

The Meaning of Race in the DNA Era: Science, History and the Law

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INTRODUCTION

What is “race”? Does the concept of race represent a natural and inevitable understanding of human difference? Does race have any biological meaning, or is it merely an artificial construct employed by society and political bodies? If race is the former, then how can modern society avoid a rebirth of racial eugenics? And yet if race is an arbitrary tool of social organization without genetic content, then how should we interpret purported forensic racial determinations based on DNA analyses?

Race is biology. Race is ancestry. Race is genetic.

The meaning of “race” is constantly questioned yet rarely understood. Early theories of race assigned social, intellectual, and moral values to perceived differences among groups of people. The perception that race should be defined in terms of genetic and biologic difference fueled the “race science” of the eighteenth and nineteenth centuries, during which time geneticists, physiognomists, eugenicists, anthropologists and others purported to find scientific justification for denying equal treatment to non-“white” persons.¹

Part I of this article thus examines the provenance of the “race” concept. The categorization of humans into “racial” groups was neither natural nor inevitable. The initial separation of humans into “racial” categories was understood to simply reflect inherent biological differences between groups of people. These differences

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¹ See generally WILLIAM H. TUCKER, THE SCIENCE AND POLITICS OF RACIAL RESEARCH (1994).

supposedly accounted for natural variances in intelligence, morality, and physical and sexual prowess. As such, these pseudo-biological differences were used to justify and explain power differentials between “races” of people.

Race is constructed. Race is biologically meaningless. Race is power.

The pseudo-scientific understandings of race supplied by nineteenth-century geneticists and biologists were applied by Nazi Germany in a manner that shocked the world. As a result, the concept of race following World War II increasingly was understood as a socio-political construction with no biological meaning.² Modern sociological theories thus uniformly understand race as a social grouping of persons necessary to preserve unbalanced relationships of power. Part II of this article examines this post-war refutation of nineteenth-century “race science,” as well as the core assumptions underlying modern racial theory.

Race is phenotype. Race is color. Race is language. Race is citizenship. Race is class. Race is culture. Race is assimilation. Race is law.

Reducing race to a single critical “essence” is an impossible endeavor. While one’s phenotype and color may contribute to racial categorization, so can one’s national origin, social class and language. As a result, race has a complex social meaning that depends in part on the prevailing “common understanding and meaning”³ of society. Not-so-antiquated notions of race once deemed Italian, Irish and Southern European immigrants and their descendants as “non-white” and cursed with inferior genetic stock.⁴ These groups eventually obtained “Whiteness” based on changing social understandings of their assimilatory potential, and the formation of a racial identity defined in opposition to “Blackness.” The elusive nature of race is similarly illustrated by the conflict between the legal racialization of Middle Eastern and Mexican persons as “white” during certain historical periods, and the social racialization of these persons as “non-white” and racially distinct during other times.⁵

² Cf. UNESCO AND ITS PROGRAMME III: THE RACE QUESTION 6-7 (1950), available at <http://unesdoc.unesco.org/images/0012/001282/128291eo.pdf> (discussing the shift from identifying biological traits to identifying “any group of people”).

³ Cf. *In re Ah Yup*, 1 F. Cas. 223 (C.C.D. Cal. 1878) (No. 104) (setting forth a “common understanding test”). The test set forth in *In re Ah Yup*, and followed in many other naturalization cases during the late nineteenth century, necessarily seeks to reinforce patterns of racial subordination by defining race in a manner that protects the social position of the racial (white) majority.

⁴ Cf. NOEL IGNATIEV, HOW THE IRISH BECAME WHITE 41-42 (1996) (discussing that after the vote by the 1790 U.S. Congress that only “white” persons could be naturalized as citizens, “it was by no means obvious who was white”).

⁵ See *Hernandez v. Texas*, 347 U.S. 475, 479-80 (1954) (stating that a person of Mexican descent has the burden of proving that persons of Mexican descent constitute a separate class distinct from “whites”); *United States v. Cartozian*, 6 F.2d 919, 922 (D. Or. 1925) (holding Armenian person held to be “white” for naturalization purposes, based on assimilatory potential); *In re Rodriguez*, 81 F. 337, 354-55 (W.D. Tex. 1897) (holding that Mexican-Americans were “white” for purposes of naturalization); *Indep. Sch. Dist. v. Salvatierra*, 33 S.W.2d 790, 794 (Tex. App. 1930) (treating Mexican-Americans as white).

Race is subjective. Race is objective. Race is whiteness. Race is blackness. Race is fixed. Race is malleable. Race is performance.

Race is constantly in flux depending on one's baseline understanding of the nature of race. I am black according to certain understandings of race, while other interpretations may render me white. I am Latino, Creole, Egyptian, and "other" according to some outsider interpretations of race, yet I can also be reduced to "mixed" by utilizing an alternative understanding of race. Outsider perceptions of race in turn may change according to my performance of race, and how race is performed around me.

Race is biology. Race is ancestry. Race is genetic.

Notwithstanding the post-war rejection of a biological interpretation of race, modern genetic science has increasingly claimed the ability to identify "race" through the biological analysis of DNA samples. Law enforcement agencies in the United States and elsewhere analyze individual DNA samples to identify the likely "race" of a criminal suspect, while courts in the United States increasingly admit expert testimony stating the statistical probability that a criminal suspect belongs to a specific race based on such DNA analyses. Such a re-biologicalization of race clearly contradicts the classical post-war theory of race as a social construct. Part III of this article examines the contemporary re-interpretation of race as having some biologically traceable genetic essence.

