Social Constructions

As anthropologists and other evolutionary scientists have shifted away from the language of race to the term *population* to talk about genetic differences, historians, cultural anthropologists and other social scientists re-conceptualized the term "race" as a cultural category or social construct—a particular way that some people talk about themselves and others.

Many social scientists have replaced the word race with the word “ethnicity” to refer to self-identifying groups based on beliefs concerning shared culture, ancestry and history. Alongside empirical and conceptual problems with “race”, following the Second World War, evolutionary and social scientists were acutely aware of how beliefs about race had been used to justify discrimination, apartheid, slavery, and genocide. This questioning gained momentum in the 1960s during the U.S. civil rights movement and the emergence of numerous anti-colonial movements worldwide. They thus came to believe that race itself is a social construct, a concept that was believed to correspond to an objective reality but which was believed in because of its social functions.\(^{[109]}\)

Craig Venter and Francis Collins of the National Institute of Health jointly made the announcement of the mapping of the human genome in 2000. Upon examining the data from the genome mapping, Venter realized that although the genetic variation within the human species is on the order of 1–3% (instead of the previously assumed 1%), the types of variations do not support notion of genetically defined races. Venter said, "Race is a social concept. It's not a scientific one. There are no bright lines (that would stand out), if we could compare all the sequenced genomes of everyone on the planet." "When we try to apply science to try to sort out these social differences, it all falls apart."\(^{[110]}\)

Stephan Palmié asserted that race “is not a thing but a social relation”;\(^{[111]}\) or, in the words of Katya Gibel Mevorach, “a
metonym”, “a human invention whose criteria for differentiation are neither universal nor fixed but have always been used to manage difference.”[112] As such, the use of the term “race” itself must be analyzed. Moreover, they argue that biology will not explain why or how people use the idea of race: History and social relationships will.

Imani Perry, a professor in the Center for African American Studies at Princeton University, has made significant contributions to how we define race in America today. Perry’s work focuses on how race is experienced. Perry tells us that race “is produced by social arrangements and political decision making.”[113] Perry explains race more in stating, “race is something that happens, rather than something that is. It is dynamic, but it holds no objective truth.”[114]

The theory that race is merely a social construct has been challenged by the findings of researchers at the Stanford University School of Medicine, published in the American Journal of Human Genetics as “Genetic Structure, Self-Identified Race/Ethnicity, and Confounding in Case-Control Association Studies”.[115] One of the researchers, Neil Risch, noted: “we looked at the correlation between genetic structure [based on microsatellite markers] versus self-description, we found 99.9% concordance between the two. We actually had a higher discordance rate between self-reported sex and markers on the X chromosome! So you could argue that sex is also a problematic category. And there are differences between sex and gender; self-identification may not be correlated with biology perfectly. And there is sexism.”[116]

Brazil

Figure \(\PageIndex{1}\) - Portrait “Redenção do Can” (1895), showing a Brazilian family each generation becoming “whiter”.

Compared to 19th-century United States, 20th-century Brazil was characterized by a perceived relative absence of sharply defined racial groups. According to anthropologist Marvin Harris, this pattern reflects a different history and different social relations.

Basically, race in Brazil was “biologized”, but in a way that recognized the difference between ancestry (which determines genotype) and phenotypic differences. There, racial identity was not governed by rigid descent rule, such as the one-drop rule, as it was in the United States. A Brazilian child was never automatically identified with the racial type of one or both parents, nor were there only a very limited number of categories to choose from,[117] to the extent that full siblings can pertain to different racial groups.[118]
Over a dozen racial categories would be recognized in conformity with all the possible combinations of hair color, hair texture, eye color, and skin color. These types grade into each other like the colors of the spectrum, and not one category stands significantly isolated from the rest. That is, race referred preferentially to appearance, not heredity, and appearance is a poor indication of ancestry, because only a few genes are responsible for someone’s skin color and traits: a person who is considered white may have more African ancestry than a person who is considered black, and the reverse can be also true about European ancestry. The complexity of racial classifications in Brazil reflects the extent of miscegenation in Brazilian society, a society that remains highly, but not strictly, stratified along color lines. These socioeconomic factors are also significant to the limits of racial lines, because a minority of pardos, or brown people, are likely to start declaring themselves white or black if socially upward and being seen as relatively “whiter” as their perceived social status increases (much as in other regions of Latin America).

