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The Origins of Scientific Racism

John P. Jackson Jr. and Nadine M. Weidman

Editor's Note: After the publication of Darwin's Origin of the Species, scientists promptly developed theories of genetic racial inferiority. Scientific racism, which was widely accepted, led to the field of eugenics which ultimately resulted in the sterilization of thousands of black Americans and culminated in the murder of 6 million European Jews.

DESPITE CHARLES DARWIN's idea that there were no fixed divisions between species, let alone races, polygenist notions of race, which assumed that the divisions between races were ancient and fixed, thrived in the new evolutionary thought. Moreover, the idea articulated by Herbert Spencer, that evolution was a struggle between races rather than between individuals, became a dominant fixture of twentieth-century racial thought. Finally, the notion that there were several European races, such as those sketched by William Z. Ripley, would begin to loom large in the twentieth century.

Evolutionary thought grew into a significant ideology that can be called "scientific racism" at the end of the nineteenth and beginning of the twentieth century. Scientific racism was the result of two lines of scientific thought merging. First, new ideas about heredity provided an explanation of the way traits could be held stable for generation after generation. Second, ideas flowered about the supremacy of the north European races — what was called Aryanism or Teutonicism in the nineteenth century and Nordicism in the twentieth. These two lines of thought were conceptually distinct. That is, one could firmly believe in the notion that heredity was fixed and immune from environmental influences while rejecting the idea that the Nordics were the supreme race. Alternatively, one could believe in Nordicism and reject the findings of modern science regarding heredity. However, among some thinkers these two ideas joined in the eugenics movement and changed how the Western world thought about race.

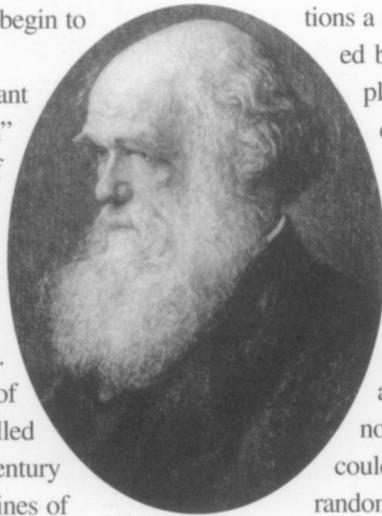
The Problem of Heredity

After the publication of *On the Origin of Species*, Charles Darwin needed to answer a strong objection to his work: how were the characteristics that allowed organisms to survive transmitted from generation to generation? Natural selection turned on the idea that tiny advantages could accumulate in an organism's line of descent, but Darwin had no

mechanism that could explain this process. Indeed, most ideas about heredity argued that it would be impossible for characteristics to be transmitted down the generations.

There were two fundamental problems. The first was "blending" inheritance. Darwin's theory depended on a beneficial trait in a parent generation being transmitted, more or less intact, to the offspring generation. The problem was that the dominant theory of inheritance did not allow for the survival of a trait in this fashion; rather, in succeeding generations a favorable trait would eventually be obliterated by other traits over time. So, if tallness of a plant was a beneficial trait, and two tall plants crossed to produce offspring, the offspring would not be as tall as the taller of its two parents but would be midway in height between the two. In artificial selection, the breeder could control crosses to ensure that a specific trait was selected for. However, Darwin's natural selection did not allow for a guiding hand in this manner. Hence, it was not clear exactly how an advantageous trait could be passed down without being swamped by random crosses with inferior types.

In a famous review of Darwin's *On the Origin of Species*, Fleeming Jenkin put the case for blending inheritance in explicitly racial terms. Jenkin argued that a white man who was shipwrecked on an island inhabited by Negroes would naturally rise to become their king. However, his natural superiority over the savages would not last through generations as the superior white qualities would be swamped by the inferior Negro stock. "Can any one believe" asked Jenkin, "that the whole island will gradually acquire a white, or even a yellow population, or that the islanders would acquire the energy, courage, ingenuity,



Charles Darwin

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patience, self-control, endurance, in virtue of which qualities our hero killed so many of their ancestors, and begot so many children; those qualities, in fact, which the struggle for existence would select, if it could select anything?"

To deal with the problem of blending inheritance, natural selection needed a mechanism that would allow for beneficial traits to be passed to succeeding generations intact and there was no clear idea what that mechanism could be.

The second problem natural selection faced was the inheritance of acquired characteristics. In the late twentieth century and continuing now into the twenty-first, the accepted idea is that heredity is largely isolated from environmental influences. In the nineteenth century, most ideas about heredity did not distinguish so sharply between heredity and environment. Indeed, such a distinction made little sense given widespread ideas about how an organism's characteristics were formed by the environment and passed along to subsequent generations. Most learned people of the nineteenth century believed in the doctrine of "inheritance of acquired characteristics." Most often associated with the French evolutionist Jean Baptiste de Lamarck (1744-1829), the doctrine taught that environmental pressures change the physical nature of an organism and that these acquired characteristics were inherited by subsequent generations.

In this view, an organism acquired traits through interactions with the environment and passed those changes to offspring. Thus, there was no sharp distinction between heredity and environment. Even Darwin argued for a version of the doctrine of the inheritance of acquired characteristics when he put forth "pangenesis" as the mechanism by which characteristics were passed from generation to generation. Darwin argued that there were tiny particles that cells dissipated through the body and passed into the offspring. Because each part of the body manufactured its own particles, the environment could directly affect heredity as changes in bodily form that owed to the environment would be transmitted to the offspring. Darwin's theory of pangenesis gained few adherents and quickly disappeared

as a mechanism for heredity after Darwin's death; however, most scientists continued to accept that traits acquired through environmental influences could be inherited biologically.

Francis Galton

Most British intellectuals in the 1830s dismissed the utopian schemes of William Farr and others who argued for controlled breeding, but they were taken up by Darwin's cousin, Francis Galton (1822-1911). Galton coined the phrase "nature versus nurture" and he came down strongly on the side of nature.

Galton's early life and upbringing was much like his cousin's. He was born into a wealthy family and expected to become a physician. Also like Darwin, he was miserable at medical school. He was spared from completing his medical education by his father's death in 1844. Upon inheriting the family fortune, Galton was free to pursue his interest in natural history.

