

Biological Diversity and Cultural Diversity: From Race to Radical Bioculturalism

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On July 28, 1996, college students Will Thomas and Dave Deacy were late for the Columbia Cup hydroplane race. To save time they stepped down and walked along a shallow bank of the Columbia River. Will Thomas stopped to pick up what first appeared to be a smooth rock in the river. The smooth rock turned out to be a human skull. Because they wanted to see all of the race, they quickly hid the skull. Will Thomas later admitted: "There were a couple of kids fartin' around and I thought they would find it" (*Tricity Herald*, July 27, 1997).

After the race Thomas and Deacy retrieved the skull and turned it over to a police officer. A return to the location where the skull was discovered led to the finding of most of the rest of the skeleton, now called Kennewick Man, so named for the Richland County, Washington, town in which "he" was found. To determine more about the individual, perhaps a murder victim, the police called in Floyd Johnson, the Benton County coroner. Because all that remained were bones and teeth, Johnson soon rang up James Chatters, an independently employed anthropologist: "Hey, buddy, I got a skull for you to look at," Johnson said.

In addition to determining that the skeleton was likely to have been a male, about 40–50 years old, Chatters noted what he took to be "Caucasoid traits" such as a dolichocephalic (narrow) skull and narrow face. He thought that the individual might have been a European settler (1997:9). While he interpreted the tooth shapes as indicating Asian ancestry, Chatters writes of the craniofacial morphology: "Many of these characteristics are definitive of modern day Caucasoid peoples, while others . . . are typical of either race" (1997:9, emphasis added). The idea that Kennewick Man was a recent settler was definitively rejected by the discovery of the tip of an ancient spear point embedded in his hip bone and a radiocarbon date of 9,300 years before the present for one of his finger bones. If Kennewick Man is a settler, then he is a much older one than previously assumed.

It is broadly agreed by anthropologists that most or all Native Americans (or American Indians) came from northern Asia, geographically, genetically, and

culturally (I use Native American and American Indian interchangeably to refer to the first peoples of the Americas). Thus, the presence of what Chatters referred to as "Caucasoid features" in a skull of great antiquity has generated considerable excitement. He suggested (1997:10) that Kennewick Man's scientific study might "alter conventional views of how, when, and by whom the Americas were peopled." The headline of a widely circulated article by Boyce Rensberger of the *Washington Post* declared: "Skeletons Suggest Caucasoid Early American" (April 15, 1997). The subheading of Douglas Preston's feature article in the *New Yorker* asks: "And why is the government withholding Kennewick Man, who might turn out to be the most significant archaeological find of the decade?" (June 16, 1977:70). In numerous articles in neo-Nazi publications such as the large-circulation, anti-Semitic *Spotlight*, Louis Beam, an "Ambassador at Large" for the Aryan Nation, uses the interpretation of Kennewick Man as a Caucasoid as proof that North America is a white homeland (Mozzochi 1998).

Intersecting with the interpretation of Kennewick Man as a "Caucasian" is compliance with the Native American Graves Protection and Repatriation Act of 1990 (NAGPRA; Public Law 101-601). NAGPRA gives Native Americans a role in the disposition of remains found on federal lands, as Kennewick Man was, and deemed to be ancestral to them. Assuming he is their ancestor, five Northwest tribes, led by the Confederated Tribes of the Umatilla Indian Reservation, filed a "claim" for the skeleton. Countering this claim, a group of eight anthropologists and archaeologists asked for further study of the remains because they may not be directly linked to these Native Americans or to any contemporary Native Americans. The scientists were joined in their claim by the Asatru Folk Assembly, a group that mixes pagan religion with neo-Nazi leadership. The Asatru think that Kennewick Man is their ancient one.

The story of Kennewick Man raises important issues that I hope to address in this chapter. Are racialized descriptions of biology useful in this and other contexts? How do we determine if Kennewick Man is biologically ancestral to the Umatillas, another Native American group, or any group of Native Americans? More generally, what is the connection between biological ancestry (writ in genes!) and cultural ancestry? How does biological variability relate to cultural diversity, and how should the relationship be theorized?

