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Race and Evolution, 1859–1900

1859, the year Darwin published *On the Origin of Species*, marks a convenient turning point for a history of scientific ideas about race. Darwin's work, while it did not persuade all scientists of the role of natural selection as the motor of evolution, did convince many that present-day life-forms had descended gradually over great stretches of time from a common ancestry. Whether a Divine Creator had been present from the beginning to start the process was an open question. But the belief that life had been produced in such a natural way without continuous divine intervention was widely held by 1870. Darwin's book helped make evolution respectable, and though there were holdouts against it, they became increasingly rare in the two decades after its publication.

1859 is thus convenient for marking this sea change in attitude. But in some ways isolating that year as the important one obscures as much as it reveals. It obscures the fact that Darwin was neither the first nor the only advocate of evolution. His influence in making evolution respectable and popular was matched, even exceeded, by that of Herbert Spencer. Spencer, a railroad engineer turned philosopher, began writing essays on evolution, though an evolution quite different from Darwin's, in the early 1850s. Moreover, *On the Origin of Species* focused on the evolution of animals and plants, and avoided directly discussing human evolution. One line was all it dedicated to the genealogy of the human species: "Light will be thrown on the origin of man and his history" (Darwin 1964 [1859], 488).

Fearing controversy, Darwin did not write publicly about human evolution until he published *Descent of Man* in 1871. But by that time, Darwin had been preceded not only by Spencer, whose evolutionary theory principally concerned human society, but also by the biologists Alfred Russel Wallace and Thomas Henry Huxley, as well as by the anthropologists John Lubbock, Edward Tylor, and John McLennan. In the 1860s, the evolution of human culture and of man's social behavior was a major focus for all these authors. We speak of "Darwin's theory," but we must be aware that he had predecessors, and that there were key areas of overlap between the pre- and post-Darwinian eras.

Charles Darwin, the British scientist whose theory of evolution created immense controversy in the mid-nineteenth century (Library of Congress)

Viewing the history of science in terms of continuity rather than in terms of radical revolutionary breaks helps reveal another feature of this period. Although evolutionary theories, particularly about human beings, circulated before Darwin himself advocated them, a host of pre-Darwinian notions about race continued to command broad assent even after Darwin published his work on natural selection. Evolution, thanks to both Darwin and Spencer, became the great organizing principle of the late nineteenth century, applied across the board in the sciences. Not only plants and animals, but human beings, the human mind, and human society were all imagined to have had an evolutionary history. But rather than overturning earlier scientific ideas about race, the new evolu-

tionary framework accommodated and confirmed them, even those that seem at first glance to be in conflict with it. All the resources of the new evolutionary science were now brought to bear as organizing concepts, models, and metaphors on the preevolutionary goal of explaining and justifying the inferiority of Asian, African, and American Indian peoples. The hierarchy of the races now became an evolutionary hierarchy. In this sense the transition between the pre- and post-Darwinian eras was a seamless one indeed.

Darwin's Argument in On the Origin of Species

Charles Darwin was an unlikely revolutionary figure in the history of science. Darwin was born in 1809 into a socially prominent, wealthy family. His grandfather, Erasmus Darwin, was a naturalist of some repute, and his father Robert was a respected physician. As a young English gentleman, Darwin was expected by members of his social class to choose a profession that suited his class—he certainly could not be a merchant or a laborer as those occupations were unsuited for "gentlemen." His choices were limited: he could be a physician, attorney, or minister. Darwin was at best an average student at boarding school in Shrewsbury. Nonetheless, in 1825 his father sent his young son to the best medical school in the world, the University of Edinburgh in Scotland, expecting him to follow his illustrious father into the healing arts.

Darwin hated medical school. His gentle disposition rebelled against the blood, the dissections, and vivisections. He decided to leave medical school in 1827 and his professional options were narrowed even further. A legal career was out of the question, for he was shy and hated confrontations of any kind. The ministry was the only remaining option, so his father sent him off to Christ's College, Cambridge University to earn a theology degree. The plan was for Darwin to become a minister in a quiet country church somewhere, a respectable career for an English gentleman.

Even though he completed the training necessary to be a minister, he never became one, for Darwin had a secret vice: natural history. Since childhood he had been an avid collector of beetles, birds' eggs, minerals, and other natural specimens. His father considered the hobby a waste of time and berated the young man for his foolishness. Darwin, however, persisted in his pursuits. Both at Edinburgh and Cambridge, Darwin spent more time exploring nature with others who shared his interests than he did in the classroom, which partially explains why he was a mediocre student. The sciences were not part of the college curriculum in early-nineteenth-century England, so Darwin's interest in nature could never be anything more than a hobby. Most early-nineteenth-cen-

tury naturalists were amateurs, English gentlemen who pursued natural history in their spare time between patient appointments or meetings with parishioners.

At Cambridge, Darwin met the clergyman and botanist John Stevens Henslow and the clergyman and geologist Adam Sedgwick, who both shared his passion for the natural world. In 1831, Henslow presented Darwin with an opportunity to join the crew of the HMS *Beagle*, which was embarking on a planned two-year survey of South America. The ship's captain, Robert Fitzroy, sought a respectable young gentleman to serve as a social companion for the long trip; the strict rules of ship's discipline and the class expectations of English society prevented the captain from socializing with any of his crew. A gentleman, however, could serve as a dinner companion for the captain.

On his voyage, Darwin noted a number of things about the natural world. He had with him a copy of Charles Lyell's *Principles of Geology*, which argued for uniformitarian geology, the view that the geological record was the product of the accumulations of small changes over incredibly long periods of time. Darwin's geological observations on his voyage seemed to accord with Lyell's ideas regarding uniformitarian geology.

Darwin also noted that organisms seemed to vary sequentially in time and space. In other words, he saw that in the fossilized remains of an animal, say an armadillo, there was a succession of organic forms over time. As one moved up the geologic strata, one could trace similar forms of armadillos that led to the present day armadillo of South America. Just as these similar organic forms appeared in the temporal fossil record, Darwin noted how similar organic forms appeared in space. The famous Galápagos archipelago, where each island had a different species of tortoise, all nonetheless very similar to one another, presented a puzzle similar to that of the fossil record. Why was it that there were similar, yet distinct, forms of these organisms? Darwin believed that he could explain these temporal and geographic successions of organic form by positing that a single species had been modified from the original type over a long period of time. For Darwin the question became, how was this modification accomplished? What was the mechanism that could change species in this way?

The planned two-year voyage of the *Beagle* stretched to five and when he returned, Darwin was a changed man. He had seen the world and established himself as a very promising young naturalist. Even his father recognized that his son could be a respectable gentleman and a practicing naturalist. A gift of money from his father allowed Darwin to abandon the ministry and focus on natural history. Darwin settled down to the comfortable life of an English gentleman.

In 1838, Darwin read the work of economist Thomas Robert Malthus (1766–1834). Malthus had suggested that there was a natural law that enabled

society to progress. He argued that population growth would always outstrip natural resources and that consequently there would always be competition for scarce resources in an economy. But, Malthus concluded, this seemingly dismal situation was actually beneficial to the economy, as the best people would rise to the challenge, gaining employment and wealth by virtue of their superior skills and energy. Malthus was critical of governmental attempts to change the natural social hierarchy, arguing that all such attempts must fail in the struggle for scarce resources. "No fancied equality," he wrote, "No agrarian regulations in their utmost extent, could remove the pressure" of the struggle for scarce resources "even for a single century" (Malthus 1798, 6). The natural law that dictated that population would always outstrip resources was the mechanism that guaranteed both a natural inequality of individuals and a natural drive toward social progress. Malthus was therefore a proponent of the laissez-faire theory of government that held that the proper role of government was to stay out of the economic affairs of the people altogether because the natural laws of society would create the best situation for all with maximum efficiency.

Darwin seized on Malthus's argument as the mechanism for organic change: just as people competed in an economy for scarce resources, so too did organisms compete in the environment for scarce resources. By the end of the 1830s, Darwin had formed his theory of "natural selection." Darwin's theory of natural selection seems simple on its face and can be stated in a few sentences. First, organisms vary within species with respect to their ability to compete for resources. Second, organisms compete for scarce resources. Third, organisms with those variations that better enable them to survive and reproduce *do* survive and out-reproduce organisms without those variations. Therefore, species are mutable as beneficial variations increase in frequency over generations.

Darwin knew he was on dangerous ground with his daring theory. For one thing, the theory of natural selection was completely materialistic and naturalistic; it outlined no role for God in the formation of organisms. Second, Darwin's theory was not progressive. For Darwin, organisms survived simply because they were better suited to their surrounding environment. There was no notion that organisms were progressing toward forms that were intrinsically better than the previous ones. Finally, these two notions together had profound implications for humans' understanding of their place in nature. Did Darwin mean that people were just another animal, not specifically created by God, not intrinsically better than other organisms?

Darwin knew that these questions were important. He knew that if he was going to publicly announce his theory he needed a lot of evidence. Consequently, he spent twenty years collecting evidence supporting his theory of natural selec-

tion. Darwin might have spent twenty more years if a young man, Alfred Russel Wallace, had not brought the same idea to the Royal Society in 1858. Wallace, equally nervous, had written to Darwin asking for advice, and they presented their findings jointly to the Royal Society in 1858. In 1859, Darwin published *On the Origin of Species*, which announced his theory to the world.

Darwin and Wallace on Natural Selection and Human Origins

Two interrelated questions confronted those who took up Darwin's theory: first, did natural selection apply to human beings, and second, if natural selection did apply to humans, how did it explain racial differences?

