Race and Intelligence

Separating Science from Myth

Edited by

Jefferson M. Fish

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To Dolores
and Krekamey

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Preface

Race and Intelligence: Separating Science From Myth is a comprehensive response to claims of differences in innate intelligence between the races. It differs in two important ways from other works on the topic, which tend to be limited to a discussion of IQ in the United States. First, this book discusses in great detail the concept of race, shows why it has no biological basis, explains the nature of human physical variation, and discusses the history and cross-cultural variability of conceptions of race. Second, in addition to discussing the United States in detail, it considers the measurement of intelligence and the use of IQ tests from a global perspective.

Race and Intelligence shines the light of science on a number of widespread but false beliefs and presents a more accurate picture in their place. Taken together, these beliefs constitute a coherent but inaccurate ideology that has a long and unfortunate history; this work confronts the ideology in its most recent incarnation. Fortunately, what is known about the subject matter is fascinating and it forms a coherent alternative vision that can be presented in this single wide-ranging volume.

The beliefs that this book responds to and that form a kind of syllogism, are the following:

1. Over time, *Homo sapiens* evolved into different subspecies or races—principally Mongoloids, Caucasoids, and Negroids.
2. In addition to biological differences in physical appearance, these races also manifest biologically based differences in behavior.
3. Human intelligence is an important form of behavior that can be measured by IQ tests. Intelligence is best understood as comprised of a single factor, *g* (general intelligence); and *g* has been shown to be largely (40%–80%) inherited.
4. There are racial differences in intelligence, with Mongoloids somewhat more intelligent than Caucasoids, and Caucasoids significantly more intelligent than Negroids. These differences are in large measure genetically based.

5. Because racial differences in intelligence are genetically based, not much can be done to change them; and it is pointless, if not counterproductive, to waste money on social policies that attempt to do so.

There are so many errors of fact, false assumptions, misunderstandings, and other distortions in these widely held assertions that it requires a wide-ranging work to clarify matters. Because American cultural beliefs with significant time depth make these assertions seem reasonable, it is important at the outset to contrast them with an alternative set for which extensive scientific evidence is presented in this volume.

These are:

1. *Homo sapiens* has no extant subspecies: there are no biological races. Human physical appearance varies gradually around the planet, with the most geographically distant peoples generally appearing the most different from one another. The concept of human biological races is a construction socially and historically localized to 17th- and 18th-century European thought. Over time, different cultures have developed different sets (folk taxonomies) of socially defined "races."
2. Racial categories are developed to serve social ends, including the justification and perpetuation of inequality. IQ testing has been a part of this process of stratifying groups.
3. Cultural content, values, and assumptions are an inherent part of IQ tests. Formal schooling teaches people new ways of thinking that are then measured by the tests. Access to schools, school quality, modes of instruction, attitudes toward formal education, and educational values vary cross-culturally.
4. Biological-sounding concepts, especially heritability, have been misused to imply a genetic basis for group differences in IQ scores. There are many cognitive abilities—a single general factor of intelligence is inadequate to account for current knowledge in psychological measurement or cognitive science.
5. A wide variety of data, including reanalyses of data presented in *The Bell Curve,* imply that group differences in IQ are social in origin and can change as the result of changing social circumstances or social interventions.

Because these five assertions are so important and lay out the overall structure of the argument of the book, they are repeated as the headings of its five parts.

To discuss such wide-ranging issues, this volume brings together leading scholars from a range of disciplines—anthropology, biology, economics, history, philosophy, psychology, sociology, and statistics. As might be expected given the terms *race* and *intelligence,* anthropology and psychology are the most heavily represented.[1]

[1] Disciplines, languages, and chapter authors differ on the capitalization of race terms (e.g., Black vs. black in English, but only *preto* in Portuguese) for a variety of reasons. Rather than insist on an arbitrary consistency, I made the editorial decision to allow each chapter to follow its own capitalization preferences.

In addition to its overall mission, a secondary goal of the book is to promote informed communication about the topics of race and intelligence—between its covers, among readers from different academic disciplines, and among the general public. Because knowledge is highly specialized, scientists and scholars often rely on "common sense" or "common knowledge" when going beyond the bounds of their expertise. Unfortunately but unavoidably, and within every culture, people's fund of common experience is heavily invested with inaccurate ethnocentric assumptions. Thus, a book like this can help to develop a shared body of knowledge that can form the basis for more productive future discussions.

For this reason, although all the chapters are intellectually rigorous, the use of specialized terminology and technical language has been limited as much as possible to cases where they are necessary, and an attempt has been made to offer explanations in those cases. This editorial policy not only facilitates interdisciplinary communication—especially between psychology and anthropology—but also helps to make the work accessible to the public at large. Although the book is about understanding race and intelligence, and not about public policy, the issues it discusses have long been raised in policy debates, so citizens deserve to be informed in ways that are clear without being overly technical.

Because the authors of the various chapters discuss race and intelligence from so many different perspectives, they sometimes make points that are relevant to other parts of the book in addition to the one in which their presentation is situated. Furthermore, because the chapter authors come from a wide range of disciplines, not all can be expected to agree on the policy implications of a scientific understanding of race and intelligence. They do, however, agree that science forms a better basis for public policy than ethnocentric assumptions.

It is one thing to argue that a particular government program (or, for that matter, a privately funded program) might not work, or is too expensive, or is a less efficient use of limited resources than some alternative, or is an inappropriate use of funds, or stigmatizes minority groups by singling them out, or to make some other argument based on evidence or political philosophy. It is quite another to say that such programs are doomed to failure because Negroids as a group[2] have a racially based biological inferiority to Caucasoids, and—adding insult to injury—that the programs are counterproductive because they make the inferiority of Negroids excruciatingly obvious and thereby demoralize them. The latter argument is not science, but racist myth masquerading as science, and deserves to be unmasked as such.

[2] The term *group* illustrates differences in the use of language between psychology and anthropology. Psychologists use the term in contrast to *individual;* group has multiple meanings that are rarely defined explicitly. Among these are (a) people with some face-to-face contact or a sense of themselves as belonging to a particular entity that is different from other comparable entities, and (b) a social category that arbitrarily includes people who lack these affective ties (e.g., group data). Anthropologists routinely make these distinctions, referring to the former as "group" or "social group" and to the latter as "category" or "social category."

Here and in the chapters I have written I follow psychological usage. Readers from the other social sciences should be aware that, for example, the reference to "Negroids as a group" does not imply that people who have been classified together think of themselves that way or share any historical or territorial connection.

I am a psychologist, so it is easy to understand how upset I was when I heard that articles by well-known psychologists arguing for racial differences in intelligence were appearing on racist web sites and seeming to give intellectual legitimacy to them. (These web sites are referred to in chap. 3.) Although I have no reason to believe that the authors gave permission for use of their work, this state of affairs does raise disturbing questions about the social responsibilities of scientists in the information age.

The process of learning about race and intelligence is one of challenging inaccurate assumptions and ultimately of coming to better understand ourselves as a species, as a variety of cultures, and as individuals. It is an intellectual journey well worth taking, and it is a pleasure to invite readers along for the ride.

ACKNOWLEDGMENTS

Any large-scale work requires the cooperation of many individuals. I would like to begin by thanking the chapter authors for their dedicated work. They are all extremely busy people, and their contributions to this project are greatly appreciated. I would also like to thank those individuals who assisted chapter authors by commenting on drafts or otherwise affecting their chapters, for their indirect contributions to *Race and Intelligence: Separating Science From Myth*. In addition, I regret any inconvenience to others whose work had to be put on hold so that chapter authors could do their part for this volume.

I want to thank those who reviewed drafts of chapters or the entire manuscript—the book is a stronger one for their suggestions. Because of the book's interdisciplinary nature, I was fortunate that a number of contributors were willing to review chapters in their areas of expertise. Their input also enhanced the cooperative spirit of this volume. Reviewers included Frank A.Biafora, Jr., Mark Nathan Cohen, Robert Ghiradella, Joseph L.Graves, Jr., Jeffrey Long, Jonathan Marks, Dolores Newton, Michael Palij, Alan Templeton, and Robert Tillman. Their contributions enhance the book, and responsibility for its shortcomings remains with me.

I would like to thank Michael Moskowitz for his support of this project during its initial stages, and Louis R.Franzini and Jerome M.Sattler for their helpful advice as it neared completion. In addition, research reductions in my teaching load at St. John's University, along with a research leave, provided time to work on this and a number of contemporaneous projects.

The idea for this book grew out of a conference at the New York Academy of Sciences, organized by Michael Palij and me, on the more restricted topic "*The Bell Curve* Reconsidered: Multidisciplinary Perspectives on Race and IQ." The conference was supported in part by a grant from Yeshiva University, and the following scholars made presentations: Gwyneth Boodoo, Ned Block, Jefferson

M. Fish, John L.Horn, Jonathan Marks, John U.Ogbu, Michael Palij, Eugenia Shanklin, Andrea Tyree, and Kimberly C.Welch. Michael Palij deserves special thanks for his contributions to that conference; in addition, it was he who came across the racist web sites referred to earlier.

