

constitute biological entities called races is a matter of cultural interest rather than scientific substance. It tells us something about American culture -- but nothing at all about the human species.

The short answer to the question "What is race?" is: There is no such thing. Race is a myth. And our racial classification scheme is loaded with pure fantasy.

Let's start with human physical variation. Human beings are a species, which means that people from anywhere on the planet can mate with others from anywhere else and produce fertile offspring. (Horses and donkeys are two different species because, even though they can mate with each other, their offspring -- mules -- are sterile.)

Our species evolved in Africa from earlier forms and eventually spread out around the planet. Over time, human populations that were geographically separated from one another came to differ in physical appearance. They came by these differences through three major pathways: mutation, natural selection, and genetic drift. Since genetic mutations occur randomly, different mutations occur and accumulate over time in geographically separated populations. Also, as we have known since Darwin, different geographical environments select for different physical traits that confer a survival advantage. But the largest proportion of variability among populations may well result from purely random factors; this random change in the frequencies of already existing genes is known as genetic drift.

If an earthquake or disease kills off a large segment of a population, those who survive to reproduce are likely to differ from the original population in many ways. Similarly, if a group divides and a subgroup moves away, the two groups will, by chance, differ in the frequency of various genes. Even the mere fact of physical separation will, over time, lead two equivalent populations to differ in the frequency of genes. These randomly acquired population differences will accumulate over successive generations along with any others due to mutation or natural selection.

A number of the differences in physical appearance among populations around the globe appear to have adaptive value. For example, people in the tropics of Africa and South America came to have dark skins, presumably, through natural selection, as protection against the sun. In cold areas, like northern Europe or northern North America, which are dark for long periods of time and where people covered their bodies for warmth, people came to have light skins -- light skins make maximum use of sunlight to produce vitamin D.

The indigenous peoples of the New World arrived about 15,000 years ago, during the last ice age, following game across the Bering Strait. (The sea level was low enough to create a land bridge because so much water was in the form of ice.) Thus, the dark-skinned Indians of the South American tropics are descended from light-skinned ancestors, similar in appearance to the Eskimo. In other words, even though skin color is the most salient feature thought by Americans to be an indicator of race --and race is assumed to have great time depth -- it is subject to relatively rapid evolutionary change.

Meanwhile, the extra ("epicanthic") fold of eyelid skin, which Americans also view as racial, and which evolved in Asian populations to protect the eye against the cold, continues to exist among South American native peoples because its presence (unlike a light skin) offers no reproductive disadvantage. Hence, skin color and eyelid form, which Americans think of as traits of different races, occur together or separately in different populations.

Like skin color, there are other physical differences that also appear to have evolved through natural selection -- but which Americans do not think of as racial. Take, for example, body shape. Some populations in very cold climates, like the Eskimo, developed rounded bodies. This is because the more spherical an object is, the less surface area it has to radiate heat. In contrast, some populations in very hot climates, like the Masai, developed lanky bodies. Like the tubular pipes of an old-fashioned radiator, the high ratio of surface area to volume allows people to radiate a lot of heat.

In terms of Americans' way of thinking about race, lanky people and rounded people are simply two kinds of whites or blacks. But it is equally reasonable to view light-skinned people and dark-skinned people as two kinds of "lankys" or "roundeds." In other words, our categories for the racial classification of people arbitrarily include certain dimensions (light versus dark skin) and exclude others (rounded versus elongated bodies).

There is no biological basis for classifying race according to skin color instead of body form-or according to any other variable, for that matter. All that exists is variability in what people look like -- and the arbitrary and culturally specific ways different societies classify that variability. There is nothing left over that can be called race. This is why race is a myth.

Skin color and body form do not vary together: Not all dark-skinned people are lanky; similarly, light-skinned people may be lanky or rounded. The same can be said of the facial features Americans think of as racial -- eye color, nose width (actually, the ratio of width to length), lip thickness ("ev-ertedness"), hair form, and hair color. They do not vary together either. If they did, then a "totally white" person would have very light skin color, straight blond hair, blue eyes, a narrow nose, and thin lips; a "totally black" person would have very dark skin color, black tight curly hair, dark brown eyes, a broad nose, and thick lips; those in between would have -- to a correlated degree --wavy light brown hair, light brown eyes, and intermediate nose and lip forms.

