

## symposium

# Q: Is there a biological basis for race and racial differences?

**Yes: Differences between the races are shown to be real by growing scientific evidence.**

BY J. PHILIPPE RUSHTON



Rushton is a professor of psychology at the University of Western Ontario in Canada and is the author of *Race, Evolution, and Behavior* and more than 200 scientific articles.

For the last 20 years my research has focused on differences between the three major races, commonly termed Orientals (East Asians/Mongoloids), whites (Europeans/Caucasoids) and blacks (Africans/Negroids). Roughly speaking, Orientals are those who have most of their ancestors from East Asia. Whites have most of their ancestors from Europe. And blacks have most of their ancestors from sub-Saharan Africa. In the main, I have not addressed the many other groups and sub-groups.

What I've found is that in brain size, intelligence, temperament, sexual behavior, fertility, growth rate, life span, crime and family stability, Orientals fall at one end of the spectrum, blacks fall at the other end and whites fall in between. On average, Orientals are slower to mature, less fertile and less sexually active, and have larger brains and higher IQ scores. Blacks are at the opposite end in each of these areas. Whites fall in the middle, often close to Orientals.

Of course, these three-way racial differences are averages. Individuals are individuals. However, I've found that this three-way pattern is true over time and across nations. That the same three-way racial pattern occurs repeatedly on some 60 different biological and behavioral variables is profoundly interesting and shows that race is more than "just skin deep." The international data come from the World Health Organization, the United Nations and Interpol. Recently, I even traveled to South Africa to collect new IQ data.

Let's start with the biological differences in sports, which is something almost everyone observes. Jon Entine's recent book, *Taboo: Why Black Athletes Dominate Sports and Why*

*We Are Afraid to Talk About It*, addresses the old cliché that "white men can't jump" (and the new one that Oriental men jump even less well). Entine shows that in sports black men and women have a genetic advantage. Compared to whites, blacks have narrower hips, wider shoulders, less body fat and more muscle.

Blacks also have from 3 to 19 percent more of the sex hormone testosterone than whites or Orientals. This translates into more explosive energy, which gives blacks the edge in sports such as boxing, basketball, football and sprinting.

Why is it taboo to say that blacks are on average better at sports? Because the next question is, "Why do whites and East Asians have wider hips — proportional to their body size — than blacks, and so make poorer runners?" The answer is that they give birth to larger-brained babies. During evolution, as the head size of newborns increased, women had to have a wider pelvis.

The hormones that give blacks the edge in sports also make them more masculine in general. They are physically more active in school, and this can get them into trouble and even lead to their being diagnosed as hyperactive.

Race differences show up early in life. Black babies are born a week earlier than white babies, yet they mature faster as measured by bone development. By age 5 or 6, black children excel in the dash, the long jump and the high jump, all of which require a short burst of power. By the teen-age years, blacks have faster reflexes, as in the famous knee-jerk response.

The biological factors underlying race differences in sports have consequences for educational achievement, crime and sexual behavior. In educational achievement and occupational success, Orientals average slightly ahead of whites, who average substantially ahead of blacks. On standardized IQ tests, hundreds of studies show this three-way pattern. Most IQ tests have an average score of 100, with a "normal" range from 85 to 115. Whites average from 100 to 103. Orientals in Asia and the United States tend to have higher scores, about

(continued on page 42)

# No: The so-called distinctions are science fiction and have a social and political agenda.

BY JOSEPH L. GRAVES JR.



*Graves is professor of evolutionary biology at Arizona State University and is the author of The Emperor's New Clothes: Biological Theories of Race at the Millennium.*

The American conception of race is a social, not a biological, construct. I recently summarized the history of race concept in the Western world. The development of the concept of races and the biological theories used to define these inextricably were linked to social changes resulting from the European voyages of discovery. For example, while the classical ancient civilizations of the Western world (Egyptian, Hebrew, Greek, Roman) did recognize the existence of human physical differences, theories of racial hierarchy did not arise until much later. European notions of the generalized inferiority of Africans surfaced after the defeat of the Muslims in the Mediterranean and Southern Europe in the 15th century. The dominance of the Ottoman Turks over the spice routes to the Indies made it necessary for Europeans to further develop their sailing technology. Thus, the need to find new trade routes to the East brought about the voyages of discovery. These, in turn, opened new lands to European colonization. The colonization of the New World brought together people from vastly different portions of the world for the first time.