A key component of the first question was the nature of human origins. If, as Darwin argued in the concluding chapter of the *Origin*, "all the organic beings which have ever lived on this earth have descended from some one primordial form, into which life was first breathed," (Darwin 1964 [1859], 484), did this mean that humans evolved in the same way? Although he hesitated to say so publicly, Darwin was convinced that natural selection explained the evolution of humans. But it was not clear to him exactly how this process worked. Moreover, those human attributes that were traditionally explained by reference to a human soul, such as moral sense, speech, and intelligence, were not easily explained by a purely materialist version of natural selection.

Though his early notebooks and drafts show him pondering these issues, Darwin was not the first to take a public stand on them. In an 1864 paper Wallace used the new theory to explain the development of humans' characteristic mental traits as well as the origin of the human races. Wallace argued that human intellectual and moral capacities had shielded human bodies from the environmental pressures that would otherwise be operative in producing structural change. So, for example, if the environment suddenly changed and became much colder, this environmental pressure might, through the action of natural selection, cause an animal species to develop a thick layer of fur or blubber as protection against the cold. Humans, however, could adopt clothing and fire, technological fixes that would help preserve their physical bodies from modification. After human beings achieved a certain level of mental and moral sophistication, natural selection would not operate any longer on their physical form but on their intellect.

Wallace's argument was calculated to please and appease the polygenists and help reconcile them to the Darwinian view of evolution. In 1864, Wallace delivered his paper before Hunt's polygenist and racist Anthropological Society

of London. The physical diversification of the races, Wallace reasoned, must have occurred at a remote time in the past before humans gained their characteristic sociality, morality, and intelligence, when natural selection was still operative on human bodies. The differentiation into separate races with distinct physical traits must have happened so soon after humans first appeared on the earth that, for all practical purposes, the races had always been distinct.

Wallace continued by arguing that once natural selection made the switch and began operating on man's intellect and moral sense, it continued to work to differentiate the races. More mentally and morally advanced and socially cohesive races would overtake, conquer, and ultimately exterminate the less advanced, just as in the animal and plant world, more fit varieties eliminated inferior varieties. Wallace's theory accounted for the development of humanity, both its physical peculiarities and its unique social/mental/moral traits, and was the first to do so entirely within the materialistic framework of natural selection.

When he first read Wallace's paper, Darwin was both pleased and anxious. He appreciated Wallace's attempt to apply natural selection to human origins but was anxious that Wallace was coming close to Darwin's own views on human origins. As it developed, however, Darwin had little to fear from Wallace overtaking him on natural selection and human origins because Wallace soon abandoned his idea.

By 1870, Wallace retreated from his materialist explanation of human origins. Wallace's new belief was that natural selection could not account for important human features. One of Wallace's more telling examples was brain size, a key indicator of humans' special nature. Wallace argued that the savage ancestors to modern humans possessed brains nearly as large as civilized humans, but savages obviously had no need of such an advanced intellect. Natural selection only selected for useful traits in a given environment and could not explain the large human brain. Wallace also argued against the usefulness of other uniquely human physical traits, such as the hand, hairless skin, erect posture, and the natural beauty of the human form.

Wallace cast his new argument in explicitly racial terms. When Wallace wrote of "savages" he meant Africans, aboriginal Australians, and other racial groups. For Wallace, such people had no need for intellect, for that was only needed in "civilization." Wallace also emphasized that human traits could be explained only by an internal spiritual drive that distinguished humans from animals. Wallace embraced spiritualism and had begun to believe in mesmerism, séances, and other attempts to contact the "spirit world." Although Wallace did not embrace traditional religion, he had abandoned the purely materialistic theory of natural selection that he had developed in parallel with Darwin.

Darwin on Human Evolution

When Darwin read Wallace's new views, he was horrified. Darwin was far less willing than Wallace to abandon natural selection as the explanation for human origins and human variation. He published his ideas on the subject in 1871 in *The Descent of Man.*

As developed in *On the Origin of Species,* Darwin's theory relied on tiny variations giving survival advantage to particular members of a species. Over time, these small advantages accumulated and species gradually transmuted into new forms. The *gradual* accumulation of traits over long periods of time was the key point. When Darwin took these basic ideas and applied them to human origins, he emphasized not the radical differences between humans and other animals but the similarities. Where Wallace and others stressed what they saw as enormous differences between human brains and animal brains, Darwin argued that the human brain, while larger and better developed, was not fundamentally different from those of other mammals.

In *The Descent of Man* Darwin maintained that even those mental and moral traits that make humans unique could be found in much more primitive forms in other animals. Darwin devoted two chapters of *The Descent of Man* showing that apparently stark differences between humans and animals were not so stark if one examined the actual behavior of social animals, from the well-developed ape to the lowly bee. The point, Darwin concluded, was to show that "The difference in mind between man and the higher animals, great as it is, is certainly one of degree, and not of kind" (Darwin 1871, 105). By these small gradations, which he believed were inherited, Darwin fashioned an argument that natural selection could account for humans evolving from animals.

Racial differences were central to his argument. To make his case, it helped that the very attributes that Darwin was struggling to explain with natural selection were the attributes tied most closely to race. Many polygenists believed that the races possessed different moral attributes, and even the monogenists were not necessarily willing to grant racial equality in that area. Darwin's own views, as revealed in his notebooks of the 1830s, later marked him as a moderate in these debates. He was not a confirmed racist—he was a staunch abolitionist, for example—but he did think that there were distinct races that could be ranked in a hierarchy.

In *The Descent of Man* these views of race helped Darwin fill in his gradualist picture of the origin of humans. Darwin admitted that the gap in intelligence and moral sense between civilized people and the animals was a great one. But one could look to the lower races to fill that gap. Ever the gradualist, Darwin came down on the side of the monogenists by treating races not as separate

species, but as variations of a single species. "The most weighty of all the arguments against treating the races of man as distinct species," he wrote, "is that they graduate into each other, independently in many cases . . . of their having intercrossed" (Darwin 1871, 226). This graduation applied not only to their physical form but also to their mental and moral capabilities. Although Darwin maintained that there were established racial differences, these differences were a series of small gradations rather than large, unbridgeable chasms. What the naturalist confronted was not a stark break between humans and animals but a continuum from lower animals to higher animals, from higher animals to savages and barbarians, and finally from barbarians to civilized people.

Despite his evolutionary gradualism and argument for continuity, Darwin also clung to the idea that the human races were distinctly different and basically unchangeable, a legacy of the influence of polygenism on him. The differences were most obvious when one considered the racial extremes. When the *Beagle* arrived in Tierra del Fuego at the southernmost tip of South America, Darwin was astonished and horrified at the sight of the savages who ran out to meet the boat. "It was without exception," he wrote in his diary of the voyage, " the most curious and interesting spectacle I had ever beheld. I could not have believed how wide was the difference, between savage and civilized man. It is wider than between a wild and domesticated animal, inasmuch as in man there is a greater power of improvement" (Darwin 1989 [1839], 172). He recalled the same scene at the end of *The Descent of Man*, where he added that on seeing the Fuegians "absolutely naked and bedaubed with paint, their long hair . . . tangled, their mouths, frothed with excitement, and their expression . . . wild, startled, distrustful," the idea immediately occurred to him: "such were our ancestors" (Darwin 1871, 404). Darwin's experience with these savages provided him with further proof of their inalterable racial difference. When a party of Fuegian natives, Christianized and civilized in England, returned on board the *Beagle* as missionaries to their native land, the Fuegians reverted to their savage ways, convincing Darwin that racial habits and racial natures were entrenched and basically unchangeable. The conversion the savages had undergone had been superficial and fleeting, while their suitability to their native way of life, and their clear inferiority, were permanent. All that remained of racial evolution for Darwin, as for Wallace, was the extermination of the inferior races by the superior.

Darwin's theory of evolution from a common ancestor was a monogenetic one that, once it gained nearly unanimous assent, should have put the polygenetic alternative to rest. But this was not the case. Polygenetic concepts and assumptions continued to form the basis of much racial science in the late nineteenth century. The result was a curious synthesis of the evolutionary idea of ever-changing, ever-fluctuating populations and the polygenist belief in fixed,

stable, racial categories. Both Darwin and Wallace, as we have seen, easily harmonized evolution by natural selection with polygenic notions; and they were not alone. The German Darwinian Karl Vogt, applying Darwin's evolutionary theory to man, argued, like Wallace had originally, that natural selection had formed the races so long ago that the differences between them had been rendered permanent (Vogt 1864). Vogt maintained, as did Darwin, that each race was so well adapted to its environment that it was incapable of change, even when moved to a new environment. For Vogt, as for Wallace and Darwin, racial evolution had essentially stopped. The polygenist idea of unbridgeable gaps between inalterable racial types thus found an honored place even in the new evolutionary science. The measurement and classification of the resulting distinct types became fodder for the burgeoning science of physical anthropology.

Physical Anthropology and the Persistence of Polygenism

Physical anthropology in the second half of the nineteenth century was dedicated to one major aim: the measurement of human bodies, particularly heads, in order to identify the stable racial types underlying human populations. The basic assumption of the science was that each race could be represented by its own essential set of traits, physical traits primarily, which were in turn associated with corresponding mental and moral characteristics. This set of traits defined the race, belonged properly only to it, and found expression in each and every one of its members. In reality, the physical anthropologists conceded that not every member of a given race possessed all of its proper racial traits. The essence of the race might not be perfectly represented in any single individual. But as an ideal, the racial essence could always be reconstructed, which is just what the physical anthropologists took their task to be. Though the mixing of populations, interbreeding, or immigration might conceal or disguise racial essences, the anthropologists believed they could always extract and identify the essences by techniques of careful measurement.