At first one might think that human biology might have nothing to do with cultural diversity. After all, for almost a century, or since the time of Franz Boas, it has been a main axiom of anthropology not to conflate race with behavior and culture (Boas 1940). But, as the story of Kennewick Man illustrates, biology has not been disentangled from culture. Laws and commonly held beliefs often privilege biology (unchanging blood and genes) over lived experience. Social hierarchies are still often made to seem natural and permanent as if imbued with a sense of nature. And biological diversity is still often and inappropriately reduced to the old idea of racial types, and subsequently used to explain culture, behavior, and socioeconomic positions.

In this introductory essay I begin by briefly reviewing the rise and demise of the idea that race describes and explains human diversity. From this review two key points emerge: (1) race is an idea and, as such, it is inconsistent with the facts of human biological diversity (in fact, race is a shamefully obsolete and potentially harmful way to think about human diversity); and (2) race and racism are sociopolitical realities (and as sociopolitical realities, they have biological consequences). Said somewhat differently, the main points of this chapter are that race is obviously real and deeply significant as a social category. When Boas advocated separating race from culture and behavior, he did not know how to think of biology free of racism. I advocate the reverse. Because race and racism are sociopolitical realities, they affect individual biologies. Understanding this presents a new and radical biocultural agenda. The continuance of "race" and ethnic differences in health calls for explication of the biology of inequality and racism.

The Invention and Reification of Race

The idea of biological race embodies the following central beliefs: (1) that the human species is divisible into a small and discrete number of categories; (2) that these categories are fixed and old; (3) that an individual's biology and behavior are in large part explainable by which race the individual is a member of; and (4) that races are hierarchically arranged (Hannaford 1996; Smedley 1999). When it is stated in this fashion, one can show when and where racial thinking began and see which, if any, of its central characteristics have been challenged in subsequent years.

Hannaford (1996) maintains that the idea of race coalesced in Europe after 1492, the year Columbus "rediscovered" the Americas and the Jews were expelled from Spain, and before the first enslaved African landed in the Caribbean and North America. Before this time concepts of "us" and "other" were common. But this sense of difference was not systematically related to biology. The "Other" might be feared, reviled, or an object of desire; but they were not thought to be different and less worthy based on biological theorizing. By the 1600s the word "race" (or a version of it in another language) was found in most European language dictionaries.

The Platonic notion of ideal types and the Christian concept of a great chain of being are deep concepts about the world that paved the way for the idea of race. The Platonic notion of ideal types holds that the physical and material world is derived from a real world of pure ideals. This "world of ideals" is explicitly stable; evolution does not exist, except in the potential for devolution from the ideal. The method of science/philosophy is not experimental and empirical, but aims to discover or imagine the ideal types through thinking about them. An inanimate object such as a chair, although a human construction, is to be evaluated insofar as it maintains more or less closely the characteristics of the ideal type of chair. In a similar way, animals and plants are evaluated in relation to how they resemble the ideal type of each respective animal and plant. Humans could also be evaluated in relationship to their ideal types. For

Plato, there were ideal male and female types, and ideal soldiers, servants, and aristocrats.

In the idea of a great chain of being in early Christianity, all "God's creatures" are considered to occupy a rung on the great chain (Lovejoy 1936). The higher the rung, the closer to God; the lower, the further from God. As is made clear in illustrations in books well into the 20th century, white Europeans occupied the top rungs, while others were further down the chain, typically placed between Europeans and primate species. Each race had a fixed and unchanging place relative to God.

Platonic idealism, of course, is flawed because it rests on the assumption that there are ideal types "out there" that are unchanging and with preordained functions, and places in life to match these functions. It was thoroughly incapable of seeing how these types are socially constructed. This lack of reflectiveness is all the more obvious in the more explicit ranking of races embedded in the great chain of being.

The above notwithstanding, before 1492 there was no obvious public or scientific concern with thinking that human differences were innate, fixed, or racial (Hannaford 1996; Smedley 1999). This changed when Europeans began to explore different parts of the world in the name of God and in search of gold and glory. Then, the idea of race became useful as a means of justifying European capitalist expansion. At this point the study of human variation becomes an important endeavor and with it was born a theory of racialism, the belief that humans are and always have been divided into a fixed number of discrete human races (types). The goals of this science of racialism were to describe these types and demonstrate how they are manifest in behavioral and biological characteristics. The science starts with efforts at classification and explanation by Buffon (1749) and Linnaeus, in the tenth edition of his *Systema Naturae* (1758), and extends through to works by the early French, German, and English natural historians, who tinkered with these classification schemes and began to consider why variation existed. For Linnaeus, race explained customs, systems of government, and psychological characteristics.

