved through propaganda, health clinics, tax breaks, and cash allowances. Portuguese doctor Candido da Cruz claimed that women were vital to the "prosperity of the Nation and the perfection of the race." As women's lives broadened in the twentieth century, eugenic campaigns aimed to guide them back to a life centered on family and children. Eugenicists feared that middle-class women would render themselves incapable of conceiving by engaging in too much mental or physical exertion. In Argentina, doctors complained in the interwar years about the damage that fashionably thin bodies wrought on women's reproductive capacity. They saw those whom they called voluntarily undernourished women as unfeminine in rejecting nubile bodies and constant pregnancy.

Boosting reproductive rates was an important eugenic aim, but more effort was expended on preventing the wrong sort from conceiving. Frequently aimed at poorer and minority women, this was the foundation of negative eugenics. Socially marginal women would weaken the nation by reproducing thoughtlessly and prolifically. Feeble-minded women were blamed for producing degenerate children, ruining marriages, and spreading venereal diseases, all of which endangered the nation. The feeble-minded woman who lacked morals was the most dangerous, and active female sexuality came to be aligned with mental deficiency. In Zürich, women arrested for prostitution could be referred for psychiatric treatment and were often pressured to agree to sterilization. In some countries, teenage girls who would not conform to “respectable” patterns of behavior could find themselves incarcerated without ever having committed a crime. Staying out late at night, mixing freely with boys, or disregarding parental orders could have monumental consequences for young women. Flouting the conventions of gendered respectability brought with it the very real chance of a diagnosis of feeble-mindedness, a finding that frequently led to institutionalization and, in many cases, involuntary sterilization.

One solution was providing appropriate education for women, shaping a curriculum designed to fit them for a maternal and familial destiny. In the late nineteenth and early twentieth century a substantial body of medical and scientific opinion contended that an excess of mental effort compromised women’s reproductive systems. Eleanor Sidgwick, a pioneer of women’s higher education in Britain, conducted a study of early female graduates in the 1890s that challenged the belief that educated women were “physically inefficient mothers.” Her research found little difference between the fertility rates of graduates and their less-educated peers. However, her evidence also showed that women were marrying less often and later, and when they did marry, were having fewer children. It was this that eugenicists jumped on to argue that higher education prevented women of good stock from starting families. They urged a gender-specific curriculum featuring eugenics, civics, and domestic subjects to train women specifically for family life and childrearing.

Yet women’s work was also vital to the eugenics movement. University-educated women did much of the family pedigree and statistical research within eugenics, working for such luminaries as Charles Davenport in New York and Karl Pearson in London. Davenport’s staff at the Eugenics Record Office included many young women graduates who, by virtue of their sex, were regarded as capable of putting interviewees at ease, and who were also conveniently cheaper to hire than similarly qualified men. True to his principles, Davenport employed women only for three years, after which he expected them to fulfill their eugenic destiny by marrying and bearing eugenic children. He was also selective in the work he offered them. Women were assigned to the family studies, which tracked families through the generations for signs of hereditary defect. Come summer they were dispatched to collect data at Fitter Family contests, while their male colleagues interacted with "hardened" criminals. The bulk of the data collected for Goddard's 1912 study of the two lines of the Kallikak family was compiled by his assistant, Elizabeth Kite. Although he quoted extensively from her reports in the book, its authorship is ascribed solely to him. The testers he sent to examine immigrants seeking entry to the United States, beginning in 1910, were mostly women, whom he believed were better at intuiting feeble-mindedness.

Women were often also active promoters of eugenics, enthusiastically joining eugenics organizations, not least because the movement offered them a chance to be authoritative about traditionally female issues. In Britain, women comprised more than 40 percent of the membership of the Eugenics Society in the mid-1930s. Women reformers such as Mary Dendy in Manchester and Ellen Pinsent in Birmingham were active in the founding of segregated colonies for the feeble-minded; Pinsent would go on to serve on Britain's 1908 Royal Commission for the Care and Control of the Feeble-Minded. The effort to sterilize feeble-minded women in western Canada in the 1920s and 1930s was spearheaded by women. In Canada activist women in the United Farm Women of Alberta organization pushed for the Sexual Sterilization Acts of 1928 and 1937, while in America's Deep South a Junior League campaign helped to pass the last sterilization act in the United States in Georgia in 1937. Australian and New Zealand white settler women were also prominent among those wanting to restrict reproduction of "degenerates" and the "feeble-minded." More than a hundred thousand Danes signed a petition organized by the Women's National Council in 1920 in favor of sterilizing sex offenders. In India middle-class feminists drew a link between well-raised children and national independence, while others vigorously promoted birth control as an antidote to poverty. Birth-control activists, working to widen knowledge of and access to contraception, frequently embraced the eugenic cause.

Marie Stopes, the British birth-control advocate, found eugenics a useful ally in making birth control accessible but resisted the idea that the poor were hereditarily unfit, maintaining that family planning would improve their lot. In India, in Mandatory Palestine, and in Korea, maternal and infant welfare was a key feminist-eugenic issue.

One small but vocal strand of eugenics advocated throwing off the shackles of Victorian respectability, seeing in the movement a liberating opportunity. The Swedish feminist Ellen Key promoted both free love and responsible motherhood, and the playwright George Bernard Shaw championed the "freedom to breed the race without being hampered by…the institution of marriage." The English eugenicist Caleb Saleeby laid out a theory of eugenic feminism in 1911 that, while not denying women political representation, still stressed maternal duties as their central responsibility to society. His insistence on and faith in what he lauded as "the unchangeable and beneficent facts of biology" was a classic statement of a central eugenic belief. It is hardly surprising that their childbearing capacity made women the chief focus of a movement dedicated to improving the quality of reproduction. Overall conservative and mainstream eugenics, emphasizing women's maternal duties and reinforcing traditional behaviors and roles, dominated the movement.

Eugenics nonetheless had much to say about male roles as well. Building on a well-established cult of adventurous colonial masculinity, the ideal of the rugged manly man conquering the weak and propagating a healthy future was a popular eugenic theme. In old age, Galton wrote a never-published utopian novel, *Kantsaywhere*, featuring an athletic, refined, brave, and attractive race of men. This emphasis on physical manliness, especially among elite men, took an interesting turn when, in early twentieth-century America, committed eugenicists became active in nature conservation. Fears of environmental deterioration and the squandering of natural resources mirrored eugenic critiques of the dangers associated with industrial squalor and misused resources. Popenoe and Johnson's eugenics textbook, *Applied Eugenics*, claimed a eugenic connection to conservation: "In pioneer days a race uses up its resources without hesitation. They seem inexhaustible. Some day it is recognized that they are not inexhaustible, and then such members of the race as are guided by good ethics begin to consider the interests of the future." In an unlikely turn, American eugenic conservationists contrasted the well-managed big-game hunting favored by a Northeastern elite with the depletion of resources by those who hunted to put food on the table. Conservation eugenics was shaped closely by class as much as by gender dynamics.

Manliness was a major focus of the new hormone therapies that became popular in the interwar years following the successful use of insulin to treat human diabetes in the early 1920s. Glandular experimentation was already common, but when sex hormones became a major focus of endocrinology, eugenicists took notice. In Vienna Eugen Steinach's hormonal rejuvenation operation attracted a wealthy clientele that included the Irish poet W. B. Yeats. Steinach's fame prompted Gertrude Atherton's bestselling 1923 novel, *Black Oxen*, in which a famed beauty restored to youthful glory by Steinach captivates New York society. At San Quentin prison in California, eugenicist medical officer Leo Stanley conducted testicular grafting experiments, using tissue samples from executed inmates to rejuvenate older prisoners and masculinize effeminate male prisoners. Hormone supplements to increase male potency and cure sexual disorders proved popular in Japan. Lewis Terman and Charles Davenport emphasized the effect of hormones on key eugenic areas of concern such as intellect and morality as well as on the physical body, while physician Louis Berman explained criminality through endocrine malfunction. For women, hormone therapy mostly addressed reproductive function. Pregnant women were given hormone injections to improve birth outcomes, and in Korea hormone advertising offered reproductive success and enhancements to femininity.

Same-sex preference was a eugenic threat invoking fears of degeneration, mental instability, and hormonal imbalance; claims that eugenic families were too fit to produce a homosexual child were common. Lewis Terman and Catherine Cox Miles' M-F test, devised in 1936, aimed to use early detection of same-sex tendencies to allow timely treatment and cure and was not seriously challenged until the 1970s. The test quantified masculine and feminine traits by asking questions such as the number of players on a baseball team or the correct seating arrangement for a guest of honor. They rated "tomboyishness" in female test-takers and "sissiness" in men. In addition to its role in determining sexual preference, the test assumed differential behaviors appropriate for men and women, and in *Psychological Factors in Mental Happiness* (1938) Terman employed the M-F test to advise couples that successful marriages were those in which wives were submissive and conventional.

