

marizes Darwin's sometimes conventional, sometimes courageous views on racial differences and ends with a plea for understanding historical figures in the context of their own times, and not in anachronistic reference to ours.

I did not want to end with stale bread, and therefore sought to build this closing section from essays not previously anthologized. Of the five, only one has appeared before in my own collections—the last piece on Darwin from *Eight Little Piggies*. But I could not bear to expunge my personal hero, while concluding with this essay grants me symmetry by allowing the book to close with the same wonderful line from Darwin that both begins this essay on the opening slice of bread and serves as the epigraphic quote for the meat of this book, the text of *The Mismeasure of Man*. One other essay—*The New Yorker* review of *The Bell Curve*—has been reprinted in collections quickly published in response to Murray and Herrnstein's book. The other essays have never been anthologized before, and I purposely left them out of my next collection to appear, *Dinosaur in a Haystack*.

This subject of biodeterminism has a long, complex, and contentious history. We can easily get lost in the minutiae of abstract academic arguments. But we must never forget the human meaning of lives diminished by these false arguments—and we must, primarily for this reason, never flag in our resolve to expose the fallacies of science misused for alien social purposes. So let me close with the operative paragraph of *The Mismeasure of Man*: "We pass through this world but once. Few tragedies can be more extensive than the stunting of life, few injustices deeper than the denial of an opportunity to strive or even to hope, by a limit imposed from without, but falsely identified as lying within."

ONE

Introduction

CITIZENS OF THE REPUBLIC, Socrates advised, should be educated and assigned by merit to three classes: rulers, auxiliaries, and craftsmen. A stable society demands that these ranks be honored and that citizens accept the status conferred upon them. But how can this acquiescence be secured? Socrates, unable to devise a logical argument, fabricates a myth. With some embarrassment, he tells Glaucon:

I will speak, although I really know not how to look you in the face, or in what words to utter the audacious fiction. . . . They [the citizens] are to be told that their youth was a dream, and the education and training which they received from us, an appearance only; in reality during all that time they were being formed and fed in the womb of the earth. . . .

Glaucon, overwhelmed, exclaims: "You had good reason to be ashamed of the lie which you were going to tell." "True," replied Socrates, "but there is more coming; I have only told you half."

Citizens, we shall say to them in our tale, you are brothers, yet God has framed you differently. Some of you have the power of command, and in the composition of these he has mingled gold, wherefore also they have the greatest honor; others he has made of silver, to be auxiliaries; others again who are to be husbandmen and craftsmen he has composed of brass and iron; and the species will generally be preserved in the children. . . . An oracle says that when a man of brass or iron guards the State, it will be destroyed. Such is the tale; is there any possibility of making our citizens believe in it?

Glaucon replies: "Not in the present generation; there is no way of accomplishing this; but their sons may be made to believe in the tale, and their son's sons, and posterity after them."

Glaucon had uttered a prophesy. The same tale, in different versions, has been promulgated and believed ever since. The justification for ranking groups by inborn worth has varied with the tides of Western history. Plato relied upon dialectic, the Church upon dogma. For the past two centuries, scientific claims have become the primary agent for validating Plato's myth.

This book is about the scientific version of Plato's tale. The general argument may be called *biological determinism*. It holds that shared behavioral norms, and the social and economic differences between human groups—primarily races, classes, and sexes—arise from inherited, inborn distinctions and that society, in this sense, is an accurate reflection of biology. This book discusses, in historical perspective, a principal theme within biological determinism: the claim that worth can be assigned to individuals and groups by measuring intelligence as a single quantity. Two major sources of data have supported this theme: craniometry (or measurement of the skull) and certain styles of psychological testing.

Metals have ceded to genes (though we retain an etymological vestige of Plato's tale in speaking of people's worthiness as their "mettle"). But the basic argument has not changed: that social and economic roles accurately reflect the innate construction of people. One aspect of the intellectual strategy has altered, however. Socrates knew that he was telling a lie.

Determinists have often invoked the traditional prestige of science as objective knowledge, free from social and political taint. They portray themselves as purveyors of harsh truth and their opponents as sentimentalists, ideologues, and wishful thinkers. Louis Agassiz (1850, p. 111), defending his assignment of blacks to a separate species, wrote: "Naturalists have a right to consider the questions growing out of men's physical relations as merely scientific questions, and to investigate them without reference to either politics or religion." Carl C. Brigham (1923), arguing for the exclusion of southern and eastern European immigrants who had scored poorly on supposed tests of innate intelligence stated: "The steps that should be taken to preserve or increase our present intellectual capacity must of course be dictated by science and not by political expediency." And Cyril Burt, invoking faked data compiled by the nonexistent Ms. Conway, complained that doubts about the genetic foundation of IQ "appear to be based rather on

the social ideals or the subjective preferences of the critics than on any first-hand examination of the evidence supporting the opposite view" (in Conway, 1959, p. 15).

