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Race, Monogamy, and Other Lies They Told You

Busting Myths about Human Nature

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The Myth of Race

The idea of “race” represents one of the most dangerous myths of our time and one of the most tragic. Myths are most effective and dangerous when they remain unrecognized for what they are.

—Ashley Montagu (anthropologist)¹

Ashley Montagu, one of the most prominent anthropologists of the twentieth century, warned about the pernicious myth of race in 1942, and his warning is still relevant today. In his 2010 book, Guy Harrison challenges the biological reality of race:

Few things are more real than races in the minds of most people. We are different. Anyone can see that. Look at a “black” person and look at an “asian” person. If a black Kenyan stands next to a white guy from Finland we all can see that they are not the same kinds of people. Obviously they belong to different groups and these groups are called races, right? (Guy Harrison, journalist)²

Guy Harrison is calling into question the most common popular perception of human variation—that if we can see differences, if we can tell people apart, then there must be real (meaning natural) differences between groups of people.³ The question of whether humans are divided into biological races is answered with a resounding academic “no” by the American Association of Physical Anthropology’s (AAPA) statement on the biological aspects of race:

Humanity cannot be classified into discrete geographic categories with absolute boundaries. Partly as a result of gene flow, the hereditary characteristics of human populations are in a state of perpetual flux. Distinctive local populations are continually coming into and passing out of existence. Such populations do not correspond to breeds of domestic animals, which have been produced by artificial selection over many generations for spe-

cific human purposes. There is no necessary concordance between biological characteristics and culturally defined groups. On every continent, there are diverse populations that differ in language, economy, and culture. There is no national, religious, linguistic or cultural group or economic class that constitutes a race . . . there is no causal linkage between these physical and behavioral traits, and therefore it is not justifiable to attribute cultural characteristics to genetic inheritance.⁴

However, there are others who answer this question with a resounding “yes:”

The three-way pattern of race differences is true for growth rates, life span, personality, family functioning, criminality, and success in social organization. Black babies mature faster than White babies; Oriental babies mature slower than Whites. The same pattern is true for sexual maturity, out of wedlock births, and even child abuse. Around the world, Blacks have the highest crime rate, Orientals the least, Whites fall in between. The same pattern is true for personality. Blacks are the most outgoing and even have the highest self-esteem. Orientals are the most willing to delay gratification. Whites fall in between. Blacks die earliest, Whites next, Orientals last, even when all have good medical care. The three-way racial pattern holds up from cradle to grave. (J. Philippe Rushton, psychologist)⁵

How can there be two such different answers to Harrison’s question? One answer states, in dry academic terms, that the popular concept of biological races is not supported by evidence; the other, in straightforward common language, says that there is a three-way pattern of racial differences. One answer is wrong.

HUMANS ARE DIVIDED INTO BIOLOGICAL RACES, OR ARE THEY?

The myth of human biological races is alive and well in our society. Someone like Philippe Rushton can make claims about racial patterns, even though they are incorrect, and have some popular success because the categories “black” and “white” make sense to us.⁶ He uses simple, common language that resonates with some of the cultural patterns we hear about via the media, in our daily lives, and in some versions of history. Rushton’s claims are a mix of popular assumptions presented as if they were biological facts. Nowhere in his book *Race, Evolution and Behavior* does Rushton provide any real data to support his assertion that “Blacks,” “Whites,” and “Orientals” are true biological groups, but he does selectively draw from social statistics on crime, income, and mortality to make spurious analogies and then leaps to connect these to the different evolutionary histories of human races. On the

other hand the AAPA statement on race (as well as a multitude of similar statements, peer-reviewed articles, books, and Web sites) states unequivocally that these types of associations are not supported and that the concept of clear or determinate biological races in humans today is not justifiable given what we know about human evolution and biology.

While most people would not fully agree with Rushon about the implications of racial differences, more than would care to admit it probably do see things in his proposal that seem to fit with common perceptions of human variation in the United States: blacks as more athletic and overly sexual, Asians as more bookish and reserved, and whites seem to fall in between, more or less the average everyman. This is because many people today see the division of humanity into races as part of human nature. It's time to bust this myth.

This myth involves the assumption that we can define a specific set of traits that consistently differentiates each race from the other with limited overlap between members. This position also assumes that differences in innate behavior, intelligence, sports abilities, aggression, lawlessness, health and physiology, sexuality, and leadership ability exist between these presumed real clusters of humans and that the clusters can be described as the Asian, black, and white races.⁷ Nearly everyone holding these beliefs would accept that these clusters do overlap in many ways and that interbreeding between them is always possible and not necessarily negative. However, as the journalist Guy Harrison put it so succinctly (and sarcastically), the majority of people regardless of what they might say in public believe to some degree in the natural reality of human races. This "reality" is an assertion that we can test scientifically.

Buying into at least some of this myth about races also suggests a suite of correlates. One is that since these differences are "natural," we should probably be wary of spending much social and economic capital trying to correct them. Some may also feel that the civil rights movement of the last century and the 2008 election of a black American president indicates that US society has already done as much as is possible to ameliorate racial inequality. From this perspective, focusing on race is not really that important anymore. Finally, many might argue that if race is not a biological entity, then how can the actual, and well-documented, differences in health, sports participation, test scores, and economic achievement between the "races" in the United States be explained? In the same vein, what about ancestry tests? How

can a company test our DNA and tell us that we are 40 percent Kenyan or 60 percent Irish? Isn't that about race?

Testing Core Assumptions about Race

To bust the myth of race we have to test the core assumptions and refute them.

ASSUMPTION: *Human races are biological units.*

TEST: Is there a set of biological characteristics that naturally divide up humans beings into races? If yes, then the assumption is supported; if no, then it is refuted.

ASSUMPTION: *We live in a (mostly) postracial society.*

TEST: Does our society still use race in assessment, definitions, and daily life? If no, then the assumption is supported; if yes, then it is refuted.

ASSUMPTION: *If race is not a biological category, then racism is not that powerful or important in shaping human lives.*

TEST: Can we demonstrate that racism, without the existence of biological races, is a significant factor affecting human health, well-being, and access to societal goods? If yes, then the assumption is refuted; if no, then it is supported.

ASSUMPTION: *If we can see consistent differences in sports, disease patterns, and other areas tied to physical features between races, these must reflect innate differences between these groups of people.*

TEST: Are these differences consistent over time? Are they due to biological or unique racial characteristics or are they better attributed to other causes? If yes, and they can be linked to biological patterns of human groups, then the assumption is supported; if no, then it is refuted.

If we can refute all four assumptions, the myth is busted.

MYTH BUSTING: RACE ≠ BIOLOGICAL GROUPS

Although humans vary biologically, we can demonstrate that this variation does not cluster into racial groups. What we refer to as human races are not biological units. Many articles, books, and official

statements make this point. However, there are very few brief and succinct overviews of human biological diversity as it relates to racial typologies. Reviewing information about blood groups, genetics, and morphological and physiological variation in the context of evolutionary processes demonstrates unequivocally that there is no way to divide humanity into biological units that correspond to the categories black, white, or Asian, or any other categories.

For close to three hundred years people have been trying to name and classify racial grouping of humans. Carolus Linnaeus, the father of modern taxonomy, made the most important attempt to do so and his classifications still seem very much like current ones.⁸ Linnaeus saw the distinction among groups of humans as being rooted in their continental origins (Africa, Asia, Europe, Americas). He saw all humans as belonging to one species, *Homo sapiens*, with a number of subspecies representing the different races.⁹ In the tenth edition of his major taxonomy of everything, *Systema Naturae*, published in 1758, Linnaeus proposed four subspecies (races) of *Homo sapiens*: americanus, asiaticus, africanus, and europaeus (he added a fifth category, monstrousus, as a catch-all for wild men and mythical beasts). Unlike his other classifications, which were based on drawings and anatomical analyses of specimens, Linnaeus based his division of humans on what he heard and read about the peoples of the different continents.

Homo sapiens americanus was “red, ill-tempered, subjugated. Hair black, straight, thick; Nostrils wide; Face harsh, Beard scanty. Obstinate, contented, free. Paints himself with red lines. Ruled by custom.” *Homo sapiens europaeus* was “white, serious, strong. Hair blond, flowing. Eyes blue. Active, very smart, inventive. Covered by tight clothing. Ruled by laws.” *Homo sapiens asiaticus* was “yellow, melancholy, greedy. Hair black. Eyes dark. Severe, haughty, desirous. Covered by loose garments. Ruled by opinion.” And last (and obviously least) *Homo sapiens africanus*: “black, impassive, lazy. Hair kinked. Skin silky. Nose flat. Lips thick. Women with genital flap; breasts large. Crafty, slow, foolish. Anoints himself with grease. Ruled by caprice.”¹⁰

These descriptions initiated the still common mistake of mixing presumed cultural differences with biological realities. The anthropologist Jon Marks has repeatedly pointed out that if you read them carefully, Linnaeus’s race descriptions sound a lot like those of Rushton’s and other modern racialists.

About half a century after Linnaeus the German naturalist Johann Friedrich Blumenbach developed another set of nonscientific human racial classifications, based on geographical definitions and some facets

of skull morphology. His classifications included Caucasian, Mongolian, Malayan, American, and Negroid races, which were also referred to as white, yellow, brown, red, and black (based on serious ignorance about skin colors around the planet). Finally, during the mid-twentieth century the physical anthropologist Carleton Coon developed a derivation of Blumenbach’s races with a more refined set of skull measurements that is still used by some racial topologists today: the Capoid race (southern and eastern Africa), Caucasian race (western and northern Europeans), Mongoloid race (Asian and Americans), Negroid (or Congoid) race (all of Africa aside from parts to the south and east), and the Australoid race (Australians). Most importantly Coon proposed that each of these races had a separate evolutionary history and thus a suite of behavioral and other traits that evolved separately.¹¹

Despite attempts by researchers over the centuries to divide humans into races based on skull shape, geographic location, and presumed cultural differences, there is absolutely no support for any of these classifications (neither those mentioned above nor the countless others proposed) as actually reflecting the ways in which the human skull, genetic characteristics, or other phenotypes cluster in our species.¹² So what does human biological variation actually look like?

As pointed out in our discussion of evolution and genetics in chapter 3, we look at variation in populations. Populations are collections of people that reside in more or less the same place, or in different places but are constantly connected, and mate more with one another than with members of other populations. There are thousands of populations of the species *Homo sapiens* spread across the globe. And in some areas (large international cities like New York, London, or Singapore) individuals from many of those populations congregate. To define a race, then, we need to be able to identify a population or set of populations that has a suite of unique markers that differentiate it from all other such populations and mark it as being affected by slightly different evolutionary forces so as to have altered genetic patterns relative to the rest of the species. Let’s look at how we vary biologically between and within populations in our blood, immune system, genetics, body shape and size, skin color, and skull shape.