These acknowledgments would be incomplete without special mention of the multiple direct and indirect influences on this volume by my anthropologist wife Dolores Newton. If we had never met, I would probably still be a monolingual, monocultural American psychologist. I would never have had the exposure to the other side of the American "racial" divide. I would never have lived in Brazil and learned its very different way of understanding human physical variation, nor, as a result, would I have developed a curiosity about other cultures' "racial" folk taxonomies. I would not have discovered physical anthropologists' understanding of human variation, nor probably—like other psychologists—would I have realized that my basic assumptions about race were simply wrong.

As an intellectual companion, Dolores has explained concepts, debated ideas, and referred me to sources I would not otherwise have encountered. For example, I did the research for and wrote chapter 5, but it is impossible for me to apportion its ideas into hers, mine, and ours. That chapter, and in some ways this book, can best be seen as the most recent product of three decades of ongoing dialogue. Furthermore, in addition to reviewing several chapters and the manuscript as a whole, she has also done much more than her share on the home front to enable me to make this book happen.

This book says things that need to be said; Dolores more than anyone else has helped it to become a reality.

—Jefferson M.Fish

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CHAPTER 1

A Scientific Approach to Understanding Race and Intelligence

Jefferson M.Fish

PSYCHOLOGISTS, ANTHROPOLOGISTS, AND RACE

Anthropologists long ago began investigating the observation that peoples who live at great distances from one another look different; speak different languages; and have different customs and ways of experiencing, relating to, and understanding the world. It took a great deal of effort and investigation to conclude that these apparent relationships are socially, rather than biologically based. That is, language, customs, and worldviews result from the ways individuals are socialized by their groups and are unrelated to their physical appearance. Healthy newborns from anywhere in the world can be equally well socialized into any distant society, learn to speak its language(s), and become a part of its culture and show no linguistic or behavioral traces of the culture of their faraway biological parents.

The discipline of anthropology incorporated this understanding into its very structure, known as the *four-field approach*. The primary division is between the field of physical (or biological) anthropology and the three subdivisions of cultural (or sociocultural) anthropology—the fields of ethnology (the description

and comparison of cultures), archaeology (the study of cultures through time), and linguistics (Ember & Ember, 1988).

Unfortunately, this understanding of the independence of culture from biology seems never to have reached most psychologists or other social scientists. Lacking cross-cultural knowledge, they have often seen the world through the filters of current American folk categories and presented data on contemporary American behavior as representative of human behavior in general.

Let me give an example from a heated discussion about race that I had with my African American wife nearly 30 years ago. We were each frustrated with the other's inability to reach certain obvious conclusions about particular populations. It turned out that, as a psychologist, I was using the term *population* to mean statistical population, whereas she, as an anthropologist, was using it to mean breeding population. In other words, our cultural misunderstanding was due not to differences in black versus white assumptions but in anthropologist versus psychologist assumptions.

The cultural gap between anthropologists and psychologists—in this case illustrated by linguistic differences in the meanings of technical vocabulary—seems not to have been bridged over the decades. For example, I have never met a psychologist who has heard of a breeding population—members of a species that breed among themselves more than they do with other members of the species—except for those to whom I have explained the concept. (To my dismay, with the decline of the four-field approach in anthropology, paralleling increased specialization in psychology, I have discovered in recent years that many anthropologists seem not to have heard of the concept either.[1])

From my point of view as a psychologist, one key reason that cultural misunderstandings and mutual ignorance between psychology and anthropology are problematic is that they permit psychologists to take seriously statistically intelligible but otherwise absurd research. Because knowledge is unitary, studies based on ethnocentric assumptions that are contrary to what is known about human evolution can only lead to false conclusions and a self-perpetuating confidence in those assumptions.

Psychologists generally view race as a biological classification, like sex—assuming that there are two sexes (male and female) and three races (Caucasoid, Mongoloid, and Negroid). Despite the existence of hermaphrodites and transvestites, the sexual classification is generally accurate, and categorizing experimental participants by their physical appearance or self-designation leads to few problems. In contrast, the question "How do you know what race your

[1] As I have worked on this multidisciplinary book and spoken with experts in a variety of fields, I have become increasingly aware of and distressed by the extent to which disciplinary specialization has prevented scholars from getting the big picture about race, even as they see their own pieces of the puzzle with great clarity. Not only are psychologists unaware of anthropologists' knowledge and vice versa, but cultural anthropologists are often uninformed about physical anthropologists' knowledge and vice versa. Similarly, whereas the nonexistence of biological races in the human species is common knowledge among evolutionary biologists, other biologists often have not heard of it. Hence, in addition to fostering communication among disciplines, this book aims at promoting communication within disciplines among their various specialties.

participants are?" has not been understood by psychologists to be unanswerable. Meanwhile, the classification of people into biological races has long been known by anthropologists to be scientifically inaccurate, but reflective instead of American folk beliefs, which differ from folk beliefs in other cultures. Because psychologists in the United States are culturally American they take these scientifically inaccurate beliefs for granted. When they assume that human races exist, and categorize their experimental participants by their physical appearance or self-designation, they unwittingly create much mischief.

Many psychologists, as part of their general education, have been exposed to the broad outlines of human evolution. Anatomically modern members of our species first appeared in Africa about 200,000 years ago. After about 80,000 to 100,000 years, small groups that were biologically unrepresentative of the continent's diversity began leaving Africa through the Middle Eastern land bridge and spread out across Eurasia, while the large and varied populations in Africa continued to evolve (although some genetic interchange between Africa and Eurasia also continued over time). About 15,000 years ago, when the Ice Age lowered the sea level enough to create a land bridge across the Bering Strait, small and biologically unrepresentative groups of Asians entered and spread out across the New World. Thus, rather than three races, we have three geographical regions of human variability: The preponderance of human physical variation is in Africa, a much lesser range of variation can be found in Eurasia, and relatively little variability exists among indigenous populations of the Americas. If biological races did exist, they would be found only in Africa, although psychologists in their research persist in acting to the contrary.

Psychologists' (and other social scientists') lack of awareness of the basics of physical anthropology is illustrated by *The Bell Curve's* evaluation of the scientific status of the work of the developmental psychologist J.Philippe Rushton. Rushton actually asserts that Negroids have small brains, large genitals, and lots of sex; that Mongoloids have large brains, small genitals, and little sex; and that Caucasoids fall in between. In Herrnstein and Murray's (1994) words, "According to Rushton, the average Mongoloid is toward one end of the continuum of reproductive strategies—the few offspring, high survival, and high parental investment end—the average Negroid is shifted toward the other end, and the average Caucasoid is in the middle" (pp. 642–643).

Herrnstein and Murray (1994) evaluated Rushton's work as follows:

> Setting aside whether his work is timely or worthwhile—a judgment we are oath to make under any circumstances—it is plainly science. He is not alone in seeking an evolutionary explanation of the observed differences among the races. As science, there is nothing wrong with Rushton's work in principle; we expect that time will tell whether it is right or wrong in fact. (p. 643)

This evaluation makes it clear that they view such work as serious science meriting serious consideration. I hope that *Race and Intelligence: Separating Science*

From Myth will help interested readers—including psychologists and other social scientists—to understand why it is that races do not exist, and to distinguish between culturally constructed labels for people's physical appearance and what is known about human evolution.

The notion that the human species has no races in the biological sense is not a new one in anthropology. Montagu (1941) made the point six decades ago, and it was commonly accepted in anthropology by the 1960s, although the relevant knowledge seems never to have diffused to other disciplines. Perhaps the publication of *The Bell Curve* served to legitimize the discussion among scientists of views about race and eugenics that have remained dormant since the end of World War II and the discovery of the Nazi death camps.

SOME RECENT BOOKS DEALING WITH RACE AND INTELLIGENCE

Before discussing the content of this volume in detail, I should mention that it was prepared over a period of several years. During this time, a number of other books have appeared that have dealt with the same topic as a main or secondary focus of attention. These books have been written from a variety of perspectives and have made a variety of claims. As I see it, their appearance has only confirmed the need for this book; a number of them are discussed or alluded to in other chapters. Suffice it to say at this point that none of them showed an understanding of the facts of human physical variation. Several showed an ethnocentric misunderstanding of the evidence, and in others the question was not even dealt with.

Perhaps even more disturbing was the fact that many of these books displayed no awareness that there was something to be known. That is, because the authors did not know what they did not know, there was no way that relevant information could have an impact on the arguments they were making. In particular, the key issue of the irrelevance of data concerning differences in performance between categories of Americans labeled as "races" to the question of whether those differences are the result of innate biological differences could not be adequately addressed.

Part of the problem is the naive notion among many researchers in psychology, sociology, education, and other fields that one can operationally define "race" in terms of American categories, as self-reported by Americans or rated by American judges, without reference to the knowledge of evolutionary biology or physical anthropology—and then make inferences about biological causation from the data obtained. It is the biological ethnocentric counterpart to the psychological ethnocentric practice of operationally defining a dimension of American personality and then imposing it on other cultures for which it may be irrelevant. By measuring it cross-culturally and then comparing (or even ranking) cultures, one winds up with quantitative ethnocentric nonsense. (As is mentioned in chap. 5, cross-cultural psychologists refer to such a concept as an *imposed etic* [Berry, 1969].)

