

SCIENCE IN SOCIETY:

“Race on Both Sides of the Razor”

Keel, T. 2018 *Kalfou: A Journal of Comparative and Relational Ethnic Studies*, 5:1, 7-17.

AUTHOR BACKGROUND



- Dr. Terence Keel is a professor at UCLA with a dual appointment in African American Studies and the UCLA Institute for Society & Genetics

PAPER BACKGROUND

- Analysis of genetics and genomics from a sociological perspective
- Addresses the question of “is race real?” in the biological and social sense
- Moves toward enumerating what must be accounted for such that race can be responsibly incorporated into biological research

**INITIAL
THOUGHTS?**

**INTRO:
THE BIOLOGY OF
RACE**

- **Does race have a biological basis?**
- **Can you determine skin color from DNA?**
- **Does the category of race have meaning/have a place in biology?**

JARGON

- **Social constructionism:** holds that characteristics such as race, gender, etc. are not innate to humans, but are instead “constructed” products of society, influenced by culture (See: [Ghost Stories for Darwin by B. Subramaniam](#))
- **Social Darwinism:** belief that “the powerful in society are innately better than the weak” (See: [Social Darwinism, AMNH](#))

The inclusion of race in research

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Important to study race, at least sociologically, because it has real social, personal, and political consequences (See: [The Importance of Collecting Data and Doing Social Scientific Research on Race, ASA](#))

“Yes, there are geographic differences in human biology and, perhaps, in vulnerabilities to particular diseases. But seeing these differences as meaningfully organized around race is a distraction from the search for the actual social, economic and physiological causes of these diseases” (See: [American Scientist’s “Is Race Real?”](#))

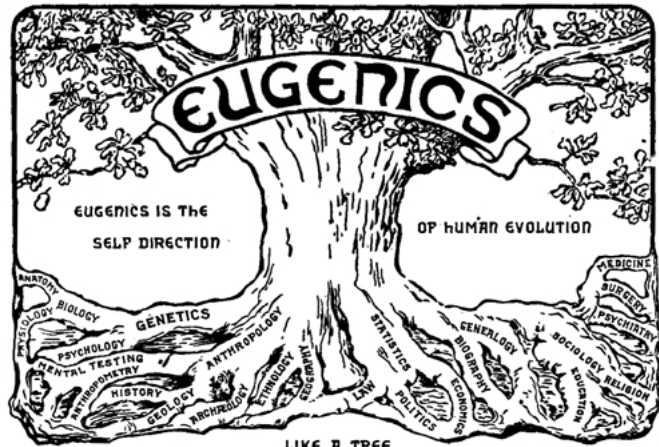
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Phasing out racial terminology in biological sciences would send an important message to scientists and the public alike: Historical racial categories that are treated as natural and infused with notions of superiority and inferiority have no place in biology” (See: [Taking Race Out of Human Genetics](#))

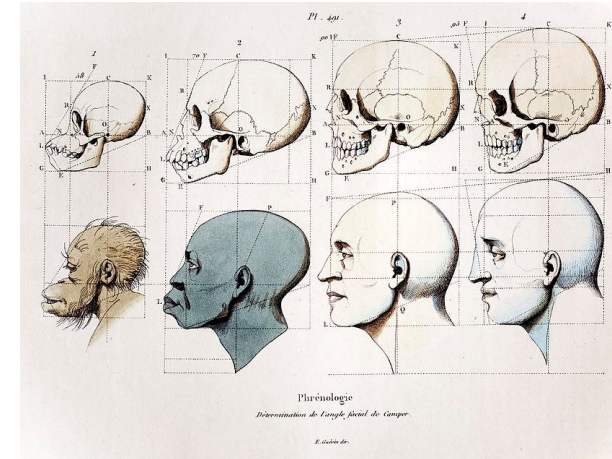
THEMES

- **Distrust of science/scientists' handling of race**
 - “Rebiologization” of race “imputes a power to ‘science’ it does not have” (pg. 9)
 - Doubt of scientists’ ability to “use the race concept, while also remaining...socially responsible” (pg. 10)
 - “social constructionists might be overestimating the degree to which scientists, and those who study them, think that human development (race) is driven by social practices and institutions” (pg. 11)
 - “Perhaps the difficulty of distinguishing social causes from genetic ones is tied to one’s beliefs about what moves human history” (pg. 10)

Where does the mistrust of biologists and geneticists around race originate?



LIKE A TREE
EUGENICS DRAWS ITS MATERIALS FROM MANY SOURCES AND ORGANIZES THEM INTO AN HARMONIOUS ENTITY.