Race is constructed. Race is biologically meaningless. Race is power.

The claims of modern genetics notwithstanding, race remains a biologically meaningless concept of human categorization. Race simply has no traceable genetic essence, and the proliferation of racial DNA testing represents a fundamental misunderstanding of the nature of race rather than the neutral application of scientific principles. Part IV of this article argues that contemporary genetics has misapprehended the elusive nature of race in a manner strikingly similar to that of the nineteenth-century race science.

PART I. EARLY THEORIES OF RACE

In order to analyze race, we must understand what "race" at its most basic level must mean. Race refers to the grouping of individuals according to some perceived shared characteristic, experience or history. It is necessary, however, to distinguish potentially benign references to race, and those racial classifications that assign purportedly immutable negative or positive attributes and characteristics to each racial category. For the purposes of this article, when I refer to "race" I am referring to the latter conception.

A. The Genesis of the "Race" Concept

It is unclear when the first theories of race as a tool for categorization and social control, were first articulated. There is some merit to the contention that racial theories separating people into categories, and assigning positive and negative values

to those categories, were prevalent by the end of the Middle Ages⁶ and during the Renaissance era in England.⁷ According to one sociologist, “by the fifteenth century, ‘race, and especially skin color, defined the contours of power relationships Biological assumptions that were familiar to a nineteenth-century Cuban slaveowner would have been recognizable to his fifteenth-century Spanish counterpart.”⁸ Further, noted sociologist Howard Winant argues that while “[t]he Crusades and the Inquisition and the Mediterranean slave trade were important rehearsals for modern systems of racial differentiation, it should be noted that in terms of scale and inexorability the race concept only began to attain its familiar meanings at the end of the middle ages.”⁹

The noted German philosopher and mathematician Gottfried Wilhelm Leibniz defined “race” in genetic terms sometime between 1677 and 1686.¹⁰ In presenting his “Egyptian Plan” for world conquest to King Louis XIV of France, Leibniz suggested creating an army formed from slaves from Africa, Arabia, Canada, and New Guinea – consisting of Ethiopians, Negroes, Canadians, and Hurons.¹¹ He presented persons from these geographic regions as “semi-beasts” and less than human, in large part to “resolve the contradiction between humanistic universalism and Christian particularism – by representing non-Christians as nonhuman.”¹² The racial classification system employed by Leibniz relied on religious distinctions (Christian – non-Christian) to justify the enslavement of non-European peoples.¹³ Religion would continue to play an important role in the development of racial theory for the next three hundred years.

While Leibniz and others may have advanced elementary racial theories that depended in part on interpretations of religious doctrine or geography, it does not appear that a formal racial taxonomy was formulated until 1735. Carolus Linnaeus, a Swedish biological taxonomist, published *Systema Naturae* which detailed a new classification system for what he deemed to be the three kingdoms of nature: the plant kingdom, the kingdom of stones, and the animal kingdom.¹⁴ Linnaeus separated human beings into four distinct categories described by both color and geographical region: Europeus (white), Africanus (black), Americanus (red) and

⁶ See Howard Winant, *Race and Race Theory*, 26 ANN. REV. SOC. 169, 172 (2000) (labeling racial categorization as a “European invention” having a common origin with the creation of “European nation-states and empires”).

⁷ See James H. Sweet, *The Iberian Roots of American Racist Thought*, 54 WM. & MARY Q. 144, 166 (1997) (“[R]ace, and especially skin color, defined the contours of power relationships Biological assumptions that were familiar to a nineteenth-century Cuban slaveowner would have been recognizable to his fifteenth-century Spanish counterpart.”); Alden T. Vaughan & Virginia Mason Vaughan, *Before Othello: Elizabethan Representations of Sub-Saharan Africans*, 54 WM. & MARY Q. 19, 21 (1997) (noting that England set Africans apart as “a special category of humankind”). See generally Emily C. Bartel, *Othello and Africa: Postcolonialism Reconsidered*, 54 WM. & MARY Q. 45-64 (1997).

⁸ Sweet, *supra* note 7, at 166.

⁹ See Winant, *supra* note 6, at 172.

¹⁰ Peter Fenves, *What “Progresses” Has Race-Theory Made Since the Times of Leibniz and Wolff?*, in THE GERMAN INVENTION OF RACE 11, 12-13 (Sara Eigen & Mark J. Larrimore eds., 2006).

¹¹ *Id.* at 14.

¹² *Id.*

¹³ *Id.* at 14-15.

¹⁴ See Uppsala Universitet, Linné On-Line, *Systema Natura – an Epoch-Making Book*, http://www.linnaeus.uu.se/online/animal/1_1.html (last visited Mar. 18, 2008).