Since biological determinism possesses such evident utility for groups in power, one might be excused for suspecting that it also arises in a political context, despite the denials quoted above. After all, if the status quo is an extension of nature, then any major change, if possible at all, must inflict an enormous cost—psychological for individuals, or economic for society—in forcing people into unnatural arrangements. In his epochal book, *An American Dilemma* (1944), Swedish sociologist Gunnar Myrdal discussed the thrust of biological and medical arguments about human nature: "They have been associated in America, as in the rest of the world, with conservative and even reactionary ideologies. Under their long hegemony, there has been a tendency to assume biological causation without question, and to accept social explanations only under the duress of a siege of irresistible evidence. In political questions, this tendency favored a do-nothing policy." Or, as Condorcet said more succinctly a long time ago: they "make nature herself an accomplice in the crime of political inequality."

This book seeks to demonstrate both the scientific weaknesses and political contexts of determinist arguments. Even so, I do not intend to contrast evil determinists who stray from the path of scientific objectivity with enlightened antideterminists who approach data with an open mind and therefore see truth. Rather, I criticize the myth that science itself is an objective enterprise, done properly only when scientists can shuck the constraints of their culture and view the world as it really is.

Among scientists, few conscious ideologues have entered these debates on either side. Scientists needn't become explicit apologists for their class or culture in order to reflect these pervasive aspects of life. My message is not that biological determinists were bad scientists or even that they were always wrong. Rather, I believe that science must be understood as a social phenomenon, a gutsy, human enterprise, not the work of robots programed to collect pure information. I also present this view as an upbeat for science, not as a gloomy epitaph for a noble hope sacrificed on the altar of human limitations.

Science, since people must do it, is a socially embedded activity.

It progresses by hunch, vision, and intuition. Much of its change through time does not record a closer approach to absolute truth, but the alteration of cultural contexts that influence it so strongly. Facts are not pure and unsullied bits of information; culture also influences what we see and how we see it. Theories, moreover, are not inexorable inductions from facts. The most creative theories are often imaginative visions imposed upon facts; the source of imagination is also strongly cultural.

This argument, although still anathema to many practicing scientists, would, I think, be accepted by nearly every historian of science. In advancing it, however, I do not ally myself with an overextension now popular in some historical circles: the purely relativistic claim that scientific change only reflects the modification of social contexts, that truth is a meaningless notion outside cultural assumptions, and that science can therefore provide no enduring answers. As a practicing scientist, I share the credo of my colleagues: I believe that a factual reality exists and that science, though often in an obtuse and erratic manner, can learn about it. Galileo was not shown the instruments of torture in an abstract debate about lunar motion. He had threatened the Church's conventional argument for social and doctrinal stability: the static world order with planets circling about a central earth, priests subordinate to the Pope and serfs to their lord. But the Church soon made its peace with Galileo's cosmology. They had no choice; the earth really does revolve about the sun.

Yet the history of many scientific subjects is virtually free from such constraints of fact for two major reasons. First, some topics are invested with enormous social importance but blessed with very little reliable information. When the ratio of data to social impact is so low, a history of scientific attitudes may be little more than an oblique record of social change. The history of scientific views on race, for example, serves as a mirror of social movements (Provine, 1973). This mirror reflects in good times and bad, in periods of belief in equality and in eras of rampant racism. The death knell of the old eugenics in America was sounded more by Hitler's particular use of once-favored arguments for sterilization and racial purification than by advances in genetic knowledge.

Second, many questions are formulated by scientists in such a restricted way that any legitimate answer can only validate a social

preference. Much of the debate on racial differences in mental worth, for example, proceeded upon the assumption that intelligence is a thing in the head. Until this notion was swept aside, no amount of data could dislodge a strong Western tradition for ordering related items into a progressive chain of being.

Science cannot escape its curious dialectic. Embedded in surrounding culture, it can, nonetheless, be a powerful agent for questioning and even overturning the assumptions that nurture it. Science can provide information to reduce the ratio of data to social importance. Scientists can struggle to identify the cultural assumptions of their trade and to ask how answers might be formulated under different assertions. Scientists can propose creative theories that force startled colleagues to confront unquestioned procedures. But science's potential as an instrument for identifying the cultural constraints upon it cannot be fully realized until scientists give up the twin myths of objectivity and inexorable march toward truth. One must, indeed, locate the beam in one's own eye before interpreting correctly the pervasive motes in everybody else's. The beams can then become facilitators, rather than impediments.