Instead of the continuous variation in human forms observed by early European explorers such as Marco Polo, the colonizers of the New World saw discrete categories (Europeans, American Indians and Africans). A period of brutal warfare began soon after these populations came into contact. European populations subjugated the indigenous Indian nations of the New World, imported and enslaved Africans and created a hitherto nonexistent social and cultural system inextricably linked to the concept of race.

Theories relating to the biology of the newly encountered populations could not help but reflect this process. For the first time, questions were posed as to whether the conquered and enslaved populations were truly human or were some sub-human varieties distinctly below Europeans on the scale of nature. The process of conquest and enslavement created the environmental conditions under which the natural (genetic) potentials of the populations involved were expressed. Thus, if naturalists of this period claimed that the African slave and the American Indian seemed less on any particular trait relative to the European, they sometimes were accurately describing what they observed.

They made two mistakes however. First, they usually were judging these populations by some European norm of cultural accomplishment and, second, they confused the degradation imposed on these people by colonialism and slavery for their natural condition. For example, Thomas Jefferson wrote of the

natural inferiority of Negroes, particularly with regard to their supposed lack of intelligence, without being able to recognize his own role in the creation of the social conditions responsible for these same observations. American society has been dominated by the race fallacy for more than three centuries.

Fortunately, as we enter the 21st century, we now understand that no biological bases for the race concept exist within the

human species. Properly understood, biological races require certain amounts of genetic variation to be manifested between particular populations or that biological populations have maintained unique evolutionary lineages within the lifetime of a species. Neither of these facts is true for anatomically modern Homo sapiens.

There is very little population subdivision in modern humans compared to other large mammals with strong abilities to disperse. There is more genetic variation within one tribe of Western African chimpanzees than found in the entire human species. For example, in 1998, *Science* magazine's genome issue devoted a section to explaining the rift between genetic reality and the racial categories to be used by the Office of Management and Budget (OMB) for the 2000 census. Commenting in that same issue, Yale University geneticist Kenneth Kidd stated: "One of the benefits that's going to come from [studies of genome diversity] is an even greater understanding of how similar we all are in our marvelous variation."

Ironically, the public has only a partial awareness of the important implications of these facts. There still are several important ongoing racial myths. When the term "race" is used, it implies the existence of some nontrivial underlying hereditary features shared by a group of people and not present in other groups.

Biological science long has been interested in the identification and quantification of variation in species. It has developed relatively precise tools to examine particular hereditary characteristics exhibited by organisms. When these tools are used to examine any of the physical features used to define human biological races, we find that we cannot unambiguously create the racial divisions of our socially defined groups. Skin color, hair type, body stature, blood groups, disease predisposition or prevalence: None of these alone or in combination defines the "racial" groups that we have constructed. Thus, the average person distinguishes what he or she perceives to be racial categories by observable physical traits.

These physical traits do vary among geographical populations, although not in the ways most people believe. For example, Sri Lankans, Nigerians and Australoids share a dark skin tone but differ in hair type and genetic predisposition for disease.

If one attempts to link physical environment with the evolution of physical characteristics such as body stature, body proportions, skull metrics, hair type and skin color to create a tree of relatedness for human populations, one arrives at trees

*(continued on page 43)*

106, even though IQ tests were made for the European-American culture. Blacks in the United States, the Caribbean, Britain and Africa average lower IQs — about 85. The lowest average IQs are found for sub-Saharan Africans — from 70 to 75.

The relation between brain size and intelligence has been shown by dozens of studies, including state-of-the-art magnetic resonance imaging. Orientals average 1 cubic inch more brain matter than whites, and whites average a very large 5 cubic inches more than blacks. Since one cubic inch of brain matter contains millions of brain cells and hundreds of millions of nerve connections, brain-size differences help to explain why the races differ in IQ.