Blood

For centuries people have looked at blood to tell us about humanity. We know that blood is important (lose enough and you die) and during

the last century researchers began to discover that blood itself is made up of a number of different elements, all of which vary a bit. Basically, blood is made up primarily of red blood cells (for oxygen transport), white blood cells (defense against infection), platelets (for clotting), and plasma (the liquid part of blood). There are also a number of other things associated with these main components and even others that use the circulatory system to get to different parts of the body.¹³

Many sets of proteins serve a variety of functions associated with red blood cells. We call these protein sets blood types.¹⁴ The best-known blood type classification is the ABO system, which is often coupled with another system, the Rhesus blood type, noted as positive (Rh+) or negative (Rh-). Today we can track more than fifteen blood type systems whose alleles (forms of genes) are found in variable frequencies across different human populations.

In the ABO gene there are four alleles: A₁, A₂, B, and O. A₁ and A₂ are very similar, and mostly respond identically. The three main alleles, A, B, and O, have a set of relationships with one another, in which A and B are considered dominant to O and codominant to one another.¹⁵ In other words, the eventual phenotype of the genotypes AA and AO is A; that of BB and BO is B; that of OO is O; and that of AB is AB. Across the human species these alleles are found at the following frequencies: 62.5 percent O, 21.5 percent A, and 16 percent B. But if we look at the level of different human populations we see different distributions of these alleles. For example, the frequency of allele B is at, or nearly at, zero in many indigenous populations in South America, southern Africa, northern Siberia, and Australia, and higher than 16 percent in indigenous populations in central Asia (figure 2), central West Africa, northern Russia, and mainland Southeast Asia.¹⁶ Alternatively, the A allele is found at its highest frequencies (more than 40 percent) in the Saami (an indigenous population) of northernmost Europe and in some groups of Australian Aborigines.¹⁷ Are populations that share these similar frequencies of A or B more closely related to one another than to the populations next to them that have different frequencies? No.

Understanding natural selection and gene flow helps us understand the distributions of blood types. Probably the most common allele is O because it is the original allele, while A and B are more recent mutations identical to O but with the addition of an extra sugar group. Also, the different ABO phenotypes confer different slightly different support against diseases. Specific blood types may increase or decrease

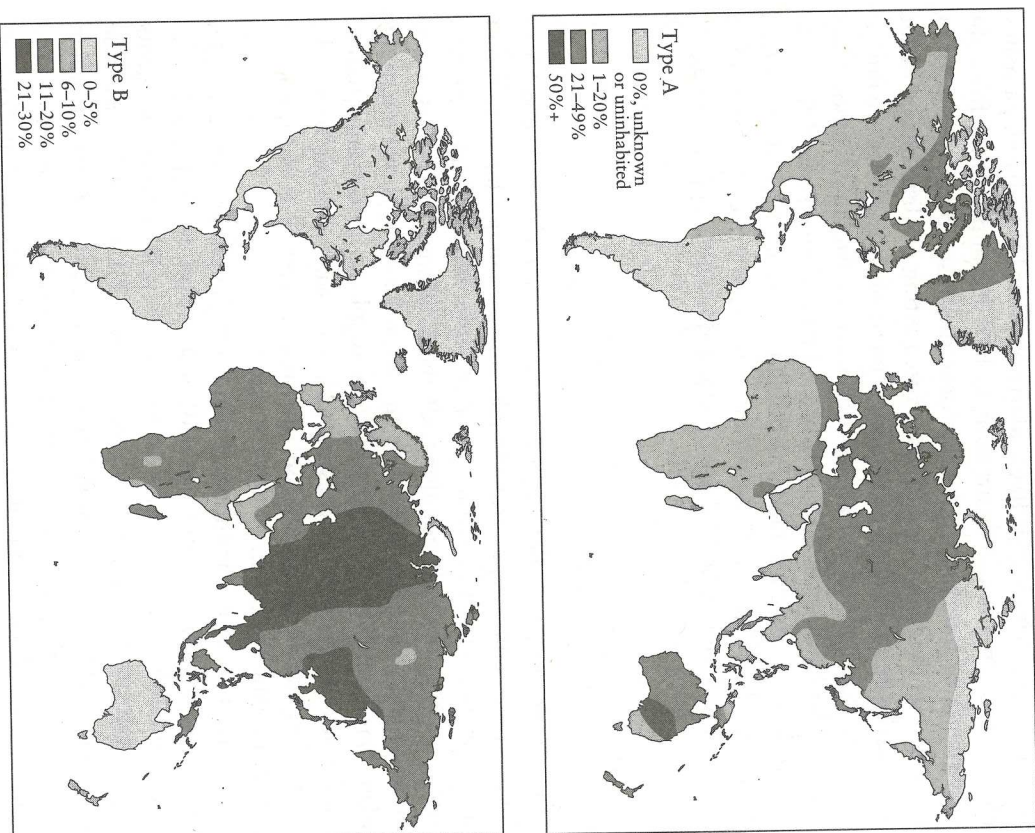


FIGURE 2. Geographical distribution and frequencies of the blood types A and B. Note that they do not follow the big three racial division of European, African, and Asian. Adapted from A. Fuentes (2011), *Biological Anthropology: Concepts and Connections*, 2nd ed. (Burr Ridge, IL: McGraw Hill Higher Education).

chances of surviving things like malaria or other blood-based parasites. However, the majority of variation in blood groups comes from the movements of human populations over the past 50,000 years or so. Gene flow is the major evolutionary force acting on distribution of the ABO alleles across human populations. None of these alleles are unique to specific populations, nor are their frequencies. And most importantly, none of the patterns of ABO (or other blood groups) match up with the black-white-Asian model of dividing humans into racial categories. In fact, the full range of blood variation is found in nearly every single human population. The biology of blood does not support biological race.

Immune System and Disease

Natural selection, gene flow, genetic drift, and mutation have combined with complex cultural patterns to make disease a major factor in recent human evolution. This became especially important as humans began living in towns and villages alongside their farming and domesticated animals. Today humans are more spread across the planet than any other mammal. We live in more types of places (mountains, cities, rainforests, deserts, etc.) and as a result, encounter a larger variety of things that can cause disease. So the immune system is an important part of human evolution.

A major part of our immune system is the human leukocyte antigen (HLA) system. Made up of a series of proteins on the surface of white blood cells, the HLA system recognizes potential infectious agents (things that are foreign to our bodies). These HLA proteins are able to tell the difference between self (your own body) and other (foreign proteins and pathogens) because of specific chemical structures. These proteins then signal the immune system that foreign substances are in the body, so that our bodies can mount a defense.

The HLA system is one of the most variable genetic systems in humans, with between five and seven genes involved, each having from three to more than a hundred alleles. This means the HLA system in people displays an enormous array of genetic combinations. Very few people, even within the same family, will share the exact same system. This means that in any human population there is a lot of variation in immune system response to pathogens. Because humans have spread around the globe so extensively in the past 50,000 years, natural selection is partially responsible for this variability. Having high diversity

in the HLA system within populations increased chances of individuals surviving and reproducing because greater variation among our immune systems betters the chances that at least some individuals within a population will be able to combat new pathogens.¹⁸

Other diseases, not related to HLA function, also have their origins in the variation in allele frequency across human populations. Albinism, the lack of production of pigment in skin, comes from a set of rare alleles for genes on three different chromosomes. Albinism comes in two types. One type emerges from a set of alleles that result in restriction of the production of the enzyme tyrosinase (required for pigment production). This form of albinism is primarily in populations from parts of Europe and central Asia. In the second type of albinism tyrosinase is produced but a failure occurs later in the production of pigment. This second type is most common in parts of Africa and the Americas. Interestingly, because each type has a functioning pigment system except for one component, two individuals with the two types of albinism can mate and produce a nonalbino child, because their allele patterns complement one another.¹⁹ Many other genetic disorders occur more commonly in some human populations than others owing to mutation, gene flow (or lack thereof), genetic drift, and cultural and ecological or environmental factors. One of the best known, and most often racialized, examples is sickle cell disease. This disease is often associated with peoples of western African descent and is held up as an example supporting a "black" race. Turns out, this is not at all the case. Sickle cell disease is a blood disorder that can occur in individuals who carry two copies of a specific allele for a protein that is part of the oxygen-transporting system in red blood cells. In times of stress, like malnutrition, exhaustion, and other diseases, the protein causes some red blood cells to become sickle-shaped, preventing effective oxygen transport. The result is an illness that severely weakens the individual and puts them at risk for other diseases.

The mutation that causes the sickling allele shows up in many human populations at very low levels (there are at least five independent mutations that have this same effect). But in most cases the mutation tends to disappear quickly, or stay at extremely low levels, because of its negative impacts. However, these alleles can be found in relatively high frequencies in some populations in western Africa, the Arabian Peninsula, southern India, and Central America. Note that only one of these geographic areas corresponds to the race category "black." What does

unite these widely separated geographic areas is the presence of the powerful disease malaria.

Malaria is caused by a group of parasites that spend part of their life cycle in mosquitoes, and if an infected mosquito takes blood from another organism (that is, bites a person), the parasite can be transferred. In people the parasite can cause problems in the circulatory and respiratory systems, sometime resulting in death. Malaria is a problem for humans only if a lot of mosquitoes are around. Interestingly, individuals with sickle cell disease (those that have two copies of the recessive sickling allele) generally do not contract malaria. Even a little sickling of red blood cells inhibits the reproduction of the malaria parasite. Individuals who have one sickling and one regular allele get mild sickling but do not get the full-blown disease; these individuals have some immunity to malaria. It appears that in areas with a high risk of malaria, the mutant allele (one of the five) can remain in the population at relatively high frequencies. These areas appear to be where people for thousands of years have cleared forested areas for agriculture, creating open fields and many places for stagnant water, which in turn attracts mosquitoes. Human alteration of the environment (niche construction) changes selection pressures on humans, mosquitoes, and the malaria parasite. The result is higher-than-expected frequencies of the sickle cell allele in certain human populations.

Interestingly this process did not happen everywhere that malaria occurs. In some areas humans changed the environment too recently for evolutionary changes to occur and in others chance plays a role. Mutation is fairly random and an effective mutation has to co-occur with the appropriate conditions for allele frequencies to change significantly. There is also a modern biocultural part to this story. As humans move across the planet, they change allele frequencies via gene flow. For example, migrations from the Arabian Peninsula, India, and western Africa resulted in higher frequencies of the sickle cell alleles in North America. Again, we see that human cultural behavior such as migration influences evolution and variation, this time via gene flow.²⁰ However, even in the United States where sickle cell is thought of as a "black" disease it is found in many individuals who are not black. Sickle cell disease does not support racial categories.