Gunnar Myrdal (1944) captured both sides of this dialectic when he wrote:

A handful of social and biological scientists over the last 50 years have gradually forced informed people to give up some of the more blatant of our biological errors. But there must be still other countless errors of the same sort that no living man can yet detect, because of the fog within which our type of Western culture envelops us. Cultural influences have set up the assumptions about the mind, the body, and the universe with which we begin; pose the questions we ask; influence the facts we seek; determine the interpretation we give these facts; and direct our reaction to these interpretations and conclusions.

Biological determinism is too large a subject for one man and one book—for it touches virtually every aspect of the interaction between biology and society since the dawn of modern science. I have therefore confined myself to one central and manageable argument in the edifice of biological determinism—an argument in two historical chapters, based on two deep fallacies, and carried forth in one common style.

The argument begins with one of the fallacies—reification, or our tendency to convert abstract concepts into entities (from the Latin *res*, or thing). We recognize the importance of mentality in our lives and wish to characterize it, in part so that we can make the divisions and distinctions among people that our cultural and political systems dictate. We therefore give the word “intelligence” to this wondrously complex and multifaceted set of human capabilities. This shorthand symbol is then reified and intelligence achieves its dubious status as a unitary thing.

Once intelligence becomes an entity, standard procedures of science virtually dictate that a location and physical substrate be sought for it. Since the brain is the seat of mentality, intelligence must reside there.

We now encounter the second fallacy—ranking, or our propensity for ordering complex variation as a gradual ascending scale. Metaphors of progress and gradualism have been among the most pervasive in Western thought—see Lovejoy’s classic essay (1936) on the great chain of being or Bury’s famous treatment (1920) of the idea of progress. Their social utility should be evident in the following advice from Booker T. Washington (1904, p. 245) to black America:

For my race, one of its dangers is that it may grow impatient and feel that it can get upon its feet by artificial and superficial efforts rather than by the slower but surer process which means one step at a time through all the constructive grades of industrial, mental, moral and social development which all races have had to follow that have become independent and strong.

But ranking requires a criterion for assigning all individuals to their proper status in the single series. And what better criterion than an objective number? Thus, the common style embodying both fallacies of thought has been quantification, or the measurement of intelligence as a single number for each person.* This book, then, is about the abstraction of intelligence as a single entity, its location within the brain, its quantification as one number for

*Peter Medawar (1977, p. 13) has presented other interesting examples of “the illusion embodied in the ambition to attach a single number valuation to complex quantities”—for example, the attempts made by demographers to seek causes for trends in population in a single measure of “reproductive prowess,” or the desire of soil scientists to abstract the “quality” of a soil as a single number.

each individual, and the use of these numbers to rank people in a single series of worthiness, invariably to find that oppressed and disadvantaged groups—races, classes, or sexes—are innately inferior and deserve their status. In short, this book is about the Mismeasure of Man.*

Different arguments for ranking have characterized the last two centuries. Craniometry was the leading numerical science of biological determinism during the nineteenth century. I discuss (Chapter 2) the most extensive data compiled before Darwin to rank races by the sizes of their brains—the skull collection of Philadelphia physician Samuel George Morton. Chapter 3 treats the flowering of craniometry as a rigorous and respectable science in the school of Paul Broca in late nineteenth-century Europe. Chapter 4 then underscores the impact of quantified approaches to human anatomy in nineteenth-century biological determinism. It presents two case studies: the theory of recapitulation as evolution’s primary criterion for unilinear ranking of human groups, and the attempt to explain criminal behavior as a biological atavism reflected in the apish morphology of murderers and other miscreants.

What craniometry was for the nineteenth century, intelligence testing has become for the twentieth, when it assumes that intelligence (or at least a dominant part of it) is a single, innate, heritable, and measurable thing. I discuss the two components of this invalid approach to mental testing in Chapter 5 (the hereditarian version of the IQ scale as an American product) and Chapter 6 (the argument for reifying intelligence as a single entity by the mathematical technique of factor analysis). Factor analysis is a difficult mathematical subject almost invariably omitted from documents written for nonprofessionals. Yet I believe that it can be made accessible and explained in a pictorial and nonnumerical way. The material of Chapter 6 is still not “easy reading,” but I could not leave it out—for the history of intelligence testing cannot be understood without grasping the factor analytic argument and understanding its deep

*Following strictures of the argument outlined above, I do not treat all theories of craniometrics (I omit phrenology, for example, because it did not reify intelligence as a single entity but sought multiple organs with the brain). Likewise, I exclude many important and often quantified styles of determinism that did not seek to measure intelligence as a property of the brain—for example, most of eugenics.

conceptual fallacy. The great IQ debate makes no sense without this conventionally missing subject.