Table 1 - Self-reported ancestry of people from Rio de Janeiro, by race or skin color (2000 survey)

<table>
<thead>
<tr>
<th>Ancestry</th>
<th>brancos</th>
<th>pardos</th>
<th>pretos</th>
</tr>
</thead>
<tbody>
<tr>
<td>European only</td>
<td>48%</td>
<td>6%</td>
<td>–</td>
</tr>
<tr>
<td>African only</td>
<td>–</td>
<td>12%</td>
<td>25%</td>
</tr>
<tr>
<td>Amerindian only</td>
<td>–</td>
<td>2%</td>
<td>–</td>
</tr>
<tr>
<td>African and European</td>
<td>23%</td>
<td>34%</td>
<td>31%</td>
</tr>
<tr>
<td>Amerindian and European</td>
<td>14%</td>
<td>6%</td>
<td>–</td>
</tr>
<tr>
<td>African and Amerindian</td>
<td>–</td>
<td>4%</td>
<td>9%</td>
</tr>
<tr>
<td>African, Amerindian and European</td>
<td>15%</td>
<td>36%</td>
<td>35%</td>
</tr>
<tr>
<td>Total</td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
</tr>
</tbody>
</table>

Fluidity of racial categories aside, the “biologification” of race in Brazil referred above would match contemporary concepts of race in the United States quite closely, though, if Brazilians are supposed to choose their race as one among, Asian and Indigenous apart, three IBGE’s census categories. While assimilated Amerindians and people with very high quantities of Amerindian ancestry are usually grouped as caboclos, a subgroup of pardos which roughly translates as both mestizo and hillbilly, for those of lower quantity of Amerindian descent a higher European genetic contribution is expected to be grouped as a pardo. In several genetic tests, people with less than 60-65% of European descent and 5-10% of Amerindian descent usually cluster with Afro-Brazilians (as reported by the individuals), or 6.9% of the population, and those with about 45% or more of Subsaharan contribution most times do so (in average, Afro-Brazilian DNA was reported to be about 50% Subsaharan African, 37% European and 13% Amerindian). If a more consistent report with the genetic groups in the gradation of miscegenation is to be considered (e.g. that would not cluster people with a balanced degree of African and non-African ancestry in the black group instead of the...
multiracial one, unlike elsewhere in Latin America where people of high quantity of African descent tend to classify themselves as mixed), more people would report themselves as white and *pardo* in Brazil (47.7% and 42.4% of the population as of 2010, respectively), because by research its population is believed to have between 65 and 80% of autosomal European ancestry, in average (also >35% of European mt-DNA and >95% of European Y-DNA).[123][127][128][129]

Table 2 - Ethnic groups in Brazil (census data)[130]

<table>
<thead>
<tr>
<th>Ethnic group</th>
<th>white</th>
<th>black</th>
<th>pardo</th>
</tr>
</thead>
<tbody>
<tr>
<td>1872</td>
<td>3,787,289</td>
<td>1,954,452</td>
<td>4,188,737</td>
</tr>
<tr>
<td>1940</td>
<td>26,171,778</td>
<td>6,035,869</td>
<td>8,744,365</td>
</tr>
<tr>
<td>1991</td>
<td>75,704,927</td>
<td>7,335,136</td>
<td>62,316,064</td>
</tr>
</tbody>
</table>

Table 3 - Ethnic groups in Brazil (1872 and 1890)[131]

<table>
<thead>
<tr>
<th>Years</th>
<th>whites</th>
<th>pardos</th>
<th>blacks</th>
<th>Indians</th>
<th>Total</th>
<th>Years</th>
</tr>
</thead>
<tbody>
<tr>
<td>1872</td>
<td>38.1%</td>
<td>38.3%</td>
<td>19.7%</td>
<td>3.9%</td>
<td>100%</td>
<td>1872</td>
</tr>
<tr>
<td>1890</td>
<td>44.0%</td>
<td>32.4%</td>
<td>14.6%</td>
<td>9%</td>
<td>100%</td>
<td>1890</td>
</tr>
</tbody>
</table>

This is not surprising, though: While the greatest number of slaves imported from Africa were sent to Brazil, totaling roughly 3.5 million people, they lived in such miserable conditions that male African Y-DNA there is significantly rare due to the lack of resources and time involved with raising of children, so that most African descentoriginarily came from relations between white masters and female slaves. From the last decades of the Empire until the 1950s, the proportion of the white population increased significantly while Brazil welcomed 5.5 million immigrants between 1821 and 1932, not much behind its neighbor Argentina with 6.4 million,[132] and it received more European immigrants in its colonial history than the United States. Between 1500 and 1760, 700,000 Europeans settled in Brazil, while 530,000 Europeans settled in the United States for the same given time.[133] Thus, the historical construction of race in Brazilian society dealt primarily with gradations between persons of majoritarily European ancestry and little minority groups with otherwise lower quantity there from in recent times.