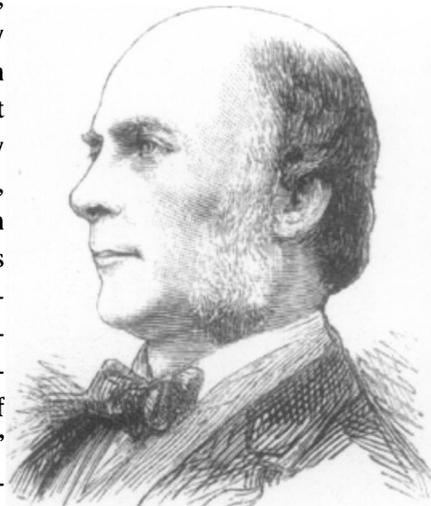
The kind of science Galton produced exemplified a widespread understanding in Great Britain about what counted as good science. Galton claimed to be a strict adherent to induction, the form of reasoning that moves from specific instances to a general rule. Following the philosophy of science

laid down by Francis Bacon (1561-1626), most nineteenth-century British scientists argued that a good scientist proceeded by induction, gathering as many facts as possible without any theory or general principle that might prejudice a neutral and objective view of these facts. Darwin, for example, made

much of his inductivist principles in *On the Origin of Species* although historians have shown that Darwin clearly had his theory of natural selection in mind

and he set out to find examples to help him prove it.

Galton, however, seemed to be an avid inductivist who was convinced that the road to science was collecting and tabulating as many examples as possible. For Galton, the inductivist method helped him sidestep the central problem of the mechanism of heredity. Galton argued that we did not need to know the mechanism of heredity to see its effects. We could observe and enumerate how traits passed from generation to generation while remaining agnostic on the actual



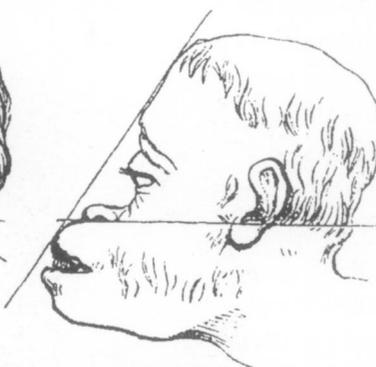
Francis Galton

"Galton believed that Negroes were at least two grades below Anglo-Saxons in ability and intelligence."

mechanics of how this occurred. In other words, as long as we could see the effects of heredity, we could control its deleterious social impacts.

The most gifted protégé of Galton, and a key figure in promoting Galtonian views of heredity and science, was Karl Pearson (1857-1936), who set out his views about science in an influential work, *The Grammar of Science* (1882). For Pearson, a good scientist avoided all speculation about unobservable entities and focused only on directly sensed evidence. Pearson argued that there was no point in trying to uncover the “real” causes of anything in science; they were, in principle, unknowable.

However, the scientist could apply mathematics, in particular statistics, to scientific phenomena without actually committing to the existence of an underlying causal agent. In other words, if statistics showed that heredity worked in a particular manner, then the scientist’s work was done.



In the nineteenth century cranial measures were used to establish that Negroes were at least two grades below Anglo-Saxons in ability and intelligence.

The idea that the scientists should focus only on biological traits that could be directly measured and tabulated became known as biometrics. Pearson founded the journal *Biometrika* in 1901, which became the main outlet for statistical studies of the physical traits of organisms. This view of the sufficiency of statistical constructs to explain scientific phenomena would continue on into the twentieth century, particularly in psychometrics and IQ testing. Galton and Pearson are correctly seen as the founders of this approach and both contributed key ideas to the science of statistics.

One of Galton’s most famous works makes his approach clear and underscores the social motivations of his work. In *Hereditary Genius*, published in 1869, Galton undertook a statistical analysis of “men of genius” in the United Kingdom. His book attempted to rank the geniuses in the country in order to determine if mental ability was inherited and concluded that it was. For Galton, society should take steps to ensure the emergence of more geniuses and fewer of lower intellectual ability. Galton believed that improving the race meant that the government should encourage breeding among the best people and take steps to keep the superior stocks from mixing with inferiors. The death of classical

Greek civilization, for example, owed to the lax morality that discouraged marriage and to women of high ability refusing to become mothers. Additionally, “in a small sea bordered country, where emigration and immigration are constantly going on, and where the manners are as dissolute as were those of the Greeks . . . the purity of a race would necessarily fail.”

Galton did not shy away from racial interpretations of his data. He believed that Negroes were at least two grades below Anglo-Saxons in ability and intelligence. “Every book alluding to Negro servants in America is full of instances” of the

half-witted nature of the race, he wrote. “I was myself much impressed by this fact during my travels in Africa.” Like Spencer, Galton believed that the inferior races were losing the evolutionary battle for existence in the face of their superior European conquerors. Galton also argued for a social program that would prevent the

same fate for England, and he was very concerned about the low level of the common English population. “It seems to me,” he concluded, “that the average standard of ability of the present time should be raised” because “the needs of centralization, communication, and culture call for more brains and mental stamina than the average of our race possess.”

Hereditary Genius drew mixed reviews from the English press in the 1870s. Many scientists appreciated Galton’s sophisticated statistical technique but many religious reviewers objected to his unapologetic naturalism, which seemed to leave no room for God’s grace or people’s control over their own salvation. Many reviewers criticized Galton’s assumption that heredity and not environmental factors was the cause of genius, an idea that cut against most of the common thinking of the time. Galton argued that the numbers showed that the hereditary material was somehow immune from environmental influences, an idea that belied widely held ideas about the inheritance of acquired characteristics. But evidence for Galton’s view would soon be forthcoming from German cytologists — scientists who study cells. However, Galton and Pearson would not necessarily appreciate the new evidence.

Hard Heredity

The move from “soft” heredity, which drew no sharp distinctions between heredity and environment, and “hard” heredity that did, had two scientific components. First, by the 1880s, advances in the microscope led cytologists, particularly German ones, to many new scientific discoveries: the nucleus of cells, for example, and the process of mitosis, wherein cells divide. In the 1880s several German cytologists, including August Weismann, Moritz Nussbaum, Oscar Hertwig, and Albert Kolliker put forth a number of new ideas that joined these discoveries in cytology to inform scientific understanding of *Vererbung* or heredity.

Although most late-nineteenth-century Germany cytologists had similar findings and arguments, the most famous contribution was that of August Weismann, who argued that the body actually contained two kinds of cells. Most of the body was made up of somatic cells. Germ cells, by contrast, were found only in the gonads and produced the sperm and egg. Germ cells were the units of heredity and, unlike somatic cells, were immune to environmental influences. This separation of germ cells from somatic cells required a drastic reorientation of the common attitudes toward the body and reproduction. In Weismann’s view, the body and all of its somatic cells were merely the conveyors of germ cells. The body did not really produce germ cells, it just transmitted them, unaltered, from generation to generation. This Weismann called the continuity of the germ plasm.