I have tried to treat these subjects in an unconventional way by using a method that falls outside the traditional purview of either a scientist or historian operating alone. Historians rarely treat the quantitative details in sets of primary data. They write, as I cannot adequately, about social context, biography, or general intellectual history. Scientists are used to analyzing the data of their peers, but few are sufficiently interested in history to apply the method to their predecessors. Thus, many scholars have written about Broca's impact, but no one has recalculated his sums.

I have focused upon the reanalysis of classical data sets in craniometry and intelligence testing for two reasons beyond my incompetence to proceed in any other fruitful way and my desire to do something a bit different. I believe, first of all, that Satan also dwells with God in the details. If the cultural influences upon science can be detected in the humdrum minutiae of a supposedly objective, almost automatic quantification, then the status of biological determinism as a social prejudice reflected by scientists in their own particular medium seems secure.

The second reason for analyzing quantitative data arises from the special status that numbers enjoy. The mystique of science proclaims that numbers are the ultimate test of objectivity. Surely we can weigh a brain or score an intelligence test without recording our social preferences. If ranks are displayed in hard numbers obtained by rigorous and standardized procedures, then they must reflect reality, even if they confirm what we wanted to believe from the start. Antideterminists have understood the particular prestige of numbers and the special difficulty that their refutation entails. Léonce Manouvrier (1903, p. 406), the nondeterminist black sheep of Broca's fold, and a fine statistician himself, wrote of Broca's data on the small brains of women:

Women displayed their talents and their diplomas. They also invoked philosophical authorities. But they were opposed by *numbers* unknown to Condorcet or to John Stuart Mill. These numbers fell upon poor women like a sledge hammer, and they were accompanied by commentaries and sarcasms more ferocious than the most misogynist imprecations of certain church fathers. The theologians had asked if women had a soul. Several centuries later, some scientists were ready to refuse them a human intelligence.

If—as I believe I have shown—quantitative data are as subject to cultural constraint as any other aspect of science, then they have no special claim upon final truth.

In reanalyzing these classical data sets, I have continually located a priori prejudice, leading scientists to invalid conclusions from adequate data, or distorting the gathering of data itself. In a few cases—Cyril Burt's documented fabrication of data on IQ of identical twins, and my discovery that Goddard altered photographs to suggest mental retardation in the Kallikaks—we can specify conscious fraud as the cause of inserted social prejudice. But fraud is not historically interesting except as gossip because the perpetrators know what they are doing and the *unconscious* biases that record subtle and inescapable constraints of culture are not illustrated. In most cases discussed in this book, we can be fairly certain that biases—though often expressed as egregiously as in cases of conscious fraud—were unknowingly influential and that scientists believed they were pursuing unsullied truth.

Since many of the cases presented here are so patent, even risible, by today's standards, I wish to emphasize that I have not taken cheap shots at marginal figures (with the possible exceptions of Mr. Bean in Chapter 3, whom I use as a curtain-raiser to illustrate a general point, and Mr. Cartwright in Chapter 2, whose statements are too precious to exclude). Cheap shots come in thick catalogues—from a eugenicist named W. D. McKim, Ph.D. (1900), who thought that all nocturnal housebreakers should be dispatched with carbonic acid gas, to a certain English professor who toured the United States during the late nineteenth century, offering the unsolicited advice that we might solve our racial problems if every Irishman killed a Negro and got hanged for it.* Cheap shots are also gossip, not history; they are ephemeral and uninfluential, however amusing. I have focused upon the leading and most influential scientists of their times and have analyzed their major works.