Asiatic (yellow).¹⁵ These categories, similar to modern racial classifications, were also imbued with personal, mental and physical characteristics. As the table below demonstrates, Linnaeus believed that whites were gentle, inventive, keen minded and innovative, American Indians were stubborn and angered easily, Asians were avaricious and easily distracted, while Africans were relaxed, negligent, lazy and careless.¹⁶

Europeus	Skin(white); build (muscular); hair (long, flowing), eyes (blue); disposition (gentle, and inventive)
Americanus	Skin (reddish); build (erect); hair (black, straight, thick); distinct facial features (wide nostrils); disposition (stubborn and angered easily)
Asiaticus	Skin (sallow; yellow); hair (black); eyes (dark); disposition (avaricious and easily distracted)
Africanus	Skin (black); hair (black; frizzled); skin texture (silky); distinct facial features (nose flat, lips tumid); disposition (relaxed and negligent)

The quad-partite racial division of humans proved to be a lasting and seemingly fundamental principle of racial taxonomy. As the sociologist William H. Tucker observes, “[t]he assumption [by Linnaeus] that mental and moral traits were associated with race was to inform many scientific investigations during the next two hundred years.”¹⁷

Inspired in part by the work of Linnaeus, German philosophers began to discuss race during the late 1700s. Emmanuel Kant, in his *Essay on Race*, proposed that there were four races: the White race, the Negro race, the Hun race (Mongol or Kalmuck), and the Hindu race.¹⁸ Kant later revised his taxonomy by using the following categories: the noble blond (northern Europe); copper red (America); black (Senegambia); and olive-yellow (Asian-Indians).¹⁹

Kant’s conception of race was clearly biologically based, as he believed that race was a “real degeneration” within a fixed, permanent species.²⁰ Kant further argued that each racial group had traits that were “unalterably sustained by succeeding generations even under change of ecological setting for protracted periods of time.”²¹ Similar to Linnaeus, Kant also accorded specific physical, mental and moral traits to each racial group. As described in Kant’s essay *On the Different Human Races*:

(Whites:) contain all natural motive springs in affects and passions,
all talents, all predispositions to culture and civilization and can

¹⁵ TUCKER, *supra* note 1, at 9.

¹⁶ CAROLUS LINNAEUS, *SYSTEMA NATURAE* 20-23 (2d ed. 1758).

¹⁷ TUCKER, *supra* note 1, at 9.

¹⁸ John H. Zammito, *Policing Polygeneticism in Germany, 1775 (Kames,) Kant, and Blumenbach, in THE GERMAN INVENTION OF RACE*, *supra* note 10, at 35, 42.

¹⁹ *Id.*

²⁰ EMMANUEL KANT, *ESSAY ON RACE*.

²¹ *Id.*

obey as well as rule. They are the only ones who constantly progress toward perfection Blacks can become disciplined and cultivated but never truly civilized All races will become exterminated/uprooted (Americans and Blacks cannot govern themselves. They thus serve only as slaves) only not the Whites. The stubbornness of Indians in their usages is the reason why they do not melt down with the Whites into a single people. It is not good that they intermix. Spanish in Mexico. On the race of Whites, who have brought about all revolutions in the world. Nomads have only brought about violent revolutions, not ones that sustain themselves Our (ancient) history of man reliably proceeds only from the white race.²²

Kant also maintained that miscegenation would inevitably result in offspring that inherit traits and phenotypes equally from both parents.²³ Kant's theory of strict miscegenation was short-lived and ultimately abandoned, however, when he was first confronted with the ambiguous and unpredictable nature of race: that a mixture of a white person and a "Mongol" did not result, without exception, in a "consistent half-breed."²⁴

The concept of using "race" to account for human variety was a very popular philosophical and scientific project during this era. Competing with Kant in the effort to promulgate a uniform theory of race based on the teachings of Linnaeus, the German medical doctor and physiologist Johann Friedrich Blumenbach proposed a racial classification scheme that endures to this day. Blumenbach felt that any racial classification scheme would be "very arbitrary indeed both in number and definition," and was strongly against viewing humans as "different species."²⁵ Blumenbach observed that there was "almost insensible and indefinable transition from the pure white skin of the German lady through the yellow, the red, and the dark nations, to the Ethiopian of the very deepest black" and that while people of non-European "races" may be different in color, "as a whole they seem to agree in many things with ourselves."²⁶ Rather, Blumenbach believed that differences in complexion and phenotype may be caused by climate and protested against theories of racial superiority or inferiority.²⁷ This is ironic given that Blumenbach's racial ideas would come to be regarded as being among the most influential in the development of modern race theory.

Blumenbach adopted Linnaeus' division of the world into five racial groups, and in 1781 introduced enduring terminology into the racial lexicon: Caucasian and Mongoloid.²⁸ Blumenbach settled on the term "Caucasian" not for any scientific or anthropological reason, but rather because he felt that white Europeans should be labeled as Caucasian since he believed the inhabitants of the southern slopes of

²² Susan M. Shell, *Kant's Conception of a Human Race*, in *THE GERMAN INVENTION OF RACE*, *supra* note 10, at 55, 56.

²³ See Zammito, *supra* note 18, at 41-42 (describing Kant's conceptualization of "half-breeding").

²⁴ *Id.* at 42-43.

²⁵ *Id.* at 47.

²⁶ *Id.*

²⁷ *Id.*

²⁸ JOHANN FRIEDRICH BLUMENBACH, *THE ANTHROPOLOGICAL TREATISES OF JOHANN FRIEDRICH BLUMENBACH* 264-70 (Thomas Bendyshe trans. & ed., 1865).

