

# Study looks at scientific, cultural perspectives on race

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(PhysOrg.com) -- A new study compares personal perceptions of race, color and ancestry of Brazilian high school students with the results of genetic ancestry tests, with the aim of investigating the tensions between cultural and scientific conceptions of race. The research, led by Ricardo Ventura Santos of the Federal University of Rio de Janeiro and Oswaldo Cruz foundation, appears in the December issue of *Current Anthropology*.

Modern genetics can provide detailed information about a person's geographic ancestry. But most scientists agree that human genetic variation doesn't correspond neatly with traditional notions about race.

"In recent decades biologists, especially geneticists, have repeatedly stated that the notion of race does not apply to the human species," Santos and his team write. "On the other hand, social scientists claim that race is highly significant in cultural, historical, and socioeconomic terms because it molds everyday social relations and because it is a powerful motivator for social and political movements based on race differences."

The tension between scientific and cultural conceptions of race is on full display in Brazil. Brazilians pride themselves on their mixed European, African and Amerindian ancestries. But in recent years, racial inequalities—especially for blacks—have spurred controversial government policies, including racial quotas for government jobs and university admissions. "At the same time," the researchers write, "the results of genomic studies that emphasize the considerable extent of

biological admixture in the Brazilian population have been widely reported in the media ..., bringing up further questions about the implementation of public policies based on race.”

In that context, Santos and his team worked with a group of [students](#) from a technical high school just outside Rio de Janeiro. The students were asked in a series of questionnaires to categorize their race or color, and to estimate by percentage their geographic ancestry. The students also gave DNA samples that were used for genetic ancestry tests. The researchers then discussed the results with the students.

“The results of the genomic ancestry tests are quite different from the perceived ancestry estimates,” the researchers report. In general, the genomic results showed that the students had far more European ancestry than they had thought.

For example, students who categorized themselves as “black” perceived their ancestry to be, on average, were 63 percent African, 19.8 percent Amerindian and 17 percent European. But the genetic tests showed that European ancestry actually dominates among the black students. The tests showed average ancestry as 51.7 percent European, 40.9 percent African and 7.4 percent Amerindian.

Students who saw themselves as “brown” perceived themselves as having roughly equal European, African, and Amerindian ancestry. The genetic test again, however, came out more European—in fact, over 80 percent European. White students, who perceived themselves as having substantial African and Amerindian decent, were shown by the tests to have very little of either.

The students’ reactions to the results varied.

“Students who had classified themselves as white generally declared

themselves ‘disappointed’ with the low percentages of African and Amerindian ancestry in their genomic reports,” the authors write. Others were “disconcerted” when their test results showed high European ancestry.

Some were even defiant. “In spite of that high percentage of European ancestry I won’t cease to be ‘black’; never!” one student said.

One student greeted the news with humor.

“One girl, who had classified herself as brown, talked about her ambition to become a ballet dancer; but, according to her, the admission process of ballet companies, especially classical ballet, favored girls with whiter skin,” the researchers write. “She said jokingly that at the next admission exam she was going to dance with the genomic test results glued to her forehead, proving her predominately European ancestry.”

Some addressed issues of public policy and race directly.

“Mine is 96 percent European, 1 percent Amerindian, 3 percent African,” one student said. “I guess the only thing that changes is that I don’t have a chance of getting on the quota.”

There is little doubt the influence of genomics on societies will continue to grow. This study, the authors say, “is pertinent to understanding the complex ways in which information about genetics may be interpreted by the lay public, and why it pervades the politics of race and/or racism affecting national policies designed to promote social inclusion.”

More information: Ricardo Ventura Santos, Peter H. Fry, Simone Monteiro, Marcos Chor Maio, José Carlos Rodrigues, Luciana Bastos-Rodrigues, and Sérgio D. J. Pena, “Color, Race, and Genomic [Ancestry](#) in Brazil: Dialogues between Anthropology and Genetics.” [Current](#)

[Anthropology](#) 50:6 (December 2009).

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