While people of mixed European and African ancestry who look like this do exist, they are the exception rather than the rule. Anyone who wants to can make up a chart of facial features (choose a location with a diverse population, say, the New York City subway) and verify that there are people with all possible admixtures of facial features. One might see someone with tight curly blond hair, light skin, blue eyes, broad nose, and thick lips -- whose features are half "black" and half "white." That is, each of the person's facial features occupies one end or the other of a supposedly racial continuum, with no intermediary forms (like wavy light brown hair). Such people are Living proof that supposedly racial features do not vary together.

Since the human species has spent most of its existence in Africa, different populations in Africa have been separated from each other longer than East Asians or Northern Europeans have been separated from each other or from Africans. As a result, there is remarkable physical variation among the peoples of Africa, which goes unrecognized by Americans who view them all as belonging to the same race.

In contrast to the very tall Masai, the diminutive stature of the very short Pygmies may have evolved as an advantage in moving rapidly through tangled forest vegetation. The Bushmen of the Kalahari desert have very large ("steatopygous") buttocks, presumably to store body fat in one place for times of food scarcity, while leaving the rest of the body uninsulated to radiate heat. They also have "peppercorn" hair. Hair in separated tufts, like tight curly hair, leaves space to radiate the heat that rises through the body to the scalp; straight hair lies fiat and holds in body heat, like a cap. By viewing Africans as constituting a single race, Americans ignore their greater physical variability, while assigning racial significance to lesser differences between them.

Although it is true that most inhabitants of northern Europe, east Asia, and central Africa look like Americans' conceptions of one or another of the three purported races, most inhabitants of south Asia, southwest Asia, north Africa, and the Pacific islands do not. Thus, the 19th century view of the human species as comprised of Caucasoid, Mongoloid, and Negroid races, still held by many Americans, is based on a partial and unrepresentative view of human variability. In other words, what is now known about human physical variation does not correspond to what

Americans think of as race.

In contrast to the question of the actual physical variation among human beings, there is the question of how people classify that variation. Scientists classify things in scientific taxonomies -- chemists' periodic table of the elements, biologists' classification of life forms into kingdoms, phyla, and so forth.

In every culture, people also classify things along culture-specific dimensions of meaning. For example, paper clips and staples are understood by Americans as paper fasteners, and nails are not, even though, in terms of their physical properties, all three consist of differently shaped pieces of metal wire. The physical variation in pieces of metal wire can be seen as analogous to human physical variation; and the categories of cultural meaning, like paper fasteners vs. wood fasteners, can be seen as analogous to races. Anthropologists refer to these kinds of classifications as folk taxonomies.

Consider the avocado -- is it a fruit or a vegetable? Americans insist it is a vegetable. We eat it in salads with oil and vinegar. Brazilians, on the other hand, would say it is a fruit. They eat it for dessert with lemon juice and sugar.

How can we explain this difference in classification?

The avocado is an edible plant, and the American and Brazilian folk taxonomies, while containing cognate terms, classify some edible plants differently. The avocado does not change. It is the same biological entity; but its folk classification changes, depending on who's doing the classifying.

Human beings are also biological entities. Just as we can ask if an avocado is a fruit or a vegetable, we can ask if a person is white or black. And when we ask race questions, the answers we get come from folk taxonomies, not scientific ones. Terms like "white" or "black" applied to people -- or "vegetable" or "fruit" applied to avocados -- do not give us biological information about people or avocados. Rather, they exemplify how cultural groups (Brazilians or Americans) classify people and avocados.

Americans believe in "blood," a folk term for the quality presumed to be carried by members of so-called races. And the way offspring --regardless of their physical appearance-always inherit the less prestigious racial category of mixed parentage is called "hypo-descent" by anthropologists. A sentence thoroughly intelligible to most Americans might be, "Since Mary's father is white and her mother is black, Mary is black because she has black 'blood." American researchers who think they are studying racial differences in behavior would, like other Americans, classify Mary as black -- although she has just as much white "blood."

According to hypo-descent, the various purported racial categories are arranged in a hierarchy along a single dimension, from the most prestigious ("white"), through intermediary forms ("Asian"), to the least prestigious ("black"). And when a couple come from two different categories, all their children (the "descent" in "hypo-descent") are classified as belonging to the less prestigious category (thus, the "hypo"). Hence, all the offspring of one "white" parent and one "black" parent -- regardless of the children's physical appearance -- are called "black" in the United States.