Mount Caucasus of modern day Georgia were the most beautiful race of people.²⁹

B. Race and the Age of Enlightenment

The racial theories of Blumenbach and other philosophers rose to special importance during the Age of Enlightenment. The Enlightenment period is important to understanding the history of the race concept, given that an understanding of race reflects in large part an understanding of how society accounts for human differences and similarities. The Aristotelian notion that inequality was the foundation of the natural order of things, as reflected in the concept of a “great chain of being,” popularized the notion that some people were naturally inferior to others.³⁰ As such, “it was but a small step to apply the same concept of hierarchical ordering within the ranks of humankind.”³¹

Accordingly, the early theories of race and racial merit provided by Linnaeus, Kant, Blumenbach and others soon became the basis for acceptable science during the Enlightenment period.³² Therefore, it is unsurprising that the Enlightenment philosophies of rationality and empiricism, developed to help understand the larger world, were applied to the smaller world of racial science.³³ As David Goldberg states:

Empiricism encouraged the tabulation of perceivable differences between peoples and from this it deduced their natural differences. Rationalism proposed initial innate distinctions (especially mental ones) to explain the perceived behavioural disparities. . . . The emergence of independent scientific domains of anthropology and biology defined a classificatory order of racial groupings – subspecies of *Homo sapiens* – along correlated physical and cultural matrixes.³⁴

The Enlightenment philosophies engendered a shift from a pre-modern understanding of human identity rooted in religion and the preservation of noble wealth through biological understandings of lineage, to an understanding of human identity rooted in race.³⁵ That said, Keenan Malik thoughtfully explains that the Enlightenment concepts of reason, rationality and the scientific method, by themselves, do not allow one to understand human difference in terms of race.³⁶ Rather, the Enlightenment beliefs in reason, empiricism and human equality were applied to justify existing inequality in terms of purported “racial” difference.³⁷

²⁹ Zammito, *supra* note 18, at 47.

³⁰ TUCKER, *supra* note 1, at 10.

³¹ *Id.*

³² *Id.* at 10-12.

³³ See KEENAN MALIK, *THE MEANING OF RACE* 40 (1996) (“Eighteenth century Europe was the cradle of modern racism’ because ‘racism has its foundations’ in the Enlightenment ‘preoccupation with a rational universe, nature and aesthetics.’”).

³⁴ DAVID GOLDBERG, *RACIST CULTURE: PHILOSOPHY AND THE POLITICS OF MEANING* 28-29 (1993); see also GEORGE MOSSE, *TOWARD THE FINAL SOLUTION: A HISTORY OF EUROPEAN RACISM* 1-3 (1978) (arguing that “Eighteenth century Europe was the cradle of modern racism” due to the “preoccupation with a rational universe, nature and aesthetics” that characterized the Enlightenment philosophies).

³⁵ GOLDBERG, *supra* note 34, at 24.

³⁶ MALIK, *supra* note 33, at 41.

³⁷ *Id.* at 41-42.

The Enlightenment belief in universal human nature and the natural rights idea of social equality necessarily understood social inequality and human difference as being irrelevant artificial expressions of feudal, monarchist social structures. The Enlightenment philosopher David Hume stated, "it is universally acknowledged that there is great uniformity among the acts of men, in all nations and ages, and human nature remains still the same in its principles and operations."³⁸ So then what could have led Hume to later state that "I am apt to suspect the negroes to be naturally inferior to the whites" and that "[s]uch a uniform and constant difference [between 'negroes' and 'whites'] could not happen . . . if nature had not made an initial distinction between these breeds of men"?³⁹ What led Enlightenment and post-Enlightenment thinkers to develop a racially-based "exception" to this general principle of universal human equality?

The call for universal rights by non-propertied social classes clashed with the strong bourgeoisie notions of capitalism and the free market that displaced the old order of monarchy and feudalism. The inherent inequality that stemmed from the private ownership of property led Adam Smith and other thinkers to believe that there had to be limits and exceptions to "universal equality" in order to protect the "natural" rights of propertied classes.⁴⁰ Indeed, there had been a long-standing pre-racial feudal tradition to organize society according to kinship and "blood ties." Entitlement to political power and class position was determined in large part upon patrilineal descent premised on the transmission of a "common substance" from father to son.⁴¹

Early theories of "race" ostensibly sought to explain class distinctions in a post-feudal society. The writings of Count Arthur Gobineau in *Essays on the Inequality of Races*, demonstrate this evolving viewpoint:

It has already been established that every social order is founded upon three original classes, each of which represents a racial variety: the nobility, a more or less accurate reflection of the conquering race; the bourgeoisie composed of mixed stock coming close to the chief race; and the common people who live in servitude or at least in a very depressed position. These last belong to a lower race which came about in the south through miscegenation with the negroes and in the north with Finns.⁴²

Race theory filled the void left by feudal hierarchy in explaining class distinctions, and reconciled the unequal treatment of certain groups of people with liberalism's embrace of universal equality.

C. Slavery and the Race Concept

The defense of private property as a natural right of humankind necessarily

³⁸ DAVID HUME, AN ENQUIRY CONCERNING HUMAN UNDERSTANDING 60 (Peter F. Millican ed., Oxford Univ. Press 2007) (1748).

³⁹ David Hume, *Of National Characters*, in SELECTED ESSAYS 360 n.120 (Stephen Copley & Andrew Edgar eds., 1993).

⁴⁰ ADAM SMITH, AN INQUIRY INTO THE NATURE AND CAUSES OF THE WEALTH OF NATIONS 480 (1789).

⁴¹ Tessie Liu, *Teaching the Differences Among Women from a Historical Perspective: Rethinking Race and Gender as Social Categories*, 14 WOMEN'S STUD. INT'L F. 265, 270-71 (1991).