I have enjoyed playing detective in most of the case studies that make up this book: finding passages expurgated without comment

*Also too precious to exclude is my favorite modern invocation of biological determinism as an excuse for dubious behavior. Bill Lee, baseball's self-styled philosopher, justifying the beanball (*New York Times*, 24 July 1976): "I read a book in college called 'Territorial Imperative.' A fellow always has to protect his master's home much stronger than anything down the street; My territory is down and away from the hitters. If they're going out there and getting the ball, I'll have to come in close."

in published letters, recalculating sums to locate errors that support expectations, discovering how adequate data can be filtered through prejudices to predetermined results, even giving the Army Mental Test for illiterates to my own students with interesting results. But I trust that whatever zeal any investigator must invest in details has not obscured the general message: that determinist arguments for ranking people according to a single scale of intelligence, no matter how numerically sophisticated, have recorded little more than social prejudice—and that we learn something hopeful about the nature of science in pursuing such an analysis.

If this subject were merely a scholar's abstract concern, I could approach it in more measured tone. But few biological subjects have had a more direct influence upon millions of lives. Biological determinism is, in its essence, a *theory of limits*. It takes the current status of groups as a measure of where they should and must be (even while it allows some rare individuals to rise as a consequence of their fortunate biology).

I have said little about the current resurgence of biological determinism because its individual claims are usually so ephemeral that their refutation belongs in a magazine article or newspaper story. Who even remembers the hot topics of ten years ago: Shockley's proposals for reimbursing voluntarily sterilized individuals according to their number of IQ points below 100, the great XYY debate, or the attempt to explain urban riots by diseased neurology of rioters. I thought that it would be more valuable and interesting to examine the original sources of the arguments that still surround us. These, at least, display great and enlightening errors. But I was inspired to write this book because biological determinism is rising in popularity again, as it always does in times of political retrenchment. The cocktail party circuit has been buzzing with its usual profundity about innate aggression, sex roles, and the naked ape. Millions of people are now suspecting that their social prejudices are scientific facts after all. Yet these latent prejudices themselves, not fresh data, are the primary source of renewed attention.

We pass through this world but once. Few tragedies can be more extensive than the stunting of life, few injustices deeper than the denial of an opportunity to strive or even to hope, by a limit

imposed from without, but falsely identified as lying within. Cicero tells the story of Zopyrus, who claimed that Socrates had inborn vices evident in his physiognomy. His disciples rejected the claim, but Socrates defended Zopyrus and stated that he did indeed possess the vices, but had cancelled their effects through the exercise of reason. We inhabit a world of human differences and predilections, but the extrapolation of these facts to theories of rigid limits is ideology.

George Eliot well appreciated the special tragedy that biological labeling imposed upon members of disadvantaged groups. She expressed it for people like herself—women of extraordinary talent. I would apply it more widely—not only to those whose dreams are flouted but also to those who never realize that they may dream. But I cannot match her prose (from the prelude to *Middlemarch*):

Some have felt that these blundering lives are due to the inconvenient indefiniteness with which the Supreme Power has fashioned the natures of women: if there were one level of feminine incompetence as strict as the ability to count three and no more, the social lot of women might be treated with scientific certitude. The limits of variation are really much wider than anyone would imagine from the sameness of women's coiffure and the favorite love stories in prose and verse. Here and there a cygnet is reared uneasily among the ducklings in the brown pond, and never finds the living stream in fellowship with its own oary-footed kind. Here and there is born a Saint Theresa, foundress of nothing, whose loving heart-beats and sobs after an unattained goodness tremble off and are dispersed among hindrances instead of centering in some long-recognizable deed.

TWO

American Polygeny and Cranimetry before Darwin

Blacks and Indians as Separate, Inferior Species

Order is Heaven's first law; and, this confessed,
Some are, and must be, greater than the rest.

—ALEXANDER POPE, *Essay on Man* (1733)

APPEALS TO REASON or to the nature of the universe have been used throughout history to enshrine existing hierarchies as proper and inevitable. The hierarchies rarely endure for more than a few generations, but the arguments, refurbished for the next round of social institutions, cycle endlessly.

The catalogue of justifications based on nature traverses a range of possibilities: elaborate analogies between rulers and a hierarchy of subordinate classes with the central earth of Ptolemaic astronomy and a ranked order of heavenly bodies circling around it; or appeals to the universal order of a "great chain of being," ranging in a single series from amoebae to God, and including near its apex a graded series of human races and classes. To quote Alexander Pope again:

Without this just gradation, could they be
Subjected, these to those, or all to thee?

.....
From Nature's chain whatever link you strike,
Tenth, or ten thousandth, breaks the chain alike.

The humblest, as well as the greatest, play their part in preserving the continuity of universal order; all occupy their appointed roles.

This book treats an argument that, to many people's surprise, seems to be a latecomer: biological determinism, the notion that people at the bottom are constructed of intrinsically inferior material (poor brains, bad genes, or whatever). Plato, as we have seen, cautiously floated this proposal in the *Republic*, but finally branded it as a lie.