Books Claiming Innate "Racial" Differences

Several recent books define race ethnocentrically (in terms of American folk categories) and misunderstand, misrepresent, or ignore evidence concerning human physical variation. The scientific way to go about the matter is to ask what we know about human physical variation, then to ask whether the evidence suggests the existence of biological races, and only if the answer is "yes" to proceed to investigate differences between the races. Because the answer is "no," the discussion is pointless, and scientists can go on to investigate other matters.

Instead, these authors appear committed to investigating IQ differences between unscientific, nonbiological, American folk categories. Their goal seems to be to demonstrate that—despite centuries of slavery, segregation, and discrimination as alternative explanations—African Americans really are inferior. Thus, Rushton (1997) never really defined what races are; assumed the existence of Mongoloids, Caucasoids, and Negroids as biological entities; blithely lumped together widely varying groups of individuals and data of uneven quality into these three categories; and referred to resulting numbers as racial differences.

Levin (1997) also assumed the existence of Mongoloids, Caucasoids, and Negroids. Although he does give a definition of race, it is an unashamedly ad hoc one —"letting 25 years mark a single generation, a 'Negroid' may be defined as anyone whose ancestors 40 to 4,400 generations removed were born in sub-Saharan Africa" (p. 20). As is discussed briefly in this chapter, and at length in Parts I and II of the book, Americans have long used ancestry, in the form of the folk concept of blood, as their own cultural criterion for race. In this way, the definition is ethnocentric. However, 110,000 years ago (25×4,400) all anatomically modern humans were in Africa. Hence, by this definition, all humans are Negroids. Clearly, what Levin was trying to do was create a biological definition that corresponds to American folk categories. As he said, "One hundred randomly chosen individuals sorting passers-by on an urban street would, without hesitation or collusion, almost always agree on who is black, white, or Asian" (p. 19). Evidently, he was assuming that the generic humans who are randomly chosen are Americans on an American street. They are not, for example, Brazilians in Brazil or Haitians in Haiti who, as I point out in chapter 5, have very different systems of "racial" classification. And what of the billion people in India? What race are they? There seem to be quite a few people who do not fit into these purportedly universal categories. Finally, studies of race and intelligence make no effort to trace the ancestry of individuals back even 4 generations, let alone 40 or 4,400, nor are genetic tests routinely run on children even to verify that their socially designated fathers are their biological fathers. So what we are left with is that socially designated race in the United States today is race.

Eysenck (1998) did not define race, but assumed that races exist and used terms like "the white (Caucasian) race" and "mongoloid races" (p. 10). He made it clear that he believes these are biological entities, and that a significant part of differences in IQ scores between the races is biological in origin.

Jensen (1998) wrote that "virtually every living species on earth has two or

more subspecies. The human species is no exception, but in this case subspecies are called races" (p. 425). This statement is simply false; *Homo sapiens* has no subspecies, as Templeton demonstrates in detail in chapter 2.

Jensen (1998) went on to write:

> A race is one of a number of statistically distinguishable groups in which individual membership is not mutually exclusive by any single criterion, and individuals in a given group differ only statistically from one another and from the group's central tendency on each of the many imperfectly correlated genetic characteristics that distinguish between groups as such. (p. 425)

This is an example of the kind of ethnocentric operational definition described earlier. A fair translation is, "As an American, I know that blacks and whites are races, so even though I can't find any way of making sense of the biological facts, I'll assign people to my cultural categories, do my statistical tests, and explain the differences in biological terms." In essence, the process involves a kind of reasoning by a converse. Instead of arguing, "If races exist there are genetic differences between them," the argument is "Genetic differences between groups exist, therefore the groups are races."

Humans have so many genes that any two groups are bound to differ from one another genetically. For example, just by chance, there are probably genetic differences between members of the local golf club and members of the local bowling league. However, one would not want to argue for the existence of golf and bowling races; nor would one want to argue if differences between the groups were found in income, education, or even IQ, that these were racial differences, rooted in biology, rather than social class differences reflecting the American cultural reality.

Genetic differences among local populations of the world's religions are also the result of social, historical, and geographical circumstances, and do not imply the existence of Buddhist, Christian, Hindu, Jewish, Muslim, or other races. It would be bizarre to hunt for the genes responsible for their differing religious thought processes.

Jews constitute an illuminating example because Hitler's labeling them a race was used as a eugenic justification for their extermination. It is true that because of culturally determined patterns of mating, there are slight genetic differences between European Jews and European Christians. For the same reason, there are slight genetic differences between North African Jews and North African Christians. However, European Jews and Christians are genetically more similar to each other than either is to North African Jews or Christians; and North African Jews and Christians are genetically more similar to each other than either is to European Jews or Christians. Local populations simply are not races.

Other Books

Jencks and Phillips (1998) produced a rather different book from the previous four. On the one hand, neither they nor their chapter authors define race or show

an awareness of the facts of human physical variation. On the other, the book does not attempt to explain black-white test score differences in biological terms (although at times the book's ignorance of physical anthropology leads it to poorly formulated discussions of issues and scientifically questionable uses of the term *race*). It is an American-focused, policy-oriented, social science discussion of differences in test scores between people called "white" and people called "black" in the United States. It looks at those differences, their effects, and what might be done to ameliorate them, much as one might look at differences between rich and poor, or between recent immigrants and fourth-generation Americans. In this sense, its methodological approach is similar to that of Part V of this volume.

In contrast to Jencks and Phillips (1998), this volume's primary focus is on refuting claims of biologically based differences in intelligence between the races and offering an alternative understanding of the phenomena involved. Thus, although some of its conclusions might differ from those of their book, the most relevant way to view it is as simply concerned with different—but related—subject matter.

This is also the case for the edited book by Samuda et al. (1998), which somewhat misleadingly claims to discuss "cross-cultural assessment." Actually, the book discusses the cognitive assessment of American minorities, rather than of people from widely differing cultures around the world. This American ethnocentric perspective in a book that defines itself as cross-cultural is unfortunately an accurate reflection of the state of affairs in American psychology today. Cultures are different groups in the United States, and races are whatever Americans consider them to be. Although the book never defines race (like the previous and next book discussed) it also does not attempt to explain in biological terms test performance differences between groups called races in the United States. Interestingly, the book reports data on the Kaufman Assessment Battery for Children (Kaufman & Kaufman, 1983) showing that, "on average white children score only 7 points higher than African American children" (Samuda et al., 1988, p. 59). This is only about half the difference found elsewhere, and is an encouraging social indicator. The finding is consistent with evidence in this volume and elsewhere concerning both the social origins of and malleability of group differences in IQ.

An important instance of this malleability is discussed in Neisser's (1998) edited book on the Flynn effect—the surprising discovery that IQs around the world have been rising rapidly for decades. This finding is difficult to reconcile with a view of intelligence as a biologically fixed entity. Unfortunately, like the others, Neisser's book never defines race. Although its findings provide strong evidence for a social explanation of group differences in IQ, its uncritical use of the American concept of race detracts from the quality of its discussion. As might be expected, a number of chapters in this volume discuss the Flynn effect and its implications.

Finally, I would like to mention a book written for a general audience by the journalist Ellis Cose (1998). Although Cose's book deals mainly with the issue of affirmative action, the author—who is not a scientist—shows a clear understanding of basic knowledge regarding both human physical variation and the differing folk concepts of race found in different cultures. The fact that a nonspecialist had no

difficulty discovering, mastering, and communicating this information is worth some comment. Cose deserves praise for his achievement, and he also demonstrates that the information is there for those who want to find it. That so many highly trained scientists, from a variety of fields, who have devoted decades of their life to some aspect of this issue, could remain unaware of or impervious to this knowledge is an indictment of (at least) disciplinary hyperspecialization.

OVERVIEW OF THIS BOOK

The presentation that follows is aimed at providing a bird's-eye view of the organization and structure of *Race and Intelligence: Separating Science From Myth*, as well as a sense of its overall argument. My hope is that this preview and associated commentary will make it easier to see how the points in the various chapters of this multidisciplinary work relate to the greater whole.[2]

Part I: Homo sapiens has no extant subspecies: There are no biologȧical races. Human physical appearance varies gradually around the planet, with the most ġeographically distant peoples ġenerally appearing the most different from one another. The concept of human biologȧical races is a construction socially and historically localized to 17th- and 18th-century European thoughȧt. Over time, different cultures have developed different sets (folk taxonomies) of socially defined "races."

In chapter 2, Templeton applies the same biological methods that have been used to examine the genetic diversity in other species to human beings. He discusses the two ways the term *race* has been used by biologists—as a subspecies or a lineage—and shows that by either definition our species has no races. He compares humans to a dozen different geographically dispersed large mammals and presents data indicating relatively little genetic differentiation among humans. In contrast to the notion of different races in different places, the model that best fits the data is one of gradual genetic variation over space. That is, the degree of genetic difference between populations varies with the geographical distance between them. Furthermore, physical traits like skin color or hair texture, thought by Americans to distinguish between races, do not vary together geographically. For example, the two most genetically different populations he discusses—from Africa and

[2] My previews and discussions of material in the following chapters vary greatly in length and are unrelated to the length of the chapters. (Nor does the amount of space devoted to a chapter imply an evaluative judgment.) Rather, they are aimed at calling attention to important aspects of the overall argument of the book. For example, in some cases I have omitted reference to extensive and thought-provoking discussions of issues only secondarily relevant to race and intelligence, whereas in other cases I have added my own comments to expand on or restate a key point or line of thought.