⁴² COUNT ARTHUR GOBINEAU, ESSAYS ON THE INEQUALITY OF RACES 120 (1915).

required a narrower understanding of social equality. The balancing of a person's natural right to social equality and freedom, on the one hand, and the natural right to own private property, on the other hand, centered prominently in the defense of chattel slavery.⁴³ Slavery was seen as a form of private property, and was initially primarily justified not on grounds of racial inequality per se, but rather on grounds of economic necessity.⁴⁴ Slavery was regarded as a "necessary evil" to support economic progress and provide opportunities for lower class whites.⁴⁵

Africans were first brought to America around 1619, and Colonial law initially made no legal distinction between African and European indentured servants.⁴⁶ Both African and European voluntary indentured servants could own property, enter into contracts, live together, and faced similar criminal punishments.⁴⁷ Further, both African and European servants could eventually pay off their "debt" and obtain freedom.⁴⁸

As America's economic reliance on free agricultural labor increased,⁴⁹ so did the need to provide non-economic rationales for the perpetual servitude of Africans. A strict economic defense of chattel slavery and perpetual servitude became inadequate to reconcile the enslavement of Africans with the principle of universal equality recognized in the Declaration of Independence and Christian theology. As a result, the unequal treatment of African servants increasingly came to be justified on the basis of religious difference during this period. Religion was utilized to resolve the conflict between the natural right to property and the natural right to social equality, as well as, the conflict between religious principles of equality and the enslavement of humans. Before long, Africans were characterized as non-Christians heathens, and it became morally and socially appropriate to treat them as slaves and to deny them a natural right to social equality. Moral and political inequality was therefore distinguished from natural or physical inequality. Accordingly, Christianized Africans were accorded legal rights not available to non-Christian slaves.⁵⁰ Slavery was consequently touted as a means for converting African heathens to Christianity.⁵¹

Nonetheless, the baptism of African servants, converting them to Christianity,

⁴³ MALIK, *supra* note 33, at 63.

⁴⁴ *Id.* at 62-63.

⁴⁵ *Id.* at 67.

⁴⁶ JOHN HOPE FRANKLIN & ALFRED A. MOSS, JR., FROM SLAVERY TO FREEDOM 65 (8th ed., Alfred A. Knopf 2000) (1947).

⁴⁷ *Id.* at 39.

⁴⁸ *See generally id.* at 38-39.

⁴⁹ *See id.* ("England came to realize that white servants were unsatisfactory . . . Even with all the means used to recruit [indentured servants], the supply was still insufficient because the tobacco, rice, and indigo plantations had an almost insatiable appetite for laborers.").

⁵⁰ *See, e.g., In re Sir Henry Maneringe* (1624), *reprinted in* PAUL FINKELMAN, THE LAW OF FREEDOM AND BONDAGE: A CASEBOOK 10-11 (Oceana Press & N.Y. Univ. Sch. of Law 1986) (allowing a black person named John Phillip to testify in court because he was "a negro Christened in England"); *In re John Graweere* (1641), *reprinted in* THE LAW OF FREEDOM AND BONDAGE, *supra*, at 10-11 (permitting a black servant named Graweere to purchase his son's freedom so that Graweere could raise his son "in the Christian religion").

⁵¹ THOMAS F. GOSSETT, RACE: THE HISTORY OF AN IDEA IN AMERICA 31 (1997).

threatened the utility of religion to justify perpetual servitude.⁵² One of the first statutory attempts to maintain a de facto system of African slavery involved an act by Virginia in 1662 that declared all children born in the colony would acquire the same legal status as their mother, regardless of whether the children were baptized as Christians.⁵³ The Virginia legislature solidified the unequal legal status of African slaves when it passed a law in 1667 that African “servants” could be baptized as Christians, but that such “baptism of slaves doth not exempt them from bondage.”⁵⁴ In 1705, the Virginia legislature discarded any religious pretense and declared Africans no longer occupied the transitional class of indentured servants, but instead were to be considered a form of “fee simple” property.⁵⁵

As the economic and religious rationales for slavery and the unequal treatment of Africans proved to be inadequate, race theory began focusing once again on the “natural” inferiority of Africans to justify inequality. “Scientific” validation of these racial theories employed to justify slavery became increasingly important. Scientific studies rooted in anatomy, physiology and biology purported to objectively establish that “[s]lavery . . . improved blacks ‘in body, mind and morals.’”⁵⁶ The disease of drapetomania – a condition of the mind that caused African slaves to attempt to escape enslavement – was scientifically established. The proposed medical treatment and preventative remedy for drapetomania called for whites to treat blacks as children – demonstrating kindness and understanding – under “normal” circumstances, and to beat and whip blacks if they rebelled until they returned to their natural and ordinary submissive state of mind.⁵⁷ Accordingly, “[s]lavery was viewed as an expression of the harmony between natural law and social organization.”⁵⁸

The infamous *Dred Scott* decision reflects the judiciary’s embrace of scientific theories of racial inequality during this time.⁵⁹ In *Dred Scott*, a slave from Missouri claimed that he had acquired freedom by virtue of living both in a free state and in a

⁵² Cf. DAVID BRION DAVIS, *THE PROBLEM OF SLAVERY IN WESTERN CULTURE* 348 (1966) (discussing the belief that baptism could not change “man’s civil state” and that nations exist that “seemed to be born for slavery”).