From this point race was widely used by scientists and politicians, and became a popularly recognized idea, so much so that it was taken to be reality. It filtered into languages and etched itself on the minds of 18th- to 20th-century Europeans (Hannaford 1996; Smedley 1999; Stepan 1982; Todorov 1993). The processes by which a folk idea such as race becomes a scientific one and is then made-to-seem real is surely variable. However, it is clear that ideas that are useful to the ruling class (with control of legislation, access to and control over information, etc.) tend over time to be accepted as certain, natural, and real.

The concept of race remains a typological and non-evolutionary concept. Surprisingly, then, many continue to use race despite the fact that the notion of fixed, ideal types should logically have been replaced well over 100 years ago with the advent of Darwinism and the dominance of evolutionary theory in biology and anthropology. The concept survives, where it obviously does not fit either fact or theory, because: (1) it became reified by constant

use, (2) it became conflated with human variation, and (3) it was and is politically useful.

Anthropology and Race

Boas being the main exception, up until World War II anthropology was the study of race. How intimate and how close is the association between anthropology and racialism can be seen in Tylor's definition of anthropology as the study of "man and the races of man" (Tylor 1946 [1881] in Smedley 1993:2). Furthermore J. Deniker's (1904) textbook in Charles Scribner's "Contemporary Science Series" is titled *The Races of Man: An Outline of Anthropology and Ethnography*. What comes before the colon, "the races of man" is aligned with what comes after the colon, "an outline of anthropology and ethnography." Here, all that we think of as involved in the study of anthropology – comparative and evolutionary approaches to biological variation as well as human custom, religion, myth, political institutions, and language – is subsumed under a study of different types of humans, called races. Deniker starts with a section on "distinctive morphological characteristics of human races" and then moves seamlessly on to physiological characteristics, ethnic characters, linguistic characters, material life, and psychic life. The association of racialism and anthropology is absolute.

In physical anthropology the sway of racialism and biological determinism remained for a very long time. Earnest Albert Hooton, founding father of American physical anthropology and, as a professor at Harvard, the advisor to the first generation of physical anthropologists, decried the obvious racism of the great chain of being. At the same time he continued to use race as a taxonomic tool and he continued to make generalizations based on differences among races, including that "we are fairly safe to assume that the Australian is far less intelligent than is the Englishman" (Hooton 1946:158).

What is evident in the writing of Hooton and other major figures in physical anthropology around the middle of this century was their lack of comfort with typology and their problems in fitting the data to typological notions. Few saw beyond typology, however, or saw how they were constrained by the reification of race (Blakey 1987; Brace 1982). One who did and became an outsider in his own discipline, Ashley Montagu, called race man's most dangerous myth, and the phlogiston of his time (Montagu 1962, 1963, 1964).

Although race began to leave the anthropological and scientific lexicon after World War II (Lieberman et al. 1989), a perusal of the literature makes clear that the idea of race never disappeared (Goodman and Armelagos 1996). The recent popularity of *The Bell Curve* (Herrnstein and Murray 1994) and the pop-racial sociobiology of Phillippe Rushton (1995) provides a clear reminder.

The Demise of Race

The decline in popularity of the concept of race is commonly held to be due to changing politics, including the entrance of women and Jewish scholars into

anthropology after World War II (Barkan 1992). This opening up of anthropology may certainly be important, but it should not overshadow the fact that there are profound and fundamental scientific reasons that speak against race. As Begley (1995) declared in *Newsweek*, when it comes to a critique of race, "science got here first."

As Montagu made clear over half a century ago, race is not a reality; it is not a thing. Race is a biological concept; it is a way of constructing and thinking about human variability. We tend to think of it as a reality, because it has become reified by its constant use and the lack of questioning of its underlying reality.