The American folk concept of "blood" does not behave like genes. Genes are units which cannot be subdivided. When several genes jointly determine a trait, chance decides which ones come from each parent. For example, if eight genes determine a trait, a child gets four from each parent. If a mother and a father each have the hypothetical genes BBBBWWWW, then a child could be born with any combination of B and W genes, from BBBBBBBB to WWWWWWWW. In contrast, the folk concept "blood" behaves like a uniform and continuous entity. It can be

divided in two indefinitely -- for example, quadroons and octoroons are said to be people who have one-quarter and one-eighth black "blood," respectively. Oddly, because of hypo-descent, Americans consider people with one-eighth black "blood" to be black rather than white, despite their having seven eighths white "blood."

Hypo-descent, or "blood," is not informative about the physical appearance of people. For example, when two parents called black in the United States have a number of children, the children are likely to vary in physical appearance. In the case of skin color, they might vary from lighter than the lighter parent to darker than the darker parent. However, they would all receive the same racial classification -- black -- regardless of their skin color.

All that hypo-descent tells you is that, when someone is classified as something other than white (e.g., Asian), at least one of his or her parents is classified in the same way, and that neither parent has a less prestigious classification (e.g., black). That is, hypo-descent is informative about ancestry -- specifically, parental classification --rather than physical appearance.

There are many strange consequences of our folk taxonomy. For example, someone who inherited no genes that produce "African"-appearing physical features would still be considered black if he or she has a parent classified as black. The category "passing for white" includes many such people. Americans have the curious belief that people who look white but have a parent classified as black are "really" black in some biological sense, and are being deceptive if they present themselves as white. Such examples make it clear that race is a social rather than a physical classification.

From infancy , human beings learn to recognize very subtle differences in the faces of those around them. Black babies see a wider variety of black faces than white faces, and white babies see a wider variety of white faces than black faces. Because they are exposed only to a limited range of human variation, adult members of each "race" come to see their own group as containing much wider variation than others. Thus, because of this perceptual learning, blacks see greater physical variation among themselves than among whites, while whites see the opposite. In this case, however, there is a clear answer to the question of which group contains greater physical variability. Blacks are correct.

Why is this the case?

Take a moment. Think of yourself as an amateur anthropologist and try to step out of American culture, however briefly.

It is often difficult to get white people to accept what at first appears to contradict the evidence they can see clearly with their own eyes -- but which is really the result of a history of perceptual learning. However, the reason that blacks view themselves as more varied is not that their vision is more accurate. Rather, it is that blacks too have a long -- but different -- history of perceptual learning from that of whites (and also that they have been observers of a larger range of human variation).

The fact of greater physical variation among blacks than whites in America goes back to the principle of hypo-descent, which classifies all people with one black parent and one white parent as black. If they were all considered white, then there would be more physical variation among whites. Someone with one-eighth white "blood" and seven-eighths black "blood" would be considered white; anyone with any white ancestry would be considered white. In other words, what appears to be a difference in biological variability is really a difference in cultural classification.

Perhaps the clearest way to understand that the American folk taxonomy of race is merely one of many -- arbitrary and unscientific like all the others -- is to contrast it with a very different one, that of Brazil. The Portuguese word that in the Brazilian folk taxonomy corresponds to the American

"race" is "tipo." Tipo, a cognate of the English word "type," is a descriptive term that serves as a kind of shorthand for a series of physical features. Because people's physical features vary separately from one another, there are an awful lot of tipos in Brazil.

Since tipos are descriptive terms, they vary regionally in Brazil -- in part reflecting regional differences in the development of colloquial Portuguese, but in part because the physical variation they describe is different in different regions. The Brazilian situation is so complex I will limit my delineation of tipos to some of the main ones used in the city of Salvador, Bahia, to describe people whose physical appearance is understood to be made up of African and European features. (I will use the female terms throughout; in nearly all cases the male term simply changes the last letter from "a" to "o.")

Proceeding along a dimension from the "whitest" to the "blackest" tipos, a loura is whiter-than-white, with straight blond hair, blue or green eyes, light skin color, narrow nose, and thin lips. Brazilians who come to the United States think that a loura means a "blond," and are surprised to find that the American term refers to hair color only. A branca has light skin color, eyes of any color, hair of any color or form except tight curly, a nose that is not broad, and lips that are not thick. Branca translates as "white," though Brazilians of this tipo who come to the United States -- especially those from elite families -- are often dismayed to find that they are not considered white here, and, even worse, are viewed as Hispanic despite the fact that they speak Portuguese.