Weismann believed that his theory meant the death of the theory of acquired characteristics. In a rather grisly experiment, he cut the tails off mice, generation after generation. Yet each time a new generation of mice was born from mutilated parents, they were born with tails. Weismann pointed to this as proof that germ plasm was immune from environmental influences and acquired characteristics could not be transmitted from generation to generation.

The second major contribution to the new notion of heredity came from the work of the Austrian monk Gregor Mendel (1822-1884). In the 1860s Mendel published a paper that argued that characteristics of pea plants were preserved

as they passed down through generations. When he crossed tall pea plants with short pea plants, the resulting offspring were not medium in height but were almost uniformly tall. Mendel could calculate the ratio of tall with short pea plants and found that inheritance was always in a 3:1 ratio. Mendel argued that this could be explained by supposing that the units of inheritance, what he called “factors,” existed in pairs in the plants. Crossing these factors brought mathematically precise and very predictable patterns of inheritance. Mendel published his work but it was ignored in the 1860s and for

three decades afterward. But on the eve of the twentieth century, when many scientists were looking for a new theory of heredity, they found Mendel’s explanation very promising. Mendel’s ideas dealt a serious blow to the theory of “blending” inheritance just as Weismann’s work had to the theory of acquired characteristics.

There was no firm consensus over these issues at the dawn of the twentieth century. The biometri-

cians, Galton’s followers, did not immediately appreciate Mendelism because biometrics focused on continuous rather than discontinuous variations. Pearson, in particular, objected to Mendelism because of its focus on discontinuous variations. It also violated his views on the place of unobservable entities in science with its talk of unobservable “factors” that caused these variations. Additionally, Lamarckians, particularly in France, resisted Weismann’s theories of the continuity of germ plasm.

Nonetheless, the new scientific ideas had important implications for the development of racial ideologies. The notion that heredity was everything and environmental factors could not change the essence of a person’s talents and abilities certainly resonated with racist notions that there was some inherited racial essence that could not be erased by education or civilization. To see how racial themes blended with the new ideas about heredity, we first need to look at the developing ideas about race among social thinkers.

The Rise of Nordicism

William Z. Ripley’s tripartite division of Europeans into Teutonic, Alpine, and Mediterranean races in 1899 was wide-



ly accepted even though no one could find a pure example of any of these races. A significant group of writers believed the most superior of the three was the Teutonic race, which was also called the Aryan race in the nineteenth century and came to be called the Nordic race in the twentieth.

The Nordicists added several important ideas to racial ideology. First was the notion that civilization itself was the product of race, and many Nordicists devoted their work to discovering the Nordic nature of all great civilizations of the past. The belief in Nordic superiority was not new at the end of the nineteenth century. Many writers in the United States before the Civil War trumpeted the superiority of the Teutons. The ancient Roman historian, Tacitus (ca. 55-120), expressed admiration for the Teutonic tribes who lived north of what Tacitus considered a decadent Rome. Many writers in the United States in the early nineteenth century took Tacitus' writings as proof that democracy as a form of government was actually an ancient practice that began in the woods of ancient Germany. These writers used this theory of the "Teutonic origin" of democracy as proof against conservative critics who argued that democracy was an inherently unstable form of government. Not so, they argued: democracy originated in the German tribes with their primitive parliaments and protorepresentative government and was therefore an ancient form of governance rather than an untested theory. The Teutonic tribes of Angles and Saxons brought this heritage to England; it then crossed the Atlantic to the United States. Hence, democracy was in some sense part of the racial heritage of the Germanic people who settled in the United States.



of the United States, writer Edward A. Freeman argued that there were three homes of the Teutonic race: the United States, England, and Germany. These nations, Freeman argued, should put their differences behind them, for they could surely rule the world. The division between superior Anglo-Saxons and inferior Celts as well as other lower races was succinctly stated by Freeman: "The best remedy for whatever is amiss in America would be if every Irishman killed a Negro and be hanged for it."

Comte Joseph-Arthur de Gobineau (1816-1882) gave one of the most widely read and elaborate defenses of the Teuton. Gobineau was from an aristocratic French family and was a firm believer that the aristocratic elite had always ruled the masses through their protection of virtue and honor as had the ancient Teutons. In the modern age, the

masses had risen and destroyed the natural order. Gobineau pointed to the political turmoil of the French Revolution wherein the ruling classes had been overrun by the masses.

Both the central ideas of Nordicism — that race was the basis of all civilization and that race must be the basis of political order — came together in Gobineau's most extended treatment of race, the *Essay on the Inequality of the Races*, published in four volumes between 1853 and 1855. Gobineau was not concerned with biology as much as history and linguistics. He affirmed the widely accepted division of the races into white, black, and yellow, and introduced the idea that civilization itself was based on race. The white race, which Gobineau called the "Aryan" race, was the only one capable of creative thinking and civilization building. The downfall of such great civilizations as Egypt and Greece owed to the commingling of Aryan blood with that of the lesser races.

The Supremacy of Nordics

Houston Stewart Chamberlain (1855-1927) followed and extended Gobineau's theories. Although he was English by birth, Chamberlain was a fervent admirer of Germany, moving to Bayreuth, Germany, at the end of the nineteenth century. In 1899 Chamberlain published *Foundations of the Nineteenth Century*, which laid out his racial ideas in full. Like Gobineau, Chamberlain believed that race was the key

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The second contribution of the Nordicists to racial thought was the claim that race, not nation or political alliance, was the basis of social order. In the late nineteenth century, the defense of democracy became deemphasized in favor of more general arguments that the very capacity for civilization was racial in nature. In the 1880s, during a lecture tour

to all of history and the only truly creative race was the Aryan. Much of the *Foundations* is devoted to showing that all great historical figures were, on close examination, Aryan. For example, Marco Polo, Copernicus, Galileo, and especially Jesus Christ were Aryans in Chamberlain's account.

"Man can breed from the best, or he can eliminate the worst by segregation or sterilization."

Both Gobineau and Chamberlain were, in some significant sense, "racial mystics." Their discussion of the great Teutonic race was shot through with talk of German blood that mystically bound all Teutons together with a racial soul. Although Chamberlain accepted all the anthropological evidence for the existence of the Teutonic/Aryan/Nordic race, for him the reality of race turned on a spiritual sharing of the "race-soul." Hence, the importance of Chamberlain placed on the supposed Aryan identity of Christ can be understood as an embrace of a mystical racism that had a spiritual, not materialistic, core.