In the same year that Miles and Terman published their gender trait test, a court case in San Francisco riveted the press. Ann Cooper-Hewitt was the scion of a wealthy New York family and heir to the greater part of her late father's fortune. His will stipulated that if she remained childless, her mother could claim Ann's inheritance. In 1934 Ann, twenty years old at the time, was hospitalized for an emergency appendectomy. Intelligence tests had classified her as a feeble-minded moron, and since she was still a minor, her mother arranged for her to be sterilized at the same time. In court Ann claimed that her mother had conspired to gain control of her inheritance. A 1917 amendment to the California statute had made explicit the state's interest in "asexualizing" the feeble-minded, a decision that doomed Ann's challenge. The judge ruled the proceedings permissible under California law, despite many witnesses who contested her diagnosis as a mental defective. Her mother's lawyer intimated that the defense would submit evidence of Ann's "erotic tendencies" to prove her alleged feeble-mindedness, and the architect of California's sterilization program, Paul Popenoe, justified the sterilization on the grounds that Ann's sexual forwardness undermined her ability to become a fit mother. The trial was at once about eugenic motherhood, gender roles, and family fitness, a perfect storm made newsworthy by the unusual spotlight on a society family. Eugenicists were buoyed by their victory in the case, which both revalidated the California law and made sterilization legal on grounds of nonconforming sexual behavior.

Class

What was unusual in this highly publicized case was that it involved a segment of society that rarely experienced the effects of eugenic policy. There were eugenicists who disapproved of inherited social privilege, fearing the degeneration born of inbreeding, but in general the rich, the well-connected, and the educated were protected from the reach of eugenic practice. They were more likely to sit in than to receive judgment. The vast majority of those whose lives were affected by eugenic diagnosis, treatments, and policies, whether male or female, and of whatever race or nationality, were the less well-off, the less educated, and the less privileged.

The life of John, the youngest and disabled child of the English king George V, was certainly not like that of his brothers and sisters, but his royal status protected him from typical eugenic intervention. He was secluded for most of his short life (he died, aged thirteen, in 1919), but the public learned of his severe epilepsy and learning disability only after his death. As a royal child, John was never institutionalized, although he was kept carefully shuttered from society. Had he been the child of a working-class family, he would likely have been classified as feeble-minded and his confinement would have been considerably less comfortable. Similarly, it was only after John F. Kennedy was elected president of the United States in 1961 that the family revealed that his sister Rosemary, only a year younger, had intellectual disabilities. Tests she took as a child assigned her an IQ between 60 and 70. A lobotomy in 1941, authorized by her father, left her brain-damaged and institutionalized. In 1949, after seven years in a New York facility, Rosemary was moved to a Catholic residential school in Wisconsin, which cared for her until her death in 2005. At first the family claimed, presumably without irony, that she was teaching at a school for handicapped children in the Midwest, although in the 1960s they acknowledged her mental disabilities, and her case spurred a campaign for better mental health care. The lobotomy, however, remained a secret that was revealed only decades later.

At the other end of the class spectrum to wealthy heiresses and royal progeny were the impoverished Buck sisters, Carrie and Doris, sterilized as a result of the 1927 Supreme Court ruling that bears their family name. Their case vividly reveals the class prejudices that so often animated eugenic activity.

The German geneticist Fritz Lenz contended that “productivity and success in social life serve as a measure of worth,” and this belief that privilege was an index of eugenic fitness was widespread. The idea that social class and economic status revealed people’s genetic endowment could be powerful enough on occasion to override other prejudices. Immigration officials in the United States, where deafness constituted eugenic grounds for deportation, made exceptions for those of higher class status.

In France, there were calls to limit pro-natalist campaigns to the affluent and to discourage the poor from populating France with "degenerates." Pan Guandan, the leading Chinese eugenicist of the interwar years, proposed selective birth control aimed at the poor. Even in places where controlling the environment and providing better conditions were the cornerstone of a positive eugenic policy, the tendency to assume that an absence of privilege constituted an absence of hereditary fitness frequently crept into eugenic thinking.

Discomfort with the behavior and lifestyles of the poor reflected the appeal of eugenics to the professional classes who filled the ranks of the eugenic societies springing up all over the world. Eugenics was embraced by doctors and educators, journalists and psychologists, social workers and lawyers, as well as by the philanthropists whose fortunes often supported its work. In the new nations of eastern and central Europe, in newly modernizing countries such as Turkey and Iran, Argentina and Mexico, eugenics gave medical professionals and social workers a substantial voice in determining the future of their country. The rising influence of science consolidated the place of eugenics as both policy and science, powerful arenas in modern societies for directing ordinary lives.

Even those whose embrace of eugenics arose from socialist or collectivist beliefs often expressed contempt or fear of the excessive fecundity of the poor. Harold Laski, a prominent British socialist, spoke of the "future swamping of the better by the worse." The English geneticist J. B. S. Haldane grew up in a privileged echelon of British society, the son of an Oxford don. His experiences in World War I led him to believe that the British working class was not a hopeless cause, and in the 1940s he would commit to Marxism and join the Communist Party. Yet he too saw the working class as innately inferior. It occurred to none of these critics to connect working-class family size to limited access to effective birth control as well as its cost. One clear-eyed critic saw the class prejudices at work. The American biologist Raymond Pearl dismissed eugenics in the *American Mercury* in 1927, claiming that when eugenicists talked of "superior people" what they meant was "'My kind of people'…or 'People whom *I* happen to like.'" Eugenics, he claimed, was "full of emotional appeals to class and race prejudices."

Eugenics also was linked to the rise of the welfare state and of progressive policies. In Scandinavia, eugenic measures emerged mostly under the banner of a collectivist welfare state; Social Democrats in Weimar Germany and in Switzerland championed a wide range of eugenic measures. American Progressivism also put the collective good ahead of the individual and promoted eugenic solutions. Henry Fairfield Osborn, director of the American Museum of Natural History, wanted to restrict welfare benefits to those with jobs and encourage the use of birth control among the unemployed. The good intentions that often lay behind this welfare eugenics were sorely tested in 1929 when the Great Depression set in. Arguments about the cost to the state imposed by the unproductive and the unfit, although not limited to the 1930s, rose to new prominence at a moment of urgent cost-cutting and of the reconsideration of welfare benefits demanded by deep economic uncertainty. Fears of an urban underclass littered with women of loose morals, unemployed men, and ill-educated and undisciplined children haunted the professional classes as cities grew. The slums where the urban poor found housing were seen as breeding grounds not just of disease and criminality, but of immorality and unrest. Poor health, poor intellect, and poor judgment were sister conditions, and surveys undertaken in the early twentieth century fueled the picture of a dysgenic working class. Eugenicists saw in working-class failings a dangerous national decline. For hard-heredity proponents, environmentalist and welfare solutions were bound to fail, for they addressed not the question of fertility at the heart of eugenics but environmental and social reforms they thought would encourage the reproductive profligacy of the poor.

With the exception of anti-immigration activism prompted by the prospect of competition for jobs, there was scant working-class support for eugenics. Labor movements tended to be suspicious of the intentions of eugenicists toward their constituencies and keenly aware of the middle-class makeup of eugenic organizations. The poor mostly experienced rather than embraced eugenics, while doctors, social reformers, and politicians saw it as a set of practices that would aid them in ordering and controlling, in improving and educating populations in need of guidance.

Race

Race was almost always a factor in eugenics, often closely linked to social status. In Germany and Denmark in the 1930s, Gypsy registers tracked the movement of traveler peoples, who were regarded both as a drain on resources and as hereditarily unsound. German psychiatrist Robert Ritter's Gypsy genealogies were based on methods Henry Goddard had used for his 1912 Kallikak study, and in drawing a picture of what he called the Ishmaelites in America's Midwest, Arthur Estabrook listed "three outstanding characteristics…pauperism, licentiousness and gypsying." Ritter's Gypsy database contained about thirty thousand names along with personal and physical details. Many of those he listed were forced into the Gypsy camps the Nazis established in 1935 in Germany and Austria, and countless numbers died there. Ritter's admiration for American eugenics was not limited to the work of Goddard; he also followed Charles Davenport in regarding the nomadism of traveler peoples as a hereditary and racially specific trait. The Romanian demographer Sabine Manuilŭ called "the mixing of Gypsy with Romanian blood…the most dysgenic occurrence affecting our race."