A morena has brown or black hair that is wavy or curly but not tight curly, tan skin, a nose that is not narrow, and lips that are not thin. Brazilians who come to the United States think that a morena is a "brunette," and are surprised to find that brunettes are considered white but morenas are not. Americans have difficulty classifying morenas, many of whom are of Latin American origin: Are they black or Hispanic? (One might also observe that morenas have trouble with Americans, for not just accepting their appearance as a given, but asking instead "Where do you come from?" "What language did you speak at home?" "What was your maiden name?" or even, more crudely, "What are you?")

A mulata looks like a morena, except with tight curly hair and a slightly darker range of hair colors and skin colors. A preta looks like a mulata, except with dark brown skin, broad nose, and thick lips. To Americans, mulatas and pretas are both black, and if forced to distinguish between them would refer to them as light-skinned blacks and dark-skinned blacks, respectively.

If Brazilians were forced to divide the range of tipos, from loura to preta, into "kinds of whites" and "kinds of blacks" (a distinction they do not ordinarily make), they would draw the line between morenas and mulatas; whereas Americans, if offered only visual information, would draw the line between brancas and morenas.

The proliferation of tipos, and the difference in the white-black dividing line, do not, however, exhaust the differences between Brazilian and American folk taxonomies. There are tipos in the Afro-European domain that are considered to be neither black nor white -- an idea that is difficult for Americans visiting Brazil to comprehend. A person with tight curly blond (or red) hair, light skin, blue (or green) eyes, broad nose, and thick lips, is a sarara. The opposite features --straight black hair, dark skin, brown eyes, narrow nose, and thin lips -- are those of a cabo verde. Sarara and cabo verde are both tipos that are considered by Brazilians in Salvador, Bahia, to be neither black nor white.

When I interviewed my American daughter and her Brazilian boyfriend, she said she was black because her mother is black (even though I am white). That is, from her American perspective, she has "black blood" -- though she is a morena in Brazil. Her boyfriend said that he was not black because, viewing himself in terms of Brazilian tipos, he is a mulato (not a preto).

There are many differences between the Brazilian and American folk taxonomies of race. The American system tells you about how people's parents are classified but not what they look like. The Brazilian system tells you what they look like but not about their parents. When two parents of intermediate appearance have many children in the United States, the children are all of one race; in Brazil they are of many tipos.

Americans believe that race is an immutable biological given, but people (like my daughter and her boyfriend) can change their race by getting on a plane and going from the United States to Brazil -- just as, if they take an avocado with them, it changes from a vegetable into a fruit. In both cases, what changes is not the physical appearance of the person or avocado, but the way they are classified.

I have focused on the Brazilian system to make clear how profoundly folk taxonomies of race vary from one place to another. But the Brazilian system is just one of many. Haiti's folk taxonomy, for example, includes elements of both ancestry and physical appearance, and even includes the amazing term (for foreigners of African appearance) un blanc noir --literally, "a black white." In the classic study Patterns of Race in the Americas, anthropologist Marvin Harris gives a good introduction to the ways in which the conquests by differing European powers of differing New World peoples and ecologies combined with differing patterns of slavery to produce a variety of folk taxonomies. Folk taxonomies of race can be found in many -- though by no means all -- cultures in other parts of the world as well.

The American concept of race does not correspond to the ways in which human physical appearance varies. Further, the American view of race ("hypo-descent") is just one among many folk taxonomies, none of which correspond to the facts of human physical variation. This is why race is a myth and why races as conceived by Americans (and others) do not exist. It is also why differences in behavior between "races" cannot be explained by biological differences between them.

When examining the origins of IQ scores (or other behavior), psychologists sometimes use the term "heritability" -- a statistical concept that is not based on observations of genes or chromosomes. It is important to understand that questions about the heritability of IQ have nothing to do with racial differences in IQ. "Heritability" refers only to the relative ranking of individuals within a population, under given environmental conditions, and not to differences between populations. Thus, among the population of American whites, it may be that those with high IQ's tend to have higher-IQ children than do those with low IQs. Similarly, among American blacks, it may be that those with high IQ children.