The Founding of Anthroposociology

A French writer, Vacher de Lapouge (1854-1936), firmly and forcefully rejected racial mysticism. Lapouge was the founder of a science he dubbed "anthroposociology." He was a tireless correspondent and organizer within the scientific community (he provided William Z. Ripley with photographs for Ripley's *Races of Europe*, for example). Lapouge was one of the first to successfully develop a full-blown version of scientific racism. Lapouge grounded his theories of race firmly in Darwin rather than in some mystical "racial soul" and this would have profound influence on twentieth-century racial theories.

Lapouge's theories were developed most fully in two works: *Social Selection* (1896) and *The Aryan and His Social Role* (1899). For Lapouge, the key racial marker was the cephalic index, which anthropologists had used to divide the European population into different races based on the shape of their heads. Lapouge tied the index not just to head shape but also to a range of socially desirable characteristics.



He was the champion of the dolichocephalic Aryans, long-headed, blond, blue-eyed, creative, strong, and natural leaders. By contrast, brachycephalic types were round-headed, dark-skinned, and timid. "Brachies," as Lapouge called them, were natural followers who did not have the imagination necessary to create and lead. Lapouge's "Dolichos" dominated northern Europe, England, and Germany. Additionally, Lapouge followed Gobineau in arguing that the French Revolution had destroyed the ancient aristocracies, which, according to Lapouge, had been dominated by Dolichos.

An outspoken atheist, Lapouge had no patience for Chamberlain and Gobineau's emphasis on a "race soul." Anthroposociology was completely materialist and rejected any and all appeals to any sort of quasi-religious mysticism. For Lapouge, the science spoke for itself and had no need for any other concepts — certainly not for any religious or moral ideas. He called for the elimination of all moral sentiment that would stand in the way of a massive breeding program that would eliminate racial inferiors. In his writings, Lapouge demanded that sentimentality, especially religious faith, blocked the necessary social reforms for the elimination of racial inferiors through selective breeding. Like Ernst Haeckel in Germany, Lapouge rejected all religion and all morality. He did not attempt to replace traditional morality with any other view and tipped into nihilism in pursuing the perfect breeding population.

Lapouge was also unusual in his embrace of "hard heredity." Most of his fellow French scientists still embraced versions of the inheritance of acquired characteristics, Jean Baptiste Lamarck being something of a national hero. Not so Lapouge, whose strict breeding program left no room for environmental improvements. For Lapouge, the only solution to the racial crisis would be the elimination of the inferior races. This cavalier attitude toward human life would be one of the key "contributions" that Darwinism made in Germany. By the dawn of the twentieth century these ideas were in the air: the notion of a heredity immune from environmental influences and a notion of Nordic supremacy. These two views would be combined in the early twentieth century in the United States and Germany as part of a larger eugenics movement.

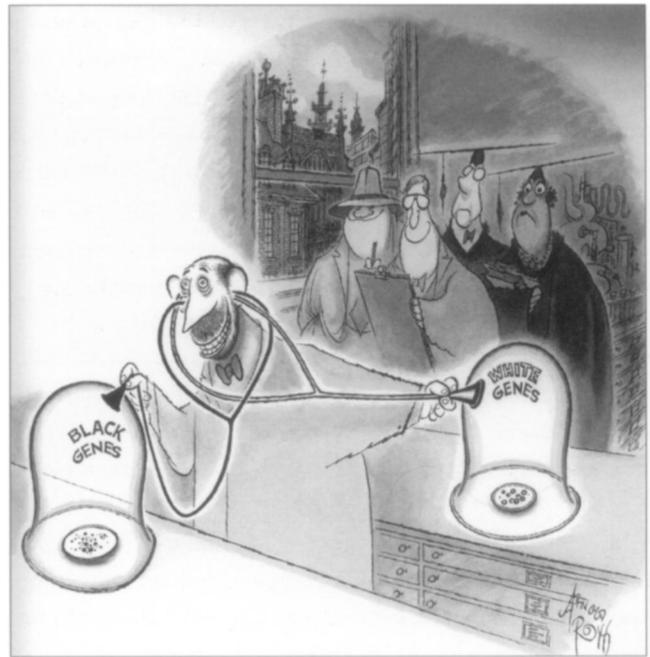
The Rise of Eugenics

Between 1900 and 1945 nearly every modernizing society had some form of eugenics movement. Recent work on the history of the eugenics movements underscores how diverse the ideologies and policies were that went under that name. Popular understanding of eugenics is often restricted to the horrors of Nazi Germany, but, in fact, leftists proclaimed their adherence to eugenic doctrines as much as those on the political right. In many countries, eugenics was confined to what we might think of as prenatal care, focusing on the “future generations” carried by pregnant women. In other countries, particularly those where Lamarckian doctrines were still scientifically respectable, eugenics focused as much on environmental improvement as it did on selective breeding.

Still, despite the diversity of eugenic doctrines, there were some commonalities. Eugenics was the idea that good people should be encouraged to reproduce and bad people should be discouraged from it. Taken in this light, eugenic thinking was a way to think about social problems in scientific terms. The decades between 1870 and 1939 were confusing and exciting times. Industrialization spread throughout Western society; the focus of life was no longer the small town or the farm. The dawn of the twentieth century brought with it large, industrial cities and attendant labor unrest, urban poverty, and slums. The worldwide economy experienced a number of economic shocks the largest of which was the Great Depression that began in 1929. This new social order included a new belief in the responsibility of the government to take an active part in solving social problems. The old, laissez-faire, free-market solutions proposed by writers like Herbert Spencer were seen as increasingly inadequate, even while many accepted his notions concerning racial struggle.

Eugenics and Race in the United States

In the United States, for example, the idea of an activist government in the early part of the twentieth century is often called “Progressivism.” In the Progressive era, an increasing number of leaders called for the government to take action to regulate a capitalism that could no longer be controlled by Adam Smith’s invisible hand. This view led to many governmental interventions such as the Sherman Anti-Trust Act (1890), the Food and Drug Act (1906), and the Federal Trade Commission (1914). The aim of legislative acts like these



was to put issues of public concern under expert control so that the deleterious effects of industrialization could be predicted and the impacts minimized. If food, water, housing, and healthcare could be put under governmental control to make them safer, why not our breeding as well?

“Under existing conditions the most practical and hopeful method of race improvement is through the elimination of the least desirable elements in the nation by depriving them of the power to contribute to future generations.”

Although not all eugenicists in the United States were racists, certain key figures certainly were. In the United States the doctrine of Nordic superiority had one of its most eloquent and forceful voices in Madison Grant (1865-1937). Much like Charles Darwin, Grant was not a scientist by training. Trained as an attorney, Grant was wealthy and had no need to practice his profession in order to make money and could therefore indulge his passion for natural history.