⁵³ See II WILLIAM WALLER HENING, *THE STATUTES AT LARGE* 170 (Richmond, Samuel Pleasants 1810), reprinted in *THE LAW OF FREEDOM AND BONDAGE*, supra note 50, at 16 (providing the text of the act entitled “Negro women’s children to serve according to the condition of the mother”). For an electronic version of the text of this act, as well as a collection of many other laws of Virginia beginning with the first session of the state’s legislature in 1619, see Hening’s Statutes at Large, <http://vagenweb.org/hening/> (last visited Jan. 2, 2009).

⁵⁴ See HENING, supra note 53, at 16.

⁵⁵ See III WILLIAM WALLER HENING, *THE STATUTES AT LARGE* 271 (Richmond, Samuel Pleasants 1812) (listing “An act concerning servants and slaves”), available at Hening’s Statutes at Large, <http://vagenweb.org/hening/> (last visited Jan. 2, 2009); see also A LEON HIGGINBOTHAM, JR., *IN THE MATTER OF COLOR: RACE AND THE AMERICAN LEGAL PROCESS, THE COLONIAL PERIOD* 32-53 (Oxford Univ. Press 1978) (surveying Virginia’s statutes through the colonial period).

⁵⁶ Joel M. Sipress, *Relearning Race: Teaching Race as a Social Construction*, 30 *HIST. TCHR.* 175, 175-85 (1997).

⁵⁷ *Id.* at 12.

⁵⁸ *Id.*

⁵⁹ *Scott v. Sanford (Dred Scott)*, 60 U.S. 393 (1856).

U.S. territory where slavery was prohibited under the Missouri Compromise.⁶⁰ Among other important legal and constitutional issues, the U.S. Supreme Court held that African-Americans, whether enslaved or free, could never become citizens of the United States and thus could not sue or be protected by the U.S. Constitution.⁶¹ The Court's belief in the natural inferiority of blacks was clearly central to its analysis:

[African-Americans] had for more than a century before been regarded as beings of an inferior order, and altogether unfit to associate with the white race, either in social or political relations; and so far inferior, that they had no rights which the white man was bound to respect; and that the negro might justly and lawfully be reduced to slavery for his benefit. He was bought and sold, and treated as an ordinary article of merchandise and traffic, whenever a profit could be made by it.⁶²

The Court therefore found that at the time of the drafting of the U.S. Constitution, blacks "were considered as subordinate and inferior class of beings, who . . . had no rights or privileges."⁶³

D. Nineteenth-Century "Race Science"

Even those scientists not associated with the pro-slavery movement in America came to embrace "race science," issuing scientific findings that blacks were a biologically separate and inferior sub-human species. Seemingly "genuine" and non-biased scientists around the world came to argue that racial inequality was a biological fact.⁶⁴ The famed Swiss naturalist Louis Agassiz believed that science "had the obligation to settle the relative rank among . . . races."⁶⁵ Agassiz thereafter concluded that the "submissive . . . negro [demonstrated] a peculiar indifference to the advantages afforded by civilized society," and therefore social treatment of blacks should be "guided by a consciousness of the real difference existing between us and them."⁶⁶

The trend towards understanding race in terms of biological difference and inferiority is perhaps best exemplified by the phrenology work of American physician Dr. Samuel George Morton.⁶⁷ Dr. Morton purported to provide "definitive" empirical evidence of black inferiority, based on his measurement of the cranial capacities of some eight-hundred human skulls.⁶⁸ Unsurprisingly, Dr. Morton found that the skulls of "Caucasians" had the largest cranial capacity, while American Indians had smaller skulls, with "Ethiopians" possessing the smallest of

⁶⁰ See Paul Finkelman, *Scott v. Sandford: The Court's Most Dreadful Case and How it Changed History*, 82 CHI.-KENT L. REV. 3 (2007), for a more detailed examination of the facts and legal import of the *Dred Scott* decision.

⁶¹ *Dred Scott*, 60 U.S. at 454.

⁶² *Id.* at 407.

⁶³ *Id.* at 404-05.

⁶⁴ TUCKER, *supra* note 1, at 17.

⁶⁵ *Id.* at 18.

⁶⁶ *Id.*

⁶⁷ *Id.*

⁶⁸ *Id.*

skulls.⁶⁹ These findings provided scientific validation for theories of non-white racial inferiority.⁷⁰

Phrenologists such as Dr. Morton utilized seemingly unbiased and logical scientific procedures to verify pre-existing racial conclusions concerning black inferiority and white superiority.⁷¹ In particular, the pseudo-scientific findings of phrenologists were used to conclude that blacks were not only a “lower” race, but a completely distinct species that were incapable of abstract reasoning.⁷² Accordingly, slavery was justified as permitting blacks to achieve their “greatest perfection,” as they were biologically incapable of becoming educated, contributing members of free society.⁷³

Phrenologists were joined by anthropometrists in their fervor to scientifically validate slavery and a race theory founded upon black inferiority.⁷⁴ The science of anthropometry seeks to measure human physical differences in order to better understand human variation.⁷⁵ As applied to the race context, anthropometrists of this time sought to examine the bodies of blacks to isolate key morphological differences from whites.⁷⁶ Using measurements of whites as the default standard of perfection, anthropometrists sought to interpret any anatomical differences in racial terms.⁷⁷ The anthropometrists of the nineteenth century made outlandish claims, such as “the hair of the white man is more perfect than that of the negro,” and the small facial angle of blacks indicated lower intelligence.⁷⁸