The New York Times

Syphilis Victims in U.S. Study Went Untreated for 40 Years

By JEAN HELLER
The Associated Press



WASHINGTON, July 25—For 40 years the United States Public Health Service has conducted a study in which human beings with syphilis, who were induced to serve as guinea pigs, have gone without medical treatment for the disease and a few have died of its late effects, even though an effective therapy was eventually discovered.

The study was conducted to determine from autopsies what the disease does to the human body.

Officials of the health service who initiated the experiment have long since retired. Current officials, who say they

have serious doubts about the morality of the study, also say that it is too late to treat the syphilis in any surviving participants.

Doctors in the service say they are now rendering whatever other medical services they can give to the survivors while the study of the disease's effects continues.

Dr. Merlin K. DuVal, Assistant Secretary of Health, Education and Welfare for Health and Scientific Affairs, expressed shock on learning of the study. He said that he was making an immediate investigation.

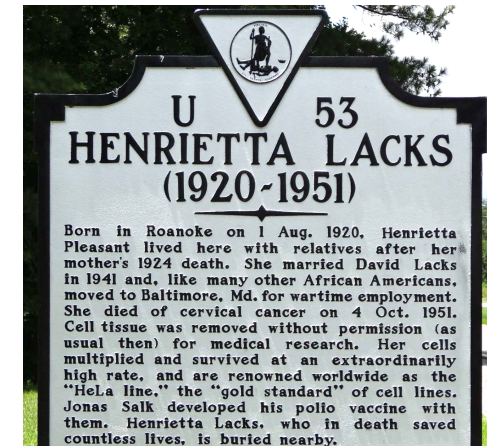
The experiment, called the Tuskegee Study, began in 1932 with about 600 black men,

top Washington Post

ICE is accused of sterilizing detainees. That echoes the U.S.'s long history of forced sterilization.

White people who support such forced sterilizations are paternalistic rather than driven by racial animus, my research suggests.

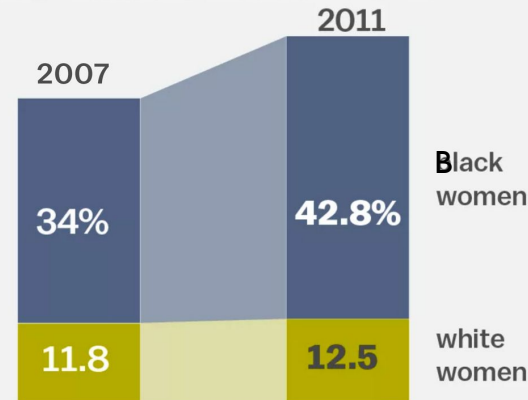
1 week ago



WHAT NECESSARY OR BENEFICIAL INFORMATION HAS COME FROM THE INCLUSION OF RACE IN RESEARCH?

America's Black-white maternal mortality gap is widening

Percentage of pregnancy-related deaths by race



SOURCE: CDC Pregnancy Mortality Surveillance System
CREDIT: Sarah Frostenson

Vox

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Developmental Stage Epigenetic Modifications and Clinical Symptoms Associated with the Trauma and Stress of Enslavement and Institutionalized Racism

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Abstract

The large-scale capture, forcible kidnapping, and subsequent forced labor associated with the historic enslavement of Africans in the Americas exerted tremendous stress on their biologies. These stresses provided the most important substrate for selection in New World African populations. The environmental and social conditions of enslavement, post-civil war reconstruction, and Jim Crow racism in the United States were a connected sequence of traumatic events that have had an enduring, multigenerational impact on African Americans and their descendants. Enslavement is manifested partially in elevated cortisol levels and, in turn, have served as catalysts for other adverse health outcomes. Elevations in circulating cortisol levels have been indicated as a significant influencing factor in psychological stress disorders such as depression and post-traumatic stress disorder. Stress responses were reinforced no doubt by the long-term food insecurity associated with enslavement. Chronic food deprivation and food instability are thought to have further exacerbated the trauma associated with other adversarial environmental effects during this period. The impact of these constraints during key stages of the lifecycle are examined and the resulting clinical symptoms and epigenetic changes documented.

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THEMES

- **Divinization of Nature/natural selection**
 - “early modern biology grew out of a Christian intellectual heritage that divinized “Nature” and reduced the role that human practices and institutions were believed to play in shaping our health, behavior, and bodily forms” (pg. 10)
 - “the belief that Nature creates race is at work when we reduce the role human agency plays in shaping the body” (pg. 11)
 - “racial differences were unalterable because they were created by God, or God’s proxy Nature, rather than humans” (pg. 11)
 - “God in Nature still haunts contemporary perceptions of race and human biology. This is true even for scientific research driven by transformative and progressive political commitments” (pg. 12)