Like his close friend, President Theodore Roosevelt, Grant was very active in the nascent conservationist movement. He was a great organizer of causes for the environment and was an active member of the Save the Redwoods League and president of the Bronx Parkway Commission which created the Bronx Zoo. Grant was instrumental in saving from extinction the American bison, whales, pronghorn antelopes, and bald eagles. He was a key figure in preserving pristine

wilderness for future generations to enjoy. Just as he wanted to preserve the environment, Grant wanted to preserve the race; for him these were two sides of the same coin. Grant's racial *magnum opus* was published in 1916 as *The Passing of the Great Race or the Racial Basis of European History*.

"Whether we like to admit it or not, the result of the mixture of two races, in the long run, gives us a race reverting to the more ancient, generalized and lower type."

Like Lapouge, Grant offered his racial theories as grounded in materialist science rather than on race mysticism. This was no accident, since Lapouge had read the entire book and offered his advice to Grant before publication. Grant celebrated the Nordic stock that made the original colonial population of the British colonies. The Nordics created the United States, according to Grant, but were in danger of being swamped by the inferior races in what he called the "survival of the unfit." Grant blamed "sentimentalists" who held the "fatuous belief in the power of environment . . . to alter heredity." Not so, Grant declared: "Speaking English, wearing good clothes, and going to school does not transform a Negro into a white man."

Immigration was a similar threat. "We shall have a similar experience with the Polish Jew," Grant warned, "whose dwarf stature, peculiar mentality, and ruthless concentration on self-interest are being engrafted upon the stock of the nation." The danger, Grant warned, was allowing more than one race in the same geographical area under the common "melting pot" notion that the environment would erase racial differences. Grant argued, "Whether we like to admit it or not, the result of the mixture of two races, in the long run, gives us a race reverting to the more ancient, generalized and lower type. The cross between a white man and an Indian is an Indian . . . and the cross between any of the three European races and Jew is a Jew." The solution, Grant declared, was twofold: man "can breed from the best, or he can eliminate the worst by segregation or sterilization." Grant believed that it would be very difficult to increase breeding of the best types, so, "under existing conditions the



most practical and hopeful method of race improvement is through the elimination of the least desirable elements in the nation by depriving them of the power to contribute to future generations."

Grant's call for a eugenically pure United States merged with wider concerns about the degeneration of inferior social types. This view was cast in terms of the new thinking about heredity, epitomized by Richard L. Dugdale's 1874 *The Jukes: A Study in Crime, Pauperism, Disease, and Heredity*. Dugdale's work on the Jukes was a family study in which the researcher studied an impoverished family in order to discover how social problems were transmitted through generations. Dugdale found that the family of Jukes, a fictional name for a real family, was predisposed toward a life of crime and poverty. But, in keeping with commonly held views of heredity of the time, Dugdale argued that by providing education and medical care, this heredity tendency toward crime in the Jukes family would be reversed. In other

words, Dugdale argued that environmental changes could lead to changes in an inherited condition.

In 1915 eugenicist Arthur Estabrook published a second edition of Dugdale's classic work, *The Jukes in 1915*, which reflected the new thinking about heredity. Estabrook called for eugenic segregation and

sterilization as the solution to the problem of the Jukes, claiming that environmental changes would do nothing to change their inherited tendency toward crime. This change in the evaluation of the Jukes family indicated that the eugenic proposals of the late nineteenth century differed from those of the early twentieth century, which came in the wake of Mendelism and Weismannism.

The first eugenics organization in the United States was the Eugenics Committee of the American Breeder's Association (ABA) formed in 1906. The ABA was dedicated to the development of American agriculture, fostering cooperation between farmers and ranchers, who had been developing their stocks of animals and crops through selective breeding for some time, and the growing number of academic biologists interested in developing the mathematical and theoretical understanding of heredity.

The Eugenics Committee of the ABA was chaired by David Starr Jordan, the president of Stanford, and included a number of prominent biologists: Vernon L. Kellogg, William E. Castle, and Luther Burbank. Eventually the work of the committee became so wide-ranging that the ABA reorganized into the American Eugenics Association in 1913, and they began publishing the *Journal of Heredity* that same year.

Among those involved with the Eugenics Committee was Charles B. Davenport (1866-1944). Davenport had been trained as an engineer as an undergraduate and received his Ph.D. in biology from Harvard in 1892. He was a professor at the University of Chicago until 1904, when he convinced the Carnegie Institution to underwrite a biological laboratory at Cold Spring Harbor in New York. The laboratory was the Station for the Study of Experimental Evolution and leaped to the forefront of the scientific study of heredity with Davenport firmly in control.

Davenport was an established scientist; he had served on the editorial board of Karl Pearson's *Biometrika* and had published some of the first papers by an American scientist on Mendel. Davenport embraced both the biometric approach and Mendelism, even though the two schools of thought were in the midst of a feud over the nature of continuous versus discontinuous variations. This reflected Davenport's plan for Cold Spring Harbor, where he aimed to unite theories of heredity, evolution, and cytology. Davenport himself contributed studies of heredity in mice, poultry, canaries, and horses using both biometrical and Mendelian approaches. But Davenport was also interested in human heredity. He published papers on the Mendelian inheritance of human eye color and a paper on the complex inheritance patterns in human skin color.

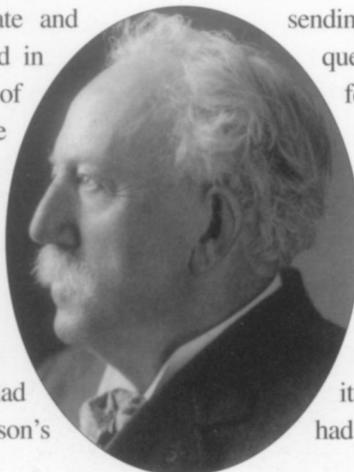
Davenport's interest in human heredity translated into a branch of the Station at Cold Spring Harbor. Davenport petitioned Mary Harriman, heir to her husband's railroad fortune, to underwrite the Eugenics Records Office (ERO) at Cold Spring Harbor in 1910. Davenport chose Harry H. Laughlin (1880-1943) as the administrator of ERO. Laughlin was teaching biology in the agriculture school of the Missouri State Normal School and had been corresponding

with Davenport on matters of heredity since 1907. In 1910 Davenport hired Laughlin to overtake the administrative needs of ERO. Laughlin was dedicated to the twin purposes of the ERO: to undertake serious research in human heredity and to educate the public about eugenics.