**European Union**

According to European Council:

The European Union rejects theories which attempt to determine the existence of separate human races.

— Directive 2000/43/EC[134]

The European Union uses the terms racial origin and ethnic origin synonymously in its documents and according to it “the use of the term ‘racial origin’ in this directive does not imply an acceptance of such [racial] theories”. [134][135] Haney
López warns that using “race” as a category within the law tends to legitimize its existence in the popular imagination. In the diverse geographic context of Europe, ethnicity and ethnic origin are arguably more resonant and are less encumbered by the ideological baggage associated with “race”. In European context, historical resonance of “race” underscores its problematic nature. In some states, it is strongly associated with laws promulgated by the Nazi and Fascist governments in Europe during the 1930s and 1940s. Indeed, in 1996, the European Parliament adopted a resolution stating that “the term should therefore be avoided in all official texts”. [136]

The concept of racial origin relies on the notion that human beings can be separated into biologically distinct “races”, an idea generally rejected by the scientific community. Since all human beings belong to the same species, the ECRI (European Commission against Racism and Intolerance) rejects theories based on the existence of different “races”. However, in its Recommendation ECRI uses this term in order to ensure that those persons who are generally and erroneously perceived as belonging to “another race” are not excluded from the protection provided for by the legislation. The law claims to reject the existence of “race”, yet penalize situations where someone is treated less favourably on this ground. [136]

France

Since the end of the Second World War, France has become an ethnically diverse country. Today, approximately five percent of the French population is non-European and non-white. This does not approach the number of non-white citizens in the United States (roughly 28–37%, depending on how Latinos are classified; see Demographics of the United States). Nevertheless, it amounts to at least three million people, and has forced the issues of ethnic diversity onto the French policy agenda. France has developed an approach to dealing with ethnic problems that stands in contrast to that of many advanced, industrialized countries. Unlike the United States, Britain, or even the Netherlands, France maintains a “color-blind” model of public policy. This means that it targets virtually no policies directly at racial or ethnic groups. Instead, it uses geographic or class criteria to address issues of social inequalities. It has, however, developed an extensive anti-racist policy repertoire since the early 1970s. Until recently, French policies focused primarily on issues of hate speech—going much further than their American counterparts—and relatively less on issues of discrimination in jobs, housing, and in provision of goods and services. [137]

United States

In the United States, views of race that see racial groups as defined genetically are common in the biological sciences although controversial, whereas the social constructionist view is dominant in the social sciences. [138]

The immigrants to the Americas came from every region of Europe, Africa, and Asia. They mixed among themselves and with the indigenous inhabitants of the continent. In the United States most people who self-identify as African–American have some European ancestors, while many people who identify as European American have some African or Amerindian ancestors.

Since the early history of the United States, Amerindians, African–Americans, and European Americans have been classified as belonging to different races. Efforts to track mixing between groups led to a proliferation of categories, such as mulatto and octoroon. The criteria for membership in these races diverged in the late 19th century. During Reconstruction, increasing numbers of Americans began to consider anyone with “one drop” of known “Black blood” to
be Black, regardless of appearance.\textsuperscript{3} By the early 20th century, this notion was made statutory in many states.\textsuperscript{4} Amerindians continue to be defined by a certain percentage of "Indian blood" (called \textit{blood quantum}). To be White one had to have perceived "pure" White ancestry. The \textbf{one-drop rule or hypodescent rule} refers to the convention of defining a person as racially black if he or she has any known African ancestry. This rule meant that those that were mixed race but with some discernible African ancestry were defined as black. The one-drop rule is specific to not only those with African ancestry but to the United States, making it a particularly African-American experience.\textsuperscript{139}

The decennial censuses conducted since 1790 in the United States created an incentive to establish racial categories and fit people into these categories.\textsuperscript{140}