Broca developed over forty instruments, including various kinds of calipers, pelvimeters, craniostats, and torsiometers, to make the increasingly precise cranial and body measurements that his science demanded. His fellow physical anthropologists used Broca's tools and techniques to measure more than 25 million Europeans throughout the late nineteenth century. American anthropologists and physicians made similar measurements of thousands of soldiers and prisoners in the American Civil War. The idea that essential racial types existed beneath human variety and could be reconstructed, the assumption of

underlying stable racial essences, was of course a polygenist one, traceable directly to Nott, Edwards, Knox, and Hunt. That Broca, an avowed polygenist and evolutionist, had such influence in anthropology in the second half of the nineteenth century, attests to the persistence of polygenist styles of reasoning in an era dominated by evolutionism.

In his 1856 work *Human Hybridity,* Broca followed polygenist tradition, arguing that there were degrees of fertility in human race mixing. Eugenesic crosses—matings between those races that were most closely allied in character—produced fully fertile offspring. Dysgenesic crosses, on the other hand—matings between the races farthest apart on the scale of humanity—were either sterile or produced only a few sterile offspring. For Broca it was as though nature herself was trying to prevent the racial essences from dissipating through mixing. But even in a fully eugenesic cross, the essential racial character would remain recognizable enough to be extracted by the anthropologist's calipers.

Such a polygenist idea was harmonious with evolutionism. The distinct racial essences developed over eons of divergent evolution. All humans may ultimately have had a common ancestor, but that singular origin point was so far back in time, the common ancestor was so remote, that to all intents and purposes the races had always been separate. By comparing modern skull measurements with the ancient ones discovered in the last half of the nineteenth century, anthropologists concluded that the races had evolved along their own separate lineages. Some anthropologists believed that the races descended from a common ancestor in the Pleistocene Era. Others, like Topinard and Vogt, traced the white, black, and yellow races each to a different ancestral species of ape. Polygenist thinking also surfaced in Topinard and Vogt's views on the impossibility of acclimatization. Racial types were so basically stable and so well suited to the environments in which they had evolved that they could not change or adapt even when placed in new conditions. Any racial transformation was out of the question. Evolutionary change had once occurred, but it occurred in the past, achieved its end, and was not ongoing.

The stability of types despite mixing, the separateness of different racial lineages, and the impossibility of acclimatization were all polygenist-inspired ideas that remained widely influential for the rest of the century. In the United States the anthropologist Daniel G. Brinton echoed them, even though he was nominally a monogenist. As late as 1896, Frederick L. Hoffman, peppering his "Race Traits and Tendencies of the American Negro" with references to Nott and Hunt, declared that a cross between a Negro woman and a white man would result in a mix that was inferior to either a full-blooded Negro or a full-blooded white. As for Negro men and white women, according to Hoffman, they were so disinclined to marry each other that the fertility of their unions was hardly a con-

cern. So easily was Broca's polygenism combined with the new evolutionary anthropology that his most notable opponent, Armand de Quatrefages, was an anti-Darwinian monogenist who argued that all races were equally interfertile and that they could adapt to all environments.

For polygenically inclined physical anthropologists after Darwin, the traditional hierarchy of races remained unquestioned. Negro, Malay, American Indian, and Caucasian fell into their familiar positions on the human ladder. But these rough divisions were not the sole focus of interest. The drive for increasingly precise measurement allowed anthropologists to draw ever finer distinctions within these categories, especially within the Caucasian category. The idea that Europeans comprised different races was familiar from Edwards and Knox, and ultimately it goes back to Julius Caesar's divisions of Gaul.

Dividing the races of Europe, determining and measuring differences among European races, became a consuming interest too for late-nineteenth-century physical anthropologists. Following Knox, these anthropologists interpreted the political struggles of Europe in racial terms. To separate a Negro from a Caucasian, skin color would usually suffice, and anthropologists needed no elaborate anthropometric tools. But distinguishing a Saxon from a Celt, an Alpine from a Mediterranean, required precise measurements. Only Broca's arsenal of measuring techniques could reveal the minute differences in headform that anthropologists believed these races displayed. The interest in measuring types of Europeans was, then, both driven by and reflected in the anthropologists' increasing technical skill. The more they measured, the more their sense was reinforced that they were measuring something real. And yet the more they measured, the harder it became to clearly distinguish one type from another. Told by Otto Ammon that he could not provide a photograph of a pure Alpine type, William Z. Ripley wrote, "[Ammon] has measured thousands of heads, and yet he answered that he really had not been able to provide a perfect specimen in all details. All his round-headed men were either blond, or tall, or narrow-nosed, or something else that they ought not to be" (Ripley 1899, 108).

Measurements of the size and shape of head, summarized by the cephalic index, were the principal means of dividing European populations. Devised by Anders Retzius in 1844 as a refinement of Pieter Camper's facial angle, the cephalic index was a measure representing the ratio of length to breadth of skull. Retzius himself was interested in European races, and Broca, Topinard, and other physical anthropologists took up both his interest and his measure later in the century. In the post-Darwinian era, anthropologists treated the cephalic index as an especially important indicator of racial group since, as a relatively useless trait, headform would not have changed in response to selective pressures. Thus its purity as a marker of racial type would be unclouded, as would

not necessarily be the case with such traits as stature or skin color. Anthropologists used the cephalic index to distinguish the dolichocephalic type, which had a long, oval-shaped head, from the brachycephalic type, which had a round head. Anthropologists associated other facial features with each type; for example, brachycephalic types were thought to have prognathous, jutting jaws.

By 1899, Ripley's *Races of Europe* summarized the consensus produced by Topinard and others during the preceding thirty years. There were three major divisions in Europe: the Teutonic, the Alpine, and the Mediterranean. The Teutonic, also called Aryan, or Nordic, was envisioned as a superior race originating in the East and bringing civilization to Europe. The beginnings of what would later become the Nazi myth of Aryan racial purity and superiority were therefore evident in this work. But Ripley's ties to pre-Darwinian racial theories were equally clear. For him the Aryans were, as they were for Knox, divided into the superior Saxon and the inferior Celt.. The Celtic type was represented by the Irish, who were commonly portrayed as monkeys in newspapers and popular journals. More fundamentally, Ripley's debt to polygenism manifested itself in his reduction of intermixed European populations to three basic types. Though he described himself as an "ardent evolutionist," evolution, for him, simply meant the mixing of these types, which the physical anthropologist then had to separate. Significantly, when considering the question of whether the types had descended from a single ancestor, Ripley refused to answer, calling the matter of origins too speculative to be a proper question for objective investigation.

The pre-Darwinian idea of stable racial types gained new force and acquired new evolutionary justification in the post-Darwinian era. In the second half of the nineteenth century, evolution became the guiding principle for the life and human sciences, helping to overhaul, rather than overturn, many older ideas that now took on a new scientific respectability. The evolutionary model that gained ascendancy during this period was a potent blend of the writings of Darwin and Spencer. Spencer was a prolific author and widely read before and after the publication of Darwin's works. The result was that, especially for Anglo-American audiences, Darwin was read through a Spencerian lens, the Darwinian emphasis on struggle combined with Spencer's emphasis on progress, and their two rather different theories of evolution conflated into a single worldview.

According to that view, evolution occurred in society just as it did in nature. Society could achieve evolutionary progress only by a fierce struggle for survival, with the losers unapologetically relegated to the bottom of the heap. Scholars often call this view social Darwinism, though it owed as much to Spencer as it did to Darwin. It came in many different varieties depending, as we will see, on which particular aspects of the Spencer-Darwin mix the writer chose to emphasize. As they conceived the struggle for existence taking place not only between