Melanesia—used to be classified as belonging to the same race because of their similarity in skin color and hair texture.

If difference among human populations varies gradually around the globe, why then does it seem so evident to Americans that races exist? Marks (1995) pointed out that the substantial geographical distances separating three distinctive groups that came to the United States—the English colonists, slaves from west Africa, and the Chinese who built the railroads—made the belief in distinctive biological races easy to sustain. The absence, until recently, of large numbers of immigrants to the United States from intermediate places (e.g., Indians and other south Asians, Iranians and other southwest Asians) has allowed Americans to maintain the perception of discontinuities in the physical appearance of human beings.

As regards intelligence, the physical anthropologist C.Loring Brace (1998) pointed out that, although human physical traits and gene frequencies vary gradually along geographical dimensions known as clines, human cognitive abilities are not clinally distributed. That cognitive abilities do not follow the geographical pattern of distribution found for physical traits implies that population differences in measured abilities are cultural rather than biological in origin.

Finally, Templeton addresses the argument that, even though there are no races, the logical possibility of genetically based population differences in cognitive abilities cannot be dismissed out of hand. (Of course, the fact that it should be raised at all is of cultural, economic, historical, political, and social interest, and is discussed in detail elsewhere in the book.) Those few studies that investigated the relation between scores on cognitive tests and degree of African ancestry found no significant correlations, thereby falsifying the prediction. (In addition, other chapters explain why—even if significant correlations had been found between one or another "African gene" and IQ—simpler explanations exist than genetically based group differences in intelligence. For example, the genes in question could affect some other variable, such as health, that affects IQ.)

In chapter 3, Graves addresses the work of Rushton in some detail. He begins by pointing out that the *r*- and *K*-selection theory that Rushton claimed to have been applying in his work has been discarded by biologists because of both its vagueness and the inconsistent and disconfirmatory results it has produced when investigated experimentally. He points out that Rushton failed to review the relevant studies.

The chapter discusses Rushton's misunderstanding of *r*- and *K*-selection theory, and points out that the theory actually makes the opposite predictions about "Mongoloids" and "Negroids" from those he claims. Furthermore, the chapter shows how Rushton's assertions coincide with a biologized argument for racial inequality from the 1920s (which other chapters trace back much further in time). It then discusses Rushton's misunderstanding and misrepresentation of the reported research he does discuss, and even provides evidence that data presented by Rushton differ from those in the original sources, and that the inaccuracies are in the direction of his theory. Finally, it concludes that Rushton's data are grossly inadequate to test specific hypotheses about human evolution.

The chapter's conclusions are consistent with those of the physical anthropologist

Leonard Lieberman (1999a, 1999b), who reviewed studies over the past 150 years claiming "racial" differences in the size of crania. Referring to Gould's (1981, 1996) work as well, he showed that both the magnitude of claimed differences and the order of racial hierarchy has varied over time, corresponding to changes in cultural beliefs. ("Mongoloids" only recently surpassed "Caucasoids" in purported brain size, as Asian countries, especially Japan, have grown in wealth and power. Of course, the real point of the argument is not to show how smart Mongoloids are, but to provide scientific-sounding "proof of the innate inferiority of Negroids. As is discussed in other chapters, "scientific" attempts to justify slavery, and then segregation, and then discrimination have a long history.)

Lieberman calls attention to Rushton's dubious practice of lumping together data of varying quality and from diverse populations and then shoehorning them into the three "race" boxes. Furthermore, he shows that "racial" differences in brain size claimed by Rushton are too small to make a difference in intellectual functioning. Lieberman points out that human brains range from roughly 1,000 cc to 2,000 cc in size and normal human populations can appear anywhere along the continuum. Furthermore, the crania of Neanderthals were about 200 cc larger than those of Europeans today (1,550 cc vs. 1,350 cc), suggesting that—if one wants to take the argument about brain size and intelligence seriously—smaller is smarter.

Rushton claims a mean difference of only 97 cc between "Mongoloids" and "Negroids"—roughly comparable to the 100 cc difference between men and women. However, women on average have smaller brains than men for the same reason they have smaller feet—because they are smaller, not because they are less intelligent. Along these lines, Lieberman (1999b) pointed out that "a greater number of neurons and dendrites can be packed into a smaller brain space…women have 4,000 more neurons per cubic millimeter in their cerebral cortex" (p. 11).

In chapter 4, Marks calls attention to differences between the science of genetics and folk explanations of heredity. He focuses on four folk beliefs about the biological inheritance of bodies and behavior that have had unfortunate effects on the scientific understanding of variation in human physical appearance and cognitive abilities. These are taxonomism, racism, hereditarianism, and essentialism.

Taxonomism refers to the scientifically invalid division of the human species into a number of purportedly distinct biological categories. *Racism,* as Marks uses the term, refers to the denial of rights to people based on their membership in a lesser category of a racial folk taxonomy. Historically, racism has often been a political accompaniment to taxonomism, as empirically invalid classifications of people into different groups have been used as a pretext for their unequal treatment. *Hereditarianism* is the belief that heredity plays an important role in human cognition and behavior. Often, for reasons of ideology or disciplinary self-interest, genes are postulated to play a significant role, when instead, variability in both behavior and genes need to be investigated in their worldwide social context. *Essentialism* involves focusing on one small aspect of the biological variation that exists, postulating it as the essence of an ideal type, and then using this essence fallaciously to explain all sorts of things.

Marks shows how the four folk beliefs pervaded the eugenics movement earlier in the century—they were part of the normal science of genetics of the era—and reached their culmination with the Nazi death camps. Now that these folk beliefs are becoming prominent once again, scientists bear a responsibility not to repeat the mistakes of the past.

In chapter 5, I begin by briefly reviewing human physical variation and showing that it does not correspond to what Americans think of as race. I then describe the American and Brazilian folk taxonomies of race in some detail to make clear that the American folk taxonomy of "blood" is just one culture-specific way of categorizing human physical variation. In other words, our understanding of race is neither biologically accurate nor cross-culturally general. I then briefly describe a number of other folk taxonomies of race, from Haiti, Martinique, Puerto Rico, Ecuador, Jamaica, and Cape Verde. Unlike the American system, which emphasizes ancestry in categorizing people according to "blood," all of the other systems give greater emphasis, in differing ways and in differing degrees, to physical appearance as the main principle determining how people are classified. These eight descriptions illustrate the wide range of cultural conceptualizations of race, based on differing principles of classification. They also illustrate that folk taxonomies in the same language (English in the United States and Jamaica, Portuguese in Brazil and Cape Verde, French in Haiti and Martinique, and Spanish in Puerto Rico and Ecuador), although differing greatly, are more similar to each other than they are to folk taxonomies in other languages. This is what one would expect from historical and cultural influences, but contrasts with supposed biological categories that would have to be universal. In other words, people can change their race by traveling from one culture to another. What changes is not their physical appearance (or, for that matter, their genes or ancestors) but rather the culture-specific category system in terms of which they receive racial labels.

Part II: Racial categories are developed to serve social ends, including the justification and perpetuation of inequality. IQ testing has been a part of this process of stratifying groups.

In chapter 6, Smedley examines the idea of race, and the involvement of science with it, over the past five centuries. She begins with the Europeans' question of whether the conquered peoples of the New World were fully human and descended from Noah, and the Church's decision that they were. The Enlightenment brought the discovery of striking anatomical similarities between humans and apes and the proposal that differences among distant groups of humans could be explained by differences in their social upbringing. By the late 18th century, however, this view was replaced by an ideology of natural inequality among groups that led to the conceptual framework of race.

As we now understand, because of the great geographical and temporal separations of the peoples of Western Europe from those of the New World and West Africa, the illusion that humans came in qualitatively different subgroups was easy to sustain,

given the evident differences in physical appearance among inhabitants of the three regions. In the English colonies in particular, these differences in appearance were capitalized on to provide a biological rationale for innate differences among the groups. This in turn provided a justification for European economic exploitation of the other groups in convenient ways (rationalized as appropriate to their differing forms of inferiority), taking the labor of Africans by enslaving them and confiscating the land of Native Americans by limiting them to reservations.

The confounding of social behavior with physical appearance has been a part of the concept of race since its inception, as is evident in Linnaeus's racial descriptions. Europeans, not surprisingly, are racially characterized in positive terms as "gentle, acute, inventive, and governed by laws," whereas Native Americans are "obstinate, merry, free, and regulated by customs," and Africans are "crafty, indolent, negligent, and governed by caprice" (Slotkin, 1965, pp. 176–181). The scientific terms for the so-called races were similarly subjective—Europeans were called Caucasians because Blumenbach was struck by the beauty of a skull from southern Russia.

From the beginning of the United States as an independent country, biologized "scientific" explanations for the inferiority of the Negro race (including assertions of small brains and large sex organs) became an important part of the political debate over whether to end slavery. Claims of a racial hierarchy, with Europeans at the top, were the dominant scientific view throughout the 19th century. Darwin's theory of evolution and Spencer's social Darwinism were used to demonstrate "scientifically" the unfitness of inferior races and classes.