E. “Social Darwinism,” Evolution and Race Theory

While ethnologists and phrenologists were searching for scientific validation for their pre-formed views of black inferiority, Charles Darwin’s theory of evolution revolutionized biological study.⁷⁹ Prior to Darwin’s publication of *The Origin of Species*, race theory focused on three key schools of thought to cultivate an ideology of black inferiority: the Aristotelian notion of a “great chain of being,” religious difference, and the polygenic focus on assigning physical and mental values to supposed morphological difference. Darwin’s theory of evolution unwittingly became the fourth key vehicle for scientifically demonstrating white superiority and black inferiority.⁸⁰

Darwin accounted for variation in the natural world based on a theory of gradual evolution within a species pursuant to a process of natural selection.⁸¹ Nonetheless, Darwin anticipated the potential social application of his evolutionary theory to race, and explicitly stated that all “races” of humans belonged to the same species:

⁶⁹ TUCKER, *supra* note 1, at 18.

⁷⁰ GOSSETT, *supra* note 51, at 73-75.

⁷¹ TUCKER, *supra* note 1, at 20-21.

⁷² *Id.*

⁷³ *Id.*

⁷⁴ *Id.*

⁷⁵ See generally GOSSETT, *supra* note 51, at 54-83.

⁷⁶ TUCKER, *supra* note 1, at 22-25.

⁷⁷ *Id.*

⁷⁸ *Id.* at 23.

⁷⁹ *Id.* at 25.

⁸⁰ See *id.* at 26-29 (discussing Darwin’s theory and its eventual application to races).

⁸¹ TUCKER, *supra* note 1, at 25-26.

Although the existing races of man differ in many respects as in color, hair, shape of skull, proportions of the body, etc., yet if their whole structure be taken into consideration they are found to resemble each other closely in a multitude of points. Many of these are so unimportant or of so singular a nature that it is extremely improbable that they should have been independently acquired by aboriginally distinct species or races.⁸²

Darwin believed that the “races of man” differed in physical anatomy, and was undoubtedly influenced by the anthropometrists and phrenologists of his time. However, Darwin was careful not to designate where the “races” fell on the evolutionary ladder, if at all.

Nonetheless, Darwin’s theories of biological evolution and natural selection were co-opted to explain human differences in terms of race.⁸³ The “Social Darwinist” school of thought, founded in part by Herbert Spencer, sought to apply Darwin’s evolutionary theory to explain (and justify) racial and class inequality.⁸⁴ Social Darwinists thus latched upon the catch phrase of “survival of the fittest” to argue that the suffering of lesser-evolved classes of people is the necessary price for evolutionary progress.⁸⁵ As such, Social Darwinists believed that all efforts to eliminate existing social inequality would only frustrate nature’s evolutionary plan. Competition between individuals is necessary in order to fether out undesirable and inferior biological traits.⁸⁶ As applied to the class context, Social Darwinists opposed all government and private intervention designed to assist the poor, including minimum wage legislation, free public education, and charitable aid to the needy. Rather, Social Darwinists believed society should advance the ideals of capitalism and free competition in order to abide by nature’s laws.⁸⁷

Noted jurist Oliver Wendell Holmes even took the Supreme Court to task for relying on the laissez faire theories of Herbert Spencer when deciding the infamous *Lochner v. New York* case.⁸⁸ In *Lochner*, the Court struck down a New York labor regulation that limited the number of hours bakers could work.⁸⁹ The Court held that the statute interfered with the freedom of employers to contract for the labor of employees, thereby violating the Due Process Clause of the Fourteenth Amendment.⁹⁰ Justice Holmes dissented from the majority holding, believing that the decision was “decided upon an economic theory” of laissez faire and admonishing the majority that “[t]he [Fourteenth] Amendment does not enact Mr. Herbert Spencer’s Social Statics [sic].”⁹¹

Social Darwinism also conveniently resolved the inherent contradiction between

⁸² CHARLES DARWIN, THE DESCENT OF MAN AND SELECTION IN RELATION TO SEX 231-32 (London, Murray 1871), available at The Complete Work of Charles Darwin Online, <http://darwin-online.org.uk/content/frameset?itemID=F937.1&viewtype=side&pageseq=1> (last visited Jan. 2, 2009).

⁸³ TUCKER, *supra* note 1, at 29.

⁸⁴ *Id.* at 26-28.

⁸⁵ *Id.*

⁸⁶ *Id.* at 27.

⁸⁷ *Id.*

⁸⁸ *Lochner v. New York*, 198 U.S. 45 (1905).

⁸⁹ *Id.* at 64.

⁹⁰ *Id.* at 53.

⁹¹ *Id.* at 75.

the Enlightenment principle of equality and existing class and racial inequality. According to Social Darwinists, people suffering from social inequality were necessarily genetically inferior and thus not equal to the ruling class. The principle of democratic equality, then, applied only to biological equals.