SIGMA Study

- Study identified 5 SNPs constituting a haplotype that are equally associated with type 2 diabetes, and are prevalent in individuals with Latin American ancestry
- “Each haplotype copy is associated with a 20% increased risk of type 2 diabetes”

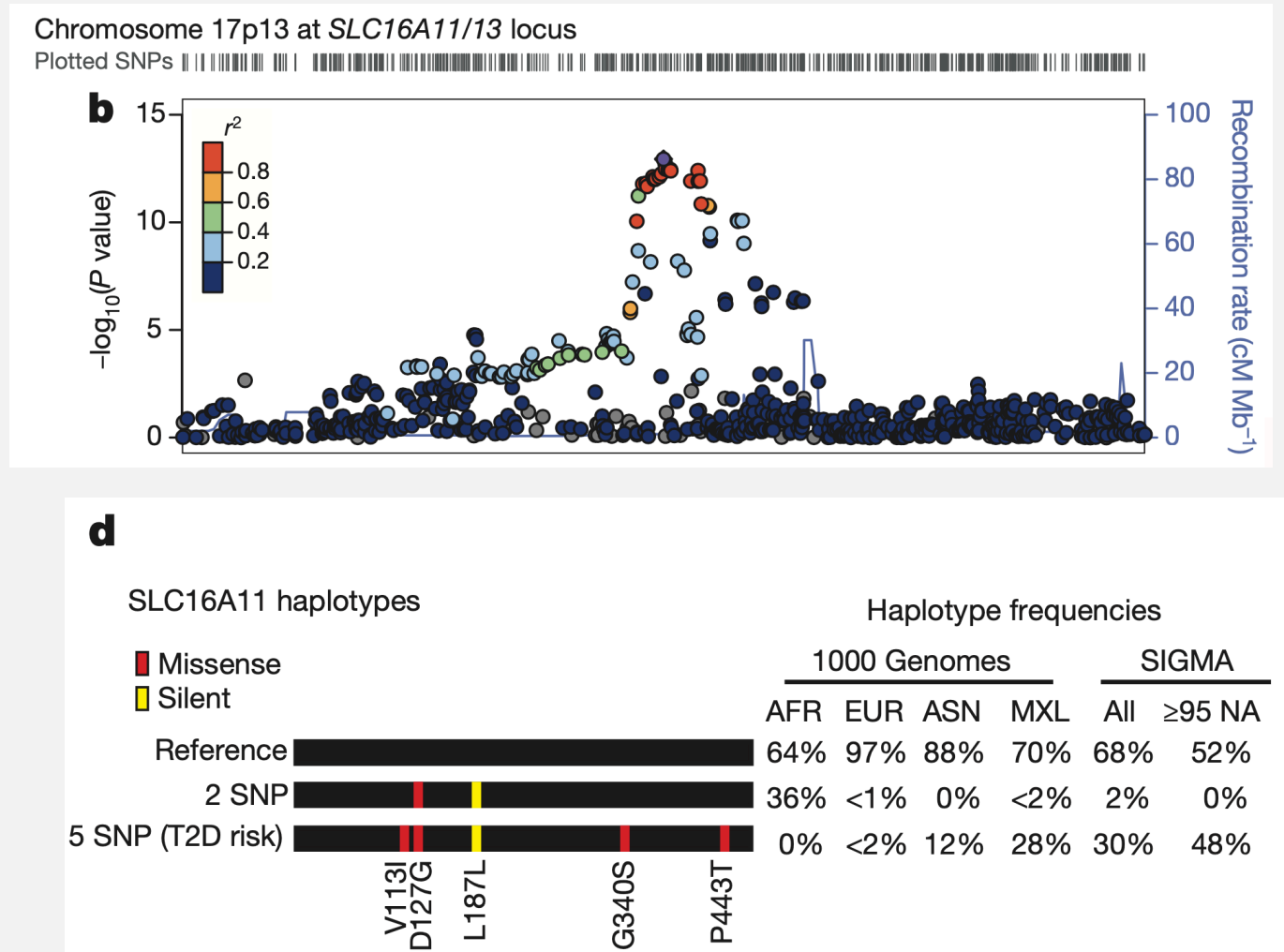
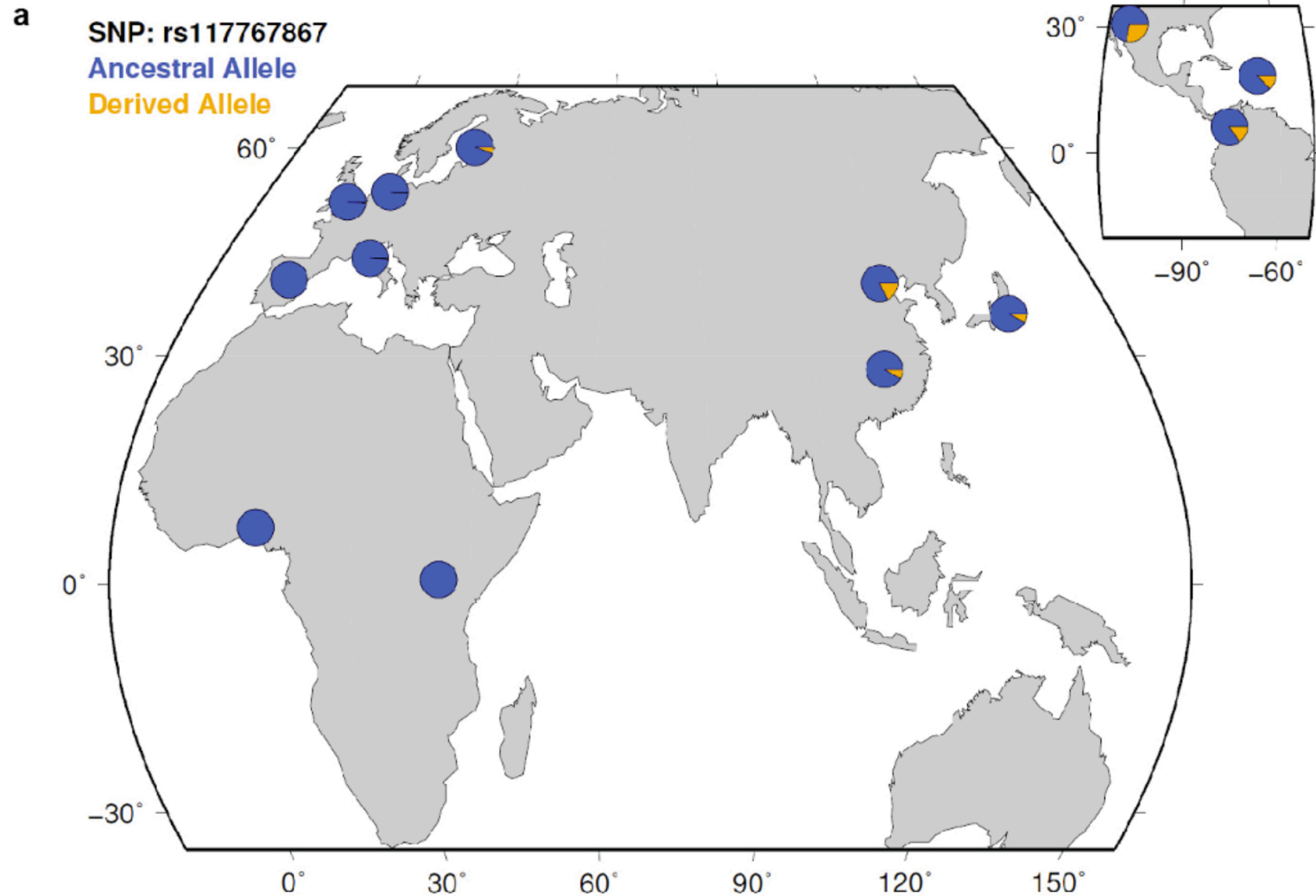


