

What is Race?

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The term race has long had a connotation of being science based and meant to distinguish one set of human beings from another in a way that seems to suggest it is a proven scientific fact. As genetic science has evolved from theory to provable fact, scientists know this to be not only false, but in fact, the opposite is true. Race is not a biological construct but rather a social construct and it will be proven through the examination of racial grouping, trait association, geography and environmental influences, natural selection, and the Africa origination and its importance in all human genetic mapping. Further, these findings will be related to racism and inequalities of today's society and the importance of education as a tool to end racism, a very real social construct.

Racial Grouping

Racial grouping is neither scientific nor unbiased as a scientific technique. Racial grouping is the practice of categorizing people based on visual human biological variations like hair appearance, facial qualities, skin pigment and stature. Scientists have found that grouping individuals in this way can sometimes become an automatic mental process to deal with large sample quantities. This information is based solely on visual appearance, and as a result tends to leave the observer with the impression that differences in a population are large and vast. In fact, when population biologist Livingstone observed populations, he concluded "there are no races, only clines" (Livingstone, 1962, p..279), meaning there is only a measurable gradient in a single trait of a species across its variations. Before the discovery and the unlocking of the human genome, scientists were arbitrary in their research which also added to confusion about what is scientifically proven and what is conjecture. Often racial stereotypes would appear in objective

research. The practice allows the misconception of race as a biological category to continue and is a primary opportunity for racism to occur.

Trait Association

The biggest scientific problem with racial grouping is that it has no correlation to any other type of human genetic diversity. Trait association with a certain group, therefore, has no basis in biological genetics. Traits are a highly complex mechanism with hundreds of genetic variants controlling a certain outcome such as eye color, skin color or even body type. Around the middle of the last century, biological science took giant leaps in discovering proof of DNA and genomics. Advances in unlocking the mysteries of the human genome have brought to light many misconceptions about human genetic makeup. Megan Gannon (2016), in her article *Race is a Construct, Scientists Argue* says that these misconceptions “still threaten to fuel racist beliefs” (para. 10). The first fully sequenced genome of a single person was published in just 2003 through the Human Genome Project. Before then, but especially since then, the scientific community has called for the elimination of race as a biological category. In taxonomy, the classification system used for all living things in the study of biology, race has never been a category and thus, the idea of race as a biological construct of trait association needs to be eliminated.

Geography and Environmental Influences

A more accurate way of looking at trait association is through geography and environmental influences. A landmark study by Stanford scientists looked at the diversity of human beings in 7 major regions of the over 4000 alleles, which are variants of a certain genetic code. In this study, over 92% of the alleles were found in more than one region and almost half

of these alleles were in all the environments studied (Chou, 2017, para. 6). Simply put, the genetic makeup of humans in all regions of the world that were studied shared almost all of their genetic makeup in some way or another. There could be no indications made of any significant differences in any racial or ethnic groups. And when a region-specific allele was found it only happened about 1% of the time in people from that area. Conclusively, there is no proof that populations grouped as races have distinct exclusive genetic traits. Humans as a species are estimated to share 99.9% of DNA with each other (Chou, 2017, para.12).

Natural Selection

Natural selection accounts for the variants in most populations as opposed to the idea of race, which would require a separate set of genetic material. The theory of natural selection has long been a pillar of biological study. It states that over time, geography, and environment the genetic structures of living things will adapt and change to survive. These changes lead to mutations that can now be traced through DNA analysis and unlock various information like human migration patterns and how closely two geographic populations interact. Scientists use this information to conclude that these genetic similarities in population are directly due to natural selection and human adaptation and not because these populations are of a different race. (Rosenburg, 2002, abstract)

The Africa Origination

Humans are not only one race but evolved from the same group of people that emigrated from Africa 2000 generations ago and populated Eurasia. DNA studies that map the genetics of early civilizations found humans did not mix with Neanderthals, rather they replaced them. Biologist Cavalli-Sforza (1997) analyzed gene frequencies on one hundred and ten blood system

groups and proteins from samples of about 2,000 aboriginal populations throughout the world. This research found that early people left Africa between 80,000 and 50,000 years ago and reached Australia by 50,000 years ago. His model of human migration from Africa suggests that after Australia, humans settled Asia, then Europe, and finally, via East Asia, the Americas (Cavalli-Sforza, 1997). Therefore, it is impossible to claim people have different genetic makeup when it is proven that all humans are derived from the same source.

Summary

The theory of race defined as a classification of human beings has long been argued by scientists as to the validity of such a claim. Now that science can map the human genome in its entirety, there is certainty and scientific data to support the certainty that race does not exist as a biological construct. Through racial grouping practices, racism has room to flourish, even when the science shows that there is greater genetic difference within a population than across populations. Trait associations can be shown to have across the board similarities and prove that all human beings have essentially the same genetic makeup with variations largely based on geographical and environmental influences. Further, we can eliminate physical trait discrimination by showing the scientific reasoning of natural selection for traits and link it back to the fact that all human genes originate from Africa as found by the science of human genetic mapping. As the science of genetics advances, the language and thinking surrounding race must be updated as well. Race as a biological category and construct is simply outdated and inaccurate and its existence proliferates racist ideas and thinking.

Discussion/Conclusion

Those that subscribe to the construct of race and see it as a valid biological construct are often seeking to increase their own biological value. As Thomas King talks about in *The Truth About Stories*, many of these categorizations and rules are applied simply to exclude, as people often equate the value of authenticity with scarcity. (King, 2003) As he travels around the country to photograph Native American artists, he wonders aloud if he is seeking to increase his own value. He talks about the disadvantages he faces as identifying as a Native American and still seeks to be identified as a Native American because he feels validated and a sense of belonging from that identity. But he also reiterates that in doing so he is invoking social politics and not a biological separation but a cultural one. (King, 2003) As we have shown here, race is not a biological fact. It cannot be proven to have scientific meaning and has been disproven through the study and examination of racial grouping, trait association, geographical and environmental influences, and the African origination of human gene mapping. Scientific education is key in providing the tools needed to eliminate race as a biological construct. Racism may be lessened or possibly eradicated when these biological facts become part of the standard educational requirements of schools across the world. As a society, we must evolve as we learn more and stand up against willful ignorance and misuse of information in the scientific as well as all communities.

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