Unlike researching heredity in farm animals or insects, scientists could not experiment on human beings, and the long generations of humans made tracing lineages difficult within the lifetime of a researcher. To avoid these problems, Laughlin and Davenport set out to collect family histories by sending specially trained eugenics fieldworkers out to question families about their history of disease, feeble-mindedness, or other eugenic disabilities. The fieldworkers would visit families with questionnaires and try to collect information relevant to the goals of the ERO. They would then take the collected information and create family histories that could yield useful information for inherited traits. Some traits actually followed a strict pattern of Mendelian inheritance. By the mid-1910s researchers at the ERO had discovered a number of them including polydactylism (having more than 10 fingers or toes) and Huntington's chorea, for example.

But the family histories went far beyond these physiological traits and included characteristics such as "feeble-mindedness" — a catch-all phrase that covered not only what we might consider mental retardation but also any failure in scholastic performance — pauperism, alcoholism, criminality, musical ability, and other social traits interpreted as owing entirely to heredity. One famous example was a 1919 report Davenport prepared for the Navy on "thalassophilia" or love of the sea. Davenport argued that the tendency for naval officers to come from the same family owed to a Mendelian trait for the love of the sea. Ignoring possible environmental pressures for sons to follow in their father's footsteps, Davenport reasoned that since the "tendency to wander" was a racial trait, as it appeared in Gypsies, Comanches, and Huns, the tendency to wander on the sea must also be an inherited trait.

Eugenics, however, was never just a science destined for the ivory tower: another part of its mission was to translate scientific truths, like thalassophilia, into public policy. Eugenicians called for two different kinds of social pro-



David Starr Jordan
President of Stanford University and
chair of the eugenics committee of
the American Breeders Association

grams. A 1926 popularized pamphlet, "A Eugenics Catechism," published by the American Eugenics Society, spelled out the two approaches. Negative eugenics dealt "with the elimination of the dysgenic elements from society. Sterilization, immigration legislation, laws preventing the fertile unfit from marrying, etc., come under this head." By contrast, positive eugenics dealt "with the forces which tend upward, or with the furtherance of human evolution. Encouraging the best endowed to produce four or more children per family, encouraging the study of eugenics by all, etc., are positive eugenics." These policy options had no greater champion in the United States than Laughlin, who tirelessly promoted eugenic policies throughout the nation.

Although both positive and negative eugenics were possible, Laughlin, like his friend Madison Grant, concentrated on the negative aspects. As the "Eugenics Catechism" made clear, there were three policy choices for proponents of negative eugenics: sterilization, immigration control, and laws preventing marriage of eugenic undesirables. Eugenacists had various degrees of success with these programs of action.

As far as race was concerned, the option of preventing eugenically undesirable marriages was a nonissue. Marriages between whites and blacks were legally prohibited long before eugenics became a popular doctrine. Laws against miscegenation, interracial marriage, were a mainstay of American legal culture beginning in the eighteenth century and were not declared unconstitutional by the U.S. Supreme Court until 1967. Even the authoritarian Madison Grant admitted that "in a democracy" it would be "a virtual impossibility to limit by law the right to breed to a privileged and chosen few."

Although eugenicists had limited impact on the racial aspect of marriage laws they were much more successful in limiting immigration, mainly because their concerns dovetailed with widespread anxieties about increased immigration into the United States after World War I. Although the United States has long proclaimed itself a nation of immigrants, such a view waxed and waned according to economic and social concerns. In the late nineteenth century, for example, concerns that cheap labor from China was swamp- ing out "white" jobs in California led to the Chinese

Exclusion Act of 1882, which cut off all immigration from China. Beginning around the same time, the nature of immigration from Europe began changing as more and more immigrants arrived from southern and eastern Europe, many of them Jewish and Catholic.

"Speaking English, wearing good clothes, and going to school does not transform a Negro into a white man."

By the 1910s immigration had touched off a reaction from many circles. Labor leaders worried about the new immigrants taking jobs from their traditional constituencies, and many conservative Americans were concerned that the new immigrants were political radicals espousing Marxist ideas. Many Americans worried that the immigrants were Jewish or Catholic, and thus unable to assimilate into the traditionally Protestant United States.

Eugenicists expressed concern that the new immigrants were from inferior racial stock and would bring with them the biological degradation of the United States. Madison Grant was especially concerned with the influx of eastern and southern European immigrants, for example, the "swarm of Polish Jews" who were coming to New York City. "While he is being elbowed out of his own home," Grant despaired, "the American looks calmly abroad and urges on others the suicidal ethics which are exterminating his own race." His chief disciple Lothrop Stoddard agreed: "Even within the white world," Stoddard wrote in *The Rising Tide of Color* in 1921, "migrations of lower human types like those which have worked such havoc in the United States must be rigorously curtailed. Such migrations upset standards, sterilize better stocks, increase low types, and compromise national futures more than war, revolutions, or native deterioration."

The eugenicists presented their concerns about immigration before Congress in the early 1920s. Representative Albert Johnson, who chaired the House Committee on Immigration and Naturalization and was also an honorary president of the Eugenics Research Association, brought Harry Laughlin before the committee's 1922 hearings on immigrant reform as an "expert eugenic witness." Laughlin came prepared with an elaborate statistical analysis that



Harry H. Laughlin

Director of the Eugenics Research Office at the Station for the Study of Experimental Evolution in Cold Spring Harbor, New York

tracked the relationships between social ills and race. As early as 1914 Laughlin had worked with Judge Harry Olson of the Psychopathic Laboratory of the Municipal Court of Chicago on a study that showed that immigrants were hereditarily predisposed to crime; over 75 percent of the juvenile delinquents in Chicago had foreign-born parents, predominantly Slavic or Italian. Pointing to poverty as the cause of crime was mistaken, Laughlin and Olson argued, because poverty was created by poor genetic constitution.

In his testimony before the House committee, Laughlin extended this kind of analysis to include not just crime, but a host of "inadequacies" such as feeble-mindedness, insanity, epilepsy, tuberculosis, blindness, deafness, deformity, and pauperism. "The outstanding conclusion," Laughlin declared for the committee, "is that . . . the recent immigrants, as a whole, present a higher percentage of inborn socially inadequate qualities than do the older stocks."

In 1924 Laughlin added another arrow to his quiver: the intelligence test. Alfred Binet had developed intelligence tests in France in 1904 as a way to help the French government educate children, especially those who had trouble learning in the regular curriculum. In 1908 psychologist Henry H. Goddard brought the tests to the United States. As the director of the Vineland Training School for Feeble-Minded Boys and Girls, Goddard sought a tool to help him classify his charges to provide them with an education fitting their abilities. Goddard eventually published a eugenic family study of his own, *The Kallikak Family: A Study in the Heredity of Feeble-mindedness* in 1912.