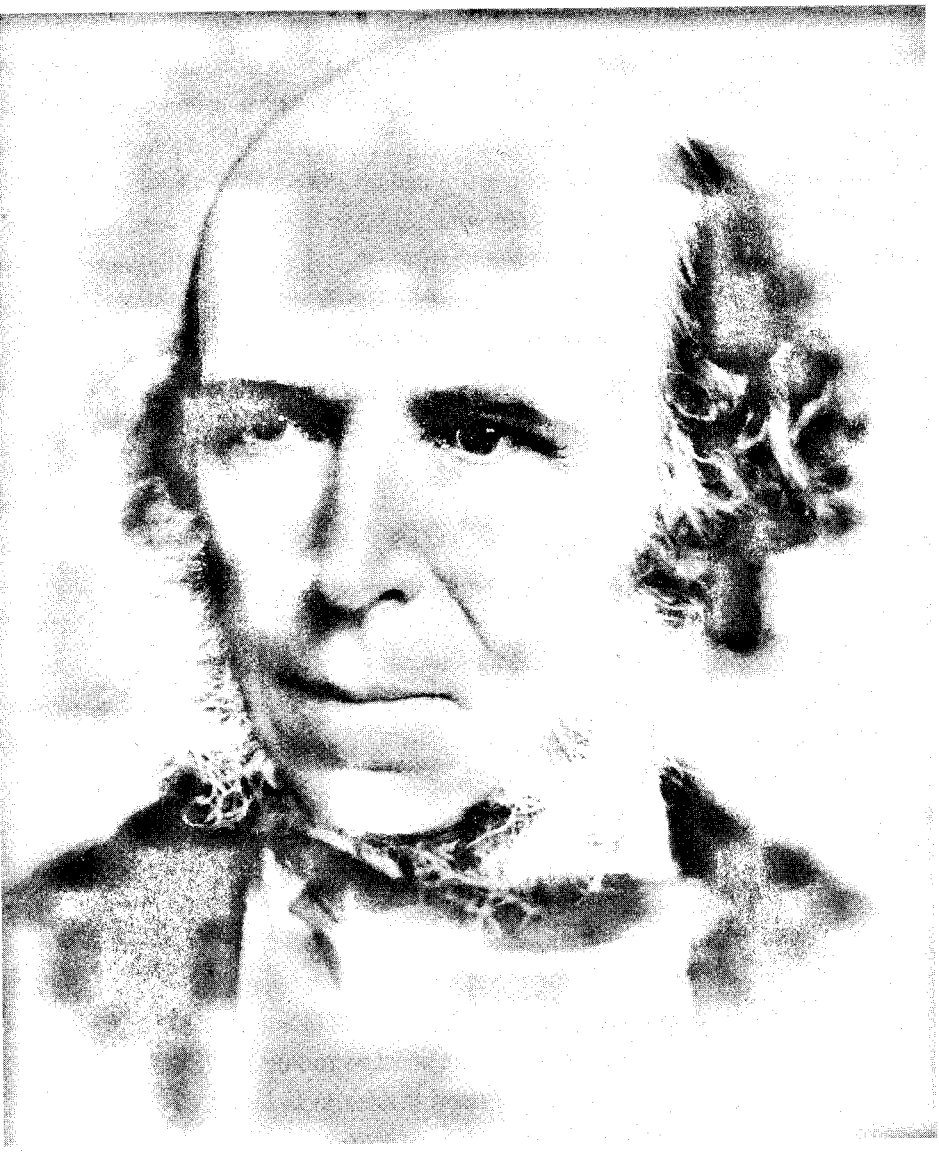
individuals, but also between groups of people, many social Darwinists reserved an honored position for race in their evolutionary worldview. Just as the newly scientific physical anthropology helped legitimize the older concept of racial type, social Darwinism lent new respectability to the well-worn notions of racial hierarchy and interracial struggle. To understanding the evolutionary framework in which social Darwinism was embedded, and the key role of race in that framework, we have to understand the life and philosophy of Herbert Spencer.

Spencer and Evolution

Herbert Spencer (1820–1903) was born in Derbyshire, in the English provinces, into a family of modest means. Both his parents, who were of Methodist and Quaker backgrounds, fostered Spencer's skepticism toward religion and toward church authority and encouraged him to dissent from the doctrines of the high Anglican Church. Spencer received his education at home from his schoolmaster father and at his uncle Thomas Spencer's school in Somerset. Spencer did not attend a university and throughout his life was mostly self-taught. After a stint as a railway and civil engineer, in 1841 he resigned his position and began writing for various periodicals.

As a young man Spencer developed the set of ideas that remained with him for the rest of his life. In his 1842 pamphlet "The Proper Sphere of Government," for example, Spencer argued that government should be strictly limited in function to protecting property and person and should not be responsible for educating, building roads, or administering charity. State-sponsored charity prevented the poor from trying to improve themselves. It encouraged them to marry and have children even though they lacked the ability to support those children. It militated against voluntary charity, thus blunting the development of the finer feelings of sympathy and generosity in the well-to-do. Self-improvement, Spencer believed, came only through struggle and free individual competition, also called laissez-faire, without government interference or support, except of the most restricted kind. Progress came only through the struggle to achieve, with every person responsible for his or her own interests. In this early radical phase of his thinking, Spencer envisioned government eventually withering away, as each member of society, including women and children, enjoyed full rights and full freedoms without infringing on any other. In 1848 Spencer moved to London to become subeditor of the *Economist*, a liberal journal, where he continued to champion his individualist, free trade, and laissez-faire policies. In 1853 he left the *Economist* to write full time.

In the 1850s, Spencer fit his ideas about government and society into an



English sociologist Herbert Spencer is credited with developing the phrase "survival of the fittest." (Library of Congress)

evolutionary framework. In such works as *Social Statics*, "The Development Hypothesis," and "Progress: Its Law and Cause," Spencer defined and popularized the concept of evolution and argued deftly the absurdity of the creationist alternative. For Spencer, evolution was synonymous with progress, development from the simple to the complex, the increasing specialization of an undifferentiated mass to a complex, ordered whole. Note that this was a very different type of evolution from Darwin's, which implied no such progress. Evolution for

Spencer meant increasing diversification and differentiation of structure and function. Evolution was also a universal principle, an all-encompassing process that could explain equally the formation of galaxies, the transmutation of species, and the history of human societies. The organic, mental or psychological, and social realms were therefore all united by this developmental master plan.

Spencer argued that higher biological organisms and more advanced societies showed the same characteristics. Both displayed greater individuation, progressively greater specialization, and differentiation. In both there was a complex division of labor, a concept exported from economics to physiology, in which different parts specialized for different functions. In fact, Spencer referred to societies as social organisms, and his analogy between organisms and societies was nearly perfect. Each had a head, a ruling portion, responsible for the sensitive and intelligent functions, as well as subsidiary members that did the mechanical work.

The analogy was so exact for Spencer that he spoke of the tissues of the body as "communicating" with each other, and of society as needing to "excret[e] its unhealthy, imbecile, slow, vacillating, faithless members" (Spencer 1851, 324). Any influence that interfered with this process was therefore evil and to be combated. Each person was to work according to his own abilities, to find his rightful place in the social organism, while society purified itself of its waste products. The suffering that this would cause for those earmarked for excretion might seem unkind at the moment but was ultimately working toward the greater good. "The poverty of the incapable, the distresses that come upon the imprudent, the starvation of the idle, and those shoulderings aside of the weak by the strong, which leave so many 'in shallows and in miseries,' are the decrees of a large, far-seeing benevolence" (Spencer,1851, 323). Spencer called this struggle for existence "the survival of the fittest," failure and death to the unfit "social selection," concepts he framed almost a full decade before Darwin borrowed them for his own evolutionary purposes.

Spencer believed that the struggle and the suffering necessarily had a good outcome. Not only would a more highly differentiated social organism result, but also one that showed the greatest interdependence of its members. Ultimately struggle would cease and harmony would reign. Just as in a perfectly adapted and efficiently functioning biological organism, in the most highly evolved society all conflict would end, and cooperation and interdependence would take over, a state he referred to as "equilibration."

For Spencer, the progressiveness of the evolutionary process was ensured by his belief in the Lamarckian inheritance of functionally acquired traits. As the members of a society, or the parts of an organism, specialize and take up their different stations in the division of labor, the modifications in mental or physical

structure that they acquire will be passed to the next generation. There was never any possibility that the process would reverse or stagnate, since Spencer's Lamarckian mechanism kept it moving in a progressive direction. Perfectibility was guaranteed by this mechanism. Those who survived the process of social selection were the fittest of their generation, and they passed their achievement via Lamarckian inheritance to their offspring. The evolution of a society for Spencer meant that intelligence, morality, and perfectibility increased, along with fitness, cooperation, and interdependence. In an interesting reversal of Malthusian reasoning, Spencer insisted that increasing morality would bring decreasing fertility, so that unchecked population growth would not stand as an obstacle to the realization of his harmonious utopia.

Spencer developed the two aspects of his progressive evolutionism, struggle and cooperation, in voluminous writings. Following on the essays he wrote in the 1850s, in 1862 he published *First Principles*, a prologue to his next ten volumes, which dealt with biology, psychology, sociology, and ethics. His *Principles of Sociology* threatened to grow so large that he had to supplement it with *Descriptive Sociology*, a compilation in more than a dozen volumes of facts about different cultures. Spencer used these facts, which he had his secretaries cull from books of travel, to support his *Principles*. *Descriptive Sociology* is a prime example of what is sometimes called armchair anthropology, which means that Spencer did not conduct any fieldwork or experiments but simply speculated on sociology based on others' descriptions.

In his *First Principles*, as well as in the writings that followed, Spencer emphasized that struggle and survival of the fittest could be only a contributing cause to the advance of society, but never the whole story. Struggle might be important in the early stages of civilization to eliminate the weaker races and produce the rougher traits. But for more advanced civilizations, struggle, brutality, and violence lost their effectiveness, and war became disadvantageous. Cooperation and adaptation via a Lamarckian mechanism were more important in bringing about the dynamic equilibrium of organism and environment that Spencer envisioned as the endpoint of evolution. The higher traits, including man's delicate mental structures, his refined social habits, and his sense of justice, could not have been produced by struggle and selection, Spencer believed, since these traits have no apparent survival value. Only a Lamarckian mechanism, driving the increasing interdependence of society's members, could account for the appearance and persistence of these higher traits.

Evolution as progress, struggle and survival of the fittest eventuating in cooperation and interdependence, and the concept of society as an organism were the building blocks of Spencer's philosophy. It was a capacious and highly adaptable philosophy, and a rich resource for social thinkers in the late nine-

teenth century. Spencer's followers often took what elements they liked, many of them emphasizing the struggle for existence at the expense of his other principles. Indeed, the social Darwinists are perhaps more accurately called "social Spencerians," since they saw unfettered individualistic competition and raw struggle as the key elements of social progress, and these are the ideas often identified with Spencer. When Spencer was at his peak, his philosophy was more complex and more nuanced than that. But as he grew older, as the British economy worsened in the 1880s and 1890s, and as Marxism gained ascendancy, Spencer became increasingly conservative, distancing himself from the socialist aspects of his own philosophy, emphasizing laissez-fare struggle, and downplaying his vision of the harmonious utopia.