Once the concept of race had become scientifically legitimate and politically institutionalized, it was used against former slaves and also provided a justification for laws against intermarriage. The concept was also used against a variety of immigrant groups—the Chinese, Irish, Jews, and Italians among others—all of whom were viewed as racially different.

The eugenics movement became central to biology and genetics, as well as psychology. There it played an important role in the IQ testing movement, providing "proof that northern European whites were intellectually superior to blacks, immigrants (including southern and eastern Europeans), and poor people, thereby justifying their mistreatment and creating a "problem" out of their higher birthrates. In the United States, this manifested itself in lynchings and other racist, anti-Semitic, and anti-immigrant acts, and in Europe Hitler made explicit use of eugenicist arguments as a rationale for genocide.

Following World War II, scientific advances in physical anthropology and genetics demonstrated that races do not exist in any biological sense, and eugenicist arguments lost scientific legitimacy. Although the American cultural view of race did not disappear, its scientific status was seriously undermined.

In chapter 7, Welch goes on to place the best known neo-eugenicist work, *The Bell Curve* (Herrnstein & Murray, 1994), in the context of the intellectual history of scientific racism in the United States. She discusses the eugenics movement in some detail, showing its involvement with IQ testing and its promotion of anti-immigration laws and the sterilization of minority group members.

The chapter discusses the essential continuity of thought beginning with Galton and the early eugenicists in the 19th century, continuing with Pearson and Goddard in the early 20th century, and leading to the more recent works of Jensen, Shockley, and Herrnstein and Murray. A discussion of the forced sterilization of prisoners, psychiatric patients, and the institutionally retarded earlier in this century—especially in the South—and of the disproportionate suffering of African Americans from these policies, brings home the American political implications of assertions of racial differences in intelligence. Welch goes on to point out the current use by white supremacist and neo-Nazi groups of works claiming racial differences in intelligence as intellectual justification for their mission. The possibility of history repeating itself is a disturbing implication of this chapter (and one of the reasons for the existence of this book).

Part III: Cultural content, values, and assumptions are an inherent part of IQ tests. Formal schooling teaches people new ways of thinking, which are then measured by the tests. Access to schools, school quality, modes of instruction, attitudes toward formal education, and educational values vary cross-culturally.

In chapter 8, Cohen takes an anthropologist's look at "race" and IQ testing—much as might be done in observing the multiple relations between two significant aspects of a distant culture. In so doing, he identifies seven assumptions underlying the ranking of races according to IQ. There are a variety of problems with each assumption—some are simply false—but Cohen argues that they all need to be true to uphold the reasoning leading to the ranking (a state of affairs defying rational judgment).

In discussing these seven assumptions, Cohen points out the empirical difficulties with many of them and also makes plain the ways in which a cross-cultural perspective illuminates their ethnocentric embeddedness in American culture. In particular, his extensive discussion of the content of IQ tests from a cross-cultural perspective (Assumption 6) goes well beyond similar critiques usually made from the perspective of American subcultures.

In condensed form, these assumptions are:

1. Intelligence is a single entity (*g*) that exists in nature and biology, and is not merely a statistical construction. All individuals in all cultures can be ranked along that single dimension.
2. Intelligence is the same thing in all cultures, and its measurement is not culture bound.
3. American IQ tests provide a valid measure of American intellectual needs.
4. Intelligence is under substantial genetic control.
5. Clearly defined "races" exist.
6. IQ tests are culture free, and scores are not affected by differences in education, language, or exposure to specific cultural content.

7. All (groups) who take the test are equally healthy, well-nourished, emotionally prepared, and intellectually motivated to do their best.

This cross-cultural discussion of IQ tests in the United States paves the way for chapter 9, in which Shanklin looks at the use of IQ tests in Africa and at Africans' reactions to them and to *The Bell Curve*. Once again, and with the distance offered by cross-cultural comparisons, we see the use of IQ tests to justify the stratification of groups, both in the European colonial powers' treatment of their African subjects and in dominant African groups' treatment of subordinate groups. Only for Europeans, however, has race served as an explanatory ideology to legitimate this exercise of power.

The chapter begins with a discussion of the ways in which European colonial powers tested their conquered subjects—both out of curiosity and to demonstrate that they were intellectually incapable of governing themselves. A key point that is developed in detail in the next chapter and discussed in several other chapters, is that formal education teaches not only specific content but also a variety of verbal, quantitative, and other reasoning and problem-solving skills. The lack of formal education of Africans in relation to European comparison groups (as well as many other important differences between higher scoring and lower scoring groups discussed at length elsewhere in this book) provided an obvious explanation for their lower test performance. Europeans, however, interpreted the Africans' test results as manifesting intellectual development that was arrested at a prelogical level.

Shanklin then describes the Internet discussion among Cameroonians living in different countries of *The Bell Curve* following its publication. Their reactions included the following: an awareness of many European and American whites' assumption that blacks were intellectually inferior and of blacks' need to cope with this; the absence of a belief in racial differences in intelligence; a recognition of ethnic prejudices about the different intellectual capacities of various groups in Cameroon; and a desire to illuminate the debate with scientific evidence. The chapter goes on to compare Cameroonian reactions to *The Bell Curve* with those of Europeans and Americans. The latter groups confuse skin color with ethnicity, whereas Cameroonians see only sociocultural information as relevant to distinguishing among groups.

The chapter concludes by pointing out that the scientific demonstration that the human species has no races in the biological sense has had little social impact and has been virtually irrelevant to combating racism. This is because misinformation is a relatively minor source of discrimination against minorities when weighed against the advantages that accrue to the favored majority.

In chapter 10, Ogbu presents a general theoretical position, and in the process responds to the question "Why do blacks score lower than whites on IQ tests in the United States?" In science, answers to general questions are more useful than answers to specific ones, so it is important to come up with good general questions. In this case, the chapter answers the broader cross-cultural questions, "As we look at

IQ testing in different countries, why do some minority groups score lower than the majority group, whereas other minority groups do not? When a group is represented in more than one country are its IQ scores the same in different places?"

The chapter also addresses the issue of defining "intelligence" in a way that is not based exclusively on Western assumptions. To do so, Ogbu distinguishes among three kinds of intelligence: Intelligence A, the innate capacity or potential for intelligent behavior (presumably an inherited genotype); Intelligence B, the everyday behavior considered to manifest a culture's idea of intelligence or the lack thereof (presumably a result of both nature and nurture); and Intelligence C, IQ, or the intelligence measured by tests. It is easy to see that Intelligence B can change (e.g., as a result of the introduction of formal schooling to a nonliterate culture) and that Intelligence C is a limited example of Intelligence B.

Ogbu gives many examples of ways in which different cultures require different kinds of thinking, and shows that, when a culture changes in a way that demands new intellectual skills, its people adapt to the new demands and develop the skills. He refers to those activities in different times and places that require new intellectual skills (like the introduction of pottery making in Mexico, or computers in the United States) as "cultural amplifiers of intelligence." These amplifiers are different from and function in addition to schools, the family, and other societal institutions that transmit (preexisting) intellectual skills directly, though they do so in different ways in different cultures. The concept of a *cultural amplifier of intelligence* is in some ways analogous to Piaget's (1970) concept of *accommodation,* in which a child develops a new, more complex way of thinking when a simpler, older way confronts novel input. It is also in some ways analogous to Kuhn's (1962) concept of a *scientific revolution,* in which scientists adopt a new, more complex way of thinking (e.g., Einsteinian relativity) when a simpler, older way (e.g., Newtonian physics) confronts novel input.

The chapter goes on to make the key distinction between immigrant (voluntary) minorities, who move to a new country because they expect a better life, and nonimmigrant (involuntary) minorities who were conquered or colonized by an occupying power or were taken as slaves against their will. Whereas voluntary minorities have many reasons to trust or at least cooperate pragmatically with the dominant culture and its schools and tests, involuntary minorities have many reasons to mistrust, doubt, actively or passively resist, or otherwise avoid cooperating with them.[3]

In the case of African Americans, the chapter details the contributions of both American society and African Americans themselves to their lower IQ scores. The

[3] As indicated previously, American biologize minority status into folk categories of race. For example, Native Americans, who are involuntary minorities, score low on tests, but are descended from Asians, who are supposedly the highest IQ race. Mexican Americans, who are classified as "Latino"—another low-scoring "racial" category—have on average a greater percentage of New World ancestry than Native Americans, but are not classified as such because "Indian" is a folk term that Americans only apply north of the border. In both cases, the labels applied to the groups are social constructions rather than biological categories, and the groups' performance is understandable socially (because they are minorities) but not "racially."

societal contributions—segregated and inferior education, job ceilings, intellectual denigration, and cultural and language biases—are well known and are also discussed elsewhere in this book. The contributions of African Americans are not so widely discussed, perhaps in an effort to avoid blaming the victim, or because behavioral scientists analyzing quantitative data have no access to the social world of African American adults and schoolchildren. These contributions include self-doubt stemming from the internalization of whites' belief that blacks are not intelligent, a folk theory of "making it" in which test scores and school credentials are not seen as important (because, historically, they have not been perceived as helping blacks to succeed), an adaptation to an ecological niche where advanced cognitive skills are not necessary for the jobs available, and an ambivalent or oppositional group identity and cultural frame of reference. With regard to the last of these, the chapter reports peer pressure against getting good grades or high test scores or taking advanced classes or speaking standard American English as "acting white."