Humans vary in their immune and disease systems because of migration, gene flow, cultural shifts (towns, domestication, etc.), and contact with a wide array of environments over the last few hundred thousand years. The majority of variation in our species is found in almost every

living population, and neither HLA nor disease patterns match the black-white-Asian categories.

Genetic Variation

The Human Genome Project, completed in 1998, was designed to identify all the genetic material in humans. The very first draft of the project confirmed what many anthropologists, biologists, and geneticists had been saying for nearly fifty years: humans, as a species, demonstrate little genetic variation between populations. In 1972 the biologist Richard Lewontin pointed out that despite the wide variability in human DNA sequences, the majority of our genetic variation can be found in every living population. Since then more extensive research has confirmed that despite nearly seven billion *Homo sapiens* spread across the planet and our enormous range of body size, shape, color, and form, the vast majority of human genetic variation is found *within* populations rather than between populations.²¹ In other words, all human populations—Japanese or Swedish, Australian Aborigine or African, American Indian or Russian, and so on—share extremely similar genetic makeup.²²

The real confusion between human genetic variation and the race concept comes from the fact that while our overall genetic makeup can be almost identical across human populations (at the macro level) it is at the same time really quite diverse on the micro level. In fact, if we look at very small areas of the genome we can identify genetic variants that are more common in certain areas of the globe than others. To an extent, we can even attempt to identify the genetic histories of individuals, a snapshot of the lines of people in the past who have contributed to one's genetic ancestry, by examining these frequencies of patterns in the micro-level variants of individuals' DNA. How can we be so similar and yet have this micro-level diversity at the same time? Basic genetic analyses can help us understand this pattern of similarity and diversity and show us that it does not equate with any of the categories of human race.

A common way to assess genetic variation is to look at how much variation is found between populations as opposed to within populations. Comparing any two populations, theoretically they can range anywhere from 0.0 (identical for every genetic variation and frequency of those variants) to 1.0 (different for every variation and frequency). Multiple researchers and research groups have looked at thousands of human genes and multiple other stretches of DNA and found that

(when there are differences), most scores range from .03 to .24 (averaging about .16 or .17). At few specific spots on the DNA, values are as high as .4 or more, but these are extremely rare.²³

What this means is that across the human genome, the vast majority of genetic variation is found within populations, and relatively little is found between populations (remember, we are talking about populations, we have not even gotten to races yet). This is an amazingly low interpopulation variation for mammals, especially large-bodied mammals that can move over great distances. For example, multiple white-tailed deer populations found across a few states in the southeastern United States have an average differentiation of about .7. In other words, we find more genetic variation between a population of deer from northern North Carolina compared with one from Florida than we do between human populations from Central America, central Asia, and central Africa. Even more to the point, if you compare any two people from anywhere on the planet and then any two chimpanzees, the chimpanzees would have 75 percent more differences with each other than would the people.²⁴ None of the examined variations map onto the traditional race categories. There were no genetic patterns that identify and lump whites versus blacks versus Asians; these patterns were looked for extensively and found not to be present.

The recent white paper study by the American Society for Human Genetics states that “because different parts of the genome have different ancestral histories, different marker systems often provide somewhat different information about population history and individual ancestry.” However, the same paper also asserts that “the routine treatment, in science, of ancestral, ethnic, and so-called racial groups as bounded biological entities perpetuates an inaccurate concept of human variation and increases the possibility of stigmatization and discrimination of the groups and the people within them on the basis of traits, behaviors, diseases, and other attributes.”²⁵ Basically, this means that we can use some genetic variants to describe patterns within and between populations, but these are not races nor do they divide humans into racial types or categories.

What does this mean? We know that human populations have more, genetically, in common with one another than they differ. At the same time there are specific aspects of the genome, called ancestry informative markers (AIMs) that can help identify the population histories of individuals. Remember, all individuals have parents, who had parents, who had parents, and so on; thus a population history is the tracking

backward of these ancestors and seeing if they are identifiable with specific patterns of genetic variation. These AIMs are generally single nucleotide polymorphisms (the smallest identifiable segments of the DNA) that occur with high frequencies in particular populations or population clusters.²⁶ They do not lump into categories such as “white” or “black,” but they do show up in particular frequencies in populations associated with specific geographic and cultural clusters we call Yoruba, Finnish, Japanese, Saami, and so on. We have a large (but incomplete) database of many populations from around the globe and we can identify small patterns of genetic diversity in these populations that differ from patterns in other populations. Not all individuals in a population have the same pattern of genetic variants, but many (or even most) do. This is similar to the situations with malaria and sickle cell disease, or the blood group patterns and other genetic traits, in the sense that some biological patterns can cluster in different areas of the globe. However, AIMs are not usually functional aspects of the genome (as in the sickle cell example) but rather are elements structured by gene flow.²⁷ So, populations that mate more within their groups than without would be expected to share certain micro-level patterns of DNA more in common with one another than with other such populations. AIMs and the whole process of ancestry testing can help us gain insight into our genetic histories, but the data and analyses do not provide any support for the existence of races and the reference samples used in these studies remain limited.²⁸

In all of this scrutiny of human genetic variation there is an extremely important finding about the African continent that affects our understandings of genetics and race: there is nearly twice as much genetic variation among human populations in Africa than among all populations outside the African continent. There also is more DNA sequence variation within Africa than outside Africa.²⁹ That is, all the genetic variation in the world is a subset of the variation found in populations on the African continent. This is because modern humans have been in Africa longer than anywhere else on the planet.³⁰ Variation needs time to accumulate, thus the areas with the highest degree of variation will be the areas where humans have resided the longest. So as figure 3 shows, the species-wide human genetic variation does not support the concept of three overlapping races; rather, it demonstrates a single human race and the fact that we have a lot of gene flow and a recent shared ancestry in Africa. The patterns in our DNA do not support the concept of discrete races in humans.

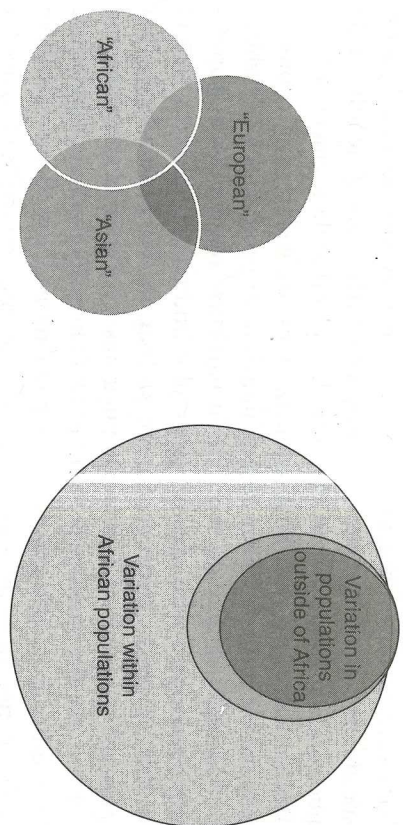


FIGURE 3. Most people think of genetic diversity in our species as three overlapping circles, but the reality is shown here. There is more genetic variation in Africa than everywhere else combined. Venn diagram of human genetic diversity based on data from N. Yu et al. (2002). Greater genetic differences within Africans than between Africans and Eurasians. *Genetics* 161: 269–274. Adapted from diagram by Jeffrey C. Long. Reproduced by permission of American Anthropological Association.

Variation in Body Shape and Size

Humans vary substantially in the size and shape of their bodies. This variation shows up both in the relative contributions of particular body parts (legs, arms, head) to overall body shape and in overall height and the shape of the torso. There is also a lot of variation in the pattern and density of body fat and muscle. The body mass index (BMI), a measurement of weight relative to height, is often used to assess patterned variations in human size and shape.

Average body mass (measured as weight within each sex) varies by as much as 50 percent across human populations, meaning that the largest humans are half again as heavy as the smallest (or more in some extreme cases). BMIs (as population averages) range from about 17 to 25 across human populations. The width of the human body at the pelvis varies by about 2.5 percent across our species, and average heights range from about just under five feet to about six feet (from about 150 to 185 cm). Aside from the extreme ends of the height spectrum, the human species exhibits about a 10 percent variation in height overall. Sexual dimorphism, or differences in size between males and females, is about 15 percent, meaning that male bodies, on average, are larger than female bodies. Interestingly it looks as though as early human societies transitioned to food growing, and as global climates warmed

up in the past 10,000 years or so, human bodies decreased in body mass. More recently, in many developed nations, people have shown some pronounced increases in height and body mass, as health care and nutritional patterns improve dramatically.³¹

Why is there such extensive variation in body shape and size in humans? It turns out that work by zoologists John Allen and Carl Bergmann on mammalian body form helps us understand human shapes. They found that in environments stressed by cold (the Arctic, for example), mammals tend to have increased body mass relative to body surface area (think of penguins or seals, with their stocky and relatively squat bodies). In environments where mammals are stressed by heat (deserts and tropical savannas, for example), the opposite is true: mammals have a decreased body mass and increased body surface area (for example, giraffes or the ears on elephants). Mammals can live only within a relatively small range of body temperatures; they must constantly retain or lose heat when they are in environments that are above or below those temperatures. So body size and shape are influenced by natural selection, as those variants that do better under thermal stresses become most common in a population.

As mammals, humans display this same pattern of morphological variation. Human populations that have spent many generations in cold-stress environments have larger torsos and shorter, stockier arms relative to many other human populations. For example, think of groups from the extreme north, like Alaskan natives and the Saami peoples of northwestern Eurasia. These body proportions maximize mass and minimize surface area, resulting in more efficient heat retention. Of course, humans also adapt to cold environments with cultural adaptations such as clothing and fire, by means of niche construction. The reverse is true of some populations that have lived for long periods in heat-stress environments. Here we see either very tall bodies with long arms and legs or very small bodies with proportional limbs. In both of these cases, surface area is maximized and mass minimized, increasing the effectiveness of heat loss.

Although natural selection has clearly influenced human body form in climatically stressful environments, the majority of humans do not live in such environments, so most populations are not under this selective pressure. So how to account for all the variation in body size and shape we see in humans? Think of the interaction between genetics, development, and selection as setting the range of possible shapes for humans, and then note the effects of cultural and nutritional factors.

Because most populations are not under strong climactic stress, the selection pressures on body size and shape are fairly relaxed, and a wide array of variation can be expressed.