Racial differences in brain size show up early in life as well.

The U.S. Collaborative Perinatal Project followed more than 50,000 children from birth to age 7. In the 1997 issue of the journal *Intelligence*, I showed that the Orientals in the study had larger brains than whites at birth, four months, one year and seven years; the whites had larger brains than blacks at all ages.

In the United States, Orientals are seen as a “model minority.” They have fewer divorces, out-of-wedlock births and reports of child abuse than whites. More Orientals graduate from college and fewer go to prison. Blacks, on the other hand, are 12 percent of the U.S. population but make up 50 percent of the prison population.

The racial pattern of crime in the United States is not due to local conditions such as “white racism.” The same pattern is found worldwide. Interpol yearbooks show the rate of violent crime (murder, rape and serious assault) is three times lower in East Asian and Pacific Rim countries than in African and Caribbean countries. Whites in European countries are intermediate. The 1996 Interpol violent-crime rates were: East Asian countries, 35 per 100,000 people; European countries, 42; and African and Caribbean countries, 149.

Orientals are the least sexually active, whether measured by age of first intercourse, intercourse frequency or number of sexual partners. Blacks are the most active on all of these. Once again, whites fall in between. These differences in sexual activity affect the rate of sexually transmitted diseases. In the United States today, 2 percent of blacks between ages 15 and 49 are living with AIDS/HIV as opposed to 0.4 percent of whites and .05 percent of Asians, according to data from the Centers for Disease Control and Prevention.

Other data make it plain that the race differences in sexuality are biological in nature. For example, the races also differ in rate of ovulation. Not all women produce one egg during the menstrual cycle. When two or more eggs are produced at the same time, pregnancy and the likelihood of producing

two-egg twins are more likely. The number of twins born is 16 out of every 1,000 births for blacks, eight out of every 1,000 births for whites and four or less for Orientals.

Why do whites fall between Orientals and blacks in so many areas? No purely cultural theory can explain this consistent pattern. Genetic and evolutionary theories are required. Genes play a big part in athletic ability, brain size, IQ and personality. Transracial adoption studies, where infants of one race are adopted and reared by parents of a different race, provide some of the strongest evidence. Oriental children, even if malnourished before being adopted by white parents, go on to have IQs above the white average. Black infants adopted into middle-class white families end up with IQs lower than the white average.

These racial patterns make up what is called a “life-history” or “reproductive strategy.” The traits evolved together to meet the trials of life — survival, growth and reproduction. Race differences make sense in terms of human evolution. Modern humans evolved in Africa about 200,000 years ago. Africans and non-Africans then split about 110,000 years ago. Orientals and whites split about 40,000 years ago.

The further north people went “out of Africa,” the more evolution selected for larger brains, slower growth rates, greater longevity, lower hormone levels, less sexual potency, less aggression and

less impulsivity. Advanced planning, self-control and rule-following are cultural manifestations of these gene-based evolutionary strategies. Surviving in cold environments required increased intelligence and larger brains. The wider hips of white and Asian women evolved to allow them to give birth to larger-brained babies.

What are the implications of this research? One is that we should stop blaming white racism for all society’s problems. If blacks are good at certain sports and Orientals do well in schools, it cannot be because each group is trying to “overcome the prejudice of white society,” because each group shows the same pattern of strengths and weaknesses in their countries of origin.

Sometimes it is claimed by those who argue that race is just a social construct that the human-genome project shows that, because people share roughly 99 percent of their genes in common, there are no races. This is silly. Human genes are 98 percent similar to chimpanzee genes and 90 percent similar to those in mice, which is why these species make good laboratory animals. But no one claims that mice, chimpanzees and humans are nearly the same! That would be laughable. Similarly, although men and women are genetically 99 percent the same, it is foolish to believe that sex is just a “social construction.”