Statistical claims that the black-white test score gap may be narrowing but will never close simply do not take into account what may appear to outsiders as a motivation on the part of many to do poorly. One is reminded of the Gypsies,[4] whose avoidance of school is legendary, who (accurately) view the schools as instruments for socializing their children into mainstream society, and who have chosen a survival strategy of group preservation through cultural isolation (Gropper, 1975; Sutherland, 1986). For Gypsies, cultural isolation depends in a profound way on individuals voluntarily distancing themselves from the norms and aspirations of the larger society. As a result, a successful Gypsy is one who has avoided the stigma of extensive formal education, as such a person would not have had the opportunity to learn the intellectual and social skills essential to his or her own culture. When a significant segment of African American youth uses low school achievement and low scores to maintain group solidarity and opt out of mainstream society, this can be seen as a similar strategy.

Gypsies can also be understood as following a strategy of provoking prejudice to confirm the need for group solidarity, thereby strengthening group boundaries. Social pressures among African American youth to limit school performance and test scores can be seen as functioning in a similar way, by confirming the intellectual prejudices of whites and demonstrating the need for solidarity in response. We can see here yet one more mutually reinforcing way in which the American black-white cultural divide continues to perpetuate itself across the generations.

After discussing the lower IQ scores of African Americans in some detail, the chapter cites evidence for a pattern of lower IQ scores among involuntary minorities around the world—in India, Europe, North America, New Zealand, and Japan. It

[4] As a unique nomadic culture that is everywhere a persecuted minority, Gypsies defy categorization even as their oppositional behavior yields fascinating insights about both them and the larger societies within which they live. Not surprisingly, they cannot be easily classified as either a voluntary minority or an involuntary minority, because they have features of both.

goes on to examine in greater detail the performance of two groups, both of which are voluntary minorities in one society and involuntary minorities in another. The fact that as involuntary minorities they display poor intellectual performance but do well as voluntary minorities implies that it is the nature of the groups' minority social status— not their biological inferiority—that explains their poor performance.

The Buraku outcasts in Japan, an involuntary minority who are physically indistinguishable from other Japanese, score 16 points below the Ippan majority (comparable to the American black-white gap of 13–15 points), but in the United States where both groups are voluntary minorities, the Buraku score the same as or slightly higher than the Ippan. Koreans, who are an involuntary minority in Japan, do poorly in school there, but they do well in the United States and China where they are a voluntary minority.

In short, an understanding of the low IQ test scores of African Americans, as of other involuntary minorities around the world, needs to take into account their resistance to the majority culture (including its schools and tests) and the effects of the majority culture's unequal treatment of them.

In terms of emphasis or focus, one might say that Parts I, II, and III of this book deal with race and its relation to intelligence, and Parts IV and V deal with intelligence and its relation to race. Furthermore, Parts I, II, and III are generally written from a cross-cultural perspective, whereas Parts IV and V are generally written from an American cultural perspective.

Stated in more detail, Part I shows that the concept of race is a social construction rather than a biological fact: Different cultures have come to select differing aspects of ancestry and/or physical appearance and arbitrarily combine them into biological sounding categories of "race." Part II shows that, although the categories of race are arbitrary in the biological sense, socially they exist to delineate group boundaries so that the unequal treatment of groups can be enforced—and intelligence tests have been one means for doing so. Part III shows that intelligence, like race, is a socially constructed concept in the sense that different cultures value and develop different "intelligent" abilities. In addition, the kinds of school-related intelligence measured by IQ tests are more specifically constructed through formal education—both by the kinds and quality of schooling provided to different groups and by the attitudes and motivation these groups bring to it.

In contrast, Parts IV and V are written by American social and behavioral scientists and implicitly accept American social categories of race as givens.[5] That is, they are written from a perspective that says "Whatever black, white, and race might mean,

[5] It would be helpful if the American social and behavioral sciences would use a term with a social meaning, like *ethnicity,* instead of *race,* because that would make it clear that it is cultural differences rather than biological differences that are under discussion. Unfortunately, given the tenacity of cultural categories, many American readers (not to mention researchers) would doubtless understand ethnicity as a politically correct euphemism for race and would implicitly interpret "ethnic differences" as biological in origin anyway.

and whoever blacks and whites might be, the following is what research in the United States shows about them in relation to intelligence, especially as measured by IQ and other tests." In other words, the emphasis is on American cognitive processes, tests, and social outcomes, and race is merely a classificatory variable in terms of which these are examined. A researcher might equally well choose social class or gender—or, for that matter, height or weight. The terms *black* and *white* are implicitly assumed to refer to *Homo sapiens* living an advanced, industrial, literate existence in the United States today, rather than to *Homo sapiens* living a hunting and gathering existence in Africa or Europe 10,000 years ago.

I call attention to this difference because it reflects a current division of perspectives in the social and behavioral sciences in the United States. This difference might be grossly characterized as cross-cultural with a significant qualitative emphasis versus American with a significant quantitative emphasis.

The reason for this difference is inherent in the methodologies. If the entities that one wishes to measure and compare—such as race or intelligence—are defined differently in different cultures, then one can do all sorts of statistical analyses within a particular culture such as the United States, but quantitative comparisons across cultures are often problematic. This is because one must gather data from the second culture along dimensions and in terms of categories that have meaning only in the first. For example, to compare black-white IQ differences in Brazil with black-white IQ differences in the United States, one would have to classify Brazilians as black or white in American terms. However, no Brazilians could be called white (even the lightest would be Latino), and the great majority of Brazilians who would be called black here would not be *preto* there. One could, of course, ask the ethnocentric question "If we pretended that Brazilians were from the United States, and did our best to classify them as black or white based on that false assumption, then how would the black-white differences on (inadequately standardized) Brazilian translations of American IQ tests compare to our black-white differences?" Such a "research question" would yield absurd results, in a manner comparable to Brazilians classifying Americans into Brazilian folk categories to study their IQ differences. (It would also have the gratuitous effect of offending Brazilians, many of whom have had the unpleasant experience of being racially misclassified when they traveled to the United States and would view such a study as a comparable affront.)

This methodological issue (referred to as *emic vs. etic comparisons*) is referred to in chapter 5. What it implies regarding black-white IQ differences is that the rhetoric of racial comparisons is implicitly biological and universal (worldwide differences between races) but the content is actually local and culture specific—differences in the United States between IQs of people called "white" and people called "black."

The inherently culture-specific nature of many of the kinds of quantitative comparisons that have been made in the United States undermines the claim that they represent differences in innate potential among groups and along dimensions that are assumed to transcend our borders. Quite apart from these limitations, such

quantitative findings are often used to support arguments for one or another social policy in the United States. For this reason, and despite their specificity, they also deserve to be examined.

Although the goal of this book is to clarify thinking about race and intelligence rather than to advance a particular social agenda, some of the following chapters do address social issues, at least obliquely. Especially in Part V, the authors review a large amount of empirical evidence. At the minimum, they make clear that quantitative data from the United States also do not support the claim that black-white IQ differences result from innate racial differences in intelligence, and therefore contradict the inference that spending to overcome social inequality is doomed to fail.

To shed light on the recurrent American concern with race and intelligence, both cross-cultural data and quantitative data gathered in the United States are necessary— each type offers something missing from the other. In addition to providing comprehensive answers, I hope that this book will help the public at large as well as researchers involved with both kinds of data to transcend their differing perspectives.

Part IV: Biological-sounding concepts, especially heritability, have been misused to imply a genetic basis for group differences in IQ scores. There are many cognitive abilities—a single general factor of intelligence is inadequate to account for current knowledge in psychological measurement or cognitive science.

In chapter 11, Block discusses the concept of heritability and shows how it has been misused to imply a biologically based, inherited, intellectual inferiority of the Negroid race. Part I of this book dealt with the nonexistence of races in detail, touching on the concept of heritability only in passing. Block discusses it in greater detail.

He begins by distinguishing two ways in which the word *genetic* is used. The first, *genetic determination*, applies to individuals; for example, the notion that genes cause all humans to have five fingers or toes on each extremity under normal circumstances, so that population variations are almost all caused by the environment (e.g., accidents or prenatal thalidomide exposure). Thus, one might say, "The reason I have five fingers on each hand is genetic."

The second sense, *heritability*, applies to groups or populations. Heritability is the percentage of genetically associated variation in a population under given environmental conditions—or, in other words, the ratio of genetically associated variation to all variation (both environmentally and genetically associated). Heritability is used to refer to differences in a population, not to individual specifics (e.g., the heritability of third graders' IQs but not the heritability of Johnny's IQ). One example would be that, until fashions changed in recent years, wearing earrings was highly heritable. Women (with XX chromosomes) wore them, and men (with XY chromosomes) did not; however, the reason for wearing them was not genetic

in the sense of having five fingers. An environmental change in fashion, with men wearing earrings, changed the heritability.