Racial difference had a long history within eugenics. Galton's first work on eugenics, *Hereditary Genius* (1869), included a chapter entitled "The Comparative Worth of Different Races," which lauded the ancient Greeks as "still unsurpassed" and ranked "the

Australian type at least one grade below the African Negro." Deploring the "draggled, drudged, mean look" of the English urban poor, the Anglo-Saxon was nonetheless for Galton a civilizing force. In Mediterranean countries such as Portugal and Italy, wealthy elites in the north disparaged southern populations as less intelligent, and therefore socially and economically backward. In Bosnia and in Bulgaria, European Christians regarded local Muslim populations as primitive. In their influential textbook *Applied Eugenics*, Paul Popenoe and Roswell Johnson stated that "the Negro race differs greatly from the white race, mentally as well as physically, and in many respects it may be said to be inferior." In Latin and South American nations, the European population blamed native and former slave populations for holding back modernization and development. The powerful Mexican *científicos* (scientists) of the early twentieth century saw European settlers as the future and often dismissed the indigenous as ineducable and unappreciative of the benefits of modern society. In Romania, the sociologist Traian Herseni, minister of culture and education in Antonescu's fascist regime, promoted the segregation of inferior races.

One of the defining characteristics of racial "inferiors" was their allegedly high fertility. What was popularly called the "Yellow Peril" in the early twentieth century envisioned an Asian population explosion that threatened to swamp the West. In eastern Europe there were comparable fears that Slavic populations, regarded as Asiatic in origin, were growing faster than the European population. Theodore Roosevelt, long before he was elected to the American presidency in 1901, contrasted vigorous population growth among French-Canadians, eastern Europeans, and African Americans with an Anglo-Saxon stagnancy he dubbed "race suicide." Roosevelt wrote and spoke ceaselessly on the issue, using it as a platform to call for immigration control as well as to urge middle-class whites to do their duty in what he called the "warfare of the cradle."

Roosevelt's eugenic thinking linked nationalism and eugenics, a connection strengthened by the defining geopolitics of the early twentieth century, rising nationalism and aggressive imperialism. Politicians in Britain warned that imperial rival Germany would outstrip Britain unless more and better babies were bred, matching the parallel German fear that the Slav element would outpopulate true German stock. This was a climate ripe for a eugenics of hostile racial difference.

Racial purity became a national resource, a way to boost national pride, to give meaning to national identity, and to build patriotism. British birth-control advocate Marie Stopes marketed cervical caps at her clinic under the brand name "Prorace," and both she and Margaret Sanger routinely spoke of racial improvement. Across Europe and elsewhere, citizens were told why theirs was a superior nation even as they were warned about lurking degeneracy. The Yugoslav ethnographer Vladimir Dvorniković claimed his people had the largest brains on the planet. Using the Roman name for Portugal to drive home the country's long and glorious history, writer and politician Téofilo Braga declared that the "true Lusitanian in Portugal" was "the genius of the maritime explorations and…the initiator of the Age of the Discoveries." Such celebrations of national superiority relied, of course, on contrasting the true belongers with marginalized outsiders who could not belong and whose presence threatened stability. Eugenics offered a way to represent that threat in biological terms as standing in the way of the nation's greatness and progress through unfit breeding, by corrupting racial purity, and by wasting precious resources. In his 1927 *Manifesto for Eugenic Japan*, Ikeda Shigenori called his country "a eugenically blessed nation" because its contact with foreigners had been minimal and its blood was thus pure.

Minority populations sometimes used the same vocabulary to protest their ostracism, laying claim to eugenic interpretations of their own heredity more flattering than those offered by ruling

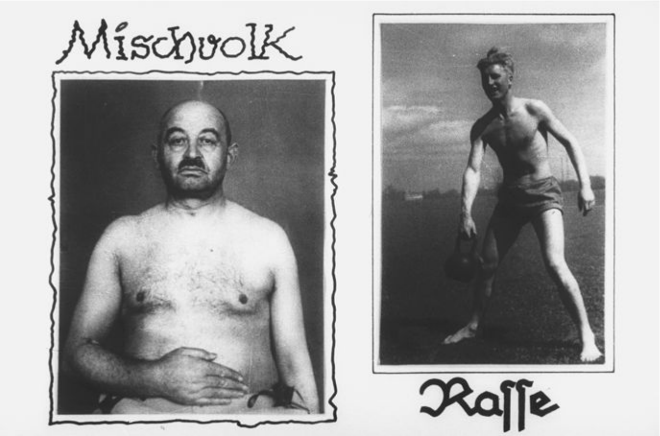
7. The British birth-control advocate Marie Stopes was also a eugenicist. She believed in the principles of racial purity and marketed a cervical cap for use in her North London clinic in the 1920s. It was called the "Prorace" cap and came in a variety of sizes to fit different women.

elites. Catalonian physician Hermenegildo Puig i Sais urged Catalonians to procreate so that Castilian Spain would not dominate them. Swedes in Finland upheld their superior fitness, as did Germans living in Czechoslovakia and Romania. Jewish eugenicists claimed that the longevity of the race was a result of eugenic practices that had protected the purity of Jewish blood for generations.

Race-mixing

Biologists and naturalists in the eighteenth and early nineteenth century had been fascinated by cross-breeding in animals, a project that yielded considerable success in agriculture. Applying the same principles to human stock was a common dream in eugenics and often revolved around the consequences of racial mixing, which frequently relied on ideas of blood purity. In 1906 the American Breeders' Association, founded in 1903 to explore plant and animal breeding techniques, established a eugenics section devoted to human breeding. Its aim was to "emphasize the value of superior blood and the menace to society of inferior blood." Since at least the middle of the nineteenth century, biologists had been interested in determining the effects of race-mixing (often derogatorily called miscegenation). In his 1916 bestseller, *The Passing of the Great Race*, Madison Grant predicted that the union of black and white Americans would lead to a "population of race bastards in which the lower type ultimately predominates." Rather earlier, in 1908, the prominent medical anthropologist Eugen Fischer had analyzed some three hundred children (whom he called "Rehoboth bastards") born to Dutch men and Khoikhoi African women in German Southwest Africa. The striking use of the term "bastard" implied the illegitimacy of such unions, and though Fischer was unable to prove that racially mixed populations had, among other negative characteristics, a higher occurrence of disease, he nevertheless claimed that whites suffered spiritual and cultural degeneration when joined with "inferior" races.

The Norwegian chemist Jon Alfred Mjøen itemized the dangers in mixing Norwegian and Lapp blood to an audience at the Second Congress of Eugenics in New York in 1921, while in Brazil eugenicists found in the mulatto population what they saw as the grim consequences of degeneration. British psychologist Raymond Cattell claimed that racial mixing produced genetic defects, a curious claim for a hard-heredity proponent, to be sure. Charles Davenport and Morris Steggerda's 1929 *Race Crossing in Jamaica* concluded that the new genetic combinations that would result from interracial unions would likely be deleterious. A "hybridized people," they claimed, are a "dissatisfied, restless, and ineffective people." And although plant geneticists Edward East and Donald Jones, writing in 1919, advised that the best course for the United States would be found in "an enormous amount of open racial inter-mixture," they drew the line at the mixing of blacks and



8. This slide from an anti-Semitic lecture contrasts a healthy and active "Aryan" (labeled "Rasse," or race) with an unhealthy and inactive person of mixed race ("Mischvolk") to illustrate the dangers of race-mixing. The lecture was the product of the Nazi *Rasse- und Siedlungshauptamt der SS* (SS Race and Settlement Main Office), the organization responsible for the racial integrity of the SS, founded in 1931 by Heinrich Himmler and Richard Walther Darré.

whites, who were too far apart, they reasoned, for a biologically harmonious melding.

Yet in some instances eugenicists claimed to the contrary that race-crossing was beneficial, even necessary. In Latin America even adherents of Mendelian theory argued that mixing had produced favorable results. Edgar Roquette-Pinto, director of the National Museum in Rio de Janeiro, and Brazilian geneticist Octavio Domingues both predicted in the late 1920s that over time race-mixing would "whiten" the Brazilian population, an outcome they saw as highly desirable. In Mexico, José Vasconcelos, secretary of public education from 1921 to 1924, praised the *mestizo*, the product of European and Indian crossing. He was one of many who thought hybridity helped Mexico limit mental, physical, and even moral degeneration. The hybridity they sought, however, was invariably intended to Europeanize. The Mexican Congress of the Child in 1921 discussed schemes for whitening indigenous children, leaving in place longstanding prejudices about indigenous populations.

Half a world away in Australia, the whitening thesis was central to an experiment spearheaded by Cecil Cook, protector of aborigines in the Northern Territory, and his Western Australian counterpart, A. O. Neville. Convinced that "biological absorptionism" would whiten indigenous Australians, they isolated and educated the children of aboriginal mothers and white fathers (known as "half-castes") in institutions far from their families, and frequently against their will. Their plan was to whiten the children through Christian upbringing and judicious marriages with white Australians. This scheme was the subject of Doris Pilkington Garimara's 1996 memoir, *Follow the Rabbit Proof Fence*, on which Phillip Noyce based his powerful 2002 film *Rabbit Proof Fence*. So-called full-blood aboriginals, isolated on remote reservations, were regarded as close to extinction, and the architects of the scheme anticipated that it would take only a few generations of approved marriages to absorb and thus obliterate aboriginality, as full-bloods died out and half-bloods were integrated into white Australia. Measures such as these reveal how eugenics reinforced longstanding prejudices on a seemingly scientific basis to produce, maintain, and support what the Swedish physician Herman Lundborg, a leading eugenics supporter, called the "biologically valuable human."