Human body variation today is largely shaped by gene flow, mating patterns, and nutrition. In a population with little gene flow with other populations and fairly equally distributed nutrition, individuals tend to converge at a similar body shape and size, whereas in populations with high rates of gene flow and variable nutrition, individuals are more variable. Because of flexibility in responses to environmental stresses, each human population has a good deal of genetic and developmental variation underlying potential ranges in body size and shape. As in the case of sickle cell disease, processes of evolution (natural selection, gene flow) are integrated with cultural patterns (migration, mating, and material and nutritional culture) to influence the shapes and sizes of human bodies. In general, relative geographic region (extreme north or south) correlates somewhat with body mass and width. Peoples in regions closer to the extreme north (such as northern Europe) and south (such as southern Chile) of the planet (with more extreme climates) tend to be large bodied. These correlations do not hold for height, however. Height tends to vary less within populations and more between populations. However, migrations, dietary customs, activity patterns, diseases, and, of course, the parameters maintained by natural selection affect the size and shape of our bodies. Most importantly, tall, short, thin, heavy, high BMI, and low BMI populations do not map to the three racial categories, and in each of the areas associated with the big three races (Eurasia, Asia, and Africa) populations of nearly all body types and shapes can be found. The diversity of human body size and shape does not support the division in humanity into white-black-Asian racial categories.

Human Skin Color

The most overemphasized and misunderstood aspect of human variation is skin color. Although many people think that skin color is a good biological way to classify people and that it identifies race, this belief is incorrect.³²

The differences in human skin are not really about color at all. Human skin has only one main pigment—melanin, which only comes in the colors of black and brown. In addition to melanin, the thickness of the skin, the blood vessels (and the blood in them), and a

minor pigment called carotene (orange-yellow) also have minor roles in skin coloration. What makes a difference in variation in skin coloration is the distribution and production of melanin and a few related biological components in the skin, which together result in varying intensities of light absorption and reflectance, making skin look darker or lighter.

Melanin is produced between layers of the skin (the dermis and the epidermis). The dermis (the inner layers) has the blood vessels, hair follicles, and glands (largely sweat glands). The epidermis (the outer layers) is primarily cells that continuously divide and replace themselves, moving toward the outermost layers; these outer layers are what we generally think of as skin. In between the dermis and the epidermis lives a type of cell called a melanocyte. Melanocytes produce melanin and distribute it into the cells of the epidermis. As the epidermal cells divide and move into the outer layers, they bring the melanin with them and distribute it across the epidermis. The density and distribution of melanin cause different levels of reflection and absorption of light in the skin and thus the appearance of different skin colors.

The number of melanocytes does not vary significantly from one human to another, but the density of melanin does. The more melanin that is produced and distributed to the epidermis, the less one type of light (white light) is reflected and the more another type of light (ultraviolet, or UV, light) is blocked from entering the dermis. So, if a person's melanocytes are producing large amounts of melanin that is being effectively distributed throughout the epidermis, that individual will look darker (reflect less light) than an individual with less active melanin production and distribution. Because individuals with less reflection have more melanin in the epidermis, their skin can prevent more UV light from reaching the dermis.

The baseline variation in human skin color arises from a specific kind of environmental pressure. Ultraviolet light in high doses can cause severe damage to layers of the dermis and even plays a role in initiating skin cancer and disrupting other aspects of physiological functioning. This is why doctors recommend using strong sun block before spending time at the beach. Until recently, when a hole formed in the ozone layer (the part of the atmosphere that filters UV light) over Antarctica, that ozone layer provided much of the planet with moderate protection from UV light. However, the intensity of UV light has always been greater at lower latitudes (closer to the equator) and less at higher latitudes (nearer the poles). Therefore, natural selection has favored increased

rates of melanin production and distribution through the epidermis in areas of higher UV stress. A map of indigenous populations around the globe shows exactly this: UV stress tends to correlate with darker skin color. Substantial research supports the hypothesis that this relationship between melanin density and UV light is the basis of variation in human skin reflectance.³³

Why aren't all humans dark? Humans do need a small amount of UV light to penetrate into the dermis. In low levels, UV light assists in the production of vitamin D, which is important for healthy skin, bones, and metabolism. Human populations near the higher latitudes (either far north or south), where UV intensity is lower, face the potential problem of not getting enough UV light for sufficient vitamin D production. These conditions would favor less intense production and distribution of melanin. Again, this pattern can be seen around the planet, with darker skins clustering toward the equatorial regions and lighter skins found further north and south. In short, UV light intensity in the environment has affected human populations, and the resultant adaptation (relative melanin production/density) helps explain the variation in human skin reflectance levels.

But variation in human skin color is more complex than just melanin distribution in populations living near or far from the equator. For example, all humans have a limited ability to respond to increased stress from UV light through tanning. When we tan, our melanocytes temporarily increase their melanin output in response to UV exposure. Melanocyte function, like other functions of our bodies, also varies in effectiveness with age, health, and a variety of diseases. Finally, movement by humans both far north and far south of the equator and gene flow between populations have resulted in a mixing of the adaptations to UV light with other factors. Thus, while natural selection sets the range of current skin color, what people look like in any given population is modified and distributed by gene flow and cultural patterns such as the use of clothing and artificial or natural tanning.

Although skin color varies across the human species, latitude accounts for most of the variation; very little variation occurs among populations within one large region or within a population (figure 4). One can find darker-skinned populations in lower latitudes, including sub-Saharan Africa, south Asia, Southeast Asia, and Polynesia. Lighter-skinned populations are found in northern latitudes, including the Americas, northeast Asia, and northern Eurasia (Europe). The main exception to this pattern is found in populations, such as in the United States or Brazil, that have

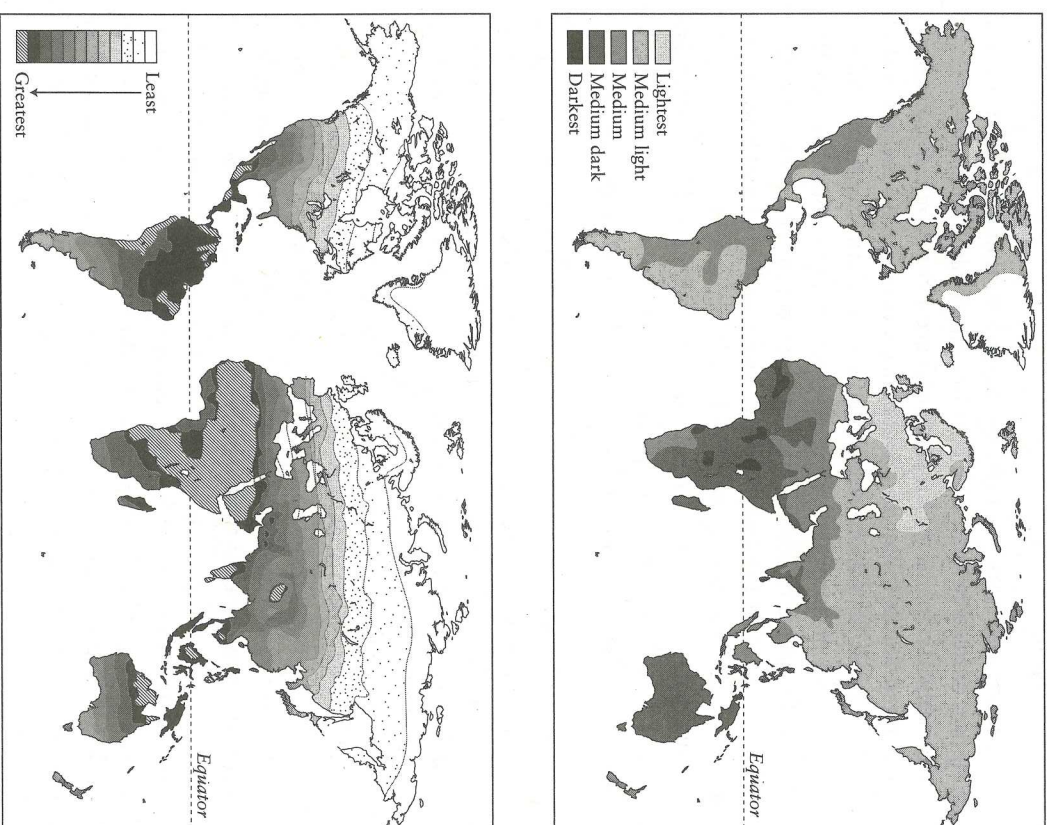


FIGURE 4. Geographical distribution of skin color patterns (top) and UV light (bottom). Note how the "darkness" of skin color maps very well to the incidence of UV light. Adapted from A. Fuentes (2011), *Biological Anthropology: Concepts and Connections*, 2nd ed. (Burr Ridge, IL: McGraw Hill Higher Education).

experienced large, recent migrations from various regions around the planet. We cannot use skin color to characterize specific populations. We can say only that it varies by regions of lower or higher latitudes. The current patterns of pigment distribution and skin color are due largely to human adaptation and gene flow and do not support the division of humans into black, white and Asian races.

Cranial Variation

A long-term mainstay in forensic analyses (the identification and description of dead people) is the use of cranial (skull) measurements to identify skeletal remains with a particular group of people. For example, in the United States today, forensic experts can usually classify a skull from the United States into the categories of Asian, black, or white at about 80 percent accuracy. Some researchers argue that the fact that skulls can be more or less reliably placed in categories such as black or white means that the categories are biologically based. However, the evidence suggests a much more complex interpretation.

Cranial variation is strongly influenced by nutrition, health, and gene flow. The actual patterns of cranial variation in our species match the pattern of variation in our DNA; about 80 percent of the variation in cranial shape occurs within each human population, and about 20 percent occurs between populations across geographic regions.³⁴ So, how is it possible that forensic scientists can classify skulls into race categories here in the United States with such relatively high levels of accuracy? The answer lies in the ways the crania are classified. If, for example, we have three categories in which to place a set of crania, we can only cluster them into those three. However, if we had six or eight or ten categories, we could cluster them that way as well. For example, in recent work forensic scientists easily differentiated the crania of white American males dating from 1979 from the crania of white American males dating from 1840, and it was as easy to do this as to classify the crania of modern American white and black males from each other.³⁵ Does that mean that white American males living in 1979 belong to a different race from white American males living in 1840? No, of course not. Numerous studies have shown that cranial form changes measurably across time within a population. If subgroups within populations or regions differ in health, nutrition, and gene flow then some measurable cranial differences will show up, especially if these subgroups of populations derive some ancestry from diverse geographical regions on the planet. Also, remember that even something as simple as limited gene flow can make two populations look more or less alike—we do not need to invoke race concepts.

It is also extremely important to note that skull measurements of humans in the United States would not be exactly the same as skull measurements taken in other parts of the world, given the differences in populations and morphologies. In other words, measurements indicating “black” in the United States would not even come close to classifying all crania from populations on the African continent (espe-

cially because there is more genetic diversity between African populations than all populations outside of Africa). The same holds true of measurements indicating “Asian” in the United States and any attempt to encompass the diversity of skull morphology found in Asia (which has two-thirds of the world’s population). In addition, none of the actual cranial measurements or patterns used to identify groups is unique to any of the big three race categories. The divisions are based on averages and ranges, so any specific cranium may or may not fit within the “correct” range. This is why experts do make a certain number of errors when placing crania in categories. The differences between crania and between groups are those of degree, not of kind.