Definitions of race are varied and protean. For example, some classifications are based on geographic origin (with some assumed biological concordance), others are based on clusters of traits, and others still are based on bureaucratic and social definitions (again, with an assumption of a biological basis). There is no agreed definition (Brace 1982). Furthermore, all efforts at a scientific (widely accepted, reliable) definition have failed. Brace captured the assumptive and protean nature of race when he comments on racialist research:

The connection between the biology discussed and the races named at the end is never clearly spelled out, and in fact the attentive reader cannot discover, from the information presented, just how the racial classification was constructed – other than the fact that this just seems to be the way anthropologists have always done things. (Brace 1982:21)

With differences in definition it is not surprising that there is also no agreement on the names and numbers of races. Thus, in forensic anthropology this powerful act of naming is left in the hands of bureaucrats and politicians with minimal knowledge of human variation. The inability to define race, the inability to agree on how many races there are, and the inability to agree upon what biological criteria make a race, show that this concept is slippery at best, making for problematic politics and biology. The following six points summarize why race is not a useful shorthand for human variation.

(1) *Race is not an evolutionary concept.* Humans change through time and space. Race, however, cannot account for these changes. This is one of the problems faced by those who want to racialize Kennewick Man. Human biologies change over decades because of population mixing and other evolutionary forces. However, these changes cannot be accounted for by a static and typological concept.

(2) *Most traits are continuously varying and clinally distributed.* Traits change in a multitude of increments from one individual or group to another. If groups are defined on the basis of biological trait frequencies, then there are typically no clear borders between where one group begins and another ends. Say, for example, we decide to use height to define groups. If we determined that there were to be two groups, then where would one make the division between tall and short people? It could be at 70 inches, 71 inches, or 200 cm. The "cutoff" point is arbitrary and a matter of convenience. Those near the

cutoff on either side are more like each other than they are like others in their group. Similarly, it is impossible to fix boundaries between races. There are no natural gaps. The division point is arbitrary and up to the whim of the classifier. Worse, this classification of a continuous trait into discrete units diminishes the true nature of human variation.

(3) *Most trait pairs are nonconcordant.* That is, traits tend to vary in different ways. The significance of this fact is that knowing the distribution of one trait can rarely explain or predict the distribution of a second. For example, knowing skin color provides no insight into height or any other anthropometric attribute. Why should it? These traits are under different selective pressures. They are not packaged together. This is why race is said to be "only skin deep."

(4) *Within-group variation is much greater than between-group variation.* There is so much variation within any purported race, about 94 percent of total genetic diversity (Lewontin 1972; Nei and Roychoudhury 1982), that extrapolation from the group to the individual is essentially meaningless. This fact suggests that two individuals of the same purported race are only marginally more genetically alike than any two individuals chosen at random. Because of non-concordance and within-group variation, the concept has little explanatory power. If we know race, we know little more. Race tells us little about the processes governing human variation and it has trivial predictive value for knowing something about individuals.

(5) *The classification is not stable across space and time.* Division points are arbitrary and up to the whim of the classifier. Thus, an individual who might be classified as "European" or "white" at one time and place is classified as "mixed," "Hindu," "quadroon," "octoroon," "colored," "mulatto," "mestizo," or "black" at another time and place (Lee 1993). Jews were considered to be a separate race (or even many racial types) before World War II, and then they became white after the war (Sacks 1994). Similar "whitening" happened for the Irish and Southern Europeans. Fish (1995) writes of how his wife and daughter "change race" when they fly from the United States to Brazil. Their biologies do not change, but the cultural classification system does. Changing racial classification is fine and appropriate for a social construct. However, because sciences such as medicine are based on repeatability, changing classifications are disastrous for a scientific construct.

(6) The unexamined movement from social definition of race to biology leads to conflation of biology and lived experience. This clouds whether observed racial types are due to lived experience, genes, or a tangled gene-environment combination. Furthermore, when genes come into play, the assumption is that a racial analysis might substitute for a more detailed individual genetic analysis.

Thomas Patterson (Chapter 9, this volume) writes that diversity "is socially and culturally constructed." Thus, the salient categories of diversity – and the meanings of these categories – are produced, and vary, over time and cultural space. Race is such a category. We tend to think of race as deep and primordial. Race seems self-evident. But the deepness of this thought that race is universal, inherent, and real, only shows the power of a racial worldview (Smedley 1999).