Block argues that IQ, like wearing earrings, may be highly heritable but is not genetically determined. Another way of putting this would be to say that heritability estimates are correlations (between genetic variation and phenotypic variation), and that one cannot infer causality from correlations. In contrast, genetic explanations are causal (e.g., XX chromosomes produce females and XY chromosomes produce males). Thus the term *heritability* sounds as if it offers a causal genetic explanation, but it does not.

In addition, the heritability of IQ within the socially constructed category of American blacks and within the socially constructed category of American whites says nothing about IQ differences between the groups. This is because heritability refers to the relative ranking of individuals within a distribution but not their actual scores: Helpful environmental effects can raise the entire distribution and harmful environmental effects can lower it. For example, imagine a group of black identical twins separated and adopted at birth in the United States, and a similar group of white identical twins. In every case, both black twins would be treated as black, and both white twins would be treated as white, creating significant environmental differences between the groups, even though each set of twins has identical genes.[6]

To give yet another example, even if the heritability of IQ were 100% for both American whites and American blacks, if the environmentally caused deficit in the average performance of American blacks were shown to be 25 points, then their observed 13 to 15-point deficit would imply that under comparable environmental conditions they would score 10 to 12 points higher than American whites.

Regarding the magnitude of the impact of the environment on IQ, Block refers to the Flynn effect (Flynn, 1987, 1999; Neisser, 1998), the worldwide rise in IQs that, in only a few decades, has exceeded the American 13 to 15-point black-white IQ gap.[7] As Flynn [1999] put it, "It is as if some unseen hand is propelling scores upward at a rate of about 6 IQ points per decade, with individual nations scattering randomly around that value" (p. 6). Thus, one way of interpreting lower IQ scores

[6] Studies of "identical twins reared apart compared to those reared together" also illustrate the much more limited view of "environment" (i.e., the United States today) that psychologists have, as compared to that of anthropologists. The studies do not compare one of each pair of twins raised by American college professors with the other raised by Brazilian Indians. Hence, in anthropological terms, such studies are of identical twins reared in very similar environments compared to those reared in extremely similar environments. By restricting the range of environments to American environments, the heritability estimate increases correspondingly. This is because the heritability statistic is a fraction—the genetically associated variation in a population under given environmental conditions divided by all variation (both genetically and environmentally associated). By limiting the environments considered, one decreases the environmentally associated variation. This makes the denominator smaller, and hence the heritability estimate larger.

[7] Substantial racial changes in intelligence test scores were similarly demonstrated in the United States earlier in this century (during segregation) by the social psychologist Otto Klineberg. He found that blacks in Northern states scored higher than whites in Southern states, and that among African American schoolchildren whose families had migrated from the South to the North, the longer they had been in the Northern schools, the higher their IQs (Klineberg, 1935, 1944, 1951).

of American blacks is to view them as a function of environments equivalent to those experienced by American whites in the not-too-distant past.

Although this essential point—that heritability within groups is irrelevant to between-group differences—is acknowledged by all researchers, Block gives a number of examples of "yes-buts" from people using within-group heritability to argue for racial between-group differences in intelligence.

Block also discusses a number of other problems with heritability; readers who are interested in pursuing the topic further might want to consult a special issue of *Genetica* (Hirsch, 1997b) on the "Uses and Abuses of Genetics in Society." Of relevance here are two additional problems with heritability cited by the editor in his contribution to that issue (Hirsch, 1997a).

First,

> heritability estimation assumes both random mating in an equilibrium population (including the equally likely occurrence of every culturally tabooed form of incest) and the absence of either correlation or interaction between heredity and environment. In fact, when one or more of these assumptions are violated, i.e., random mating in an equilibrium population, correlation or interaction, heritability is undefined. (Hirsch, 1997a, p. 220)

Second, he reported that

> In our study of 212 nuclear families comprising 1068 people, we were able to test a subsample of 38 families for concordance on four blood groups, no less than 13% (=5 families out of 38) had children who could not be the biological offspring of at least one of the putative parents (Hirsch, McGuire & Vetta, 1980; Johnson, 1974). In the United Kingdom, Philipp (1973) has provided evidence that 30% of husbands were not the biological fathers of their children. (Hirsch, 1997a, p. 215)

Presumably, this high number includes children (and perhaps some of their stepparents or other caretakers) who do not know they are adopted, children switched by mistake at the hospital at birth, and other kinds of nonsexual explanations—as well as children resulting from their mothers' voluntary or involuntary liaisons with men other than their socially designated fathers. Anthropologists routinely distinguish between culturally defined kin relationships and biological ones, but it

[8] Another point worth making in passing is that, to the extent to which genes are involved with IQ, there are bound to be a lot of them, with small and environmentally sensitive effects, interacting with each other in complex ways. As a result, their reshuffling over the generations to produce any population effects (raising or lowering IQ) would have to be very slow. This contrasts with eugenicist claims that higher birthrates among those with low IQs should lead to a rapid dumbing down of the population. (As we know, the Flynn effect demonstrates that the opposite is actually taking place.)

appears that those who make heritability estimates of IQ may not always have been so meticulous.[8]

In chapter 12, Horn reviews the argument of *The Bell Curve,* especially as it pertains to measured intelligence and its heritability. He finds the book's claims unsupported and argues that it can best be understood as advocacy for particular political policies rather than as a scientific document.

Horn begins with a discussion of the National Longitudinal Survey of Youth (Baker, Keck, Mott, & Quinlan, 1993), the data from which are the main source of *The Bell Curve's* argument, and which is also discussed in subsequent chapters. Herrnstein and Murray (1994) used the sum of 4 of 10 subtest scores referred to as the Armed Forces Qualification Test (AFQT) from a larger battery (the Armed Services Vocational Aptitude Battery; Welsh, Watson, & Ree, 1990) as a measure of IQ, or g, the purported general factor of intelligence. Instead of *g,* however, the score represents crystallized knowledge (*Gc,* a measure of academic achievement), one of nine different "intelligent" abilities identified by cognitive psychology.

Horn finds serious flaws with Herrnstein and Murray's (1994) reasoning in selecting the four subtests, with their measure of socioeconomic status (SES), and with the claim that the SES score adequately accounts for environmental influences on the individuals from prenatal development through their participation in the study. As a result, the book's main findings can be summarized as follows, "a fairly reliable measure of academic achievement is a better predictor of subsequent academic achievement and its correlates than is a rather unreliable measure of social class" (p. 307, this volume).

Horn critiques Herrnstein and Murray's (1994) claim that intelligence=IQ=*g,* and argues instead that there are multiple factors. In particular, fluid reasoning *(Gf)* is closest in meaning to Spearman's g, but is different from Herrnstein and Murray's *Gc* measure. *Gf* and *Gc* overlap only about 25% in what they correlate with, and can be understood as different forms of intelligence. Horn discusses other forms of intelligence as well, such as short-term apprehension and retrieval *(Gm),* visual comprehension and processing *(Gv),* and auditory capabilities *(Ga),* all of which differ from one another and from *Gf* and *Gc* as well.

Horn examines the statistical assumptions underlying heritability estimates and the methodological problems involved in gathering relevant data (e.g., the similarity of environments of twins reared apart is illustrated by a heritability estimate for their religious attitudes of .49). He also argues that Herrnstein and Murray (1994) used the wrong estimate of heritability, thereby inflating their figure substantially.

Horn discusses evidence that IQ can be raised (by 8–25 points) and the increases maintained over time as a result of intensive and sustained interventions during childhood. (Much additional evidence for this point is presented in chapter 15.) In a similar manner during adolescence, intensive coaching has been shown to raise Scholastic Assessment Test scores. Finally, I would like to call attention to a study of college graduates because it used the same AFQT data set examined in *The Bell Curve.* The authors found that "it was the black students who made the

largest gains between the end of high school and college graduation, with their test scores increasing more than four times as much as those of white college students" (Meyerson, Rank, Raines, & Schnitzler, 1998, p. 141).

In short, there is evidence that cognitive abilities are malleable, and as they evolve over time positive experiences along the way can lead them to improve (and negative experiences can have the opposite effect).

To combine Horn's analysis with that of Ogbu in chapter 10, one might say that individuals are born with a variety of potentials that bear varying relations to a variety of "intelligent" cognitive activities that might be displayed in varying ways and to varying degrees later in life. The varying pathways to the differing evolutions of these diverse abilities are actualized differentially both among different individuals within a culture and from one cultural group to another. Formal education is a key to developing many of these intellectual abilities.

Part V: A wide variety of data, including reanalyses of data presented in The Bell Curve, imply that group differences in IQ are social in origin and can change as the result of changing social circumstances or social interventions.

In a way, those who claim differences in innate intelligence between blacks and whites are making a nonscientific demand of their critics to prove a negative. That is, they are asking them to demonstrate that there are no differences in innate intelligence between categories of millions of people called races. Then, whatever evidence is offered is countered by an unending series of "yes-buts" and "what-ifs." For example, one cannot prove the nonexistence of ghosts because any negative experimental result could be responded to by the objection that that particular experiment might not be ghost sensitive.