In both cases, it is possible that the link between the IQs of parents and children may exist for reasons that are not entirely environmental. This heritability of IQ within the two populations, even if it exists, would in no way contradict the average social advantages of American whites as a group compared to the average social disadvantages of American blacks as a group. Such differences in social environments can easily account for any differences in the average test scores between the two groups. Thus, the heritability of IQ within each group is irrelevant to <u>understanding</u> differences between the groups.

Beyond this, though, studies of differences in behavior between "populations" of whites and blacks, which seek to find biological causes rather than only social ones, make a serious logical error. They assume that blacks and whites are populations in some biological sense, as sub-units of the human species. (Most likely, the researchers make this assumption because they are American and approach race in terms of the American folk taxonomy.)

In fact, though, the groups are sorted by a purely social rule for statistical purposes. This can easily be demonstrated by asking researchers how they know that the white subjects are really white and the black subjects

are really black. There is no biological answer to this question, because race as a biological category does not exist. All that researchers can say is, "The tester classified them based on their physical appearance," or "Their school records listed their race," or otherwise give a social rather than biological answer.

So when American researchers study racial differences in behavior, in search of biological rather than social causes for differences between socially defined groups, they are wasting their time. Computers are wonderful machines, but we have learned about "garbage in/garbage out." Applying complex computations to bad data yields worthless results. In the same way, the most elegant experimental designs and statistical analyses, applied flawlessly to biologically meaningless racial categories, can only produce a very expensive waste of time.

As immigrants of varied physical appearance come to the United States from countries with racial folk taxonomies different from our own, they are often perplexed and dismayed to find that the ways they classify themselves and others are irrelevant to the American reality. Brazilians, Haitians, and others may find themselves labeled by strange, apparently inappropriate, even pejorative terms, and grouped together with people who are different from and unreceptive to them. This can cause psychological complications (a Brazilian immigrant -- who views himself as white -- being treated by an American therapist who assumes that he is not).

Immigration has increased, especially from geographical regions whose people do not resemble American images of blacks, whites, or Asians. Intermarriage is also increasing, as the stigma associated with it diminishes. These two trends are augmenting the physical diversity among those who marry each other -- and, as a result, among their children. The American folk taxonomy of race (purportedly comprised of stable biological entities) is beginning to change to accommodate this new reality. After all, what race is someone whose four grandparents are black, white, Asian, and Hispanic?

Currently, the most rapidly growing census category is "Other," as increasing numbers of people fail to fit available options. Changes in the census categories every 10 years reflect the government's attempts to grapple with the changing self-identifications of Americans -- even as statisticians try to maintain the same categories over time in order to make demographic comparisons. Perhaps they will invent one or more "multiracial" categories, to accommodate the wide range of people whose existence defies current classification. Perhaps they will drop the term "race" altogether. Already some institutions are including an option to "check as many as apply," when asking individuals to classify themselves on a list of racial and ethnic terms.

Thinking in terms of physical appearance and folk taxonomies helps to clarify the emotionally charged but confused topic of race. Understanding that different cultures have different folk taxonomies suggests that we respond to the question "What race is that person?" not by "Black" or "White," but by "Where?" and "When?"

PHOTO (COLOR): The author's daughter

PHOTO (COLOR): Race is like an avocado, says Fish: It goes fro fruit to veggie based on where it is.

PHOTO (COLOR): Dolores Newton, Ph.D., Fish's wife, is a cultural anthropologist.

PHOTO (COLOR): Krekamey Fish (left) is considered 'black' in america because she inherited 'black blood' from her mother.

DOUBLE TAKES

Twins of differing racial appearance make apparent the absurdity of race as biological classification. In the U.S., all four twins are considered black, since they all have one black parent and hence "black blood." Clearly, "blood" is different from genes. In Brazil, where racial classification is based on appearance, each twin would be a different tipo -- and seen other ways in cultures with other folk taxonomies. At right, mark Smith (r) says of Rick (I): "We are identical in almost every possible way except for the color of or skin. Yet for most of his life, Rick was treated as an inferior. It is a disgrace." At left, twins Reece (I) and Louise (r) Simmons are "minireplicas" of their mom and dad.

-- Jefferson Fish

PHOTO (COLOR): Double Takes

PHOTO (COLOR): Mark Smith and Rick

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