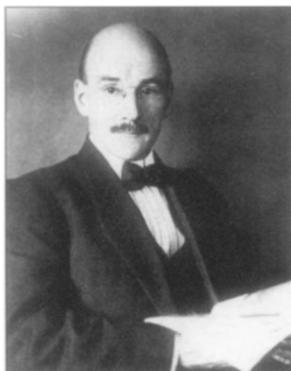
Intelligence testing received an enormous boost during World War I when Stanford psychologist Robert M. Yerkes and others developed a series of tests to help the Army with the induction process. The aim of the Army tests was not to detect the feeble-minded but to sort draftees into appropriate positions in the military. The Army did not want to have highly intelligent applicants assigned to ditch-digging and dull draftees sent to Officer Training School. After the war, intelligence testing generally, and the Army tests in particular, took on new life. The Army tests showed that black soldiers were far less intelligent than white soldiers. This surprised no one and created little stir in the academic community until these conclusions were challenged in the 1930s. Of

more immediate importance during the 1920s and the great immigration scare were the results that pointed to racial differences among the white inductees. One of the staff psychologists who had worked with the Army, Carl Brigham, published a volume in 1923 from the Army data. Brigham declared that only applicants from the Nordic countries fared well on the intelligence tests and recommended strict laws forbidding race mixing and radically curtailing immigration of Alpine and Mediterranean stocks. In the meantime, Henry H. Goddard gave a series of intelligence tests to recent immigrants on Ellis Island and declared that two out of five were feeble-minded.

The result of this widespread intelligence testing together with all of Laughlin's other data and the enormous political popularity of immigration restriction caused Congress to pass the Immigration Restriction Act in 1924. Under the 1924 act, immigration quotas would be set according to the 1880 census. The reason for choosing the census from four and a half decades before the act was passed was explicitly racial: that year predated the waves of immigration from southern and eastern Europe.

Hence, immigration was encouraged from the Nordic countries and discouraged from the Alpine and Mediterranean countries, just as Madison Grant had hoped.

The 1924 Immigration Restriction Act had an important effect on racial theorists in the United States. Madison Grant's *Passing of the Great Race* paid almost no attention to "the Negro Problem" in the United States, instead focusing on the dangers of inferior white racial types overtaking the heroic Nordics. However, the 1924 act solved the problem of inferior white races coming into the country. Additionally, World War I brought with it the "Great Migration" of blacks from the rural South to the urban North as they attempted to leave the authoritarian Jim Crow system, the crushing poverty of the tenant farming system, and systematic disenfranchisement. Grant, and others, despaired at the growing number of dark faces they saw on the city streets and declared that something must be done about it. In his last book, *Conquest of a Continent*, published in 1933, Grant declared that, "The Negro problem must be taken vigorously in hand by the Whites without delay. States which have no laws preventing the intermarriage of white and black should adopt them." Consequently, beginning in the



Henry H. Goddard
Director of the Vineland
Training School for Feeble-
Minded Boys and Girls

1930s American scientists lost sight of the different white races and focused increasingly, if not exclusively, on the “black” and “white” races.

“The principle that sustains compulsory vaccination is broad enough to cover cutting the Fallopian tubes. . . . Three generations of imbeciles are enough.”

The third program of negative eugenics was sterilization. Madison Grant had proposed mass sterilization, “beginning always with the criminal, the diseased, and the insane, and extending gradually to types which may be called weaklings rather than defectives, and perhaps ultimately to worthless race types.” However, unlike immigration restriction, in the United States sterilization was not targeted racially as Grant had urged. The involuntary sterilization of individuals who had become public charges, especially those institutionalized, was a patchwork affair in the United States, varying widely from state to state and from institution to institution. The first law requiring compulsory sterilization of criminals, idiots, rapists, or imbeciles was passed in 1907 in Indiana. By 1922, 17 other states had similar statutes on the books. These laws were not racially targeted but were aimed at institutionalized people who had, for one reason or another, become charges of the state. The reasons for these laws, moreover, were not exclusively eugenical: some physicians believed that sterilization lowered the sex drive, making it easier to manage people under institutional care. Others simply did not want those who had shown a propensity to become public charges to have children for whom they could not care.

As with immigration reform, the champion of compulsory sterilization was Harry Laughlin, who believed that at least 10 percent of the population was defective and needed sterilization. He published a number of works between 1914 and 1922 that outlined the legal aspects of involuntary sterilization. The key legal problem was that sterilizing people against their will faced the constitutional objection of denying people their rights without due process of law. Laughlin drafted, and urged states to adopt, a “Model Sterilization Law,” designed to withstand constitutional challenges.

In 1927 Laughlin played a key role in the Supreme Court



decision in *Buck v. Bell*, which held that involuntary sterilization was constitutional. The state of Virginia had attempted to sterilize Carrie Buck, feeble-minded mother of a feeble-minded child, under a sterilization statute based on Laughlin’s Model Sterilization Law. At the trial to determine the constitutionality of the measure, Laughlin served as an expert witness, testifying that Carrie Buck’s immorality and feeble-mindedness were hereditary in nature. In 1927 the Supreme Court decided that Virginia’s actions were constitutional. The renowned jurist, Oliver Wendell Holmes Jr., in issuing the court’s opinion, wrote, “It is better for all the world if, instead of waiting to execute degenerate offspring for crime or to let them starve for their imbecility, society can prevent those who are manifestly unfit from continuing their kind. The principle that sustains compulsory vaccination is broad enough to cover cutting the Fallopian tubes. . . . Three generations of imbeciles are enough.”

Despite the triumph in *Buck*, sterilization in the United States remained a haphazard affair. The nature of the American federal system left the enactment of sterilization statutes in the hands of state governments, which meant there was no central authority for making sterilization decisions. Moreover, despite *Buck*, there were legal concerns as laws needed to be carefully drafted in order to pass con-

“The Negro problem must be taken vigorously in hand by the Whites without delay. States which have no laws preventing the intermarriage of white and black should adopt them.”

stitutional muster. Moreover, the guarantees of freedom of speech meant that involuntary sterilization was always open to public criticism. The Roman Catholic Church was a powerful critic of involuntary sterilization and many scientists, including geneticist Herbert Spencer Jennings and political scientist Joseph Gilman, took public stands against Laughlin’s policy recommendations. Despite the controversies surrounding involuntary sterilization, however, between 60,000 and 90,000 Americans were sterilized under various state programs in the twentieth century.