Racial prejudice may be as old as recorded human history, but its biological justification imposed the additional burden of intrinsic inferiority upon despised groups, and precluded redemption by conversion or assimilation. The "scientific" argument has formed a primary line of attack for more than a century. In discussing the first biological theory supported by extensive quantitative data—early nineteenth-century craniometry—I must begin by posing a question of causality: did the introduction of inductive science add legitimate data to change or strengthen a nascent argument for racial ranking? Or did a priori commitment to ranking fashion the "scientific" questions asked and even the data gathered to support a foreordained conclusion?

A shared context of culture

In assessing the impact of science upon eighteenth- and nineteenth-century views of race, we must first recognize the cultural milieu of a society whose leaders and intellectuals did not doubt the propriety of racial ranking—with Indians below whites, and blacks below everybody else (Fig. 2.1). Under this universal umbrella, arguments did not contrast equality with inequality. One group—we might call them "hard-liners"—held that blacks were inferior and that their biological status justified enslavement and colonization. Another group—the "soft-liners," if you will—agreed that blacks were inferior, but held that a people's right to freedom did not depend upon their level of intelligence. "Whatever be their degree of talents," wrote Thomas Jefferson, "it is no measure of their rights."

Soft-liners held various attitudes about the nature of black disadvantage. Some argued that proper education and standard of life could "raise" blacks to a white level; others advocated perma-

nent black ineptitude. They also disagreed about the biological or cultural roots of black inferiority. Yet, throughout the egalitarian tradition of the European Enlightenment and the American revolution, I cannot identify any popular position remotely like the "cultural relativism" that prevails (at least by lip-service) in liberal circles today. The nearest approach is a common argument that black inferiority is purely cultural and that it can be completely eradicated by education to a Caucasian standard.

All American culture heroes embraced racial attitudes that would embarrass public-school mythmakers. Benjamin Franklin, while viewing the inferiority of blacks as purely cultural and completely remediable, nonetheless expressed his hope that America would become a domain of whites, undiluted by less pleasing colors.

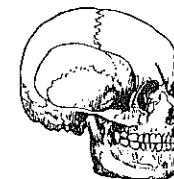
I could wish their numbers were increased. And while we are, as I may call it, scouring our planet, by clearing America of woods, and so making this side of our globe reflect a brighter light to the eyes of inhabitants in Mars or Venus, why should we . . . darken its people? Why increase the Sons of Africa, by planting them in America, where we have so fair an opportunity, by excluding all blacks and tawneys, of increasing the lovely white and red?*

Others among our heroes argued for biological inferiority. Thomas Jefferson wrote, albeit tentatively: "I advance it, therefore, as a suspicion only, that the blacks, whether originally a distinct race, or made distinct by time and circumstance, are inferior to the whites in the endowment both of body and mind" (in Gossett, 1965, p. 44). Lincoln's pleasure at the performance of black soldiers in the Union army greatly increased his respect for freedmen and former slaves. But freedom does not imply biological equality, and Lincoln never

*I have been struck by the frequency of such aesthetic claims as a basis of racial preference. Although J. F. Blumenbach, the founder of anthropology, had stated that toads must view other toads as paragons of beauty, many astute intellectuals never doubted the equation of whiteness with perfection. Franklin at least had the decency to include the original inhabitants in his future America; but, a century later, Oliver Wendell Holmes rejoiced in the elimination of Indians on aesthetic grounds: ". . . and so the red-crayon sketch is rubbed out, and the canvas is ready for a picture of manhood a little more like God's own image" (in Gossett, 1965, p. 243).



Apollo Belvidere



Greek



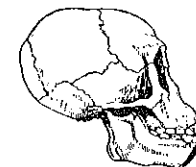
Negro



Creole Negro



Young chimpanzee



Young chimpanzee

2 • 1 The unilinear scale of human races and lower relatives according to Nott and Gliddon, 1868. The chimpanzee skull is falsely inflated, and the Negro jaw extended, to give the impression that blacks might even rank lower than the apes.

abandoned a basic attitude, so strongly expressed in the Douglas debates (1858):

There is a physical difference between the white and black races which I believe will forever forbid the two races living together on terms of social and political equality. And inasmuch as they cannot so live, while they do remain together there must be the position of superior and inferior, and I as much as any other man am in favor of having the superior position assigned to the white race.

