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AnthroNotes

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FORGET THE OLD LABELS: HERE'S A NEW WAY TO LOOK AT RACE

by Boyce Rensberger

You're not a racist. You know that deep down inside, all people are pretty much the same, no matter what color their skin or what shape their eyelids.

But you are curious about differences among these groups that we call races. Everybody is.

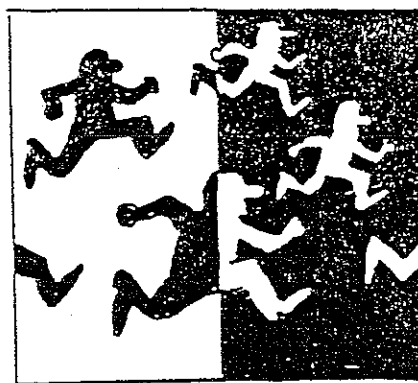
Why do most people from Europe have pale skin? Why is the hair of Africans tightly curled? Why do most Africans and most Europeans—and their descendants in this country—have eyes that are shaped alike but are so different from an Asian's eyes. Or maybe you wonder why people come in so many colors and facial forms in the first place. And many people wonder whether the differences are more than skin deep.

These are honest, scientifically worthy questions. In fact, scientists have tried for centuries to answer them. After discarding many mistakes in their interpretations, today's researchers generally agree on three major discoveries.

1. There are many more differences among people than the obvious ones such as skin color and facial form. Dozens of other variations have been found that are more than skin deep. We'll look at some of them shortly.
2. These differences have been good for the human species. If we were not so diverse, we would not

be such an evolutionary success. For example, without the protection of dark skin, our ancestors in Africa could not have survived the strong tropical sun.

And when some of those ancestors migrated to the climate of northern Europe, where there is less sunlight, they could not have survived unless they lost most of their skin color. We'll get back to this too.

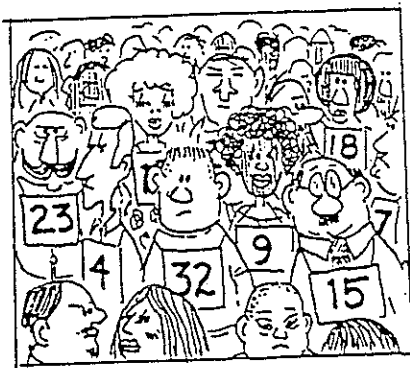


3. The third conclusion is probably the hardest to understand—races don't really exist, at least not outside our imaginations. We all use the word "race" as if it meant something specific and clear-cut. We talk and act as if blacks, whites and others belong to different groups that developed naturally long ago. But, according to most anthropologists today, that isn't true. They say races are mostly arbitrary categories invented by people to fit a misunderstanding about how human beings evolved.

A few centuries ago, European scientists claimed that races were natural divisions of the human species. Some even argued that races represented a series of evolutionary stages, some "more advanced" than others. The old-time researchers knew of very few differences among various peoples and did not fully understand how evolution works. In fact, the concept of race was developed long before 1859, when Charles Darwin, the English naturalist, published his discoveries about evolution.

In 1735, Carl von Linne, the Swedish naturalist better known as Linnaeus, said there were four races. Over the years dozens of other classifications have been proposed, some arguing that there are as many as 31 or even 37 races.

Today, anthropologists are aware of many differences that were never noticed before and that don't correspond to racial categories. More important, the more that researchers study people worldwide, the more they realize that if they take into account all the hidden differences, they get a very different picture of what is similar or dissimilar among groups. If you consider each feature by itself, you see that a person of one race can be more like a person of another race than he or she is like someone of their own race.



Take blood for example. African blacks may be any of the four major blood types: A, B, O and AB. The same is true of European whites and of Asiatic peoples. If you're a type O, your blood is more closely related to that of any other type O person—regardless of race—than it is to a type B or type A of your own race. If you need a blood transfusion, you shouldn't care whether the donor's skin color is like

yours; you want someone with blood like yours. The same is true of organ transplants. Your closest genetic match for a donated kidney, for example, could easily be somebody of another "race."