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Much confusion arises because there are several sets of genetic measures. A much more realistic story comes from looking at the 3.1 billion base pairs that make up the 30,000 genes. People differ in one out of every 1,000 of these base pairs. Each change in a base pair can alter a gene. Technically, base-pair differences are called single nucleotide polymorphisms (SNPs). The 99 percent figure is based on DNA sequences which do not differ between people or even most mammals. These can give the impression that human groups and chimpanzees are almost identical because these genes code for similar internal organs, eyes, hands and so on. Though humans and mice look very different, any anatomy student can tell you that even their internal bone structures are very similar.

The Feb. 23 issue of *Science* magazine reported that 2.8 million SNPs were already being sold by Celera Genomics to scientists trying to crack the code of human behavior. Base-pair differences are important and SNPs clump together in races. Just one change in the base pair for hemoglobin, for example, causes sickle-cell anemia, from which many blacks suffer. Other base-pair differences affect IQ, aggression and mental illness. The 3.1 billion base pairs provide plenty of room for large racial differences.

If races did not exist, we would not find the same racial patterns all around the world and over time. The scientific evidence shows that the politically correct mantra that "race is just skin-deep" is a case of deep denial. ●

### GRAVES: *continued from page 41*

that do not match the measured genetic relatedness and known evolutionary history of our species.

For example, such a thesis would link Papuans and Australian Aborigines to sub-Saharan Africans and would link Eskimos and North American Indians to Swedes and French. We know from genetic analyses, however, that Papuans and Australian Aborigines are most distinct from sub-Saharan Africans and that Eskimos and North American Indians are more closely related to Northeast Asians, such as the Japanese.

These failures result from the fact that local populations respond to climatic and other external environmental variables to produce physical characteristics adaptive to that specific environment. Thus, in general, tropical populations will have physical traits that match tropical conditions, and northern populations will match northern conditions.

These features of a population's characteristics will be discordant (not correlated) to other aspects of physical make-up. For example, at the same latitude, populations at high altitude might be expected to have greater lung capacity and greater red blood-cell volume than a genetically related population at lower altitudes. We would expect that Kenyans, due to evolving at high altitude, would have greater mean lung capacities and red blood-cell counts than people living in the Congo basin. Yet, at the same time, Kenyan populations at high altitude have a very low frequency of the sickle-cell anemia gene. It has been demonstrated that the prevalence of the sickle-cell trait directly is related to its ability to resist malaria. Malaria transmission is rare at high altitudes. This is because the mosquitoes that carry the parasite require high amounts of moisture.

Genetic adaptation to altitude could explain the recent East African dominance in long-distance running events, particularly if there were cultural changes within the region that allowed greater access for these populations to world compe-

tion during the last 10 years. However, this year the men's Boston Marathon was won by a South Korean, with an Ecuadorian finishing in second place. However, third, fourth, fifth, 10th, 12th, 15th, 16th and 17th place went to East Africans (mostly Kenyans). The women's race gave no evidence of Eastern African domination, with only first, fourth and fifth place going to East Africans. There were four Eastern Europeans, 10 of Western European origin (mostly American) and three East Asians. These results are very far away from suggesting a racial predisposition for this particular sport. For example, the winners in the men's race also came from mountainous countries.

Besides the common misconception of racial sports dominance, there are claims concerning genetically determined racial intelligence, predisposition to criminal behavior and the mistake of conflating racial identity with vulnerability to a particular disease.

If we recognize that biological races do not exist, then the legacies of our social construction of race are more problematic. For example, if no difference in genetic predisposition for intelligence exists between socially constructed races, what is it about our society that causes the mean difference between European- and African-Americans on

standardized tests? How do we explain the persistent 2.5 to 3.5 times greater age-specific mortality from major diseases exhibited by African-Americans? Why are African-Americans found disproportionately in all stages of the criminal-justice system? Are these conditions related to the way in which African-Americans have lived in a society where opportunity continues to be stratified by socially constructed race?

I argue in *The Emperor's New Clothes* that it is imperative that we dismiss the socially determined racial distinctions or we will never progress toward a truly democratic and antiracist society. Individuals must be judged by the content of their character, not from falsely derived social/racial stereotypes. ●

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