The term "Hispanic" as an ethnonym emerged in the 20th century with the rise of migration of laborers from the Spanish-speaking countries of Latin America to the United States. Today, the word “Latino” is often used as a synonym for “Hispanic”. The definitions of both terms are non-race specific, and include people who consider themselves to be of distinct races (Black, White, Amerindian, Asian, and mixed groups).\textsuperscript{141} However, there is a common misconception in the US that Hispanic/Latino is a race\textsuperscript{142} or sometimes even that national origins such as Mexican, Cuban, Colombian, Salvadoran, etc. are races. In contrast to “Latino” or “Hispanic”, “Anglo” refers to non-Hispanic White Americans or non-Hispanic European Americans, most of whom speak the English language but are not necessarily of English descent.

References:


7. \textsuperscript{a} \textsuperscript{b} \textsuperscript{\textit{Race}}\textsuperscript{2}: \textit{Oxford Dictionaries}. Oxford University Press. Retrieved 5 October 2012. “\textit{1. Each of the major division of humankind, having distinct physical characteristics [example elided]; \textit{1.1. MASS NOUN} The fact or condition of belonging to a racial division or group; the qualities or characteristics associated with this. \textit{1.2. A group of people sharing the same culture, history, language, etc.; an ethnic group [example elided].}” Provides 8 definitions, from biological to literary; only the most pertinent have been quoted.

8. See:
   - Lie 2004
   - Thompson & Hickey 2005
   - Gordon 1964\textsuperscript{[\textit{page needed}]}
   - AAA 1998
   - Palmié 2007
   - Mevorach 2007

10. See:
   - Montagu 1962
   - Bamshad & Olson 2003

11. Sober 2000

12. Lee et al. 2008: “We caution against making the naive leap to a genetic explanation for group differences in complex traits, especially for human behavioral traits such as IQ scores”

13. AAA 1998: “For example, ‘Evidence from the analysis of genetics (e.g., DNA) indicates that most physical variation, about 94%, lies within so-called racial groups. Conventional geographic ‘racial’ groupings differ from one another only in about 6% of their genes. This means that there is greater variation within ‘racial’ groups than between them.’”

14. Keita, S O Y; Kittles, Royal, Bonney, Furbert-Harris, Dunston, Rotimi; Royal, C D M; Bonney, G E; Furbert-Harris, P; Dunston, G M; Rotimi, C N (2004). “Conceptualizing human variation”. Nature Genetics 36 (11s): S17–S20. doi:10.1038/ng1455. PMID 15507998. “Modern human biological variation is not structured into phylogenetic subspecies (‘races’), nor are the taxa of the standard anthropological ‘racial’ classifications breeding populations. The ‘racial taxa’ do not meet the phylogenetic criteria. ‘Race’ denotes socially constructed units as a function of the incorrect usage of the term.”

15. Harrison, Guy (2010). Race and Reality. Amherst: Prometheus Books. “Race is a poor empirical description of the patterns of difference that we encounter within our species. The billions of humans alive today simply do not fit into neat and tidy biological boxes called races. Science has proven this conclusively. The concept of race (…) is not scientific and goes against what is known about our ever-changing and complex biological diversity.”

16. Roberts, Dorothy (2011). Fatal Invention. London, New York: The New Press. “The genetic differences that exist among populations are characterized by gradual changes across geographic regions, not sharp, categorical distinctions. Groups of people across the globe have varying frequencies of polymorphic genes, which are genes with any of several differing nucleotide sequences. There is no such thing as a set of genes that belongs exclusively to one group and not to another. The clinal, gradually changing nature of geographic genetic difference is complicated further by the migration and mixing that human groups have engaged in since prehistory. Human beings do not fit the zoological definition of race. A mountain of evidence assembled by historians, anthropologists, and biologists proves that race is not and cannot be a natural division of human beings.”


18. Graves 2001

19. Keita et al. 2004

20. AAPA 1996 “Pure races, in the sense of genetically homogeneous populations, do not exist in the human species today, nor is there any evidence that they have ever existed in the past.”-p.714

21. Keita, S O Y; Kittles, Royal, Bonney, Furbert-Harris, Dunston, Rotimi; Royal, C D M; Bonney, G E; Furbert-Harris, P; Dunston, G M; Rotimi, C N (2004). “Conceptualizing human variation”. Nature Genetics 36 (11s):
Many terms requiring definition for use describe demographic population groups better than the term ‘race’ because they invite examination of the criteria for classification.