In general, support for racial mixing relied on the prospect of diminishing the less valuable and promoting the strong elements in the union. Francis Galton endorsed Chinese emigration to East Africa on precisely those grounds. In a lengthy letter to *The Times* in June 1873, he envisaged an industrious Chinese community that could "out-breed and finally displace . . . the lazy palavering savages." Decades later, Mussolini claimed that Mediterranean and Latin mixing would help Italy strengthen its political power, although when he aligned himself with Hitler in the late 1930s, he changed his tune, calling the French a decrepit race. In France physiologist Charles Richet and pediatrician Eugène Apert, president of the French Eugenics Society, welcomed "Latin" unions with the Spanish and the Italians but condemned Afro-French mixing.

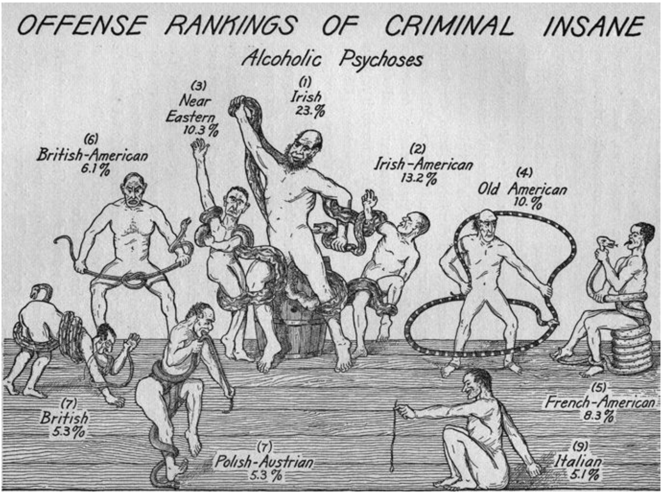
In many countries, states had begun removing children from abusive parents for their own protection in the late nineteenth century, though seldom from affluent families. Eugenic versions of these child-removal schemes in the twentieth century were frequently based on racial judgments. In Switzerland, itinerant Yenish families, among the largest nomadic peoples in Europe and already despised by many as vagrants, were the main focus. A federal scheme established in 1926 permitted the removal of Yenish children from their birth families. Altogether, around six hundred such children were forcibly removed and placed in schools or asylums or with European Swiss families, and their parents were kept ignorant as to their whereabouts. Failure to improve in a new environment could be grounds for sterilization, and as in Australia, these state wards could not marry without prior approval. Alfred Siegfried, the director of the program, interpreted the Yenish preference for an itinerant lifestyle as psychologically abnormal, calling it a psychopathological nomadism that needed correction. In Israel, a government-run "absorption" department aimed to Europeanize Jews of Middle Eastern origin arriving in the new state after 1948. Among the techniques of assimilation influenced by eugenics were the classes offered in childrearing and hygiene. There is evidence, still contested in some quarters, that to speed assimilation children from these families were removed and adopted by Ashkenazi (European) Jews.

Immigration

Immigrants were frequently identified as a eugenic problem. English biometrician Karl Pearson and his collaborator Margaret

Moul claimed in 1925 that "the whole problem of immigration is fundamental for the rational teaching of national eugenics." By that time, immigration legislation was already a major eugenic target and often among its most successful ventures. A significant number of immigration laws across the globe drew on eugenics for their policies and their justifications. Cuba's first immigration law in 1902 excluded the Chinese and provided a chilly climate for nonwhite migrants in an effort to boost what was called "Cuban Aryanism." In Britain eugenics advocates campaigned for an immigration policy that would exclude the unfit, and immigration laws in 1905 and 1914 restricted the entry into Britain of eastern European Jews. In France immigration increased exponentially in the 1920s, swelled by refugees and facilitated by a significant shortage of labor, but by the end of the decade, the tide had turned against migrants. Workers' organizations demanded restrictions, and calls for selective immigration found widespread support.

Theodore Roosevelt's prediction of race suicide was based, in part, on the assumption that immigrants had persistently higher reproductive rates than native-born white Americans. For first-generation migrants this was often the case, but in the United States the succeeding generation, born to immigrant parents, displayed a markedly lower rate of fertility. Nonetheless Roosevelt and many others envisioned a dystopia in which an older northern European stock was overrun by inferiors who could and would outbreed them. Lothrop Stoddard's bestselling polemic, *The Rising Tide of Color: The Threat Against White World-Supremacy* (1920), advanced the idea of a world eugenics designed to ensure that the white races would not be swamped by faster-breeding peoples. In a memorable if chilling phrase, eugenic sociologist Edward Ross described immigrants to America as "beaten members of beaten breeds." Eugenic claims that many of them carried hereditary conditions, mental and physical, meant that at Ellis Island and other entry points, overworked officials looked for signs of deportation-worthy defects among those awaiting processing.



9. Influenced by eugenic ideas, the anthropologist E. A. Hooton argued that criminality was innate, that it manifested in physical as well as mental characteristics, and that it was important to classify criminals by race. His book *Crime and the Man* (1939) claimed that the criminally insane are heavier than other insane people and that insane people tend to be shorter than the noninsane.

Views like those of Ross found sympathetic ears when prominent eugenicists testified before Congress in the early 1920s on proposed changes to immigration policy. Among them were Harry Laughlin and Madison Grant. Two acts in 1921 and 1924 imposed racial quotas based on a "National Origins Formula," designed to curb southern and eastern European entry. The effect was dramatic: where immigration in 1920 had exceeded eight hundred thousand, it dropped in 1921 to around three hundred thousand. The 1924 act capped annual immigration at 165,000, not including dependents. Potential immigrants were required to disclose whether they or their parents "had ever been in an institution, or hospital for the care and treatment of the insane," a clear nod to eugenic anxieties about hereditary mental deficiency.

Though Canadians, Mexicans, Haitians, Cubans, and Dominicans were expressly excluded from the provisions of the 1924 act, mostly because of seasonal labor needs in border states from Texas to California, crossing to the United States from Mexico involved mandatory disinfection and inspection procedures designed to stem problems related to hygiene and clearly shaped by eugenic ideas. As Latino immigration, in particular, grew, anti-immigrant sentiment acquired an increasingly eugenic voice. Writing to a Santa Cruz, California, newspaper in 1927, Charles Goethe, an avid eugenicist and a Sacramento real-estate broker, warned that the Mexican birthrate was rapidly swamping the Nordic. In an article two years later, he claimed that Mexican immigrants were "eugenically as low-powered as the Negro." Harry Laughlin agreed, claiming that Mexican immigrants were of low intelligence and carried diseases. Similar thinking prompted the Canadian Parliament in 1910 to forbid entry to a wide swath of those displaying mental retardation or illness as well as physical disabilities.

Eugenic thinking also shaped deportation and expulsion policies. Even before the quota acts of the 1920s, the United States routinely denied entry to potential migrants with communicable diseases as well as to those who performed poorly on IQ tests, while in Argentina consuls and immigration officers had wide discretion in excluding undesirable immigrants. In Hungary Galician Jews were repatriated after World War I for alleged health reasons. Harassment and expulsion of Romany and other itinerant peoples in much of Europe was justified on eugenic grounds. In some instances, however, eugenicists foresaw national competition for the best stock amid fears that the fittest were emigrating. Jon Alfred Mjøen claimed in 1914 that the best Norwegians were leaving for the United States while those migrants entering Norway were of inferior stock. Madison Grant saw it otherwise, complaining that "countries are now striving to keep the desirable people at home…sending the undesirables, especially the Jews, to America."

Across the broad spectrum of beliefs that eugenics accommodated, the range of opinion on all these issues was striking. At no point was there a single definitive eugenic position or set of definitions on which all could agree. No clear division between adherents of positive and negative eugenics or even across political lines characterizes debates around race, class, or gender, but their presence was inevitable and ineluctable. While there was agreement that reproduction was central, it was often understood in critically different ways. Yet for all this diversity, the pull to hierarchy and difference as defining human interaction and generation frequently won out over other systems of thought. As a result, eugenics often inclined toward harsher and more punitive policies that disproportionately affected minorities, the poor, and the marginal as well as women, based not just on questionable scientific grounds but on the willingness and capacity of individuals to conform to ideal behaviors. In general, that determination was grounded in expectations critically shaped by prevailing social standards, understood in biological rather than in social, economic, and cultural terms. For all its evocation of scientific rationality, eugenics could not escape the social worlds, deeply influenced by race, class, and gender differences, in which it was both forged and pursued.