What I have tried to do above is to "problematize" not the classification itself, but the implied biological basis of the classification. This implied biological basis of race has led to racialism and racism. Thus, it is useful to decouple race as a biological term from social groupings. This should clarify the biology of oppression and racism. African American babies die at a rate twice that of European American babies (David and Collins 1991, 1997), not because of race (read biology), but because of institutional and other forms of racism. Over a century ago Darwin said: "if the misery of our poor be caused not by the laws of nature, but by our institutions, great is our sin."

From Race to Radical Bioculturalism

Although race is a biological myth, biology and race are still important. They are just different, and they connect in different ways. In this section I provide examples of how race as biology fails as a scientific device and suggest ways in which it might be replaced.

Race and human evolution

Archaeologists and prehistorians have a tendency to think about populations and cultures of the past as interacting like billiard balls. They are discrete: when one ball is in motion it either collides with another ball or it misses altogether. If it hits another ball then it either deflects off, or it moves the hit ball. Sometimes the hit ball is displaced and goes somewhere else, possibly into a pocket, extinct forever. The key point is that the billiard balls do not change their essence. The "8 ball" does not become a 7.9 or 8.1.

The current debate over human origins, between the supporters of the multiregional model (in situ evolution and population continuity; Wolpoff and Caspari 1997) and the out-of-Africa model replacement (Stringer and McKie 1996), is an example of this. The billiard ball of a population that came out of Africa either hit all the others and knocked them into the pockets (replacement), or it missed (continuity). No middle group is left for intermingling and partial replacement. In presenting some of the questions that Kennewick Man might help us answer, Chatters (1998) presupposes replacement and asks how and by whom Kennewick and his clan were replaced. The white billiard ball (Kennewick Man's alleged group) was knocked off the table by one of a darker hue.

It might be useful to think of ancient peoples as nearly always being in motion. Affiliations were constantly shifting and the borders between one group and another were generally fuzzy. The political scientist Eqbal Ahmad (Hampshire College) has often pointed out that ethnic hybridity and multiculturalism are the rules; the past was a multicultural and multiethnic place. If true, biology should reflect this, and, indeed, it does. Genetic change was (and is) not dramatic (or racial) but slow and continuous. One group bumped into another and they exchanged partners, and the process continued into the next valley and valleys beyond.

The conceptual lens through which the peopling of the Americas is viewed leads to a vision of populations (and their genes) as race-like billiard balls. To the contrary, archaeological evidence indicates that the Americas have long been a place of extensive trade networks and contacts. Groups were in constant interaction, sometimes hostile, frequently utilitarian, often friendly. Biological analyses need to take this into account.

The billiard ball model developed as part of the 19th-century worldview in which miscegenation, or race crossing, was a great fear. The builders of the Egyptian pyramids were assumed to be whites, but the modern-day Egyptians were Other. The only way left open to get from ancient to contemporary Egypt was through population replacement. The same worldview considered contemporary Native Americans as non-white and the builders of the Mesoamerican and Mayan pyramids as a mystery group. Both of these racist scenarios were overturned by evidence of cultural and generic continuities. The change is that the white billiard ball never was there to begin with. Now, Chatters's interpretation of Kennewick Man (1998), interestingly, represents an attempt to reinsert the white billiard ball. But the crude billiard ball model remains in nearly all analyses.

I am willing to bet that the peopling of the Americas was more complex than has been realized. The many families and bands that likely wandered across the Bering Strait without doubt carried genetic residues of individuals who resided across the Pacific. After all, the idea of race was not yet invented and these ancient peoples probably did not share fears of miscegenation with their 19th-century chroniclers. Groups and individuals could certainly have entered the Americas from further to the south. Why not? The point is that thinking in terms of race oversimplified the peopling of the Americas. And the same thinking is not going to let us see the complexities of past human interactions in North, Central, and South America.

Forensic anthropology

One of the fundamental goals of skeletal biology and its daughter field of forensic anthropology is accuracy with regard to the demographic characterization of individuals and groups. Parts of this characterization include the assignment of race or ancestry.

While forensic anthropologists lament that due to migration and intermixture it is more difficult to assign race now than in the past, with few possible exceptions such as Sauer (1992, 1993), the reality of races seems never to have been seriously questioned. In most cities in the United States the dichotomy of white and black is no longer as obvious as it once seemed. Asians, Native Americans, and various Hispanic groups make less certain the work of assigning race to a skeleton. The American "melting pot" makes the job of assigning race harder (St. Hoyme and Iscan 1989). Harder, yes, yet the underlying validity of the paradigm of human races is nearly unquestioned.