Figure 1. (b) Regional plot of association at 17p13.1 that spans *SLC16A11* and *SLC16A13*. (d) Graphical depictions of *SLC16A11* haplotypes constructed from the synonymous and four missense SNPs associated to type 2 diabetes, with haplotype frequencies derived from the 1000 Genomes Project and SIGMA samples. AFR, African (n = 185); ASN, east Asian (n = 286); EUR, European (n = 379); MXL, Mexican samples from Los Angeles (n = 66).

SIGMA Study

- Higher frequency of type 2 diabetes risk allele (derived allele) in Latin American and East Asian populations than in
- Allele absent in African populations and origin dated to 800,000 years ago (far prior to major human migration from Africa 100,000 years ago)
- Hypothesized to be the results of Neanderthal admixture with Asian and Latin American populations (“5 SNP” variant later found in Neanderthal genome)



Extended Data Figure 6. (a) Allele frequency of missense SNP rs117767867 (tag for risk haplotype) in the 1000 Genomes Phase I data set.

**RELEVANCE
TODAY**

nature

<https://doi.org/10.1038/s41586-020-2818-3>

Accelerated Article Preview

The major genetic risk factor for severe COVID-19 is inherited from Neanderthals

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Hugo Zeberg & Svante Pääbo

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CONCLUSIONS

Holding true:

- the huge impact of culture, race, religion, etc. on human health outcomes
- the influence of social organization on human evolution

...how do we expand our ability to analyze and draw conclusions about human difference (in health, behavior, etc.) using genetics and genomics?



THANK YOU