Chapter 5

Eugenics after 1945

Eugenics, claimed Paul Popenoe and Roswell Johnson in *Applied Eugenics*, their 1918 college textbook, "was practically forced into existence by logical necessity…it demands the right to speak, in many cases to cast the deciding vote, on some of the most important questions that confront society." A later textbook, James Neel's *Human Heredity* (1954), spoke of the "lurid and disquieting history" of the eugenics movement, where "loose thinking," especially in Germany and the United States, had discredited eugenics, which, the author hoped, would soon re-emerge on a more reasonable basis. These markedly different perspectives in texts separated by some four decades trace the changing fortunes of eugenics. Neel's comments mark the change in the landscape after the prosecution of Nazi war criminals in the late 1940s deeply tainted eugenics. The criminal case against the Nazis did not spell the end of eugenics, though it did tarnish its reputation considerably. Latin eugenics, far more closely associated with welfare and health than with more prescriptive policies, adapted to the postwar mainstream more easily than hardline eugenics, which found itself associated, not always accurately, with the recent Nazi past.

The Nuremberg doctors' trial and its effects

Between 1945 and 1949, more than one hundred military, business, legal, and medical Nazi defendants were tried for war crimes by an international military tribunal in Nuremberg, a site chosen because it also had been the location of annual Nazi propaganda rallies. Beginning in December 1946, a tribunal, headed by the American judge Walter Beals, heard 139 days of testimony in what was called the Doctors' Trial, against twenty-three Germans accused of brutal human experimentation and murder. Sixteen were found guilty, and seven sentenced to hang for their crimes, but despite the gravity of Nazi scientific and medical experimentation in the name of eugenics and race hygiene, the prosecution's task was not always easy. The court had jurisdiction only over the war years and mostly focused on experiments carried out on prisoners in the 1940s rather than the eugenic sterilization and euthanasia policies preceding them. Eugenics was guilty largely by association and was not the focus of the prosecution. The judges concluded that the doctors (who made up twenty of the twenty-three defendants on trial) had violated ethical codes and distorted the ends of scientific research.

Eugenics had come to maturity and gained its popularity in an era in which consent for human experimentation was not yet universally accepted. Germany's murderous wartime activities were not unique, as the defense lawyers at Nuremberg were at pains to point out. The Nazis certainly took lack of consent to a violent extreme in their use of prisoners, but the principle of consent as inviolable only emerged in the wake of the trial. Nazi research did include eugenics and certainly used eugenics to justify many killings, but the trial was focused heavily on research using human subjects to test extreme conditions and new drugs for future use by the German military.

As well as passing judgment, the tribunal enunciated a ten-point statement, popularly known as the Nuremberg Code, intended to govern future scientific and medical research and especially to protect human subjects. Ironically, its most important and famous principle was originally part of a set of voluntary guidelines for human experimentation drawn up in Germany in 1931 before the

Nazi regime and never implemented. It limited the testing of children and demanded the “unambiguous consent” of experimental subjects. The Nuremberg Code likewise has always been voluntary and has no legal standing, representing an ideal rather than a mandate. The same is true of the Helsinki Declaration, first developed by the World Medical Association in 1964 as another ethical code on human experimentation; though widely adopted, it is not legally binding.

The Nuremberg trial, which helped associate eugenics with Nazism, punished only a fraction of those who participated in Germany’s wartime experiments on human subjects. A number of prominent eugenicists actively engaged in Nazi science evaded prosecution and remained active in scientific research. Fritz Lenz, head of the Kaiser Wilhelm Institute and a professor of racial hygiene during the Nazi regime, became professor of human genetics at Göttingen in 1946, and Robert Ritter, whose work had justified the killing of Romany and Sinta people even before the war, became a respected public health expert. Many held postwar positions in university genetics departments. Ernst Rüdin, author of Germany’s 1933 sterilization law, was stripped of his Swiss citizenship but beyond a small fine otherwise escaped punishment. He always insisted that his race hygiene work had won international acclaim and that its distortion under Hitler was not of his doing.

Eugenicists believed that theirs was a respected science appropriated and distorted by the Nazis, and that it could and should be rehabilitated. They pointed to the success of eugenic laws and policies in Scandinavia and especially in the United States. The post-1945 years thus saw not so much the demise of eugenic ideas and principles but their reworking and rewording. For many supporters, the chief concern in the postwar years was whether the term “eugenics” was now too tainted to be retained; far fewer questioned whether eugenic principles themselves might be the problem. Eugenic policies did not disappear in 1945, but they were almost everywhere renamed. The word “eugenics” all but disappeared, with a few notable exceptions.

Many eugenic institutions simply changed their names. The Swedish Institute for Race Biology was transformed into the Department of Medical Genetics at Uppsala University, while the Hong Kong Eugenics League, in keeping with its long-term emphasis on birth control, became the Hong Kong Family Planning Association. Carlos Blacker, head of the Eugenics Society in Britain, advocated what he called a “crypto-eugenics” to advance eugenic policies minus the label. Reluctant to concede a connection with Nazism, he nonetheless understood the need to distance eugenic aims from German fascism. Many scientists around the world continued to support eugenics, including prominent figures such as the Danish geneticist Tage Kemp and the British scientist Julian Huxley. Eugenics organizations were among the sponsors of the first International Congress for Human Genetics held in Copenhagen in 1956.

Population control

In the 1950s and 1960s, much of the attention of eugenicists was focused on the new political interest in planetary population control. A new vocabulary anchored by the prospect of a “population bomb” (the title of Paul Ehrlich’s bestselling 1968 book) emerged as it became clear that the technologies of World War II had improved both life expectancy and in some instances infant mortality. The advent of antibiotics and pesticides, nutritional gains derived from food rationing and more efficient agriculture, and success in minimizing debilitating diseases had added some 15 million to the Earth’s population each year of the war, a striking contrast to the devastating effects of World War I. That the most significant growth in population was in Asia and Africa amplified Cold War anxieties about political unrest and instability in these areas. Many saw burgeoning population as speeding the demand of colonies for independence from their European masters by exacerbating hunger and dissatisfaction. In a highly polarized political climate, the Americans and their allies feared that the resulting instability would open newly independent countries to Soviet influence. The lower birthrates now so well established in the developed world became synonymous with civilization.

By the late 1950s private and public money—from U.S. foreign aid, philanthropic foundations such as Rockefeller and Ford, the United Nations, and wealthy individuals such as physician Clarence Gamble (heir to the soap company Procter & Gamble)—poured in to birth-control programs and research. Gamble worked closely with Margaret Sanger and in the 1930s financed a number of pilot birth-control programs aimed at reducing family size among the poor. President Dwight Eisenhower told the U.S. National Security Council in 1958 that what was needed to secure the world was “an effective two cent contraceptive” that anyone could afford. The fear in the West was that relentless population growth would threaten living standards worldwide by putting pressure on resources. The new vision was of zero population growth, a replacement-rate strategy in which births and deaths balanced one another.

American economist Kenneth Boulding proposed in 1964 a system of marketable licenses entitling people to procreate, an idea since revived a number of times. In 1968, the Population Council (established in the 1950s with Rockefeller support) commissioned a family planning film from the Walt Disney Company. Starring Donald Duck and available in a wide array of languages, this ten-minute film aimed largely at audiences in the developing world celebrated the wisdom of family planning and, in the words of the Council, “attitudes favorable to the small family norm.” Nobel physicist and avid eugenicist William Shockley suggested cash incentives to encourage sterilizations among those with a low IQ.

On the whole, however, the new emphasis in population and reproduction was less concerned with feckless or substandard individuals threatening the body politic than with the large-scale effects of lower mortality and higher fertility. Birth control played a more prominent and widespread role than it had in earlier eras, even as the Vatican endorsed its longstanding opposition to abortion and birth control. True to its protean character, eugenics would shift its emphasis again as human genetics made strides, but in the 1950s and 1960s population organizations, official and voluntary, were staffed in large part by eugenics advocates, and global overpopulation was the overwhelming concern.

Alarm over burgeoning birth rates was not limited to the West. India and Pakistan sought to reduce population growth after the war. Family planning became official state policy in India in 1951. In 1958 a member of Parliament from northern India unsuccessfully proposed a law to sterilize those with “undesirable mental and physical conditions,” but when Indira Gandhi was elected to lead India in 1966, she set family planning targets at 6 million intrauterine device (IUD) insertions and 1.23 million sterilizations for the year. Within a decade her notorious mass sterilization campaign had made world headlines. Between 1974 and 1977, there were some twelve million sterilizations in India, of men more than women since vasectomy was quick and cheap. Government employees were under huge pressure to coax people to be sterilized, facing suspension or nonpayment of wages if they did not cooperate, or if they failed to meet government quotas. Teachers who declined sterilization could lose pay, and villages receiving irrigation waters risked having their water supply cut if they failed to meet local sterilization targets. People were offered small gifts such as tins of cooking oil and transistor radios in exchange for agreeing to sterilization. The campaign was hugely unpopular and secured the resounding defeat of Gandhi and her Congress party in 1977. Yet in 1983 the United Nations awarded her, along with Qian Xinzhong, head of China's State Family Planning Commission, its new Population Award, choices strongly reflecting widespread global concern with the effects of overpopulation.