• Lest we choose to regard this statement as mere campaign rhetoric, I cite this private jotting, scribbled on a fragment of paper in 1859:

Negro equality! Fudge! How long, in the Government of a God great enough to make and rule the universe, shall there continue knaves to vend, and fools to quip, so low a piece of demagogism as this (in Sinkler, 1972, p. 47).

I do not cite these statements in order to release skeletons from ancient closets. Rather, I quote the men who have justly earned our highest respect in order to show that white leaders of Western nations did not question the propriety of racial ranking during the eighteenth and nineteenth centuries. In this context, the pervasive assent given by scientists to conventional rankings arose from shared social belief, not from objective data gathered to test an open question. Yet, in a curious case of reversed causality, these pronouncements were read as independent support for the political context.

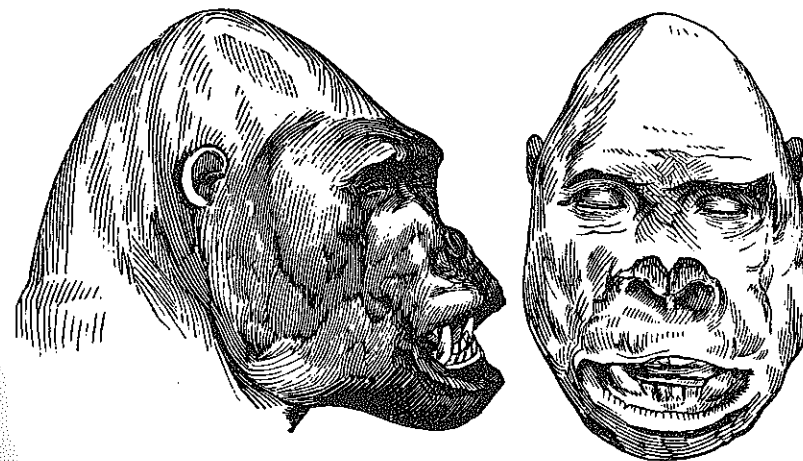
All leading scientists followed social conventions (Figs. 2.2 and 2.3). In the first formal definition of human races in modern taxonomic terms, Linnaeus mixed character with anatomy (*Systema naturae*, 1758). *Homo sapiens afer* (the African black), he proclaimed, is "ruled by caprice"; *Homo sapiens europaeus* is "ruled by customs." Of African women, he wrote: *mammae lactantes prolixae*—breasts lactate profusely. The men, he added, are indolent and anoint themselves with grease.

The three greatest naturalists of the nineteenth century did not hold blacks in high esteem. Georges Cuvier, widely hailed in France as the Aristotle of his age, and a founder of geology, paleontology, and modern comparative anatomy, referred to native Africans as



Algerian Negro

Saharran Negro



Gorilla

2•2 An unsubtle attempt to suggest strong affinity between blacks and gorillas. From Nott and Gliddon, *Types of Mankind*, 1854. Nott and Gliddon comment on this figure: "The palpable analogies and dissimilarities between an inferior type of mankind and a superior type of monkey require no comment."



Orangutan



Hottentot wagoner



Chimpanzee



Hottentot from Somerset

2 • 3 Two more comparisons of blacks and apes from Nott and Gliddon, 1854. This book was not a fringe document, but the leading American text on human racial differences.

"the most degraded of human races, whose form approaches that of the beast and whose intelligence is nowhere great enough to arrive at regular government" (Cuvier, 1812, p. 105). Charles Lyell, the conventional founder of modern geology, wrote:

The brain of the Bushman . . . leads towards the brain of the Simiadae [monkeys]. This implies a connexion between want of intelligence and structural assimilation. Each race of Man has its place, like the inferior animals (in Wilson, 1970, p. 347).

Charles Darwin, the kindly liberal and passionate abolitionist,* wrote about a future time when the gap between human and ape will increase by the anticipated extinction of such intermediates as chimpanzees and Hottentots.

The break will then be rendered wider, for it will intervene between man in a more civilized state, as we may hope, than the Causasian, and some ape as low as a babon, instead of as at preent between the negro or Australian and the gorilla (*Descent of Man*, 1871, p. 201).

Even more instructive are the beliefs of those few scientists often cited in retrospect as cultural relativists and defenders of equality. J. F. Blumenbach attributed racial differences to the influences of climate. He protested rankings based on presumed mental ability and assembled a collection of books written by blacks. Nonetheless, he did not doubt that white people set a standard, from which all other races must be viewed as departures (see essay 4 at end of book for more information about Blumenbach):

The Caucasian must, on every physiological principle, be considered as the primary or intermediate of these five principal Races. The two extremes into which it has deviated, are on the one hand the Mongolian, on the other the Ethiopian [African blacks] (1825, p. 37).