Spencer on the Savage Mind

Spencer believed that the hierarchy of races that he and most of his fellow Victorians observed was an evolutionary hierarchy. The lower races were less evolved, stuck in the past, biologically and culturally simpler than Caucasians. As one moved from the savage to the civilized, one advanced in evolutionary time. Society became increasingly complex and specialized, and primitive homogeneity diversified into modern heterogeneity. Civilized people showed increasingly complex physiological and psychological organization and had a correspondingly more complex relationship to their environments.

Spencer's evolutionary scale was, crucially, a unilinear one. Mankind was a unity, not because all human beings were the same, but because the different human groups stood at different steps in the same process. All human groups progressed along the same scale and all could be measured by the same standard. Spencer expected the savage to come up to a European standard, and to do so by progressing through the same stages that European society had presumably passed through. More than metaphorically, the savage showed the European what his own past, his own racial history, had been. Sociocultural evolutionists would develop the idea that the savage was a clue to the Caucasian past.

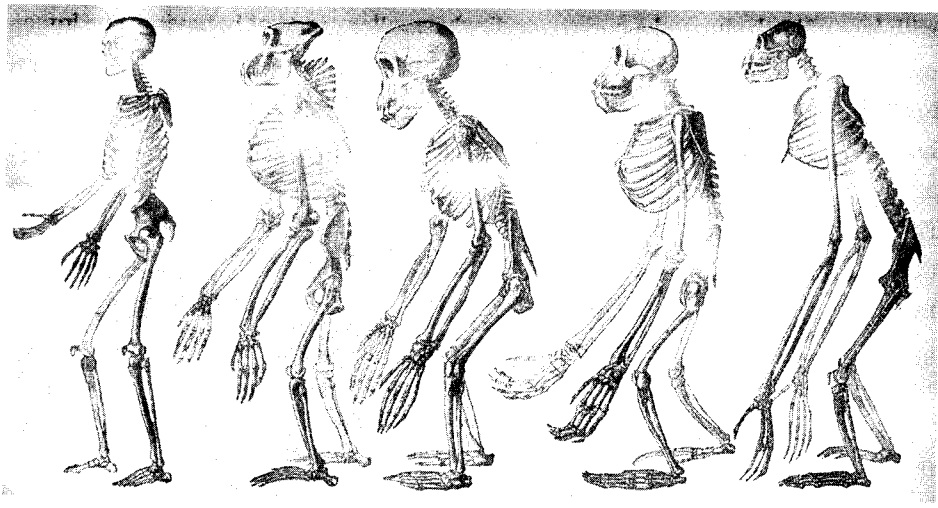
Spencer took the idea of increasing specialization quite literally. Brain mass, he believed, was a direct indication of position on the evolutionary scale. Because their ancestors had used their brains more effectively, through a process of Lamarckian inheritance the higher races inherited a larger brain mass. This put the lower races, inheriting a smaller brain mass, at a disadvantage from the outset. Spencer was far from believing that all people entered the world with equal potential. Brain mass varied directly with mental complexity, and those

with less of both showed a correspondingly smaller range of behavior. The lower races tended to be guided by reflex action and irrational mimicry. Their behavior was characterized by rigid customs that could not be modified to suit changing circumstances. "Many travelers comment on the unchanging habits of savages," Spencer wrote (Spencer 1979, 192). "The semi-civilized nations of the East, past and present, were, or are, characterized by a greater rigidity of custom than characterizes the more civilized nations of the West. The histories of the most civilized nations show us that in earlier times the modifiability of ideas and habits was less than it is at present."

This lack of plasticity in the lower races was due not only to their small brains but also to the fact that their children's period of development was shorter than that of children of advanced races. Infancy and childhood were key phases in development, and the more extended they were, the more they allowed impressions from the environment to shape the brain. The more environmental influence, the greater the departure from ancestral forms, and the more civilized the race. The savage child was considered precocious, developing at a faster rate than the civilized child, but with puberty came mental arrest, an abrupt shutting down of the developmental process. Thereafter the savage nature became fixed. An American popularizer of Spencer, John Fiske, provided an anatomical explanation for this mental arrest. Fiske believed that the cranial sutures of the savage skull closed when the child reached puberty, stopping all further brain growth and mental development. The idea was pre-Darwinian, traceable to Gratiolet, Broca's colleague, and the polygenist Hunt, but for Fiske it was entirely amenable to an evolutionary framework.

Spencer's writings on the comparative psychology of man amounted to an attempt to characterize the savage mind. Members of all the races lower than the Caucasian had minds that were rigid and unadaptable, automatic or reflex in character, impulsive and uncontrolled. The savage showed persistence in the lower intellectual faculties, spending hours carving a stone tool, for example, but little aptitude for anything requiring higher thought. His emotional responses were impulsive, showing how little they were controlled by any higher part of the nervous system. The lack of the cardinal Victorian virtue of self-control demonstrated for Spencer the evolutionary distance between the savage and the civilized.

But Spencer did not believe that all savages were identical. Like everything else in his progressive scheme, different savage natures possessed different qualities in degrees and could be arrayed hierarchically. Although they all may have lacked self-control, rational curiosity, and the capacity for abstract thought, in other traits their natures differed widely. They showed various emotional specialties: some savage tribes were gregarious, others indifferent to society; some



The skeletons of five primates: human, gorilla, chimpanzee, orangutan, and gibbon based on Ernst Haeckel's The Battle of Evolution, *1905 (Bettman/Corbis)*

were ungovernable, while others submitted easily to external restraint; some sought praise eagerly, others less so; some desired property, others did not.

Some savage races possessed peculiar aptitudes. For example Spencer recounted the musical ability of Negroes who could sing harmonies to complex tunes upon their first hearing of them. He noted that each savage tribe treated its women differently. In keeping with his idea that evolutionary progress means increasing specialization, Spencer maintained that the higher the race, the greater the contrast between men and women in physical appearance and social role. Significantly, however, when discussing the altruistic sentiments, which he considered the highest, including pity, generosity, and justice, Spencer did not provide any savage examples. The implication was that the lower races had not yet evolved to those levels. Whether they would ever so evolve was highly doubtful.

For Spencer and Fiske, the lower races—African, Polynesian, American Indian—were arrested in a state of savagery, from which only direct intervention could remove them. The ancient Egyptians and the Chinese had moved out of savagery, but only into an immobile, nonprogressive type of civilization. The Spencerians, however, doubted that Asians, Africans, and other lower races could be brought onto a progressive course, for reasons having directly to do with Spencer's evolutionary philosophy.

In Spencer's laissez-faire evolutionary framework, Caucasians achieved civilization by self-development and individualistic struggle. Struggle was essential for progress, but the problem with the lower races, according to Spencer and his followers, was that they seemed to have little ability for it. Their behavior was

circumscribed largely by their imitativeness, a tendency toward irrational or automatic mimicry that suppressed any more rational or critical response. But imitation was superficial and no substitute for real striving. A savage might imitate a civilized man, but such imitation stood in the way of his becoming truly civilized and was in fact a dangerous thing to encourage, for the savage could throw off the guise and revert at any moment. Imitation could not overcome the ingrained habits of the race. The behaviors carved into the savage's system by Lamarckian inheritance would overpower his puny attempt to imitate his betters. The steps of evolutionary progress were gradual and deliberate and could not be hurried over or supplanted by being sped up artificially. Neither imitation nor education, then, could really solve the race problem because the problem was a consequence of the savage's very nature.

Impulsive and irrational, mirthful and intolerant of discipline, the savage was stuck in a permanent childhood and lacked the capacity to grow out of it. As the ability to learn self-restraint and self-discipline eluded him, so did the ability to develop into a civilized adult. For Spencer, the resemblance between savages and children came as no surprise. Since the savage represented the past, literally, the childhood, of the civilized race, the similarity between adults of the lower races and Caucasian children was an essential outcome of Spencer's evolutionism. And since all peoples progress through the same intellectual and moral stages, those who have not, or not yet, reached the top of the ladder must therefore share common traits.

The equation between the savage and the Caucasian child was one outcome of this reasoning. But it was not the only one. Women, the lower classes, and criminals were also childlike, or savage, in certain ways. All were subordinates in different realms of life, all lacked the ability to look after or control themselves, and all represented lower positions on the unilinear scale. These were powerful analogies. Victorian philosophers, scientists, and social thinkers equated and spoke in similar terms about women, children, peasants, laborers, criminals, madmen, Irishmen, and savages. The American Spencerian sociologist William I. Thomas, for example, made parallel arguments about the dangers of educating Negroes and women. These lower orders of humanity were not completely interchangeable, nor did Spencerians treat them as exactly identical. But they did share certain basic traits that marked them as primitive.

The German biologist and social Darwinist Ernst Haeckel generalized the Spencerian analogies among primitive groups into the biogenetic law. Encompassing all of nature, this law stated that ontogeny recapitulates phylogeny, that the stages of individual development repeat the stages of racial development, or, more simply, that the individual while growing into an adult climbs all the steps of the evolutionary ladder. Thus Haeckel believed that the human fetus at vari-

ous points in its development resembled an adult reptile and an adult amphibian before progressing to mammalian status. As the infant grew into an adult, and by adult Haeckel of course meant the northwestern European male adult, it recapitulated not only the physical stages, but just as crucially the mental and moral stages of its ancestors, represented by apes, savages, and women. For Haeckel as for Spencer, the hierarchical chain of being was entirely compatible with an evolutionary framework.