Singapore's National Family Planning Programme, begun in 1966, also targeted population reduction, legalizing birth control and abortion in 1970. In 1972 the government introduced a two-child policy intended to maintain replacement-level fertility. It offered schooling and housing incentives alongside deterrents to further births. In the 1980s a decidedly eugenic change in policy focused on encouraging educated women to bear more children; by 1987 women with financial means were being encouraged to have large families. These were all strategies eugenicists had championed over many years. As early as 1918 Paul Popenoe and Roswell Johnson had warned of the dysgenic effects of women teachers (whom they called "superior persons eugenically") remaining unmarried, proposing remedies to encourage them to marry and procreate.

This mixed message promoting childbearing among some and discouraging it among others was a clear continuation of the eugenic policies of earlier eras. A concerted pro-natalist effort in the eastern European Soviet satellites in the 1960s did not extend to ethnic minorities, who continued to be reviled for their large families. In Czechoslovakia, Romany women faced forced tubal ligations both under the Soviet regime and after independence. Eager to encourage the right people to reproduce, Romania implemented a tax on childless Romanian adults over twenty-five in 1966, discouraging contraception and supervising pregnant women. Those with large families were entitled to better housing and larger rations as well as maternal leaves and sponsored childcare. The campaign was maintained for the quarter-decade Nicolae Ceauşescu was in power, and though unsuccessful in its aims had an adverse effect on women's rights with its promotion of maternity above all else.

Two years after Indira Gandhi was thrown out of office in India, China instituted a one-child policy and then, in 1995, a Law on Maternal and Infant Health Care (initially identified as a eugenic law) that made sterilization or permanent contraception a condition of marriage for those with heritable diseases and permitted abortion of fetuses with genetic defects. Those with conditions such as hepatitis or sexually transmitted disease were required to defer marriage until successfully treated. Although implementation remains weak and spotty, and in some places has been ignored, the law still exists.

In 1985 Peru, assisted by the U.S. Agency for International Development, outlawed abortion and sterilization, began providing contraceptives at no cost, and introduced sex education alongside guaranteed freedom of reproductive choice, all as part of a poverty-reduction scheme. They also undertook a vigorous sterilization campaign aimed largely at rural highland communities. As in India, state officials were pressured to meet quotas, and the result was that some quarter of a million women, mainly indigenous Quechua and Aymara, were sterilized between 1986 and 1988, often under coercive conditions. At the 1995 United Nations women's conference in Beijing, Peruvian president Alberto Fujimori hailed his policies as a feminist breakthrough, yet in practice this was a policy hauntingly similar to other racially targeted sterilizations so often favored by eugenicists throughout the twentieth century.

In Scandinavia, sterilization policies first implemented in the 1930s remained in force after the war, although far fewer were performed for eugenic reasons. In the United States, the Family Planning and Population Research Act of 1970 earmarked monies for family planning and lifted a ban on federal funding for sterilization. Although it offered broader access to family planning for less well-off families, it was also an opportunity for clinics to offer and even encourage sterilization. In practice, poor and minority women were often under considerable pressure to choose sterilization rather than less permanent methods of birth control. In 1973, three doctors at Aiken County Hospital in South Carolina told women patients on welfare that they would refuse to treat them after three births unless they agreed to a sterilization. Around one-third of welfare recipients giving birth in the facility that year were sterilized as a result.

A series of high-profile court cases publicized the continuing practice of non- or quasi-consensual sterilization in the United States. In 1973 the Southern Poverty Law Center filed the first of a number of lawsuits on behalf of two African American sisters, aged fourteen and twelve, regarded by clinic staff as mentally retarded and, in the case of the younger, physically disabled as well. The two girls were sterilized at a federally funded clinic in Alabama after their illiterate mother signed what she thought was a consent to birth control for them. Coming so soon after the revelations about the Tuskegee syphilis experiment (in which treatment for syphilis was withheld from four hundred black men in order to track the course of the disease in African Americans), also federally funded and also in Alabama, the case attracted considerable attention. It prompted lawsuits elsewhere from women who had been similarly treated: in North and South Carolina, in California, and in the Indian health services treating Native American women. So widespread was the practice of sterilizing women of color in the American Deep South that it was known locally as the “Mississippi appendectomy.” Echoing the practices of prewar eugenics, those sterilized were overwhelmingly from minority groups, and many were classified as mentally retarded. In North Carolina, around 40 percent of those legally sterilized were black.

In 1995 Leilani Muir sued the Canadian province of Alberta after taking IQ tests to prove that her sterilization as a “moron” was unwarranted. She won a substantial settlement, setting off a wave of some 750 similar lawsuits. In another case that recalls the splashy Cooper-Hewitt trial of 1936, a woman sterilized at the request of her mother when she was fifteen lost her bid to sue the judge who granted permission. Her mother had claimed she was retarded, but no further proof had been required before the procedure was approved. The case, *Stump v. Sparkman* (1978), which originated in Indiana, went all the way to the Supreme Court, which ruled that for technical legal reasons the judge who issued the sterilization order could not be sued.

More recently, the availability of contraceptive implants such as Norplant (introduced in 1991) has in the United States encouraged financial incentive schemes, paying women on public assistance to accept an implant and offering reduced jail time for convicted criminals willing to be fitted with one. In the early 1990s proposals in a number of states to tie welfare assistance to women's use of Norplant invited the prospect of mandatory birth control, linking eugenic thinking from an earlier era to new technologies.

Genetics, biology, and eugenics

The emphasis on transnational and global population currents may have been new in the postwar era, but the tactics deployed both to raise and to decrease births were familiar eugenic policies promoting prevention (negative eugenics) or encouragement (positive eugenics). With the rapid development of human genetics these old standbys were joined by new techniques to manipulate reproduction, the capacity to predict problems as well as sex before birth or even before conception, and the ability to intervene actively whether in vitro or in utero, in or outside the pregnant body. This alliance of biology and genetics is often known as reprogenetics.

Many critics charge that reprogenetic techniques constitute a contemporary eugenics. As far back as 1969 molecular biologist Robert Sinsheimer dubbed genetic engineering a new eugenics, acknowledging that "the ethical dilemma remains." A great deal of research in genetics and molecular biology concerns reproduction, and supporters claim that it offers a way to tackle reproductive decision making without the troubling actions of an earlier eugenics, and without the burden of contemporary values either. Yet advocates of eugenics have made a similar case throughout the history of the movement, insisting that a scientific approach to human breeding is value-free and neutral, grounded in fact and science. Genetic advances have, to be sure, in many instances contested claims made by early eugenicists; what we cannot know is whether current claims in turn will someday seem inadequate or even false. This is not to minimize the many benefits new research has to offer the field of reproduction, but rather to act as a reminder of a long and complicated history, one that has led sociologist Hilary Rose to call eugenics and genetics "conjoint twins" in an ironic echo of the twin studies on which a good deal of eugenic research has relied. Proponents of the new technologies offer a radically different interpretation than that proposed by Rose. Professors of social medicine Sheila and David Rothman, for example, reject any association between reprogenetics and eugenics, advancing the term "enhancement" as a better way to describe the prospects of genetic manipulation.

Genetic counseling on reproductive matters began shortly after the end of World War II. Early counseling techniques often relied on the same pedigree charts developed at the Eugenics Record Office in the heyday of eugenic research. In Sweden the first generation of counselors compiled similar genealogical information in the course of their work. The first genetics clinic in England, headed by eugenicist John Fraser Roberts, opened in 1946 at Great Ormond Street Hospital in London. Genetic counseling became a major part of prenatal and ultimately preconception care, especially in places where abortion was now legal. Preventing the birth of defective babies dominated the early years of counseling in the West, based on the belief that terminating fetuses with defects was in the best interests of all. In the late twentieth century disability advocates attacked that attitude, critiquing a worldview in which only the perfect baby had value and rejecting a meaningful distinction between the normal and the disabled. The resulting shift toward nondirective counseling is not shared throughout the world, and in many places counseling remains prescriptive, distinguishing desirable from undesirable babies.