*Darwin wrote, for example, in the *Voyage of the Beagle*: "Near Rio de Janeiro I lived opposite to an old lady, who kept screws to crush the fingers of her female slaves. I have stayed in a house where a young household mulatto, daily and hourly, was reviled, beaten, and persecuted enough to break the spirit of the lowest animal. I have seen a little boy, six or seven years old, struck thrice with a horse-whip (before I could interfere) open his naked head, for having handed me a glass of water not quite clean. . . . And these deeds are done and palliated by men, who profess to love their neighbors as themselves, who believe in God, and pray that his Will be done on earth! It makes one's blood boil, yet heart tremble, to think that we Englishmen and our American descendants, with their boastful cry of liberty, have been and are so guilty."

Alexander von Humboldt, world traveler, statesman, and greatest popularizer of nineteenth-century science, would be the hero of all modern egalitarians who seek antecedents in history. He, more than any other scientist of his time, argued forcefully and at length against ranking on mental or aesthetic grounds. He also drew political implications from his convictions, and campaigned against all forms of slavery and subjugation as impediments to the natural striving of all people to attain mental excellence. He wrote in the most famous passage of his five-volume *Cosmos*:

Whilst we maintain the unity of the human species, we at the same time repel the depressing assumption of superior and inferior races of men. There are nations more susceptible of cultivation than others—but none in themselves nobler than others. All are in like degree designed for freedom (1849, p. 368).

Yet even Humboldt invoked innate mental difference to resolve some dilemmas of human history. Why, he asks in the second volume of *Cosmos*, did the Arabs explode in culture and science soon after the rise of Islam, while Scythian tribes of southeastern Europe stuck to their ancient ways; for both peoples were nomadic and shared a common climate and environment? Humboldt did find some cultural differences—greater contact of Arabs with surrounding urbanized cultures, for example. But, in the end, he labeled Arabs as a “more highly gifted race” with greater “natural adaptability for mental cultivation” (1849, p. 578).

Alfred Russel Wallace, codiscoverer of natural selection with Darwin, is justly hailed as an antiracist. Indeed, he did affirm near equality in the innate mental capacity of all peoples. Yet, curiously, this very belief led him to abandon natural selection and return to divine creation as an explanation for the human mind—much to Darwin's disgust. Natural selection, Wallace argued, can only build structures immediately useful to animals possessing them. The brain of savages is, potentially, as good as ours. But they do not use it fully, as the rudeness and inferiority of their culture indicates. Since modern savages are much like human ancestors, our brain must have developed its higher capacities long before we put them to any use.

Preevolutionary styles of scientific racism: monogenism and polygenism

Preevolutionary justifications for racial ranking proceeded in two modes. The “softer” argument—again using inappropriate definitions from modern perspectives—upheld the scriptural unity of all peoples in the single creation of Adam and Eve. This view was called monogenism—or origin from a single source. Human races are a product of degeneration from Eden's perfection. Races have declined to different degrees, whites least and blacks most. Climate proved most popular as a primary cause for racial distinction. Degenerationists differed on the remediability of modern deficits. Some held that the differences, though developed gradually under the influence of climate, were now fixed and could never be reversed. Others argued that the fact of gradual development implied reversibility in appropriate environments. Samuel Stanhope Smith, president of the College of New Jersey (later Princeton), hoped that American blacks, in a climate more suited to Caucasian temperaments, would soon turn white. But other degenerationists felt that improvement in benevolent climes could not proceed rapidly enough to have any impact upon human history.

The “harder” argument abandoned scripture as allegorical and held that human races were separate biological species, the descendants of different Adams. As another form of life, blacks need not participate in the “equality of man.” Proponents of this argument were called “polygenists.” → blacks as diff. species

Degenerationism was probably the more popular argument, if only because scripture was not to be discarded lightly. Moreover, the interfertility of all human races seemed to guarantee their union as a single species under Buffon's criterion that members of a species be able to breed with each other, but not with representatives of any other group. Buffon himself, the greatest naturalist of eighteenth-century France, was a strong abolitionist and exponent of improvement for inferior races in appropriate environments. But he never doubted the inherent validity of a white standard:

The most temperate climate lies between the 40th and 50th degree of latitude, and it produces the most handsome and beautiful men. It is from this climate that the ideas of the genuine color of mankind, and of the various degrees of beauty ought to be derived.