Social Darwinism and Its Variants

For the Spencerians, evolution provided a many-sided justification for domination, a paternalistic philosophy that could control the childlike outsider, whether that outsider was a member of a lower race, gender, or class. But social Darwinist arguments varied and underwent subtle shifts depending on which aspects of the Spencer-Darwin blend the writer chose to emphasize. The idea of individualistic struggle was often replaced by a collectivist ideal, meaning that the races themselves were in competition. The American sociologist William Graham Sumner, for example, argued for unrestricted competition among individuals and survival of the fittest; success in the struggle belonged to the industrious, the frugal, and the temperate. But the English Spencerian Walter Bagehot envisioned the competition as between nations or civilizations, the important forces being those, like religion, that bound the individual members of a nation together, kept them subordinate to their government, and molded their national character. For Bagehot, the struggle took place on a national or racial rather than on an individual level.

When it came to racial relations and interracial struggle, British and American Spencerians tended to lessen Spencer's original laissez-faire emphasis. There were now reasons that all the races could not compete equally on a level playing field, reasons that struggle, and therefore progress, had to be restricted to Caucasians. For what were considered the lowest races of men—Africans, Polynesians, and American Indians—there could be no question of racial struggle with Caucasians. Domination by Europeans was inevitable, as the lower races could never progress on their own and so required such domination. As the ideal of direct intervention provided a rationale for imperialism, it also virtually assured the extinction of these lower races, which was in some cases already happening.

Whether Negroes or Chinese immigrants to the United States should be allowed to compete in society was a slightly more delicate issue. According to American Spencerians, the Negro needed to be exposed to struggle in order to progress. But efforts to help the Negro had to be strictly limited, as too sudden an uplift could be dangerous. Here the efficacy of intervention was thrown into

doubt. A race that needed constant prodding by compulsory education could never compete in a truly fair manner. Moreover, such exposure to the struggle would ultimately prove the Negro's demise. Common medical opinion held that freedom was unhealthy for Negroes, that they deteriorated mentally, morally, and physically as freedmen, a belief bolstered by supposedly high rates of Negro insanity reported in the 1870, 1880, and 1890 census. Chinese immigrants, on the other hand, possessed an unhealthy advantage in competition with whites. Though considered tradition-bound and rigidly unable to adapt, many Americans also believed the Chinese to be hard workers and all too willing to help one another. The Chinese had to be excluded from the racial competition because their racial habits could potentially make them a little too successful.

Spencer's evolutionism could thus provide a rationale not only for imperial expansion but also for subordinating African Americans and for restricting the flow of immigrants into the United States. In this last area social Darwinism overlapped with the eugenics movement, which helped put policies of immigration restriction into practice. Both ideologies aimed to maintain the integrity of the white race. The homogeneity of society should not be compromised by an influx of unassimilable elements. Its health as a smoothly functioning organism depended on the full integration of its parts, and those that refused assimilation, especially groups that did not behave according to Euro-American standards, should be excluded or eliminated or society would break down. Spencer valued heterogeneity in the division of labor as the mark of an evolved society, but never racial heterogeneity. When it came to the races, both Spencerians and eugenists believed that all parts of a society must be homogeneous in race and character, and whether they relied on the organic analogy or on beliefs in the purity of the blood, Spencerians and eugenists came to the same conclusion, both believing that race mixture must be resisted. Rome fell, they argued, because of an influx of unassimilable elements, and in the late nineteenth century, the fear was that the United States was taking the same path.

Social Darwinism in Germany

Anglo-American ideas about racial hierarchy and interracial struggle derived from a mixture of Spencerian and Darwinian theories. In other contexts, however, the blending of these two evolutionary philosophies was not as complete. In Germany, for example, they were almost entirely pried apart. Here Spencer's influence was slight, although the notion of struggle, both on an individual and on a racial or national level was traceable in the writings of German scientists directly to Darwin. In Germany, we can speak accurately of social *Darwinism*,

Ernst Haeckel (1834–1919)

Haeckel was Germany's premier zoologist and one of the earliest champions of Darwinism. Born in Potsdam, he received an M.D. degree in 1858 but never practiced medicine, as he was always more interested in pure biology. He received a doctorate in zoology from the University of Jena in 1861 and remained a professor of zoology and comparative anatomy there for the rest of his life. He was an important teacher at Jena, where a chair and Zoological Institute were created for him, and where he counted many important German scientists among his students. In the mid 1860s Haeckel became an enthusiastic convert to Darwinism and integrated humans into an evolutionary framework before Darwin himself dared to do so. Haeckel embraced Darwinism not only as an evolutionary theory but as a cosmic philosophy, applicable to the entire universe. He saw evolution as a kind of religion that revealed beauty, design, and meaning in nature. Becoming close to nature, and understanding and celebrating man's animal origins, were for Haeckel the goals of the evolutionary religion that he called "Monism." Monism meant that matter and mind were everywhere conjoined in nature, and was opposed to traditional Christian dualism—that soul and body were separate entities.

(Library of Congress)

In his 1866 *Generelle Morphologie*, Haeckel placed all of the organic and inorganic worlds into a Darwinian evolutionary framework, and this work, combined with the highly detailed biological treatises that followed, most of them dealing with problems of classification of invertebrates, made their author famous. In addition to being an

although the Germans kept an important place for progress and for an organic conception of society stemming from Romantic nature-philosophy.

Darwinian theory strongly influenced and spread rapidly through the German intellectual community. By the 1860s, many German biologists, sociologists, philosophers, theologians, ethnologists, and economists converted to Darwinism, applying it easily to the natural and social realms. At first many of these thinkers used Darwinism to support a liberal ideology of progress, opposing socialism and favoring laissez-faire. But in succeeding decades, as Bismarck consolidated power and the former liberals became part of an entrenched elite, the social Darwinist movement became increasingly conservative and wedded to the status quo. This political shift was common to the history of the movement in Britain and France as well.

Ernst Haeckel was one of the earliest and most powerful of these German

original researcher, Haeckel was an indefatigable popularizer of the theory of evolution, which he did in part by drawing gnarled and detailed evolutionary trees. He also held to several speculative theories, all of which he saw as more important to evolution than Darwin's mechanism of natural selection—spontaneous generation, the notion of pan-psychism (which holds that all things, living and nonliving, possess some form of mind or soul), the Gastraea theory (that there is a common ancestral form for all many-celled creatures), and, perhaps most famously, the biogenetic law (that ontogeny recapitulates phylogeny, or that individuals, as they grow, pass through the evolutionary stages of their ancestors). Haeckel was also a committed Lamarckian throughout his career.

From the 1880s, Haeckel turned increasingly to the social, moral, and religious implications of evolution. His 1899 *Riddle of the Universe* popularized his Monist philosophy, as did the German Monist League, which he founded in 1906. Members of the League included some of the most prominent scientists in Germany in the early twentieth century. There was much in Haeckel's Monist worldview that endorsed social Darwinism, indeed, that was proto-Nazi in character. In keeping with their religion of nature, Haeckel and his Monists believed that the Germans needed to revitalize their inner racial essence by renewing their contact with nature. True Germans were Aryans, the highest race, but they faced biological deterioration and decay unless they applied nature's law unimpeded in society. This meant that the weak and sickly must be destroyed at birth, that the needs of the individual must be subordinated to the state, particularly to the state's authoritarian power, and that a harmonious organic community, pure in racial essence, must be evolved as a result. A supporter of polygenism and of conflict and struggle between higher and lower races, Haeckel helped make racism scientifically respectable. A strong nationalist his entire adult life, he died deeply disappointed in Germany's defeat in World War I, but he was celebrated for his scientific work and for the religion he made out of it.

converts to Darwinism. As a professor of biology at the University of Jena, Haeckel began applying Darwin's theory to humans before Darwin himself did. In his 1868 *History of Creation*, which appeared in over twenty editions before World War I, Haeckel argued for unfettered struggle as the motor of progress. He saw all of nature as a struggle of organism against organism in an unending war. There was no reason, Haeckel argued, to think that human beings were any different from the rest of nature.

For Haeckel the struggle took place not only among individuals but between nations or races as well. In the *History of Creation* Haeckel divided human beings into ten races, of which the Caucasian was the highest and the primitives were doomed to extinction. His beliefs in militarism and nationalism, racial competition and imperialism were manifested in his founding of the Monist League, with its emphases on the union of spirit and matter and the dom-

inance of superior races. Members of the Monist League later became important in constructing Nazi ideology.

Haeckel's views were echoed by the paleontologist Friedrich Rolle, who argued that Malthusian population pressure would precipitate a war between the races. The biologist Heinrich August Ziegler declared in 1893 that the clearest lesson Darwin taught was the preeminent role that war played in spurring progress in human evolution by the elimination of inferior types. The zoologist Oskar Schmidt wrote that society should stop seeing savages through the rose-colored glasses of the missionary and adopt the objective view of the scientist wherein savages became slated for destruction in the struggle for existence. Among sociologists the same views prevailed. Both Max Weber and Otto Ammon justified national and racial competition in Darwinian terms. Weber spoke of the struggle for "elbowroom," while Ammon glorified war as a progressive force.