The same race-blind relationships are true of many physical factors, from the critical to the trivial. Take ear wax, which comes in two kinds. One is wet and sticky; the other is dry and crumbly. The vast majority of Africans and Europeans have the same kind—wet and sticky—while the vast majority of Asians have the dry kind.



We can also look at racial differences from another angle. Lots of people think that skin color is a major factor in pigeonholing people in racial groups. Yes, it is true that most Africans and their descendants have skin that is darker than that of most Europeans and their descendants. But millions of people in India, classified by some anthropologists as members of the "Caucasoid," or "white," race, have darker skin than most Americans who call themselves black. Does their black skin mean that they should be grouped with black Africans? Or does their straight hair mean they should be grouped with Europeans?

Also, many "Negroid" people living in sub-Saharan Africa today (such as the !Kung San, or Bushmen) have skin no darker than that of many Mediterranean people such as the Spaniards, Italians, and Greeks. And there are people in New Guinea who are as black and woolly-haired as any African but have no known ancestral links to Africa.

And here's another angle to think about. If you want to classify all black Africans in one group, how do you deal with the fact that within Africa live

several kinds of people with much more dramatic differences than skin color. There are the world's smallest people, the Mbuti pygmies of Zaire who average 4-foot-7 and whose size is very similar to that of a group in the Philippines called the Negritos. And there are the world's tallest, the Tutsi of Rwanda, who average 6-foot-1—close to the average for the very pale-skinned Scandinavian peoples. The two African ethnic groups live just a few hundred miles apart but have remained separate. In size, they more closely resemble other ethnic groups who live very far away.

Among Africans are still other kinds of diversity that are more than skin deep. Such differences within the usual broad racial groups have led most anthropologists to say it makes no sense to think that races are biological categories. You can classify specific traits but not people who are bundles of different combinations of traits.

Sherwood L. Washburn, an anthropologist at the University of California at Berkeley, has long questioned the usefulness of racial classification. "Since races are open systems which are integrating, the number of races will depend on the purpose of the classification," he says. "I think we should require people who propose a classification of races to state in the first place why they wish to divide the human species."

The overwhelming conclusion of anthropologists, in short, is that no physical feature distinguishes any race. Not even a combination of traits will do the job.

SO HOW COME PEOPLE ARE DIFFERENT?

Biologists say most racial differences arose as a result of a process called natural selection. This is the phenomenon that Darwin discovered in the 19th century, and it explains a lot about how evolution happens. In a nutshell, it means that if a mutation—a change in a person's genes—produces a useful feature, the person with that change is more likely to be healthier, live longer and, most important for

evolution, have more children. Since the change is in the genes, the children inherit it. Because the change gives each person an advantage in survival, eventually those with it will outnumber those without it.

Skin color provides an excellent example. People whose ancestors have lived a long time in the tropics have dark skin. And the farther people lived from the equator, the lighter their skin. Even southern Europeans usually are darker than northern Europeans. In Africa, the darkest skins are near the equator, but at the north and south ends of the continent, the skins are lighter. In southern India, many people are as dark as the blackest Africans while northern Indians are about as light as southern Europeans. Whatever the skin color, it is all due to different amounts of a dark brown substance called melanin.

This north-south spectrum has evolved in response to the sun's intensity in local regions. Too much sun causes sunburn and skin cancer. Too little deprives the body of vitamin D. Without this vitamin, bones grow crooked, resulting in a disease called rickets. In the tropics, the sun is so strong that enough gets through dark skin to make all the vitamin D a person needs.

When dark-skinned people first migrated out of Africa and into northern climates, they may well have suffered rickets, which also can deform the pelvis, making childbirth dangerous or impossible. But because skin color can vary slightly even within a family, lighter-skinned children would be less affected. As a result they would probably have more children than their darker relatives. And those children would be even more likely to have lighter-skinned children of their own.

After many generations, the natural effect of the combination of dark skin and low sunlight would select for people who had lost more and more of their original color. This is Darwin's natural selection at work.

Only a few external differences other than color appear to provide a survival advantage. The strongest case can be made for nose shape. People native to colder or drier climates tend to have longer, more beak-shaped noses than those living in hot and humid regions. This is because the nose's job is to warm and humidify air before it reaches the sensitive lungs. The longer the air's path to the lungs, the warmer and more humid the air.