A great deal of the cranial variation we actually notice has more to do with face shape and form and hair than the actual construction and overall shape of the skull. These characteristics are even less useful for classifying peoples, as types of hair (frizzy, thick, dark, light, etc.) are distributed across the planet in ways that generally do not correlate with specific patterns in skin color, face shape, body type, or geographic origin.³⁶ The same is true for broad and thin noses, lip size, and the shape and structure of cheekbones and chins. Cranial variation cannot be used to sort human beings into racial categories.

There is no support for biological races

We can look to human biology to understand how people vary, how populations differ from one another, and how patterns of adaptation and gene flow shape the way humans look across the planet. Data and results from research into body shapes and size, genetics, skin color, skull shapes, and every other aspect of human biological variation demonstrate unequivocally that we cannot divide humans into discrete biological clusters of white, black and Asian. This does not mean that humans do not vary—populations do differ from one another and this variation can be important. It just means that the racial divisions white, black and Asian do not reflect biology: they are cultural constructs.

Why don’t most people know this? In large part it is because of our limited exposure to what humans actually look like. Most people do not have the opportunity to travel across the world and see a large subset of the nearly seven billion members of our species. Nor do they have much opportunity to read concise and accessible summaries of thousands of research efforts documenting human biological variation. As established in chapter 2, we are who we meet. Our schemata are shaped

and our perceptions of reality structured by what we are exposed to. For example, look at the picture in figure 5 before reading the next few sentences. You should immediately be able to tell that the three children and the young man are from different populations of humans. Given our shared schemata and experiences you can probably as easily place them into two presumed races: the kids are dark with large noses and frizzy hair, so probably of African origin, and therefore “black” and the young man is lighter with sharp facial features and dark hair, probably southern European origin and therefore “white.” If you agree with this assessment then you are half right (the guy in the picture with wristwatch is me, a long time ago). I am of European origin (my father is from Spain and my mother’s parents from Eastern Europe) and so would be classified in the United States as white (or Hispanic/Latino, but that is another issue). However, the three kids are not of African descent. We’d call them black here in the United States based on our cultural interpretation of their skin, hair, and faces, assuming these features reflected African descent, but they do not. These kids are members of the Dani people from West Papua (the Indonesian side of the island of Papua New Guinea). They are about as far away as you can get from African descent. (I share many more allele frequencies in common with some African populations than they do.) Our limited personal knowledge of human variation cripples our ability to really understand how erroneous racial assumptions are.

Despite everything we’ve just discussed, many Americans assume that because we seem able to determine a person’s race by looking at them or because we can test our DNA and get a percentage of Yoruba or Irish ancestry using ALMs, then the concept of race must have some biological validity. This is wrong; very few people have the background knowledge to make accurate statements regarding the extent and patterns of human biological variation.

Consider an analogy. Nearly all human beings currently accept the notion that the earth is round. We accept it despite the fact that the earth appears to us in our daily experience to be flat. Only a few humans (for example, astronauts or people who sail around the world and arrive back at the same place) have personally seen or experienced the earth as round. The rest of us accept the evidence as scientifically valid even though our personal experience contradicts it. A similar situation holds with the concept of race. Most people do not have the opportunity to see the patterned distribution of humanity across the globe. Although most of us in the United States can generally classify the people we see

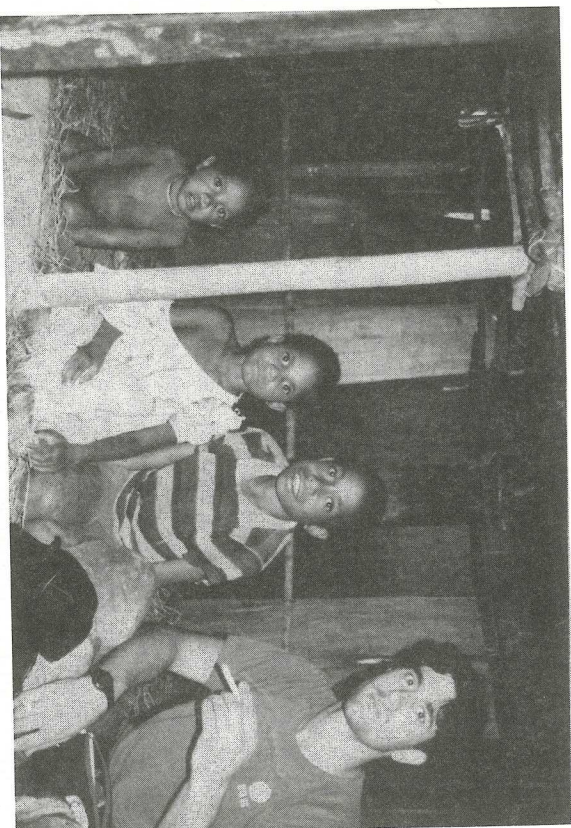


FIGURE 5. These children are not from Africa: they are West Papuan (the Indonesian side of the island of Papua New Guinea). Photograph from author’s fieldwork, 1992.

every day into three to five groups (though not always as easily or reliably as one might think), these groupings might not be valid in other locations. Further, these groupings reflect only a small percentage of the global biological variation in humanity. Thus, as with the shape of the earth, the broader situation is not necessarily obvious from our limited perspectives. If we have the context (broad exposure and the scientific data and understandings reviewed here), we can realize that, although our personal experience and cultural context might seem to show us one thing, the overall pattern of human biological diversity demonstrates something else: that *Homo sapiens* is one species, undivided into races or subspecies. The myth that human races are biological units is busted.

MYTH BUSTING: RACE IS NOT BIOLOGY, BUT IT STILL MATTERS IN OUR SOCIETY

Okay, so if races are not biological units and civil rights has made significant changes in our society over the last fifty years, then race does not matter, right? Wrong.

In 2004, 50 years after *Brown v. Board of Education*, the controversies around “race” and racism are raging as brightly as ever. Whether we are

talking about the future of affirmative action in elite universities, or what the next U.S. Census form will look like, or what the achievement rates of white males are versus underrepresented students of color, this conversation is by no means finished. (Yolanda Moses, anthropologist)³⁷

The point made by Yolanda Moses is that race matters as a social factor in the United States. The concept of race and how it plays out in our society are core factors in structuring our individual schemata and the maintenance of cultural constructs of, and societal expectations for, human behavior. However, in the first and second decades of the twentieth-first century a chorus of voices has emerged arguing that we are moving toward a postracial society, or at least a society where race is no longer as powerful or important as it was for much of the twentieth century.³⁸ This view contradicts what Moses and the entire American Anthropological Association posit: that race matters as an important cultural component of our society.³⁹ Although the reality of race and racism as part of our society is not being debated, the relative importance of race is a strong current issue, as noted in a recent poll by ABC News and the *Washington Post*.⁴⁰ More than twice as many American blacks identified racism as a “big problem” than did American whites.

Since the 2008 election of Barack Obama as US president, there has been a steady series of debates about the relative role of race and racism in our society—not just about blacks or whites but also about Hispanic/Latinos and Asians. The improvements in civil rights and the election of a black president do not demonstrate that we are in a (mostly) postracial society. Being black, white, Asian, Latino, or other means something in the United States, and although these categories are not biological units, they are social constructs that are central to many aspects of our society: race is not biology, but it does matter.

Consider the following question: Why is Barack Obama considered black? He is an individual with one parent born in the United States (who would be considered white) and one parent born in Kenya (who would be considered black). Why, when classifying President Obama, do we call him black or African-American and not white or European-American or even better yet Afro-Euro-American? Well, interestingly, this last label is not an option in our classification system; moreover, because of his skin color, hair type, and the fact that one of his parents is black, Obama cannot be white. In the United States we have governmentally crafted definitions of race as well as broadly accepted social definitions. We also practice a form of hypodescent,

the notion that racial identity is denoted by physical inheritance and by “blood” from a racial group. But this works in a particular way: the lower ranking group is what defines the descent. So throughout US history (and up to today) “looking” black makes you black, as does any black parentage (even great-grandparents). According to popular opinion, having even one drop of “black blood” in your genealogy makes you black, but having many drops of white blood does not make you white.

Why is this? It is tied to the concept that races are biological units and that some races are better than others; thus biological influence (or contamination) from one race dictates what race you are. This is rooted in misguided notions about genetics and biology, but nonetheless remains, subconsciously, a *de facto* reality for our society. This is one reason why Barack Obama is considered black and not white.

Another reason has to do with our own government’s classification system. The Census Bureau creates and maintains a set of definitions that we use to officially classify people in our society. The official guidelines state that

The Census Bureau collects race data in accordance with guidelines provided by the U.S. Office of Management and Budget (OMB), and these data are based on self-identification. The race response categories shown on the questionnaire are collapsed into the five minimum race groups identified by the OMB, and the Census Bureau’s “Some other race” category. The racial categories included in the following text generally reflect a social definition of race recognized in this country, and not an attempt to define race biologically, anthropologically or genetically. In addition, it is recognized that the categories of the race items include racial and national origin or socio-cultural groups. People may choose to report more than one race to indicate their racial mixture, such as “American Indian” and “White.”⁴¹

Note that there is a specific statement that these are purely social categories and not intending to define race as biological. However, as you will see with the following definitions, this is not totally true. Before the census asks about one’s race, it first asks if one is “of Hispanic, Latino, or Spanish origin.” These categories are not officially considered racial categories (more on this below). Here are the official definitions of race for the US government:

Mark the “White” box if this person has origins in any of the original peoples of Europe, the Middle East, or North Africa. This includes people who indicate their race as “White” or report entries such as Irish, German, Italian, Lebanese, Near Easterner, Arab, or Polish.

Mark the “Black, African Am., or Negro” box if this person has origins in any of the Black racial groups of Africa. This includes people who indicate their race as “Black, African American, or Negro,” or provide written entries such as African American, Afro-American, Kenyan, Nigerian, or Haitian.

Mark the “American Indian or Alaska Native” box if this person has origins in any of the original peoples of North and South America (including Central America) and who maintain tribal affiliation or community attachment. This category includes people who indicate their race as “American Indian or Alaska Native,” and/or provide written entries such as Navajo, Blackfeet, Inupiat, Yupik, Canadian Indian, French American Indian, or Spanish American Indian.

Mark any of the Asian boxes if this person has origins of any of the original peoples of the Far East, Southeast Asia, or the Indian subcontinent including, for example, Cambodia, China, India, Japan, Korea, Malaysia, Pakistan, the Philippine Islands, Thailand, and Vietnam. This includes “Asian Indian,” “Chinese,” “Filipino,” “Korean,” “Japanese,” “Vietnamese,” and “Other Asian.”

Mark the “Asian Indian” box if this person indicates their race as “Asian Indian” or identifies themselves as Bengalese, Bharat, Dravidian, East Indian, or Goanese.