The German social Darwinists believed that an aristocracy of talent, identified across the board with the white race, would prevail in these interracial struggles, and that within European society, brisk competition would prepare the race for these inevitable conflicts. The ethnographer Friedrich von Hellwald justified brutal struggles on both individual and racial levels in the most extreme terms, untempered by any ethical concern for the weak. The collectivist struggle among the races was also justified by several other thinkers who in the latter decades of the nineteenth century made the shift from radicalism or liberalism to conservatism. Ludwig Gumplowicz, Austrian professor of sociology at the University of Graz, wrote in his 1883 *Racial Struggle* that war between the races was inevitable, that peace was only temporary, and that Africans and Asians would be exterminated in any struggle with Europeans. Imperialism was part and parcel of this scheme, since the conquering of the weak and inferior was necessary for social progress. Gumplowicz's follower, Gustav Ratzenhofer, an Austrian military officer, echoed his teacher's belief in racial war and imperialism, arguing that such struggles strengthen the conquering nation and improve its internal harmony, its civilization and culture. And the geologist and geographer Friedrich Ratzel, in his 1901 *Lebensraum*, defined the Darwinian struggle for existence specifically as the struggle to control territory, not only among animals and plants but also among human races. For Ratzel, the primitive races, of which he considered the American Indians one example, would continuously be displaced by the cultured races.

Sociocultural Evolutionism in Britain

The evolutionary framework did not rise to prominence unchallenged. Even after evolution was accepted as a fact for nonhuman animals and plants, the

place of human beings in the Darwinian evolutionary picture was contested, primarily by religious thinkers. In the late 1860s, the Duke of Argyll and Archbishop Richard Whately both lodged objections to the idea that man had arisen from lower forms. Instead, they argued, man had degenerated from a higher, more perfect state endowed by God in the Garden of Eden. Argyll and Whately claimed that there were distinctive human traits and that these helped deny any genealogical relationship between man and the animals.

Such challenges did not, however, weaken the evolutionary framework. To the contrary, Argyll and Whately's assertions helped strengthen that framework by setting the research program for a group of evolutionary anthropologists. Known as the sociocultural evolutionists, this group came of age in the generation just after Darwin's and took on Darwin's own problem of anthropogenesis. Meeting the religious challenge, they asked how these distinctively human characteristics could be explained in a natural, developmental way without recourse to divine origin or causation. The three anthropologists who, in different but complementary ways, answered this question were John Lubbock, Edward Tylor, and John McLennan. Together they created a powerful framework to explain the evolution of human culture and customs. Lubbock, Tylor, and McLennan were not social Darwinists in the sense of advocating or justifying individual or collectivist struggle. But in much the way that Spencer's ideas had, their theories of anthropogenesis placed savages below Europeans on the evolutionary ladder.

In his 1865 book *Prehistoric Times, as Illustrated by Ancient Remains and the Manners and Customs of Modern Savages*, Lubbock argued for the great antiquity of man. The subtitle summarizes one of the major methods of sociocultural evolutionism: the comparison of ancient remains to the material culture of present-day savages in order to illuminate what Stone Age people must have been like. Now of course extinct in Europe, the representatives of the Stone Age were to be found among those living fossils, the primitive races of the world. In *Prehistoric Times*, Lubbock characterized savages, whether found in South Africa, North or South America, India, or Australia, not as noble in any way but as enslaved by their own limitations, needs, passions, and ignorance.

In 1867 and 1868, Lubbock responded directly to the challenge posed by Argyll and Whately. In order to oppose the view that human characteristics were divinely given, Lubbock had to show that savages could indeed provide clues to the missing link between the European and the ape. He had to argue that there was continuity between the savage and the Victorian, that there were indications of the ability to progress among the primitives, and that there were residues of barbarism among the civilized.

In his 1870 *Origin of Civilization*, Lubbock expanded on this view by tracing each of the major social or cultural institutions or forms up from savagery to

Sir John Lubbock (1834–1913)

Sir John Lubbock had careers not only as an anthropologist and archaeologist, but also as a science popularizer, financier, and politician. Born in London, he was the eldest son of a prominent banker who was also distinguished as an astronomer and mathematician. When Lubbock was young the family moved to an estate within one mile of Darwin's home in Kent, and Lubbock grew up with Darwin as a surrogate father and as a member of Darwin's inner circle; he was one of the few to learn of Darwin's theory of natural selection before 1859. A regular churchgoer his whole life, Lubbock nonetheless early on lost all orthodox belief, in which he was doubtless influenced by Darwin.

Lubbock had only a few years of formal schooling and entered the family banking business at the age of 14. But his entry into the world of science was helped along by Darwin and Lyell, and through them Lubbock became acquainted with many of the most important scientific men of the day. In the 1850s, upon his discovery of the first fossil musk ox in England, he gained admission to two of the most prestigious British scientific societies, the Geological and the Royal, even as he pursued his banking career. In 1865 his *Prehistoric Times* was published, presenting the archaeological, geological, and paleontological evidence for man's antiquity and introducing to the public the idea of four prehistoric ages: Paleolithic, Neolithic, bronze, and iron. The same year he ran for a seat in Parliament but lost (a loss one of his biographers attributed to his still controversial views on man's antiquity). In 1870, however, the same year that his second major anthropological work appeared, *The Origin of Civilization*, Lubbock ran again for Parliament and won. As a member of Parliament he introduced numerous bills to reform education and labor, including one that established

its highest flowering in modern Europe, imagining the stages through which civilization might have developed. Instead of arguing, as he had earlier, for a diffusionist view, that civilization had spread from East to West, Lubbock now shifted his strategy to propounding the independent invention of cultural forms. To counter the religious degenerationists, Lubbock had to show that the savage could progress on his own, could in effect think himself out of savagery without help, divine or otherwise. By arguing that the savage shared in a core of common human traits, that the races developed in parallel from the same primitive beginnings and passed through the same stages, Lubbock could claim that Stone Age man could have progressed to present-day Victorian gentleman completely naturalistically. The diffusionist view implied that a primitive race needed outside intervention to evolve. But if savages could invent various cultural forms independently, just as Stone Age man must have, then no such intervention was necessary. Lubbock's view of the savage in 1870 was therefore somewhat different from his earlier work. Though still portrayed as inferior, the savage was now basically rational, capable of progress, and shared in a common human nature.

Edward Burnett Tylor took up Lubbock's argument against the diffusionist

the first secular bank holiday, a day popularly known as "St. Lubbock's Day." In 1871 he became the first president of the Anthropological Institute of Great Britain and Ireland. In addition to his study of prehistoric remains in Britain and on the Continent, Lubbock also published extensively in botany and entomology.

(Library of Congress)

Lubbock served in Parliament for thirty years, from 1870 to 1900; during the same period he held such prominent positions as vice-chancellor of the University of London and president of the Institute of Bankers. In 1900 in recognition of his public service he was given a peerage and chose his title, Lord Avebury, to commemorate a prehistoric site he had studied. His later works were popularizations, books of travel and of uplifting quotations on "The Pleasures of Life," but even his major anthropological works, which were issued in numerous editions into the 1910s, were intended to introduce scientific themes to the general public and were widely successful in doing so.

Lubbock remained until his death in 1913 in many ways a typical Victorian: absolutely secure in his privileged place in the world, wishing to help the worthy working poor help themselves, and certain of the Englishman's superiority to the savage races—a notion he saw as clearly connected to the civilizing project of British imperialism.

view. To make the case for the naturalistic evolution of man, Tylor argued, as Lubbock had, that savages could progress unassisted and that the development of culture was not the result simply of diffusion. Tylor's contribution to solving the problem of anthropogenesis was to classify the phenomena of culture and arrange them in probable order of evolution. He reconstructed the general course of human development as progressing through the stages of savagery, barbarism, and civilization. To reconstruct this order, Tylor introduced the doctrine of survivals, by which the anthropologist looked for surviving forms or relics of the past.

John McLennan (1827–1881) used a version of Tylor's doctrine of survivals to reconstruct the naturalistic evolutionary development of marriage customs. In *Primitive Marriage*, McLennan traced human marriage to its origins in primitive promiscuity and polyandry. Rather than having degenerated from some higher state, marriage had instead evolved from lower forms of association. The symbols of the present-day Victorian marriage ceremony were relics of what must have been the realities of the Stone Age past. Once McLennan reconstructed the causal developmental sequence of marriage customs, he could

trace all similar present day symbols to the same primitive realities. Inspired by Lyell's yielding to Darwinism in 1863 and his subsequent work on *The Antiquity of Man*, McLennan argued for the long stretches of time during which humanity had evolved. In an article "The Early History of Man," McLennan summarized the tenets and methods of sociocultural evolutionism. These included a belief in human antiquity and opposition to biblical chronology, an argument for progressive development and against degenerationism, the comparative method, and the doctrine of survivals.

None of these three major sociocultural evolutionists interpreted human history or human progress in terms of racial conflict, as did the social Darwinists. In fact their idea of evolution was not even particularly Darwinian. Darwin favored connecting similar forms as branches of an evolutionary tree, tracing their diffusion from common origins. But the sociocultural evolutionists assumed the separate and independent origin of cultural forms and their advancement in parallel through time, all to prove that the development of humanity had occurred unassisted. At its base, such a set of assumptions reflects polygenism. The invention of human cultural forms occurred many times in many different places, the result of like minds responding to similar circumstances, and without divine help. The sociocultural evolutionists' vision of the human past was one of regular, continuous, gradual, unidirectional progress, excluding all divine intervention. It was a vision they shared with Spencer. Indeed, Lubbock, Tylor, and McLennan firmly endorsed Spencer's view of the stages of human progress represented by the various savage races of the world. This evolutionary framework was, as we will see, the paradigm against which early-twentieth-century cultural anthropology, led by Franz Boas, constituted itself.