Migration is a key player in the evolutionary drama. Geneticists know that if all members of a species stay in one breeding population, all will stay the same or change in the same ways. But if some members move away and become isolated from the rest of the species, the two groups evolve in different ways. Any mutation in one group eventually can change it forever but can have no effect on the other group—as long as the two don't interbreed.

Human beings are very mobile. They like to pull up stakes and move long distances before settling down. Many times the migratory group loses all contact with the old folks at home. This is why hundreds of different languages have developed. If our ancestors had stayed in touch over thousands of years, we'd probably all speak the same language today. Another result of losing touch is reproductive isolation, which means that any changes in the genes cannot be transmitted to another group.

The fact that people of so many different physical types do exist is proof of long periods of reproductive isolation.

SEXUAL SELECTION PLAYS A ROLE

Aside from the examples above, there is little evidence that any other visible differences among people have any practical advantage. For example, nobody knows why Asiatic people have that special form of upper eyelid or flatter facial profiles.

The thin lips of northern Europeans and many Asians have no known advantage over the full lips of many Africans and Middle Eastern peoples. Why do middle-aged white men go bald so much more often than men of other backgrounds? Why does the skin of the !Kung San, or Bushmen, wrinkle so heavily in middle age when that of most other Africans resists wrinkling far better than that of Europeans?

One possible explanation is another evolutionary process that Darwin also discovered—sexual selection. This differs from natural selection, in which the environment chooses who will survive. In sexual selection, the choice is up to the prospective mate.

In simple terms, ugly persons will be less likely to find mates and pass on their genes than will beautiful people. And, of course the definition of beauty varies from culture to culture. Consider the fact that white Europeans and their descendants are usually so much hairier than Africans or Asians. Some anthropologists have suggested that this evolved because white women, like female lions, preferred males with imposing facial fur.

There is a third way that differences can appear in isolated groups—especially traits that are neither good nor bad for a person. Imagine a family with straight finger prints. If the children marry people with curved finger prints, their new genes (offering no advantage) might never become common, or might even disappear. But if this one family strikes out on its own and founds a new settlement in some

remote region, straight finger prints eventually might be the rule among all the family's descendants. This kind of evolution is called genetic drift.

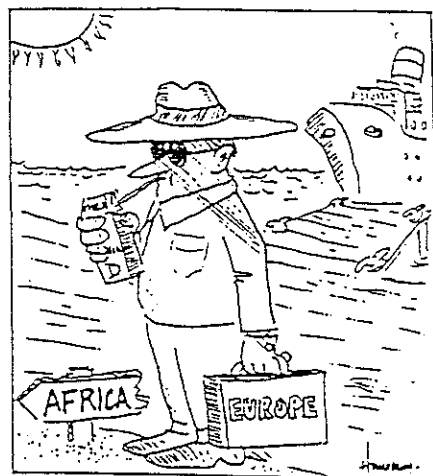
Although reproductive isolation is essential to produce differences, there is plenty of evidence that no group of humans has stayed isolated for more than a few thousand years. For one thing, a very long separation between two groups allows their genes to become so different that the groups no longer can interbreed. The fact that all peoples can intermarry and have healthy children proves that we all remain members of the same species. Our differences are trivial in a biological sense. In fact, geneticists have estimated that the variations in genetic makeup that account for racial differences occupy only about 0.01 percent of our genes.

SO, WERE THERE EVER PURE RACES?

Until the mid-20th century, most researchers assumed that so-called pure races once existed. Those early thinkers had great trouble figuring out who belonged in which race and decided that was simply because migrations and intermarriage had mixed up, or blended, the once-distinct traits. Today, most anthropologists hold that pure races never existed. They think that human beings have always been migrating and intermarrying, spreading new genes worldwide.

Genes useful in all parts of the world would spread quickly—those, for example, that might improve the immune system. Surely the fastest to spread were the genes that improved the brain. In fact, anthropologists who study the earliest human beings agree that a fully modern brain evolved long before any of today's races came into existence.