Diagnostic amniocentesis (prenatal diagnosis of the genetic constitution of a fetus) opened the door to a greater application of genetics in reproductive care. The use of amniocentesis to detect fetal defects spread in the late 1960s, first in the British Isles and then in the United States. The procedure became safer when ultrasound to guide the needle became part of the procedure in 1972. Though widely available, cost was and is a factor that has limited its use in most of the world to better-off women. Another common application of genetic testing is the screening of newborn babies for hereditary conditions requiring immediate treatment, such as beta-thalassemia, phenylketonuria (PKU), and sickle-cell anemia. In PKU, a recessive metabolic disorder of the liver, sufferers lack an enzyme that helps metabolize phenylalanine, which occurs in many foodstuffs. High amounts of unmetabolized phenylalanine retard brain development, but this can be prevented by a low-protein diet with no or limited amounts of phenylalanine begun shortly after birth. Neonatal screening for PKU was widespread in many countries by the 1960s and was mandatory in forty-three American states by 1967. Today screening at birth for some twenty disorders is required in practically every American state, requires no parental consent, and enjoys wide acceptance.

Sickle-cell anemia, by contrast, offers a case study of how genetic screening can stir controversy. The red blood cells of those with sickle-cell anemia do not carry oxygen well, and the tendency to change shape (sickle) can block blood vessels, making the disease potentially quite dangerous. While sickle-cell anemia is found in a number of populations around the world, in the United States it has disproportionately affected African Americans, and early preventive schemes were thus focused on the black population. When state public health departments began requiring racially specific sickle-cell screening in the 1970s, black doctors and activists asked why screening was needed for an as yet incurable condition, interpreting these plans as racial targeting reminiscent of earlier eugenic practices. They also highlighted the critical distinction between sickle-cell disease and sickle-cell trait (in which an otherwise healthy individual carries the gene but is unaffected). The 1972 National Sickle-Cell Anemia Control Act erroneously claimed in its preamble that two million Americans suffered from the disease, when in reality there were only around one hundred thousand with the disease; the remainder only carried the trait. This misinformation set off a panicked response that hit black Americans hard. After four black recruits died during a high-altitude Army recruitment exercise in the early 1970s, the Air Force Academy disqualified sickle-cell trait carriers (until 1981), and many airlines either grounded or terminated staff with the trait. Insurance companies raised health insurance rates for carriers as well as those with the disease. In some states school attendance required sickle-cell screening (a policy that at the time of writing is being revisited with respect to child vaccination), angering black communities who saw the short-lived policy as discriminatory, pointless, and grounded in bad science.

Yet screening programs in some regions have enjoyed considerable success. Cyprus, where beta-thalassemia (like sickle-cell anemia, a recessive gene disorder) is highly prevalent, has developed a remarkably successful approach to screening. With the support of parents, a public information campaign in 1972 on the Greek side of the island aimed to prevent the birth of afflicted children through genetic screenings and counseling. When fetoscopy testing became available in 1977, the overwhelming majority of women chose to test and also opted to terminate affected fetuses. Encouraged by the decrease in beta-thalassemia births, Turkish

Cyprus introduced compulsory premarital screening in 1980. The policy had clear eugenic roots but was tightly directed to one well-understood condition for which there was a practically foolproof test, nullifying charges of discrimination. After negotiations with Orthodox Church leaders, in which supporters argued that screening and counseling would over time reduce rather than increase the rate of abortion, the Greek side of the island followed suit in 1983. The Cypriot program has been hugely successful, essentially stamping out beta-thalassemia in a short time. The Cypriot policy does not forbid marriage between carriers; its only mandatory element is screening. Parents opposed to abortion have since 1999 had access to preimplantation diagnosis in which the embryo is screened at no cost. Interestingly, attempts to emulate the Cypriot model in Greece, also affected by the disease, have ended in failure.

Some elements of the Cypriot scheme have been adopted in Israel, where genetic reproductive technologies are available at little or no cost to patients. Premarital screening is elective but uptake is high, and abortion carries minimal stigma among non-Orthodox Israeli Jews. (For Muslims, Islamic law does not wholly forbid abortion in the first 120 days of a pregnancy.) The state covers abortion costs in some cases (including fetal defects) and also pays for in vitro fertilization treatments for up to two children, as well as embryo transfers for gestational surrogacy. Contemporary Israeli policy is thus explicitly pro-natalist as well as heavily reliant on new genetic work that targets the prepregnancy period as a way to improve birth outcomes.

Another successful screening program is that of the American-based Dor Yeshorim organization (Generation of the Upright). In 1983 it began offering tests for the autosomal recessive Tay-Sachs gene, more prevalent among Ashkenazi Jews than other populations, in an attempt to prevent marriages between two carriers. The organization now screens in eleven countries for some sixteen recessive conditions, and on its Web site indicates the importance of facilitating healthy marriages, an emphasis clearly linked to eugenic aims.

By testing embryos in vitro for genetic defects, the development of preimplantation genetic diagnosis (PGD) in 1990 allowed parents to choose whether or not to proceed with a pregnancy. Unlike amniocentesis, PGD also reveals the sex of the baby and has been banned for purposes of sex selection in some countries with a long-held preference for male children. The ban in India, beginning in 1996, has been widely flouted, and in many places the female infanticide common in earlier eras is rapidly being replaced by embryo choice among those who can afford the test.

Genetic technologies have thus made possible not just treatment and prevention of diseases and defects but also reproductive enhancement, allowing an element of choice in the genetic makeup of future children, at least among the affluent. This was, of course, the dream of the eugenics movement. Proponents hail these new techniques as a means to diminish human suffering, some even arguing that since the technology exists, humans have an obligation to enhance, not just to heal. Many, such as molecular biologist Lee Silver, advocate that reprogenetics should be constrained only by the marketplace. For the Rothmans, what's at stake is "allowing science to set its own agenda . . . allowing happiness to drive clinical care . . . allowing profit motives almost unbounded license, and allowing individuals to exercise autonomy and choice." Optimists contend that there should be no obstacles for those who can afford to enhance their unborn child. In his tellingly named book *Remaking Eden*, Silver takes the position that our willingness to accept "the parental prerogative after birth" makes it illogical "to argue against it before birth."

In 1998 the American Society of Human Genetics issued a statement opposing coercion in reproductive choice. The following year a paper by a group of bioethicists entitled "What Is Immoral About Eugenics?" called compulsion and coercion "morally objectionable." They maintained that true equality consisted in making "eugenic choices ... available to all who desire." No harm, they claimed, would arise from parents choosing the hair color of a child, or its skill sets. In their view, it was little different than raising a child with particular values or beliefs. Eugenics was not the problem, but rather its misguided application.

While Silver, the Rothmans, and others thus advocate for the principle of individual choice, philosophers Julian Savulescu and Ingmar Persson claim that parents have a responsibility to select the best children and that what they call "moral enhancement" is central to human survival. Bioethicist John Harris contends that a woman who suspects her unborn child may have a genetic disorder and does not seek prenatal testing is guilty of moral negligence. Harris does not shy away from an association with eugenics and argues forcefully that disability is both an inferior way of life and increasingly avoidable, thanks to advances in biological knowledge.

It was attitudes similar to these, along with growing sophistication of genetics techniques, that prompted a revival of the interwar vision of artificial insemination. Herman Muller himself returned to the idea in the early 1960s, mainly as an antidote to his growing concern about what he termed genetic load. Muller's "load of mutations" posited that medical intervention as well as welfare provisions made defective genes less likely to be eliminated early. As a result, the human genetic load (the incidence of bad genes in the population) would rise, and he predicted it also would speed up the rate at which new mutations appeared. The results, he calculated, would be a sicklier and feebler population in some eight generations, further hastened by increased radiation exposure. Linus Pauling, twice a Nobel laureate and a prominent sickle-cell researcher, shared Muller's concern that the human mutation rate was growing under the double burden of medical intervention and ionizing radiation, as did William Shockley.

Muller's solution was twofold and still substantially eugenic: decrease reproduction among the high-load population and simultaneously nurture those with the best genes. It was in this context that his idea of eutelegenesis re-emerged as a means to achieve stable equilibrium by encouraging reproduction among the well-born. Spurred by the successful freezing of sperm in the early 1950s, he advocated what he now called germinal choice. As so often happened, funding came from a wealthy individual, in this case a Californian eyeglass lens manufacturer, Robert Graham. The project got nowhere during Muller's lifetime, not least because he and Graham did not share the same ends for the scheme, but after Muller's death Graham founded the Repository for Germinal Choice in 1971, collecting and freezing only the sperm of Nobel laureates, and filling his advisory board with outspoken eugenicists such as Raymond Cattell. Graham's elitist venture raised eyebrows and was abandoned in 1999, but sperm banks have since become a part of the reproductive landscape, with Denmark and the United States the leading providers. Sperm from those with sought-after talents or other desirable characteristics is more expensive, despite the knowledge—repeatedly ignored for generations by eugenic enthusiasts—that births will in time regress to the mean.