This is why science is inherently skeptical and demands that those making an assertion support it with data rather than asking others to demonstrate it is false. If people want to show that there are biologically based differences in intelligence between groups then they should find the IQ-relevant genes they believe exist and demonstrate the population differences. Otherwise, the working assumption has to be that any obtained group differences are social in origin. This is because the tests measure complex learned social behavior, because the definitions of the groups are socially constructed, and because there are many substantial and well-documented social differences between the groups. The more of these social factors that are taken into account, the smaller the unexplained remaining difference. There are other variables the quantitative effects on black-white IQ differences in the United States of which have not been studied. One can only expect that taking them into account would further reduce the unexplained difference.

For example, here are three social variables of three different kinds—economic, cultural, and psychological—with effects on the black-white IQ gap in the United States that have yet to be included in multivariate analyses. Conley (1999) presented evidence that substantial black-white differences in household wealth (accumulated assets, as opposed to income differences) are related to differences in educational

and other outcomes. Ogbu, in chapter 10, presents cross-cultural evidence that involuntary minorities resist the schools and tests of the majority culture, and that this resistance (in contrast to the behavior of voluntary minorities) leads to lower IQ scores. Steele (1997) showed that test performance is lowered by stereotype threat (e.g., the belief of African Americans that their academic ability is being tested or of women that their mathematical ability is being tested) and disidentification (e.g., reconceptualizing the self without academics or mathematics as a part).

In addition to such social variables, a variety of factors in the biological environment also have not been included in attempts at comprehensive analyses. These include prenatal differences in maternal diet (including alcohol consumption leading to fetal alcohol syndrome), health status, and access to prenatal care; and environmental factors in infancy and early childhood such as diet, health status, health care, and exposure to lead (leading to lead poisoning) and other environmental toxins.

These examples can hardly be exhaustive. One is tempted to ask why some investigators are so convinced that innate racial differences in intelligence exist. A few decades ago, during a previous iteration of the debate, two social psychologists examined the biographical characteristics of 83 researchers who had reached a variety of conclusions. They concluded that "investigators whose research was categorized as concluding that Negroes are innately inferior intellectually came from higher socioeconomic backgrounds" (Sherwood & Nataupsky, 1968, p. 57), suggesting that such findings may tell us more about our own society than they do about innate racial differences.

In any event, a substantial body of evidence does exist, and the three chapters of Part V examine key aspects of what is known.

In chapter 13, Hout focuses on poverty in the United States and examines *The Bell Curve's* claim that innate differences in intelligence are its most important cause. (A modest relation between IQ-like measures and success in the labor market has long been recognized.) He begins by pointing out the decline in income of the poor and the increase in the percentage of poor Americans over the last 25 years, despite considerable economic growth. This increase in poverty at the same time as the rise in IQs (the Flynn effect) argues against a genetic explanation.

Hout reanalyzes *The Bell Curve's* data and presents additional evidence that social factors (e.g., schools, the family, and labor markets) are the main determinants of social inequality. More specifically, poverty is much greater in families headed by a single woman, poor children attend worse schools, and gender and racial discrimination affect access to jobs.

Hout reviews the content of the AFQT, and with specific item examples, shows that it is a measure of academic achievement (see chap. 12) and that its item content assumes formal schooling (see chap. 10) and is not culturally neutral (see chap. 8). He then reviews the statistical procedures used in *The Bell Curve* and shows that they systematically exaggerate the effect of intelligence on poverty and all other outcomes (e.g., teen pregnancy or truancy) because they assume that there is no environmental component to AFQT scores. Additional analyses of the data show that—as pointed out in several previous chapters and repeated in subsequent ones

as well based on a range of sources—education has an important effect on AFQT intelligence.

Separate from the question of whether the AFQT measures inherited intellectual potential is the question of how well it predicts social outcomes. By using better measures of social origins, Hout shows that they have powerful effects. African American young adults are nearly four times as likely to be poor as their white counterparts. They grew up in families with half the income, their parents had less schooling and worse jobs, and they attended inferior schools in less secure neighborhoods. The AFQT is a significant predictor of poverty, although the size of the effect is reduced substantially by controlling for several appropriate variables. Nevertheless, gender is a much stronger predictor—more than a quarter of single mothers are poor. Amidst the complexities that result in poverty, academic skills rank as a small but significant factor—far behind "race" (a social classification, as the term is used in this chapter), gender, and family issues.

In chapter 14, Devlin, Fienberg, Resnick, and Roeder report on their own and other researchers' reanalyses of *The Bell Curve's* data. After calling attention to the intellectual roots of *The Bell Curve's* argument in the eugenics movement, they point out flaws in the statistical methods used, leading to evidence for a much weaker effect than that claimed by Herrnstein and Murray (1994). They go on to point out difficulties with Herrnstein and Murray's use of the concept of heritability, especially as applied to IQ, as well as with their assertion that IQ is adequately represented as *g*.

Devlin et al. examine the logic of *The Bell Curve's* causal model and show it to be oversimplified. In particular—and as pointed out in a variety of other ways in a number of chapters—Herrnstein and Murray omitted a consideration of the effects of formal education (as well as other potentially relevant variables) on both IQ and social outcomes. Thus, correlational effects that are claimed to be caused by IQ might well be the result (in whole or in part) of other influences. This basic logical flaw undermines the core of *The Bell Curve's* argument.

Devlin et al. conclude by commenting on the policy implications of *The Bell Curve*. (They also discuss some recent books in the same vein by Jensen [1998] and Murray [1997], as well as their own recent book [Devlin, Fienberg, & Resnick, & Roeder, 1997] and others by Gould [1996], Neisser [1998], and Sternberg and Grigorenko [1997].) While Herrnstein and Murray (1994) expressed a libertarian ideological opposition to Head Start, affirmative action, and other government programs to reduce inequality, the scientific evidence they attempted to marshal stemmed from flawed analyses and did not support their conclusions. Devlin et al. express concern that poor social policy stems from poor statistical analyses.

I would like to add my concern that, by giving credence to Rushton's arguments because they could be mobilized to support *The Bell Curve's* social program, Herrnstein and Murray (1994) took an unnecessary and highly questionable step. Libertarianism and eugenics are two distinct ideologies, and to the extent to which eugenicists advocate governmental action (as they did with disastrous results earlier in the century) they are in opposition. Most libertarians are antiracist and view

slavery and segregation as key American examples of the dangers of governmental power. Herrnstein and Murray could have based their "meritocracy" argument solely on inherited individual differences in intelligence and could have attempted to limit debate to that issue. They made clear they understood that one could not generalize from individual differences to group differences, and yet they argued specifically for inherited group differences among people categorized into races. In so doing, they did not consider well-established knowledge in evolutionary biology and physical anthropology about the nonexistence of races. This is another important way in which the book's poor science has done real social harm.

In chapter 15, Barnett and Camilli discuss the effects of Head Start and other preschool educational programs on the cognitive development of poor children. This concluding chapter is the only one with a primary focus on policy implications, but that is not the main reason for its inclusion in this volume. Rather, because it addresses the issue of whether early interventions can have long-term effects (in contrast to the view of cognitive abilities as mainly innate) and because it examines the effects of these programs on different American "racial" groups, it is relevant to the central concerns of this volume.

Barnett and Camilli systematically review 37 long-term studies—15 model programs and 22 large-scale public school and Head Start programs that were chosen to meet a number of research criteria, critique and discuss the studies' designs and findings, and reanalyze some key data. They discuss a number of shortcomings in previous reviews of research, including (a) the failure to distinguish between IQ and achievement, and (b) a series of methodological flaws in the design and interpretation of studies that created the erroneous impression of achievement gains disappearing over time. In addition to making suggestions for future research, the authors also reach a number of important conclusions.

Barnett and Camilli conclude that both model programs and large-scale public school programs lead to substantial and long-term cognitive and educational benefits for children, and that model programs have larger effects. Furthermore, they find no evidence that the effects of the programs on cognitive development and school success differ across ethnic groups. (This contradicts assertions that long-term effects existed for Latino and white but not African American children.)

Barnett and Camilli point out that preschool programs are being asked to fill more functions outside the classroom with no increase in funding, thereby taking time and expertise away from their main mission and creating the danger of watering down their demonstrated cognitive effects. Because it appears that such programs help to lay the foundation for subsequent school learning, they also argue for investigating the effects of very early (beginning in the first year of life), very intensive programs.

CONCLUSION

With this overview of the organization, structure, and content of *Race and Intelligence: Separating Science From Myth* completed, we can go on to explore

the details of human biological variability and intelligence. It is a long way from the assertion that the Caucasoid, Mongoloid, and Negroid races differ in innate intelligence to the rather different scientific conclusion that the human species has no races (although the United States and other cultures have a variety of folk concepts of race), that there is no single form of intelligence, and that formal education helps people to develop a number of cognitive abilities. It is also an intellectual journey well worth taking.

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PART I

Homo sapiens has no extant subspecies: there are no biological races. Human physical appearance varies gradually around the planet, with the most geographically distant peoples generally appearing the most different from one another. The concept of human biological races is a construction socially and historically localized to 17th and 18th-century European thought. Over time, different cultures have developed different sets (folk taxonomies) of socially defined “races.”