Genes useful only in some areas would tend not to become common when they were carried to other places. Dark skin, for example, is not an advantage in cold climates. Light skin is a serious disadvantage in tropical climates. So skin color genes could not flow far and persist, at least not until the age of milk fortified with vitamin D, large hats, and long sleeves.



Still, many genes that had no significant good or bad effects—such as those of blood type or ear wax, can spread far and did. But few have come to 100 percent prevalence anywhere. In fact, the varying degrees of prevalence of certain traits provides a clue to the kind of race mixing and genetic blending that has always been part of human history.

Look at the three maps with this article. They plot the Old World distribution of three major genetically controlled features: type-A blood and two supposed markers of race—hair form and skin color. The traits are largely independent of one another. No combination of traits can be offered as defining any race.

The bottom line, anthropologists agree, is that the science does not support the idea of races as natural units, now or in the past. You cannot pick just one or even a few traits and claim that they define a biological category. People have tried to do this using the most visible features such as skin color, facial form, but have ignored all unseen genetic variability, which doesn't fit the visible pattern.

Perhaps if humans were blind to everything but ear wax, we would say there are two races. If all that mattered was ABO bloodtype, we would argue that there are four races.

SO WHAT?

After the many misunderstandings of the past, the great lesson of anthropology, biology and genetics

is that all people are the same in the essentials but are highly diverse in a few things. These differences have arisen not because there are fundamentally different kinds of people but simply because we are a restless, curious, hopeful migratory species whose intelligence has allowed us to make a good living in almost every environment on Earth.

Human beings are more mobile than ever, and genes are flowing farther and more widely than ever. In many parts of the world this is blending once-diverse features. But if the past is a guide, no amount of blending is likely to take away the diversity that has made the human species so successful and that surely will prove useful as the environment on Earth changes in centuries ahead.

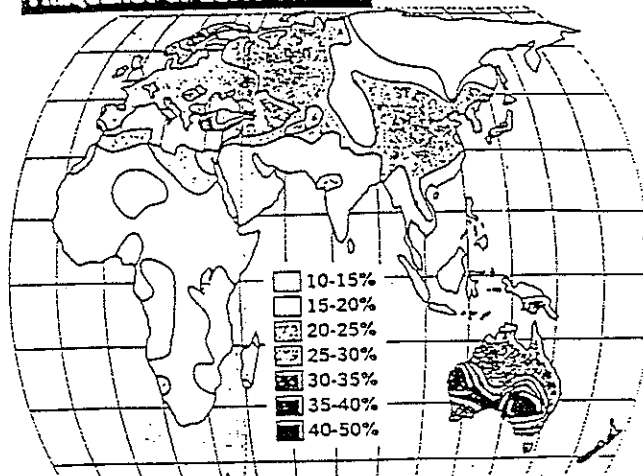
SET UP YOUR OWN RACIAL CLASSIFICATION

If there really are races, shouldn't you be able to see them in maps like these? The maps show the distribution of three genetic traits, all in people whose ancestors have lived in each area since ancient times. Where would you draw the racial boundaries?

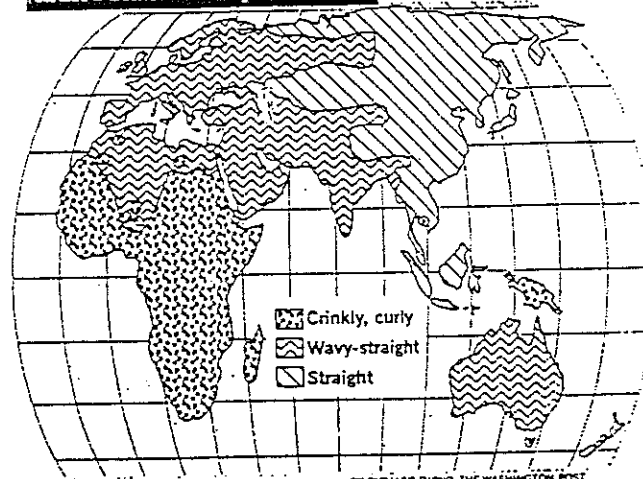
The fact is that these and all other variable traits are distributed independently. In other words, just because you have one trait, it has nothing to do with whether you have another one. Consider the aborigines of Australia. Their hair form (wavy-straight) is like that of European whites. Their skin color is like that of African blacks. And their prevalence of blood type A resembles that of a huge swath of the world from Europe to southern Asia.