The Nazis' "Racially Valueless" People

For many, the very term "eugenics" is equivalent to Nazi racism and the genocide of Jews, Gypsies, and others under the Nazi regime. However, it bears repeating that nearly every industrialized country embraced eugenic doctrines in the early twentieth century. Only in Nazi Germany, however, did eugenical thinking play a substantial role in genocide.

There was no inevitable relationship between eugenics, even racist eugenics, and genocide, but this does not change the fact that under the Nazi regime, genocide was the result.

Historians have conceptualized the applied biology of the Nazis in two ways. The first is the "selectionist" metaphor, which viewed the world as engaged in a struggle of race against race, and the survival of the fittest demanded racial purity and the elimination of racial inferiors. This view is clearest in Nazi propaganda calling for the elimination of Jews, Gypsies, and Slavs as a Darwinian imperative. The second is the "organicist" metaphor in which society is like an organism and each group within society needed to keep in its place for the organism to function correctly. In Nordicist terms, this meant that the Nordics would be the leaders, the brain, and the Alpine and Mediterranean races would be the workers, the hands or feet. This view accounts for Nazi propaganda that painted Jews as "parasites" on the Aryan body. Rats were a common Nazi metaphor for Jews; the Nazis argued that such parasites needed to be eliminated.

Eugenic laws came quickly under the Nazi regime. A few months after coming to power, the Nazi government passed the Law for the Prevention of Genetically Diseased Offspring, aimed at sterilizing those carrying hereditary defects. The Nazis instituted an elaborate system of "Genetic

Health Courts" to ensure that all whom they sterilized had adequate legal protections. Across the Atlantic, American eugenicists were delighted. Harry Laughlin boasted that the German law was based on his own Model Sterilization Law. Indeed, Laughlin received an honorary doctorate from the University of Heidelberg in 1936 for his work in eugenics. Paul Popenoe editorialized in the *Journal of Heredity* that



Oliver Wendell Holmes
 "Three generations of imbeciles is enough!"

the German law was not racist in origin and the legal safeguards in place would prevent any possible abuse. A few months later, American eugenicists greeted with joy the extension of the sterilization laws to cover "habitual criminals." American eugenicists admired the German system which, unlike the frustrating patchwork state-by-state system in the United States, enjoyed a strong central authority to guarantee the eugenic purity of the country. Further laws followed the sterilization law. In 1935 Hitler signed into law three measures often called the "Nuremberg Laws." These laws stripped non-Aryans of citizenship, prohibited the marriage of Jews and Aryans, and required all couples wishing to marry to submit to medical examinations to ensure the purity of the race. By 1939 the urge to purify the race would take another step beyond preventing the concep-

tion of inferior children: the elimination of children whose lives the Nazi government deemed not worth living.

In 1939 Hitler signed an order directing physicians to determine if institutionalized patients who were incurably ill should be granted a mercy killing by the state. This would relieve the state and the German people of carrying the load of "racially valueless" people. By 1941 the Nazis had euthanized over 70,000 hospitalized people under this program. The Nazis tested and improved many of the technical aspects of the Shoah, or Holocaust, in the medical elimina-

Photo: AP/Wide World Photos

tion of lives deemed not worth living: the gassing, the transport of prisoners so as to not induce panic, and the use of these deaths to advance medical knowledge. The Nazi regime, of course, culminated in the paroxysm of destruction called the Shoah. Scholars have written literally thousands of books on the Nazi genocide of Jews, Gypsies, and others in the search for an explanation for these atrocities. Scientific ideas about race certainly were not solely responsible for all the horrors produced by Nazis, but it is worth noting two aspects of science that were significant and tell us something about the relationship between science and society. One of the lessons of Darwinian racism was that not all lives were equal in value and hence society should not fear the death of some inferior individuals. Certainly that was the lesson of Lapouge and Haeckel. Ploetz and Schallmayer argued that the eugenic imperatives of Darwinism trumped traditional moral inhibitions against killing because these were inferior lives. This view was not limited to European Darwinists. "The laws of nature," Madison Grant declared, "require the obliteration of the unfit, and human life is valuable only when it is of use to the community or race." The United States, however, never wed this ideology to political power as happened under Hitler.

"It is better for all the world if, instead of waiting to execute degenerate offspring for crime or to let them starve for their imbecility, society can prevent those who are manifestly unfit from continuing their kind."

The second way that science contributed to the Nazi genocide was by providing the appearance of a value-neutral judgment on the worth of some human lives. Science reported "the facts" about human inequalities, and to object to "the facts" on sentimental grounds was foolish. As an illustration, consider the fates of the two chief ideologues of the Nazi regime: Alfred Rosenberg and Hans F.K. Gunther. Rosenberg was part of the Nazi inner circle and his racial writings, notably *Foundations of the Twentieth Century*, echoed the race mysticism of Houston Stewart Chamberlain. After the war, Rosenberg was hanged as a war criminal. Gunther, by contrast, lived a full life after the war and continued to publish until his death in 1968. Because he was a scientist, and science was divorced from political concerns, he was immune from the ramifications of his writings. A more chilling example is that of Otmar von Verschuer, the direct benefi-

ary of the immense human suffering at Auschwitz, who continued to serve on the boards of scientific journals until his death in 1969.

"Sterilizations should begin with the criminal, the diseased, and the insane, and extending gradually to types which may be called weaklings rather than defectives, and perhaps ultimately to worthless race types."

After World War II the science of race would undergo a stunning transformation. Science, which had provided a substantial underpinning for racist doctrines before the war, would be enrolled against racist concepts afterward. Even as the Nazis rose to power in the 1930s, the fundamental doctrines of scientific racism were under attack. After the war the objectivity of science would be dedicated to denying the truth of racial differences, a complete reversal of orientation.

JERIC



Winston Churchill on the Racial Danger of Feeble-Minded People



Winston Churchill used opprobrious terms like *blackamoor*, *chink*, *wop*, and *baboo* and distinguished between the white race and others. For example, he wrote that at a September 1944 conference, he was glad to record that "the British Empire was still keeping its position, with a total population, including the Dominions and Colonies, of only 70 million white people."

Churchill as Home Secretary advocated the forced sterilization of "mental degenerates." In a 1910 letter that reads as if drafted by a Nazi, he argued, "The unnatural and increasingly rapid growth of the feeble-minded and insane classes constitutes a national and race danger which it is impossible to exaggerate."

He never outgrew his views. His doctor recalled that in 1955, Churchill asked whether black people got measles. When he was told that there was a very high mortality among Negroes from measles, he growled, "Well, there are plenty left. They've a high rate of production."

—Gretchen Rubin
Forty Ways to Look at Winston Churchill
(Ballantine Books, 2003)

Illustration: Ismael Foidan.