Mark the “Chinese” box if this person indicates their race as “Chinese” or identifies themselves as Cantonese, or Chinese American. In some census tabulations, written entries of Taiwanese are included with Chinese while in others they are shown separately.

Mark the “Filipino” box if this person indicates their race as “Filipino” or who reports entries such as Philippine, Philippine, or Filipino American.

Mark the “Japanese” box if this person indicates their race as “Japanese” or who reports entries such as Nipponese or Japanese American.

Mark the “Korean” box if this person indicates their race as “Korean” or who provides a response of Korean American.

Mark the “Vietnamese” box if this person indicates their race as “Vietnamese” or who provides a response of Vietnamese American.

Mark the “Other Asian” box if this person provides a write-in response of an Asian group, such as Bangladeshi, Bhutanese, Burmese, Cambodian, Hmong, Laotian, Indonesian, Iwo Jiman, Madagascar, Malaysian, Maldivian, Nepalese, Okinawan, Pakistani, Singaporean, Sri Lankan, Thai, or Other Asian, not specified.

Mark the “Native Hawaiian” box if this person indicates their race as “Native Hawaiian” or identifies themselves as “Part Hawaiian” or “Hawaiian.”

Mark the “Guamanian or Chamorro” box if this person indicates their race as such, including written entries of Chamorro or Guam.

Mark the “Samoan” box if this person indicates their race as “Samoan” or who identifies themselves as American Samoan or Western Samoan.

Mark the “Other Pacific Islander” box if this person provides a write-in response of a Pacific Islander group, such as Carolinian, Chuukese (Trukese), Fijian, Kosraean, Melanesian, Micronesian, Northern Mariana Islander, Palauan, Papua New Guinean, Pohnpeian, Polynesian, Solomon Islander, Tahitian, Tokelauan, Tongan, Yapese, or Other Pacific Islander, not specified.

Mark the “Some other race” box if this person is not included in the “White,” “Black or African American,” “American Indian or Alaska Native,” “Asian,” and “Native Hawaiian or Other Pacific Islander” race categories described above. Respondents providing entries such as multiracial, mixed, interracial, or a Hispanic, Latino, or Spanish group (for example, Mexican, Puerto Rican, Cuban, or Spanish) in the “Some other race” write-in space are included in this category.

People who are of two or more races may choose to provide two or more races either by checking two or more race response check boxes, by providing multiple responses, or by some combination of check boxes and other responses.⁴²

There are a number of relevant factors to be found in these definitions, but one aspect stands out: “black” is treated differently from all the others. If you look closely at the definitions, you will see that “Black, African Am., or Negro” is the only category where the term “racial groups” is used (“if this person has origins in any of the Black racial groups of Africa”). In all of the other main categories the term “original peoples” is used. This marks the black category as a race, a biologized entity, relative to the other categories. Also, note that it is not just any racial groups, but the “Black racial” groups of Africa. Is there any mention of other types of racial groups in Africa (or anywhere else)? No. There is a clear demarcation of “black” as distinct type of category from the other “original peoples” categories. To be sure, the government does explicitly state that “the racial categories included in the following text generally reflect a social definition of race recognized in this country, and not an attempt to define race biologically, anthropologically or genetically.” Yet that is exactly what it is doing, indicating with these categories that in the United States race matters and also that there is a hierarchy of races (one that mimics Phillipe Rushton’s analyses). There are no reasons given by the Office of Management and Budget for its use of the terms “racial groups”

versus “original peoples,” but we can look at the history of naming races from Linnaeus to the modern day to see what is going on here. “Black” is associated with a lower ranking in the hierarchy of races. Race matters. It is worth noting that the US government bureau validates this assertion by stating that it is using the “social definition of race recognized in this country.”

Examining the other categories, we also see that these ways of classifying people are clearly nonbiological and in fact emerge largely from events and patterns in US history. The classification of Middle Easterners and Arabs as “white” is certainly left over from a time when the relationship between the United States and the Middle East, especially Muslim countries, was quite different. How many in our society today would define Osama bin Laden, Saddam Hussein, Muammar el-Qaddafi, or anyone from Algeria, Morocco, Iran, or Egypt as “white”? The mandate that to be Native American or American Indian you must hail from the “original peoples of North and South America (including Central America)” and “maintain tribal affiliation or community attachment” stems from the history of treaty signings and manipulation of Indian lands and cultures by the US government. Interestingly, this results in a number of Native Americans without tribal affiliation not being legally classifiable as American Indians. The fact that “Asian” applies to anyone with ancestry in the “Far East, Southeast Asia, or the Indian subcontinent,” which is about 70 percent of all humans on the planet and a substantial portion of the overall inhabited landmass, emerges from the limited exposure that the United States has had to the wide range of peoples and populations of Asia. Finally, the “some other race” category is a bit of a catchall (except that you can reinsert Hispanic or Latino as a race at this point) for accounting purposes just in case someone comes up with something else. As part of its normative functioning, the government keeps tabs on the socially defined races (in a very general way) in order to manage the country, which invalidates the assertion that race no longer matters. Race is a core part of the United States.

Let’s close this section with a few statistics from the US Department of Labor and the Pew Research Center:⁴³

- In tests of housing markets conducted by the US Department of Housing and Urban Development (HUD), black and Hispanic potential renters and buyers are discriminated against (relative to whites) nearly 25 percent of the time.

- Light-skinned immigrants in the United States make more money on average than those with darker complexions, and the chief reason appears to be discrimination.

- Blacks and Hispanics have considerably lower earnings than Asians or whites. In 2009, the median usual weekly earnings of full-time wage and salary workers were \$601 for blacks and \$541 for Hispanics, compared with \$880 for Asians and \$757 for whites. The earnings of black men (\$621) and Hispanic men (\$561) were 65 and 60 percent, respectively, of the earnings of Asian men (\$952). The earnings of black women (\$582) were 75 percent of the earnings of Asian women (\$654), a higher ratio than among black and Asian men. The median earnings for white men and women were 89 and 86 percent of their Asian counterparts in 2009. Median earnings for Hispanic women were \$509.

- In 2009, about 90 percent of blacks and Asians (twenty-five years of age and older) in the labor force had received at least a high school diploma, the same proportion as whites. In contrast, about 67 percent of Hispanics had completed high school. Asians were most likely to have graduated from college; 59 percent had a bachelor’s degree or higher, compared with 35 percent of whites, 24 percent of blacks, and 16 percent of Hispanics. Although blacks and Hispanics were less likely than whites and Asians to have obtained a college degree, the proportion of college graduates for all groups has increased over time. For all groups, higher levels of education are associated with a greater likelihood of being employed and a lower likelihood of being unemployed. Nonetheless, at nearly every level of education, blacks and Hispanics were more likely to be unemployed in 2009 than Asians or whites.

- The 2008 infant mortality rate per 1,000 births is 5.7 for whites, 13.6 for blacks, 5.6 for Hispanics, and 6.9 for the United States as a whole.
- The 2009 percent of each group living below the poverty level is 11.5 for whites, 32.2 for blacks, 28.4 for Hispanics, 19.4 for other (primarily Asian), and 17.2 for the United States as a whole.

- Percentage of groups without health insurance: 12.2 for whites, 20.9 for blacks, 33.5 for Hispanics, 17.7 for other (primarily Asian), and 17.2 for the United States as a whole.
- The 2009 net worth of US househ olds: white: \$113,149, black: \$5,677, and Hispanic: \$6,325; there is a twentyfold difference between whites and all the others!

I could continue to list statistics, but these are enough to demonstrate the point that, while race is not a biological unit, race as a social reality matters in the United States. The myth that we live mostly in a postracial society and that race does not matter is busted.

MYTH BUSTING: RACE IS NOT BIOLOGY, BUT RACISM AFFECTS BIOLOGY

It is a myth that racism is not a powerful or important force in shaping human lives and that it does not have an impact on human biological systems. Even though race is not a biological unit in humans today, the realities of social race and associated racism and inequality can become biology: race can impact physiological and epidemiological systems. Recent work in anthropology and medicine shows us that inequality and social perceptions of self and other in a racialized society can, and do, have real biological (especially health) impacts, as the sociologist Troy Duster noted in 2003: "There is a complex feedback loop and interaction effect between phenotype and social practices related to that phenotype."⁴⁴

Race is social reality and thus related to patterns of inequality in the United States.⁴⁵ People use phenotypic aspects of humans (what we look like) to classify people into races. Thus the reaction by individuals to perceptions of race based on our shared cultural constructs and our schemata can affect the world around us. Actions by others and the way we see ourselves as fitting, or not fitting, into specific parts of society, our expectations of what is normal, and the social niches we occupy can affect the ways in which our bodily systems (our biology) respond to the external environment. This type of impact is especially reflected in aspects of the body that relate to health.

Take the example of hypertension (recurrent high blood pressure). From 1988 to 2006 the overall percentage of US adults with hypertension (age-adjusted) went from 25 to 31 percent. In non-Hispanic white males this increase was the same as the national average, for

black males it went from 37 to 42 percent, and in Hispanic (primarily Mexican) males it decreased from 27 to 26 percent. Interestingly, how far someone is living below the poverty level also correlates with a large increase in hypertension over the 1988–2006 time period.⁴⁶ Given that both Hispanic and black males earn less on average than whites, and thus have a greater chance of living below the poverty level, one would expect their blood pressures to be equally increased. However, this is not the case; data consistently show that US citizens of African descent (blacks) have higher levels of hypertension than other US residents. Why might this be?

First, the sociocultural reality of race and racism has biological consequences for racially defined groups. Thus, ironically, biology may provide some of the strongest evidence for the persistence of race and racism as sociocultural phenomena. Second, epidemiological evidence for racial inequalities in health reinforces public understanding of race as biology; this shared understanding, in turn, shapes the questions researchers ask and the ways they interpret their data—reinforcing a racial view of biology. It is a vicious cycle: Social inequalities shape the biology of racialized groups, and embodied inequalities perpetuate a racialized view of human biology. (Clarence Gravlee, anthropologist)⁴⁷

Going on the assumption that "black" is a biological category, the company NitroMed announced that "the African American community is affected at a greater rate by heart failure than that of the corresponding Caucasian population. African Americans between the ages of 45 and 64 are 2.5 times more likely to die from heart failure than Caucasians in the same age range."⁴⁸ This was the push they used to get their ethnic/race-specific hypertension drug, BiDil, cleared by the FDA.⁴⁹ They developed an antihart failure drug combination that initially was shown to be ineffective in the general population but had some initial success in a targeted study of black Americans.⁵⁰ In addition to the debate about whether or not this drug really does help blacks more than any other group, this is an incorrect response to the problem. It is not the biology of being black that leads to increased hypertension rates. There is no unique or cohesive biological set of characteristics that define "black" or any other race on the planet. Rather, it is the reality of our cultural constructs and the perceptions of race, which result in certain kinds of societal inequality (both perceived and practiced), that affects the health (and thus biology) of people who fall into different race categories. Perceptions and experiences of race affect biology, rather than there being biological differences characterizing the races

that lead to the differences observed. Though this is more or less the opposite of what most people think, it is not any less real. This is true for all the racial groupings in the United States, but the case of US blacks and blood pressure is among the most studied, so we focus on that as an example here.