You might think it would help to consider additional features such as the shapes of noses, lips and eyes. But it doesn't. They, too, are independently distributed and maps showing their distribution would be even more confusing.

FREQUENCY OF BLOOD TYPE 'A'

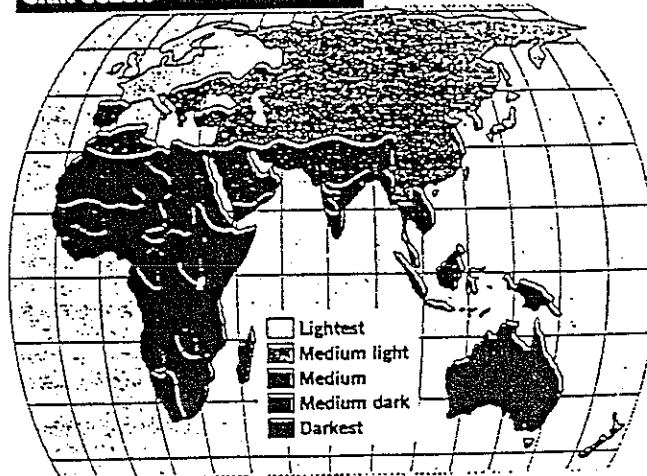


HAIR FORM



BY RICHARD FURNO-THE WASHINGTON POST

SKIN COLOR



SOURCE: "The Kinds of Mankind," by Morton Klass and Hal Hellman

RACE AND INTELLIGENCE

Arguments that one human population is intellectually superior to another are fairly new in human history, dating mainly from the time of massive enslavement of Africans. The idea of using Africans in the New World, however, grew out of the racist assumption that they were superior to the American Indians. Bartolome de las Casas, a Spanish priest of the 1500s, argued that Indians being enslaved by the Spanish conquerors were not up to the "civilized" work demanded of them in farming, mining and industry. He argued that the colonial rulers should import more advanced peoples such as Africans.

Much later, when some people challenged the morality of slavery, defenders claimed that Africans were not fully human, especially in intellect.

In modern times, researchers have made many tests of the mental powers of all groups of people and repeatedly found that if they test people of equivalent social and educational background, they find no significant differences. In 1961, the council of the American Anthropological Association ruled unanimously that it knew of no evidence that any population was less capable than any other of participating fully in modern, complex society. Further studies have reinforced that conclusion. ♦

If you want to know more, here are three good books:

Human Variation: Races, Types and Ethnic Groups. 3rd ed. by Stephen Molnar. Prentice Hall, 1992. (A detailed look at what science knows about variation among humans.)

The Mismeasure of Man by Stephen Jay Gould. Norton, 1981. (A highly readable treatment of science's early misadventures, some brutal and tragic, with the concept of race.)

The Evolution of Racism by Pat Shipman. Simon & Schuster, 1994. (A history of race theory and racism from Darwin's day through the ill-conceived eugenics movement and Nazism to the modern view.)



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Boyce Rensberger is a science writer for The Washington Post.

About Boyce Rensberger:

Boyce Rensberger is the creator and editor of the Horizon Section of the *Washington Post*, published the second Wednesday of each month. He chose the provocative topic of race as the first Horizon article, reprinted here. His research into race was generated out of curiosity, and a belief that it was time to address the issue "for which there is a lot of interest and misunderstanding."

Rensberger, who has an undergraduate degree in zoology, has been a science writer for newspapers and magazines for the past thirty years. Prior to coming to *The Washington Post* ten years ago, Rensberger was science editor of *Science* 1980 from 1981-84 and for eight years a writer for the *New York Times*. He finds his stories by reading scientific journals and magazines and by attending professional meetings to learn about new developments in the sciences.

Rensberger has long been interested in anthropology, particularly human evolution and physical anthropology. In the 1970s, his interest piqued while spending a year in East Africa at sites well-known for evidence of early human activity, namely Olduvai Gorge and Koobi Fora, working with scientists such as Donald Johanson, F. Clark Howell, and various members of the Leakey family.