Forensic research articles on the determination of race are relatively uniform. Race is known from some form of documentation (such as a researcher's

observations or death registration) and multivariate techniques are used to discriminate among two or more racial groups (Thompson 1982). Forensic reports typically involve completing a series of measurements and observations and then estimating race based on fit to a formula.

Perhaps the most widely used method of racial assessment, and one of the few methods to be independently evaluated, is Giles and Elliot's (1962) discriminant function for separating white, black and Native Americans based on cranial measurements. Like most techniques, this method is very good at identification of race on the test sample. This is an obvious and somewhat circular truth because it is upon the test sample that the best formulae to distinguish groups are constructed. However, when formulae are tested in other contexts the rate of correct identification is seriously reduced if the groups are not part of the same population. The Giles and Elliot (1962) formulae have been tested at least four times on individuals of known Native American ancestry. In three of the four cases the percentage of correct identifications is actually less than chance. As I have said before, this is not even good enough for government work (Goodman 1997).

The problem of applying racial formulae to determining the race of bones in different places is well known in forensic anthropology (Brues 1992; Sauer 1992). However, the reason for the problem and its implications has not been widely acknowledged. It is the forensic anthropologist's goal to provide "bureaucratic race," that which is officially recognized (St. Hoyme and Iscan 1989). However, bureaucratic races change and they may have little to do with biology (Lee 1993). Finally, biologies change too. Native Americans from Maine are not biologically homogeneous with those from Minnesota. The inability to use a formula derived in one place for skulls in another tells us that we are not dealing with the same population.

Fortunately, race is not an essential concept for forensic anthropology. The rhetoric of racial types could easily be changed to that of continental ancestry without affecting law enforcement efforts. More importantly, the applied goal of forensic anthropology is to describe as well as possible how individuals looked, and other aspects of their biologies. To think one has done this by plugging data into an equation and degrading the information to an estimate of racial affinity is misleading. Perhaps we can do better by going back to description – to the description of facial and postcranial architecture and other keys to individual identification. After all, the forensic puzzle is not the identification of race, it is the identification of an individual.

Race and biomedical research

Racial differences in health and disease are hot topics. In the last few years the National Institutes of Health inaugurated a new "Research Center on the Psychobiology of Ethnicity" to study how different groups respond to medications (Holden 1991), and a journal titled *Ethnicity and Disease* was launched to foster the study and the spread of information on aspects of the intersection of human variation and disease (Cooper 1991). Concerned with the use of race and ethnicity in medical research, the Centers for Disease

Control and Prevention (CDC) convened an expert workshop on the "use of race and ethnicity in public health surveillance" (MMWR 1993). Is race a useful way to think about human biological variation in studies of morbidity, mortality, and health care?

At least two fundamental problems repeatedly arise when assuming that the measured race differences in disease rates are biological and can be generalized to a racial propensity or predisposition. First, the environment is rarely controlled for. Second, the results once assumed to be genetic are reduced to the equating of genetic with pan-racial. Thus, one is often faced with a double leap of scientific faith: that a disease is genetic in etiology and that genetic equates with a racial-genetic predisposition.

A paper entitled "Transitional Diabetes and Gallstones in Amerindian Peoples: Genes or Environment?" (Weiss 1991) illustrates this problem. By the title "... Genes or Environment?" the author makes clear that he purports to test whether high rates of disease are the result of genes or environment. Of course, the dichotomy of genes or environment is a false one, and the author is surely using this for pedagogical purposes. Yet, aside from this point of simplification, how balanced is the analysis? One paragraph is devoted to environmental etiology and ends with the sentence: "Many potential confounding factors make these results difficult to interpret" (Weiss 1991:111). Having dismissed environmental etiology, the author proceeds to discuss at length and in very optimistic tones preliminary research that shows weak correlations between genetic markers and diabetes rates, not questioning at all the correlative nature of the research. The notion that diseases such as diabetes, gallstones, and obesity are prevalent in Native Americans because of a genetic predisposition is reified further by the development of the term "New World Syndrome" (Weiss et al. 1984).