If one takes a look at African descendant populations around the Americas, not just in the United States, we see a very different picture of hypertension. Comparing blacks in the Caribbean with those in the United States we find that many of the Caribbean groups do not show the pattern of disparity in hypertension characteristic of US blacks.⁵¹ This is quite important as there is no biological or genetic suite of characteristics related to blood pressure that differentiate Caribbean blacks from US blacks, but there are social and societal differences. For example, the histories of relationships, colonialism, slavery, and mixing of peoples are somewhat different in the Caribbean than in the United States. Also, a vast majority of Caribbean blacks are considered Hispanics in the US census; however, there is a range of variation in who labels themselves black, who labels themselves Hispanic, or both, or something else entirely. The patterns of inequality and the social construction and definitions of race have different patterns and origins in the Caribbean. In this case, the way in which race is perceived (by oneself and others) in the United States has particular effects on the body.

There are a series of research projects that demonstrate that discrimination, skin color, and the perception of skin color are major factors in the increased hypertension rates in US blacks. Many studies show that there is a correlation between racial inequality and a wide range of physiological measures of stress including increased cardiovascular response, which leads to elevated blood sugar, blood pressure, and heart rate. For example, African American women who were treated unfairly but did not report the discrimination exhibited higher blood pressure than those who spoke up. Also, high status (or wealthier) darker-skinned black men had higher blood pressure than their lighter-skinned counterparts. This is hypothesized to be related to the pattern where the darker-skinned men endured more negative social interactions because darker skin is associated with lower socioeconomic status, according to racial stereotypes in the United States.⁵² In an excellent study focusing specifically on this factor the anthropologist Clarence Gravlee and colleagues demonstrated that skin color as a factor in social classification based on culturally defined race categories was a better predictor of blood pressure than

a genetic estimate of ancestry (percentage of ancestry from African populations). They also found that using a range of sociocultural variables associated with race as major components of the investigation of hypertension revealed a variety of new pathways to understand the relationships between genetic/biological variability and blood pressure.⁵³

In addition to the self-perceptions of race impacting our body's biological systems, the structure of inequality associated with race can also have effects on the health of US populations. For example, an article published in the *New England Journal of Medicine* in 2004 noted that across the United States, black patients generally receive lower-quality health care than white patients. The researchers argued that part of the reason for this might be that black patients receive their care from a "subgroup of physicians whose qualifications or resources are inferior to those of the physicians who treat white patients." The researchers conducted an analysis of 150,391 visits by black Medicare beneficiaries and white Medicare beneficiaries sixty-five years of age or older. They were seen by 4,355 primary care physicians. The study found that the majority of visits by black patients were with a small group of doctors (80 percent of visits were accounted for by 22 percent of physicians), who also provided only a small percentage of care to white patients. Comparing white and black patient visits they found that the doctors visited predominantly by black patients were less likely to be board certified than were the physicians visited by the white patients and also more frequently reported that they were unable to provide high-quality care to all their patients. Finally, the doctors primarily treating black patients reported having greater difficulties obtaining access to high-quality subspecialists, high-quality diagnostic imaging, and non-emergency admission to the hospitals for their patients. The authors of this study concluded that black and white patients are generally treated by different physicians and that the doctors treating black patients may be less well trained and may have less access to important resources than physicians treating white patients.⁵⁴ This research shows that social histories and the economic and societal reality of race in the United States can lead to an inequality in access to medical services, which in turn can significantly affect the health (and thus biology) of people classified into different races.

There are a number of other such examples where social perceptions and actions result in inequality that affects our bodies and becomes part of our physiological reality. We can see examples of this across

the races and, importantly, we also see this emerging from inequality based on income, education, and social access (all related to poverty and economic hierarchies), and of course, gender. The point being, as discussed in chapter 2, multiple elements go into the construction of our schemata and societal patterns. This is not a myth: these patterns and perceptions of reality are real for us as a culture and in turn have a real effect on the way we see what is normal and natural. This results in societal patterns of inequality that influence and shape our bodies, minds, and health.

Finally, I do want to emphasize that this is not an argument that variation in diseases and disease risk is exclusively determined by social structure and inequality. There is substantial variation across human populations in disease risks and susceptibilities, rooted in genetic variation and patterns of evolutionary pressures. The core point here is that this variation is based on population and population of ancestry and does not map to the racial triad of white, black, and Asian. For example, the deadly Tay Sachs disease is more common in Ashkenazi Jews (Jewish peoples of eastern European origin) than in other ethnic groups. Are Ashkenazi Jews a race? No. Cystic fibrosis is more common in people in the United States with northern European ancestry. Are Northern Europeans a race? No. Sickle cell disease is more common in Americans of African, Arabian, and Indian descent, but do these groups make up a race? No. The point being that there is important variation in allele frequencies across the human species and that variation is distributed within and between populations. This leads to some patterns of disease that affect some populations more than others. But these patterns do not map to racial differences. There are not white, black and Asian diseases. However, being white, black or Asian can put you in different social and environmental realities that lead to inequalities in health and disease. The myth that racism is not a powerful or important force in shaping human biology is busted.

MYTH BUSTING: WHERE DO "RACIAL" DIFFERENCES, OR OUR PERCEPTIONS OF THOSE DIFFERENCES, COME FROM?

Looking around the United States we can see that there are differences in sports, disease patterns, test scores, and many socioeconomic factors among racial groupings in the United States. The myth is that these reflect inherent (natural or biological) differences between these groups of people, but we know by this point in the chapter that this is not

true. There is only one human race, and the divisions of white, black and Asian are not biological categories. However, this fact does not alter the reality that there are some patterns of differences, on average, between white, black, and Asian in the United States. The preceding sections demonstrate that while race is not a biological category, it can have effects on health, economic status, or educational attainment, among other factors. Piecing together the information from chapters 1 and 2 we can see that these differences emerge via a complex history and set of social contexts, and the interactions of schemata, history, and political and cultural constructs, but not from innate differences between the groups. Individuals vary, and individuals are found across the spectrum of these differences. The statistics of economic access, health, and education are real, but they are not static. Neither are race categories. Who counts as white, black or Asian changes over time and place, as do the ways in which society reacts to these groups and how we perceive ourselves.

While much of the rest of Lawrence Summers's 2005 speech drew significant criticism (for his assumptions about gender, see chapter 6), the point extracted below is an important one:

To take a set of diverse examples, the data will, I am confident, reveal that Catholics are substantially underrepresented in investment banking, which is an enormously high-paying profession in our society; that white men are very substantially underrepresented in the National Basketball Association; and that Jews are very substantially underrepresented in farming and in agriculture. These are all phenomena in which one observes underrepresentation, and I think it's important to try to think systematically and clinically about the reasons for underrepresentation. (Lawrence Summers, former president of Harvard University)⁵⁵

We can see differences in representation in sports, professions, socioeconomic status, health, and the like across the races today and we must ask questions about our society in order to explain them. The specific history of the United States, and the perceptions of difference we hold as normal and natural, have structured the ways in which people classified into races live their lives. We have to ask about the waves of migrations to the United States, the history of slavery, and the concept of Manifest Destiny. We need to think about our public education systems, the history of segregation and civil rights, the impact of the Second World War, and the history of our cities and suburbs during the previous two centuries, to lay a baseline for really understanding the social, economic, and health differences we see today.⁵⁶

But these basic and complicated realities are not the first ones many people rely on when thinking about racial differences. Rather, we frequently see characterizations of the races similar to those proposed more than two hundred years ago by Linnaeus and reiterated today by Rushton. Today, generally, most people look around and say that blacks are better at physical sports, whites run companies, and Asians do really well on tests. But are these generalizations really accurate? And if they are, we know that race is not a biological unit, so an explanation for the differences has to be largely nonbiological and thus social and historical.

Let's use the example of racial representation in sports to demonstrate how and why the differences are so much more complex than is evident from a superficial glance. In the 2010–2011 season the National Football League (NFL) had 67 percent black and 31 percent white players (with the other 2 percent made up of Asian, primarily Samoan, and Hispanic/Latino players). Of the senior administrative positions on NFL teams, 16 percent are held by blacks, Hispanics/Latinos, or Asians and 84 percent by whites. Eighty-three percent of quarterbacks, the team leader on the field, are white; 86 percent of the running backs and 84 percent of the wide receivers, both workhorse players for running and scoring, are black.⁵⁷ This pattern of the majority of players being black, with even more being running backs and receivers, and the majority of quarterbacks being white in spite of their lower representation in the overall player pool, reflects something. In the National Basketball Association (NBA) as of 2011, 78 percent of players are black, 17 percent white, 4 percent Hispanic/Latino, 1 percent Asian, and 1 percent other (also, 17 percent are not US citizens, most of whom would be classified as Asian and white and possibly Hispanic in the United States).⁵⁸ This pattern reflects something. Finally, it turns out that in major league baseball (MLB) two-thirds of all shortstops are Hispanic/Latino (and a majority of those are from the tiny Dominican Republic) and more than one in three MLB players are not from the United States.⁵⁹ This pattern also reflects something. But what?

If these patterns reflect a biological reality that whites are better leaders and managers and blacks are better at running and jumping, then white and black must be biological units. This logic would also lead us to the conundrum of trying to find the gene for shortstop in the Dominican population and an explanation for why Asians are so biologically bad at American sports. But these searches would be useless.

These are not group biological differences. There is no evidence that if you randomly select three men, one black, one white, and one Asian, in the United States that the black will be better at fullback or basketball, that the white will be a great quarterback, and that the Asian will not play sports. However, depending on where you select your young men from (city, suburb, rural town, West Coast, East Coast, Southeast, Midwest, etc.), what age you select them at, what economic group you select them from, and their number of siblings, religion, health history, and place of birth of their parents, you are going to have varied results. The point is that the patterns we see today in professional sports are due to historical and social realities, residence patterns, socioeconomic access to sports facilities, and popular perceptions of race differences. It was not that long ago that nonwhites were not allowed to play in most professional sports, that there were no black quarterbacks, and that the majority of running backs were white. The role of race in sports is a social, economic, and historical reality that is neither static nor related to genetics. Instead, it is part of the ever-changing social structure of our society.