In the meantime, however, the evolutionary worldview was entrenched in the institutions of Victorian anthropology. In 1871, after a decade's worth of struggle, the two major British anthropological societies, the liberal Darwinist Ethnological Society and the Anthropological Society of London, founded by the polygenist James Hunt, combined to form the Anthropological Institute of Great Britain and Ireland. Its establishment reflected the growth of anthropology as a profession that was no longer the exclusive domain of amateurs like Darwin and Spencer but now a field for specialists. The Institute's founding demonstrated that a reconciliation had been made between the two formerly warring societies on such previously divisive issues as monogenism and polygenism. Although many of the former Ethnologicals had strenuously objected to Hunt's polygenism and the conservative outlook of his society, indeed to the very name "anthropology" itself, the joining of the societies signaled that they had come to consensus. With polygenism explicitly in retreat, though its influence was subtly incorpo-

rated into the evolutionary worldview, and with the predominance of that worldview itself, there was now agreement on what the important issues were.

Bibliographic Essay

The material for this chapter was drawn from several different historical literatures, and the treatment of a complex period and topic was made even more difficult by the fact that the literatures were almost entirely mutually exclusive. Writings by historians on Spencer and social Darwinism generally treat the topic of race only briefly. Meanwhile writers on the history of the race concept have largely ignored or given very short shrift to social Darwinism. There are a few exceptions to this larger pattern, and those are the works that have formed the basis for this chapter.

There is a library of writing on Charles Darwin himself. One of the best sources is the two-volume biography by Janet Browne, *Charles Darwin: Voyaging* (New York: Knopf, 1995) and *Charles Darwin: The Power of Place* (New York: Knopf, 2002). The best single-volume biography is Adrian Desmond and James Moore, *Darwin: The Life of a Tormented Evolutionist* (New York: Warner Books, 1991). Readers seeking a short introduction to Darwin and his times would be well served by Michael Ruse, *The Darwinian Revolution: Science Red in Tooth and Claw* (Chicago: University of Chicago Press, 1979). *On the Origin of Species* is available widely, usually in the sixth and final edition. A facsimile of the first edition is available as *On the Origin of Species* (Cambridge, MA: Harvard University Press, 1964).

The works above touch on Darwin's views of race (Ruse excepted). For the original, there are several editions of *The Descent of Man.* This chapter relied on Charles Darwin, *The Descent of Man and Selection in Relation to Sex* (Princeton: Princeton University Press, 1981). For a detailed look at Darwin's racial views see Nancy Stepan's *Idea of Race in Science* (Hamden, CT: Archon, 1982). On Darwin's dispute with Wallace over human origins see Malcolm Jay Kottler, "Alfred Russel Wallace, the Origin of Man, and Spiritualism," *Isis* 65, no. 227 (1974): 145–192.

There is a voluminous literature on social Darwinism, its history and its meaning, most of it conceived in reply to Richard Hofstadter's classic work, *Social Darwinism in American Thought* (originally published 1944 by University of Pennsylvania Press, reissued in 1955 by Beacon Press). Subsequent historians have taken issue with Hofstadter's definitions and generalizations, specifically to his claim that social Darwinism was widespread throughout Anglo-America. Such rebuttals can be found in Robert C. Bannister, "'The Sur-

vival of the Fittest is Our Doctrine': History or Histrionics?" *Journal of the History of Ideas* 31 (1970): 377–398, also his *Social Darwinism: Science and Myth in Anglo-American Thought* (Philadelphia: Temple University Press, 1979); in R. J. Halliday, "Social Darwinism: A Definition," *Victorian Studies* 14 (1971): 389–405; and in Donald C. Bellomy, "'Social Darwinism' Revisited," *Perspectives in American History, New Series I* (1984): 1–129. Most of these have very little to say about the role of racial thinking in the work of social Darwinists, however, and the historiographic debates over the term will probably strike a noninitiate as hair-splitting, inconclusive, and confusing. For those seeking a path through them, the debates over social Darwinism have been clearly summarized and a newly inclusive definition for the term set out by Mike Hawkins in *Social Darwinism in European and American Thought, 1860–1945* (Cambridge: Cambridge University Press, 1997).

For the purposes of this chapter, and for those wishing to understand race and social Darwinism, the best sources remain Hofstadter's chapter on racism and imperialism; Greta Jones's *Social Darwinism in English Thought* (Brighton, Sussex, UK: Harvester, 1980), which includes a discussion on race and class (although Jones unhelpfully conflates social Darwinism with eugenics); and Gregory Claeys, "'The Survival of the Fittest' and the Origins of Social Darwinism," *Journal of the History of Ideas* 61 (2000): 223–240. On the German social Darwinist ideas of racial competition and struggle, and for insightful commentary on the role of collectivism in social Darwinism, see Richard Weikart, "The Origins of Social Darwinism in Germany," *Journal of the History of Ideas* 54 (1993): 469–488. On Ernst Haeckel, see Daniel Gasman, *The Scientific Origins of National Socialism: Social Darwinism in Ernst Haeckel and the German Monist League* (New York: American Elsevier, 1971). On Herbert Spencer's evolutionism and his racial views, see John S. Haller, *Outcasts from Evolution: Scientific Attitudes of Racial Inferiority, 1859–1900* (Urbana: University of Illinois Press, 1971), especially the chapter "From Biology to Sociology: Spencer and his Disciples." Haller's book, however, is repetitive and poorly written; his explanations of Spencer's philosophy are unclear and neglect the larger social Darwinist context. The best source on Spencer's racial views remains Spencer himself; his 1876 article on "The Comparative Psychology of Man," included in Michael Biddiss's anthology *Images of Race* (Leicester, UK: Leicester University Press, 1979) helped inform the discussion in this chapter. Background on Spencer and his science of society can be found in Robert L. Carneiro and Robert G. Perrin, "Herbert Spencer's Principles of Sociology: A Centennial Retrospective and Appraisal," *Annals of Science* 59 (2002): 221–261. Readers should be warned, however, that Carneiro and Perrin take the peculiar and distinctly ahistorical view that Spencer's science, its method, its theory, and even the facts he

collected, should be revived and put into use by sociologists today. A more historical treatment of Spencer's philosophy can be found in Robert Richards's *Darwin and the Emergence of Evolutionary Theories of Mind and Behavior* (Chicago: University of Chicago Press, 1987). On Spencer's shift toward conservatism, see Mark Francis, "Herbert Spencer and the Myth of Laissez-Faire," *Journal of the History of Ideas* 39 (1978): 317–328.

The equally voluminous literature on the science of race in the latter half of the nineteenth century pays only glancing attention to social Darwinism. Nancy Stepan's *Idea of Race in Science* (Hamden, CT: Archon, 1982) contains a thorough discussion of physical anthropology and race in this period, on which the section in this chapter drew, but astonishingly mentions neither social Darwinism nor Spencer. The argument that there were "polygenist survivals" post-Darwin, and that these are evident in the physical anthropology of the late nineteenth century, comes from George Stocking, *Race, Culture and Evolution: Essays in the History of Anthropology* (Chicago: University of Chicago Press, 1982), especially the essay "The Persistence of Polygenist Thought in Post Darwinian Anthropology." Stepan concurs with and further develops Stocking's argument. Stocking treats Spencer's evolutionism, Lamarckianism and ties to social Darwinism in essays in *Race, Culture, and Evolution*, especially "The Dark-Skinned Savage: The Image of Primitive Man in Evolutionary Anthropology" and "Lamarckianism in American Social Science, 1890–1915." Stocking discusses Spencer and especially the sociocultural evolutionists Lubbock, Tylor, and McLennan at more length in George Stocking, *Victorian Anthropology* (New York: Free Press, 1987). An overview of Lubbock's life and work can also be found in the editor's introduction to John Lubbock's *Origin of Civilization and the Primitive Condition of Man* (originally published 1870), ed. Peter Riviere (Chicago: University of Chicago Press, 1978). Roger A. Pauly, Jr., makes the case for Lubbock's connection to the imperialist project in his unpublished Ph.D. dissertation, "Unnatural Selections: British Evolutionary Anthropology and the Civilizing Mission" (University of Delaware, 2000). On the debate between the degenerationists Argyll and Whately and the socioculutral evolutionists, see also Neal C. Gillespie, "The Duke of Argyll, Evolutionary Anthropology and the Art of Scientific Controversy," *Isis* 68 (1977): 40–54.

Too often historians are willing to exempt Darwin from the racial ideology and social Darwinist views held by his contemporaries and attribute these "perversions" of Darwin's thought to Spencer or to less "objective" social thinkers. Hofstadter's is a prime example of this argument: to him Darwinism was simply a "neutral tool" that could be put toward a number of different political ends, both conservative and liberal. Fortunately this kind of excision of Darwin from his social context is now being thrown into serious doubt by, among others,

Robert Young, in "Darwinism *is* Social," in *The Darwinian Heritage*, ed. David Kohn (Princeton: Princeton University Press, 1985, 609–638), and Jim Moore, "Socializing Darwinism: Historiography and the Fortunes of a Phrase," in *Science as Politics*, ed. Les Levidow (London: Free Association Books, 1986, 38–80).