Opposition

Antagonism to the reproductive possibilities engendered by new genetic techniques has focused on many issues. Critics charge that the quest for embryonic perfection potentially increases discrimination against the disabled and that children might be harmed by an unreasonable raising of parental expectations. Others claim that the rarity of genetic disorders makes widespread embryo screening extravagant. The vast majority of scientists now see genetic makeup as only one component in disease propensity, and many express concern that an overemphasis on biological factors underestimates the role of economic and social conditions. Geneticists Lionel Penrose and Theodosius Dobzhansky had made this point before World War II, urging that identifying good and bad genes required environmental context. The sickle-cell gene is a good example of their findings; in its heterozygous trait form it offers resistance to malaria, so rather than being an uncomplicatedly "bad" gene it confers distinct advantages in particular environments. Recent critiques like these are reminiscent of those aimed at eugenics earlier in the century questioning its grasp of the science.

Novels such as those by Aldous Huxley and Yevgeny Zamyatin depicted eugenics as a joyless quest for state efficiency in which humans existed almost exclusively as functionaries fulfilling designated tasks. That reading of the eugenic vision remained strong after the war. In his satirical look at the future, *The Rise of the Meritocracy* (1958), British sociologist Michael Young described a well-run, bloodless, and efficient future in which citizens are required to carry a National Intelligence Card indicating their intellectual status. The body issuing these cards is the all-powerful Eugenics House. Postwar science fiction has frequently drawn genetically engineered characters whose humanity is never quite fully realized, implying a dystopic future through genetic engineering.

Race and genetics

One of the major criticisms of genetics, as of an earlier eugenics, continues to focus on the contentious issue of race. Since the 1940s prominent scientists have issued a series of declarations about the relationship between race and science. The first came in 1939 when thirty-two of the leading names in genetics signed what became known as the Geneticists' Manifesto. This statement denied any biological basis to race while retaining a place for eugenics as an instrument of social good, signaling support for birth control and calling for the alleviation of poverty and hunger. One of its signatories was Julian Huxley, first director of the United Nations Educational, Scientific and Cultural Organization

(UNESCO) after the war. In 1950, under his leadership, UNESCO issued a statement to the effect that race was a social myth, not a biological phenomenon. It was not well received among scientists, for whom no such consensus then existed; some objected to what they understood to be an anti-eugenic element in the text. UNESCO would issue another statement half a century later, in 1995, that also declared that race had neither utility nor legitimacy in biology. While contemporary mainstream science denies a biological basis for racial difference, the debate is far from over, and activists often see in population genetics leftover notions of race robed in a new vocabulary.

The persistence of race research in genetics, say critics, does little to distance newer research from an earlier eugenic preoccupation. That race continues to operate as a variable can be seen in the turn that coercive sterilization has taken since 1945, aimed above all at poor and minority women. Racial difference also continues to be used as an explanatory factor in the metrics of intelligence. The association of both intelligence metrics and sterilization with eugenics is inescapable. In 1969 Arthur Jensen claimed that intelligence was mostly determined by genetic factors, and that those of African descent scored lowest in intelligence tests, just as Brigham, Terman, and others had claimed a half-century earlier. Jensen thought it reasonable to hypothesize that "genetic factors are strongly implicated in the average Negro-white intelligence difference," although he did not wholly rule out environmental factors. His mentor, the British psychologist Hans Eysenck, agreed, claiming whites constituted a superior intellectual race.

Jensen, Eysenck, and their followers gathered together in the International Institute for Advanced Race Research, whose journal, *Mankind Quarterly*, offered an outlet for work that was increasingly unpublishable in mainstream scientific journals. The IIARR was yet another of the eugenic organizations reliant on the generosity of a wealthy individual: Wickliffe Draper had a long history of funding eugenics projects. He had bankrolled “race-crossing” studies in the interwar years and founded the Pioneer Fund in 1937 to support “race betterment” studies. The fund continues to support similar research today and is associated with a body of work that many commentators see as both racist and eugenic. It was among the benefactors of California’s 1994 Proposition 187, which barred undocumented immigrants and their children from receiving state services. In the 1950s it also helped the House Un-American Activities Committee demonstrate the inferiority of African Americans who, the organization recommended, should be repatriated to Africa.

Studies such as Jensen’s appeared at a moment when laws and policies based on eugenics were in the spotlight. The repeal of compulsory sterilization laws in the United States and Canada began in the 1970s. Switzerland apologized in the 1980s for the removal of Yenish children from their families. In 1996 Sweden began offering reparations to those who had been compulsorily sterilized, and a slew of American states issued formal apologies for their sterilization schemes in the early 2000s. Yet much of this was happening even as minority and poor women worldwide continued to be sterilized without their consent or under duress. Eugenic ideas might have been publicly derided, but associated policies often endured even as new technologies made hitherto impossible dreams of manipulating reproduction a reality. Concerns with heritability did not disappear; the new emphasis on genetics ensured their survival. Misplaced notions of genes determining sexual preference or particular skills remain popular and tenacious, and scientific research continues to probe the relationship between genes and the environment. While their emphasis may differ, most scientists acknowledge interaction between nature and nurture in explaining inheritance.

The road ahead

Eugenics began as a means to control reproduction by preventing birth in some instances and promoting it in others. These principles have remained intact in the postwar era of genetic discovery but have been joined by options to manipulate and to predict reproduction. As an increasingly sophisticated reprogenetics permits greater control over human reproduction, the emphasis has shifted to who controls decision making. In the eugenic heyday of the 1920s and 1930s the "common good" was frequently invoked as a justification for all manner of restrictions on parenting, immigration, and freedom of movement. The "nation" or the "race" took precedence over individual liberties in diverse political climates. The excesses of Nazi Germany made many rethink that stance, although state-level interventions have by no means vanished in the former eastern bloc, in the Americas, and in major Asian nations.

In 2011, for example, the Indian state of Rajasthan began offering significant incentives to those who agreed to sterilization in a scheme the BBC dubbed "cars for sterilisation." Rajasthan is not alone in using consumer goods as an incentive to family planning, suggesting a new emphasis on what we might call a consumer eugenics. Not only might individuals benefit from material goods in exchange for reproductive actions, but individuals and couples can utilize a growing array of genetic options in managing their own reproduction. Whether choosing preimplantation diagnosis to avoid fetal defects or opting for screening, clinics across the world from Kuwait to Kansas, India to Iceland, offer a range of reproductive choices bearing directly on what kind of a child a parent desires. Options may include sex determination and intelligence, though at present cognitive and physical disabilities remain the principal focus. Consumer eugenics also offers the outsourcing of reproductive labor; where wealthy women in earlier centuries employed wet nurses to breastfeed their infants, today surrogacy is a way for women in poor nations to earn a living wage.

These technologies and opportunities have changed the landscape of reproduction in profound ways, as have other important historical currents in the past half-century or so. The population anxieties of the Cold War era, the resurgence of feminism, the sharp intensification in consumerism, and the fast pace of globalization have all played a role in shaping the increasingly individual choices made possible by reprogenetics.

Far from disappearing, critics have noted with dismay a regeneration of eugenics in new social formations as well as in genetic research. Sociologist Dorothy Wertz conducted a survey in 1998 on ethical issues in medical genetics. The questionnaire she distributed to some three thousand genetics professionals in thirty-six countries avoided use of the tarnished term "eugenics" but asked questions about mandatory sterilization, counseling around fetuses with a genetic condition, and the place of disability in society. She found broad approval for parental choice, but also a strong conviction that parents should demonstrate social responsibility. She also found that counseling in many places was "purposely slanted" and "sometimes accompanied by openly directive advice" and predicted that as "genetics becomes part of general medicine, there will likely be greater directedness."

It is safe to say that eugenics did not disappear after World War II. It may not be practiced in the same way, and there is no reason we should expect it to be so in light of advancing technologies. But the urge to improve, to direct, and to control human reproduction in an age of genetic expertise is unlikely to see eugenic desires and aims dissipate. As has always been the case with eugenics, it remains a movement of considerable diversity, yielding a variety of views and positions, many of them truly benevolent in intention if not always in application. Most striking, perhaps, in modern eugenic practice is the emphasis on individual choice and consumer preference. Earlier eugenics looked in large part to the state for implementation (though much of its funding remained private), while today's eugenics has diminished state involvement and focuses increasingly on individual choice. Proponents of the new reprogenetics hail the prospect of individuals choosing to enhance and improve their offspring, undoubtedly an exciting opportunity, but seldom spare much thought for the impact of the world of consumer choice on those without the means to participate. Whether a fully noncoercive eugenics is possible in the age of the consumer remains to be seen, but we would do well to remember the human cost of so many earlier eugenic practices, and the uncanny tendency of that burden to fall heavily on the shoulders of those who could least afford or fight it.

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