This is not to say that there are no aspects of human biological variation at play. If you are a small male, you are not going to be very good at football or basketball (with a few amazing exceptions). There is variation in human muscle quality and density, in hand-eye coordination, and in endurance running, but these are not distributed along racial lines, and all can be radically improved via training. And, of course, elite athletes at the professional level are horrible examples to rely on when examining average differences between people. Professional athletes have risen above thousands and thousands of others at every level to attain the extremely few slots at the top level in their fields. They have also focused the majority of their physiological and social development on attaining professional status in sports, and we know that that sustained effort shapes the body and mind. Why individuals chose a specific sport and what kind of response they receive is very important in understanding these differences. In chapter 1 I invoked the scenario of a bunch of high school kids playing a pickup basketball game; given the choice between three kids of the same height and build, but one white, one black, and one Asian, social histories and current perspectives are going to shape who gets chosen first. This is true across our society. We know biological, social, and physiological development are affected by our schemata and cultural context: if you are from an area where the people around you do not

value participation in competitive sports, or most people play hockey, or most people play basketball, there will be developmental and social influences that shape the way you respond to and perceive of sports throughout your life.

There are many excellent overviews of the history of US racial groups and sports and how it has changed over time.⁶⁰ In his recent book, Guy Harrison points out that, in spite of the often-heard adage “white men can’t jump,” nearly all of the best track and field high jumpers are white, and few people classified as black have ever won a gold medal in the Olympics for the high jump. Despite the majority of black players in basketball today, before collegiate basketball was integrated in the late 1950s and 1960s, Jewish athletes (classified as white now, but viewed a bit differently then) dominated the sport, and the majority of heavyweight boxers in the first third of the twentieth century were Jewish and Irish. In the Winter Olympics throughout its history, white athletes have dominated, winning nearly all the medals, with very few blacks competing at all. These patterns in professional sports all have to do with a complicated mix of history, society, and individual variation, and do not derive from any racial ability to be better at sports, math, or management. Regardless of this awareness, the perception of race being associated with innate or natural differences in sports ability is extremely strong in the United States. While this perception is the result of many different histories, there is one that stands out as worthy of our focus.

One Small Piece of Important History: Eugenics

Although it has no biological validity, racial categorization in the United States remains a deeply engrained cultural pattern with potentially negative biological and social impact. A major component of this cultural pattern’s resilience in the face of evidence can be traced to the US love affair with an early twentieth-century pseudo-science called eugenics.

In the early 1900s, work on simple genetic systems was becoming widely known, and early geneticists and social theorists adopted this work to develop the field of eugenics, which is the study of human beings with the applied goal of improving human biology and biological potential. The argument was for an enlightened scientific approach to make humans stronger, more disease resistant, and more intelligent. Eugenists believed that we could improve the human species

via careful selective mating and the establishment of human pedigrees; they wanted to make sure “good genes” were protected and “bad genes” were kept out. We now know this was a totally incorrect way to think about genetics, but at the time it made some sense.

The eugenists were heavily influenced by the idea of simple genetic inheritance, which dominated the early understanding of genetics and was easily grafted onto existing notions of human heredity (such as the idea that you simply get one thing from dad and one from mom and the dominant one is what you have in your phenotype). By the 1920s eugenists developed a widespread, erroneous conception of simple genetic systems that linked them with stereotypical ethnic traits. For example, eugenists considered feeble-mindedness (low intelligence) to be a simple dominant/recessive trait that they believed occurred with high frequency among immigrants to the United States from southern Europe (Italians, for example, figured predominantly in this categorical disparagement).⁶¹

Many in the eugenics movement sought to use genetics to explain the social, cultural, and racial differences among groups in the United States. Economic, political, and religious differences were seen as reflecting genetic distinctions. Eugenists used simplistic ideas about taxonomy and racial categories based on cranial measurement to support their notions. They thought they could predict intelligence, ability to mesh with American society, and a worker’s potential from skull size and shape or from skin color and brow size. Their ideas were incorrect, and over time eugenics fell out of favor, especially after World War II, since the Nazis in Germany had used the eugenicist paradigm to bolster their attempts to identify and standardize their ideas about so-called Nordic and Aryan types and to exterminate several groups of people including Jews, Slavs, Romani (Gypsies), and homosexuals.

But the impact of the eugenics movement in the United States remained very powerful. Textbooks in genetics and human biology in use into the 1950s were written by eugenists, and major arguments against civil rights legislation in the late 1950s and 1960s rested heavily on the published work of eugenists and their misappropriation of anthropological research. Academically, eugenists’ ideas fell out of favor, but for the public they remain very strong.⁶² And this has played a major role in maintaining the myth of innate racial differences.

While we can see real differences in sports participation, disease patterns, and socioeconomic status between the races in the United States, these differences are not due to biological or unique racial

characteristics. They arise from individual variation, and social, historical, and economic patterns and contexts that characterize our society. The eugenics movement in the United States played a core role in maintaining the belief that such differences are genetic characterizations of social race groups.⁶³ The myth of the racial categories black, white and Asian as biological units, or as a natural classification of humanity, remains busted, but many differences between groups in the United States do occur, do change over time, and are a major part of our society and its perceptions of race.

WHAT RACE IS AND WHAT IT IS NOT

The anthropologist Clarence Gravlee has suggested that we stop saying that race is a myth, and instead accept that parts of it are myths while other aspects are not. He is correct: the myth part about race is that in modern humans there are biological races. The nonmyth part is that in our society the social categories of race are a reality that affects our lives. Thus, white, black, and Asian are not real biological, evolutionary, or natural categories nor do they reflect true divisions in human nature. However, white, black and Asian are real categories in the United States, for historical, political, and social reasons. People get placed in these categories both by themselves and by others. These social race divisions have real effects on the bodies and minds of the people in the United States. Race is not biology, but race affects biology, experience, and social context. Here are some closing thoughts on what race is and what it is not.

Race is not a valid way to talk about human biological variation

Biological anthropologists widely agree about how to describe and interpret variation in the human species. This agreement can be summarized in the following five points that represent our core understanding of biological variation in humanity:⁶⁴

1. There is substantial variation among individuals within populations.
2. Some biological variation is divided up between individuals in different populations and also among larger population groupings.
3. Patterns of within-group and between group variation have been substantially shaped by culture, language, ecology, and geography.

4. Race is not an accurate or productive way to describe human biological variation.
5. Human variation research has important social, biomedical, and forensic implications.

Race is a social reality that can have lasting biological effects

The work of Clarence Gravlee, Bill Dressler, and others discussed in the preceding sections demonstrate this point: race is not biology but it can affect biology. In a February 2000 editorial, the prestigious, peer-reviewed journal *Nature Genetics* issued the following guideline:

The laudable objective to find means to improve the health conditions for all or for specific populations must not be compromised by the use of race or ethnicity as pseudo-biological variables. From now on, *Nature Genetics* will therefore require that authors explain why they make use of particular ethnic groups or populations, and how classification was achieved. We will ask reviewers to consider these parameters when judging the merits of a manuscript—we hope that this will raise awareness and inspire more rigorous design of genetic and epidemiological studies.

That is, we may use classifications by race and/or ethnicity when talking about human variation, but we must be clear why and how we are using these categories and about issues of directionality and reality of biological groupings. Race as a concept and racial inequality (racism) as a social reality can affect biology.

Race ≠ Ethnicity

Ethnicity is a way of classifying people based on common histories, cultural patterns, social ties, language use, symbolic shared identities, and the like. It lays no claim to biology and is used both by those attempting to classify others and by those within the different ethnic groups as a symbol of social unity. Ethnicity is not a natural set of divisions in humanity; it is fluid, changing over time and space. The terms “ethnicity” and “race” are often used interchangeably, even in commercial ancestry testing; this is wrong. This mistaken usage is a holdover from the patterns established by eugenicists trying to identify as biological groups the various national and ethnic groups who were living in, or entering, the United States in the early twentieth century. From that time on the notion of “ethnic” has been used as a technique for establishing “white” as normal and nonethnic, in contrast to the “other.”

Check out the shampoos and hair care products at your neighborhood drugstore: most places will have an aisle or section marked “hair care” and another marked “ethnic products” or “ethnic hair care.” This is shorthand for “black,” or frizzy, hair care products. Think about the common phrase “ethnic food.” Does this refer to what is considered to be typical US (or white) food like hamburgers, hotdogs, or meatloaf? No, it means all the other types of foods associated with nonwhite groups or with subdivisions of southern or eastern European origin, those not considered white in the early parts of the twentieth century, like Jewish, Italian, and Slavic.

The same holds true for commercial ancestry testing. If you submit your DNA sample to one of the many companies that offer such services and your results come back 50 percent Irish, 35 percent German, and 15 percent Yoruba, you might think you were basically “white” but also 15 percent “black.” This is a nonsensical statement. The results suggest only that given the limited genetic samples we have to compare your sample with, certain very small parts of your genetic variation seems to fit with the micro-patterns found most commonly in Irish and German samples but there are some small similarities with the patterns found in our Yoruba sample. At best this means that you have mostly western European ancestors, with possible some West African ancestry mixed in. Or the results might be erroneous given the limited sampling of human populations in the reference samples. Irish/German is not equal to “white” and Yoruba is not equal to “black”; they are simply ethnic labels used to refer to the population samples used in the genetic comparisons. This has nothing to do with “race.”

Ethnicity is a valid way to describe social histories and social and symbolic identification, but it is not biology and most definitely is not race.

MOVING BEYOND THE MYTH

If, as a society, we can move beyond the myth of race as describing natural and biological units, then we can better address the inequalities that the race myth—and its concomitant, the social practices of racism—have created. The myth is strong, even in the face of resounding evidence against it. However, education and information (and access to them) are the main tools of myth busting. We will not move past this myth in this generation, or maybe not even in the next, but it is a possibility for the future of our society. As more and more of the myth-busting information discussed here becomes part of our social context, as children develop

their schemata in the context of an accurate, information-rich social network, the effect on our cultural constructs and societal perceptions can be substantial. Some of these changes are already under way, but the forces maintaining the myth of race are many and massive, especially the current pattern of inertia, or maintenance of the status quo, in adults. We may find it very difficult to change our own views, or once changed, we may find it uncomfortable to speak up against this myth in many situations. Or, maybe we can try out the lyrics of the popular song “Your Racist Friend” by the group They Might Be Giants:⁶⁵

It was the loveliest party that I've ever attended
If anything was broken I'm sure it could be mended
My head can't tolerate this bobbing and pretending
Listen to some bullet-head and the madness that he's saying

This is where the party ends
I'll just sit here wondering how you
Can stand by your racist friend
I know politics bore you
But I feel like a hypocrite talking to you
You and your racist friend

In order to move forward we all have to be active in the discussion about the reality of racism in the United States. We need to confront our racist friends, family, and society. This chapter contains the basic information and references leading you to more in-depth analyses of the myth of race and all the details that refute it. Many of our social norms and cultural constructs stand in our way; they support the inertia and patterns that maintain the myth or at least make it very difficult to challenge it publicly. However, once we have read this kind of information, we cannot be hypocrites, we must be myth busters.