Research on race and anemia provides a further example of the public health implication of assuming that group differences are due to biological race. In the 1970s Garn and colleagues presented data on the distribution of hemoglobin levels in blacks and whites in the United States. They reported an approximate 1.0 g/dl mean difference (blacks less than whites; Garn, Smith, and Clark 1974; Garn, Ryan, et al. 1975; Garn 1976). Following this work, the suggestion was made to institute separate cutoffs for anemia for blacks and whites.

Robert Jackson (1990, 1992, 1993) has reexamined some of these same data and has introduced new data. He controls for obvious environmental factors such as iron intake, and eliminates from analysis low hemoglobin values that may be related to genetic anemias. In doing this he finds that the mean hemoglobin difference between blacks and whites is reduced to the 0.2–0.3 g/dl range.

Despite these data very knowledgeable researchers such as Pan and Habicht (1991) continue to call for separate hemoglobin cutoffs for classification of anemia in blacks and whites. However, if the black cutoff is reduced just 0.5 g/dl, from 12.0 g/dl to 11.5 g/dl, half the difference proposed by Garn et al. (1974), the prevalence of anemia in nonpregnant, nonlactating black women (18–44 years) is estimated to be reduced "on paper" from 20 to 10 percent (Pan and Habicht 1991).

Yet still, separate cutoffs are supported despite the fact that the purported "race" difference in iron metabolism has no known genetic basis, especially not one that suggests that blacks are uniformly more efficient than whites in their metabolism of iron, or that they somehow do just as well on 0.5 g/dl less hemoglobin. Nor has it been proven that the difference is pan-racial. This issue, of course, is more than a theoretical one: separate cutoffs lead to profound health implications when one considers some of the functional consequences (in learning, work, and immunological capacity) of low hemoglobin values in ranges near anemia cutoff values (Scrimshaw 1991).

The report from the CDC workshop on race in medical research highlights the fact that the lack of clarity over whether race differences are reflective of genetic or nongenetic factors is a serious constraint to public health (MMWR 1993). Among its conclusions are that "because most associations between disease and race have no biological basis, race - as a biological concept - is not useful in public health surveillance" (1993:12).

Further, racial categories are too broad to be meaningful, there is no clear definition of race, the Office of Management and Budget (OMB) Directive 15 (which delineates the racial categories for federal agencies) has no scientific basis, distinctions between race and ethnicity are unclear, concepts of race change over time, and their meanings differ among individuals. The CDC report goes further still in its conclusion that emphasis on race in public health reinforces racist stereotyping and diverts attention from underlying socioeconomic factors (MMWR 1993:12-13). Somewhat conversely, it may be useful to maintain race as a social construct and as a means to monitor the health consequences of racism.

I agree with the CDC finding that this untheorized use of race is extremely problematic (see also Dressler 1993; Hahn et al. 1992; Hahn 1992). The implications of the undertheorizing are that differences are assumed to be due to genetics, and this approach reinforces a form of victim blaming. Yet the 2.4-fold higher relative risk of infant mortality of black babies over white babies in the United States cannot be explained by genetic predisposition (David and Collins 1991). How this difference might be related to different experiences of whites and blacks has recently been shown by David and Collins (1997). They find that babies born in Illinois to African-born women have birth weights that are closer to the babies of U.S.-born white women than to babies of U.S.-born black women.

This study shows how the experience of race is more important than the genetics of race. The CDC report suggests that racism, in both its material and ideological components, is more real than race. Racism and socioeconomic factors undoubtedly have more of an effect on health and biological welfare than race as biology. Unfortunately, the mixed messages of what race differences in morbidity and mortality signify continues to confuse the public, and many researchers. Perhaps the only way to clarify the message is to change the language.

Conclusions

Boas called for the separation of biology from culture because it was clear to him that biology could not account for differences in cultural position

and achievement. I agree. But biology and culture still are intertwined in interesting and important ways. How we see an individual is based in part on biological cues, and the consequence of seeing and thinking about difference may be biological. That is, ideas about racial difference have consequences under the skin - they affect stress levels, birth weights, infant mortality rates, and more.

In a sense, by thinking of race as a sociopolitical concept or a social formation, we are turning it upside down. It is in this way, however, that we might reintegrate anthropology and move toward what could be called radical bioculturalism (Goodman and Leatherman 1998).

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