27. Steve Olson, Mapping Human History: Discovering the Past Through Our Genes, Boston, 2002


29. Lee 1997

30. See:
   ◦ Blank, Dabady & Citro 2004
   ◦ Smaje 1997

31. See:
   ◦ Lee 1997
   ◦ Nobles 2000

32. See:
   ◦ Smedley 2007
   ◦ Sivanandan 2000
   ◦ Crenshaw 1988
   ◦ Conley 2007
   ◦ Winfield 2007: “It was Aristotle who first arranged all animals into a single, graded scale that placed humans at the top as the most perfect iteration. By the late 19th century, the idea that inequality was the basis of natural order, known as the great chain of being, was part of the common lexicon.”

33. Lee 1997 citing Morgan 1975 and Appiah 1992

34. See:
   ◦ Sivanandan 2000
   ◦ Muffoletto 2003
   ◦ McNeill et al. 1996: Psychiatric instrument called the “Perceived Racism Scale” “provides a measure of the frequency of exposure to many manifestations of racism … including individual and institutional”; also assesses motional and behavioral coping responses to racism.
35. Miles 2000
36. Owens & King 1999
37. King 2007: For example, “the association of blacks with poverty and welfare … is due, not to race per se, but to the link that race has with poverty and its associated disadvantages”–p.75.
38. Schaefer 2008: “In many parts of Latin America, racial groupings are based less on the biological physical features and more on an intersection between physical features and social features such as economic class, dress, education, and context. Thus, a more fluid treatment allows for the construction of race as an achieved status rather than an ascribed status as is the case in the United States”
39. a b c Marks 2008, p. 28
40. a b Smedley 1999
41. Meltzer 1993
42. Takaki 1993
43. Banton 1977
44. For examples see:
   a Brace 2000
   b Gill 2000
   c Lee 1997: “The very naturalness of ‘reality’ is itself the effect of a particular set of discursive constructions. In this way, discourse does not simply reflect reality, but actually participates in its construction”
46. Todorov 1993
47. Brace 2005, p. 27
49. a b c Graves 2001, p. 39
50. Marks 1995
52. Stocking 1968, pp. 38–40
53. Desmond & Moore 2009, pp. 332–341
57. Currell & Cogdell 2006
58. Cravens 2010
59. See:
Cravens 2010
Angier 2000
Amundson 2005
Reardon 2005

60. See:
Smedley 2002
Boas 1912

61. See:
Marks 2002
Montagu 1941
Montagu 1942

62. Wilson & Brown 1953
63. See:
Keita et al. 2004
Templeton 1998
Long & Kittles 2003

64. Haig et al. 2006
65. a b Waples & Gaggiotti 2006
66. a b c d e Templeton 1998

67. See:
Amadon 1949
Mayr 1969
Patten & Unitt 2002

68. a b Wright 1978
69. See:
Keita et al. 2004
Templeton 1998

70. Sesardic 2010

72. a b Lieberman & Jackson 1995
73. Brace 1964
74. a b Livingstone & Dobzhansky 1962
75. Ehrlich & Holm 1964
76. Weiss 2005
77. Marks 2002


80. Boyd 1950

81. Lieberman & Kirk 1997, p. 195

82. Molnar 1992

83. Human Genome Project 2003

84. a b c Graves 2006

85. Hawks 2013, p. 438 “The shared evolutionary history of living humans has resulted in a high relatedness among all living people, as indicated for example by the very low fixation index (FST) among living human populations.”

86. Lewontin 1972


90. (Schwartz 2001), (Stephens 2003) (given in summary by Bamshad et al. 2004, p. 599)

91. Smedley & Smedley 2005, (Helms et al. 2005), [1]. Lewontin, for example argues that there is no biological basis for race on the basis of research indicating that more genetic variation exists within such races than among them (Lewontin 1972).


93. Long & Kittles 2003


95. Edwards 2003

96. **Dawkins, Richard; Wong, Yan** (2005). The Ancestor’s Tale: A Pilgrimage to the Dawn of Evolution. Houghton Mifflin Harcourt. pp. 406–407. ISBN 9780618619160. “(Summarizing Edwards’ thesis): We can all happily agree that human racial classification is of no social value and is positively destructive of social and human relations. That is one reason why I object to ticking boxes on forms and why I object to positive discrimination in job selection. But that doesn’t mean that race is of “virtually no genetic or taxonomic significance.” This is Edwards’s point, and he reasons as follows. However small the racial partition of total variation may be, if such racial characteristics as there are highly correlated with other racial characteristics, they are by definition informative, and therefore of taxonomic significance.”

97. See:

   ◦ Cavalli-Sforza, Menozzi & Piazza 1994
   ◦ Bamshad et al. 2004, p. 599
   ◦ Tang et al. 2004
   ◦ Rosenberg et al. 2005: “If enough markers are used… individuals can be partitioned into genetic clusters that match major geographic subdivisions of the globe.”

98. Mountain & Risch 2004

99. Gitschier 2005

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127. De Assis Poaires, Lilian; De Sá Osorio, Paulo; Spanhol, Fábio Alexandre; Coltire, Sidnei César; Rodenbusch, Rodrigo; Gusmão, Leonor; Largura, Alvaro; Sandrini, Fabiano; Da Silva, Cláudia Maria Dornelles (2010). “Allele frequencies of 15 STRs in a representative sample of the Brazilian population”(PDF). Forensic Science International: Genetics 4 (2): e61. doi:10.1016/j.fsigen.2009.05.006. PMID 20129458.

128. Brazilian DNA is nearly 80% European, indicates study.


133. Renato Pinto Venâncio, “Presença portuguesa: de colonizadores a imigrantes” i.e. Portuguese presence: from colonizers to immigrants, chap. 3 of Brasil: 500 anos de povoamento (IBGE). Relevant extract available here [2]


136. Race Policy in France by Erik Bleich, Middlebury College, 2012-05-01


139. Nobles 2000

ORIGIN BY RACE; 2007 American Community Survey 1-Year Estimates


148. Race, Class, and Gender in the United States (text only) 7th (Seventh) edition by P. S. Rothenberg p131


162. Frederick P. Rivara and Laurence Finberg, (2001) “Use of the Terms Race and Ethnicity”, Archives of Pediatrics & Adolescent Medicine 155, no. 2 119. "In future issues of the ARCHIVES, we ask authors to not use race and ethnicity when there is no biological, scientific, or sociological reason for doing so. Race or ethnicity should not be used as explanatory variables, when the underlying constructs are variables that can, and should, be measured directly (eg, educational level of subjects, household income of the families, single vs 2-parent households, employment of parents, owning vs renting one’s home, and other measures of socioeconomic status). In contrast, the recent attention on decreasing health disparities uses race and ethnicity not as explanatory variables but as ways of examining the underlying sociocultural reasons for these disparities and appropriately targeting attention and resources on children and adolescents with poorer health. In select issues and questions such as these, use of race and ethnicity is appropriate."

163. See program announcement and requests for grant applications at the NIH website, at nih.gov.


167. The conceptualization and operationalization of race and ethnicity by health services researchers, Susan Moscou, Nursing Inquiry, Volume 15, Issue 2, pages 94–105, June 2008


170. Risch et al. 2002

171. Condit et al. 2003 In summary, they argues that, in order to predict the clinical success of pharmacogenomic research, scholars must conduct subsidiary research on two fronts: Science, wherein the degree of correspondence between popular and professional racial categories can be assessed; and society at large, through which attitudinal factors moderate the relationship between scientific soundness and societal acceptance. To accept race-as-proxy, then, may be necessary but insufficient to solidify the future of race-based pharmacogenomics.

172. Graves 2011

173. Fullwiley 2011

174. Harpending 2006, p. 458 "On the other hand, information about the race of patients will be useless as soon as we discover and can type cheaply the underlying genes that are responsible for the associations. Can races be enumerated in any unambiguous way? Of course not, and this is well known not only to scientists but also to anyone on the street."

175. Lee et al. 2008

176. Kahn 2011, p. 132 “For example, what are we to make of the fact that African Americans suffer from disproportionately high rates of hypertension, but Africans in Nigeria have among the world’s lowest rates of hypertension, far lower than the overwhelmingly white population of Germany? Genetics certainly plays a role in hypertension. But any role it plays in explaining such differences must surely be vanishingly small. (citing Richard Cooper et al., ’An International Comparative Study of Blood Pressure in Populations of European vs.


182. Abraham 2009

183. Willing 2005

184. a b Sauer 1992


186. a b Shriver & Kittles 2004