The concept of “survival of the fittest” was soon extended to race theory. The different “races” were believed to represent different positions on the evolutionary ladder. Armed with scientific evidence provided by physiognomists and anthropologists, Social Darwinism unsurprisingly viewed the white race as occupying the highest state of human evolution, while non-white races remained in a lower stage of evolution. As one Social Darwinist stated, there was “one way, and one way only, in which a high state of civilization has been produced, namely the struggle of race with race and the survival of the physically and mentally fitter race.”⁹² Social Darwinism thus pitted race against race in the struggle for evolutionary survival, and viewed domination and oppression over “inferior races” to be the only method to improve society.⁹³

The skewed reasoning of Social Darwinism led to one conclusion as to how to resolve the “race problem”: eliminate the biologically inferior races from the genetic pool.⁹⁴ The extermination of inferior races, namely the black race, was coldly regarded as an inevitable expression of natural law: “If [blacks] were the highest form of human life, we might be concerned [But] to the clear, cold eye of science, the plight of these backward peoples appears practically hopeless. They have neither part nor parcel in the future history of man.”⁹⁵

Miscegenation also posed a threat to evolutionary progress. According to Social Darwinists, such mixtures would always lead to biological denigration:

The consequence is that, if you mix the constitutions of two widely divergent varieties which have severally become adapted to widely divergent modes of life, you get a constitution which is adapted to the mode of life of neither – a constitution which will not work properly, because it is not fitted for any set of conditions whatever.⁹⁶

Nonetheless, the mixture of the various strains of the “Aryan race,” was regarded as a laudable evolutionary goal that would “produce a more powerful type of man than has hitherto existed I think . . . the Americans may reasonably look forward to a time when they will have produced a civilization grander than any the world has known.”⁹⁷

F. The Eugenics Movement

Social Darwinism encouraged many scientists to attempt to improve society by subtly “guiding” the natural evolutionary process. Francis Galton, a cousin of

⁹² TUCKER, *supra* note 1, at 29 (quoting Karl Pearson).

⁹³ *Id.*

⁹⁴ *Id.* at 29-34.

⁹⁵ *Id.* at 31 (quoting William Benjamin Smith, a professor at Tulane University in 1905).

⁹⁶ GOSSETT, *supra* note 51, at 151 (quoting Letter from Herbert Spencer to Kentaro Kaneko (Aug. 26, 1892), in 2 DAVID DUNCAN, LIFE AND LETTERS OF HERBERT SPENCER 17 (D. Appleton and Co. 1908)).

⁹⁷ *Id.* (quoting EDWARD LIVINGSTON YOUMANS, HERBERT SPENCER ON THE AMERICANS AND THE AMERICANS ON HERBERT SPENCER 19-20 (D. Appleton and Co. 1883)).

Charles Darwin and influenced by the teachings of Social Darwinism, coined the term “eugenics” to refer to the scientific promotion of superior genetic, hereditary traits. Galton believed that science could promote the development of a perfect “human race” by encouraging the transmission of superior genetic “stock” and inhibiting the transmission of inferior genetic “stock.”

The eugenicists sought to develop scientific measures of innate ability and intelligence to support their claims that heredity determined genetic potential. Relying on the law of deviation from an average, Galton and other eugenicists developed various statistical measures of intellectual ability that purported to determine human “merit.” Utilizing a “normal curve” of distribution, Galton found that blacks scored two grades lower than whites on intelligence tests.⁹⁸ According to Galton, it was obvious that the majority of blacks were “half-witted” and thus biologically inferior to whites.⁹⁹

Galton was one of the first scientists to theorize that intelligence was scientifically quantifiable and normally distributed along a statistical bell curve. Psychologists aided in developing mental tests that replaced the anthropometric measurements of the past. These mental tests were regarded as being able to scientifically and rationally determine human worth. Mental tests soon became psychology’s principal scientific method largely due to the field’s alliance with the eugenicist movement. That these purportedly neutral tests were tainted by racial bias is almost too obvious to mention. As the sociologist William Tucker recounts:

Even before data from the new mental tests had been gathered, many social scientists had already made up their mind about the intelligence of blacks and immigrants. . . . Indeed, had the data conflicted with already received opinion, the new instruments would probably have been invalidated as measures of intelligence and discarded; some earlier tests of ability had already suffered such a fate when they failed to yield the expected racial ordering.¹⁰⁰

The eugenicist movement also sought to provide scientific support for existing legal rules of hypodescent. Eugenicists believed that a racial hybrid always resulted in a biological degeneration, and exhibited the genetic stock of the parent from the inferior race. As such, eugenicists believed:

The cross between a white man and an Indian is an Indian; the cross between a white man and a Negro is a Negro, the cross between a white man and a Hindu is a Hindu; and the cross between any of the three European races and a Jew is a Jew.¹⁰¹

In many ways, the Social Darwinist movement inspired the eugenicist movement to apply pre-existing principles of animal husbandry to humans. Indeed, one of the most important early eugenicist organizations was called the “American Breeders’ Association,” whose name was later changed to the American Genetic Association.¹⁰² Thus, the eugenicist movement focused on human breeding programs for those with superior racial genetics and sterilization programs for those

⁹⁸ TUCKER, *supra* note 1, at 43.

⁹⁹ GOSSETT, *supra* note 51, at 156.

¹⁰⁰ TUCKER, *supra* note 1, at 74-75.

¹⁰¹ *Id.* at 90 (quoting MADISON GRANT, *THE PASSING OF THE GREAT RACE* 18 (1923)).

¹⁰² *Id.* at 62.

with inferior genetics. Galton concluded that heredity, as informed by Social Darwinism, made it “quite practicable to produce a highly gifted race of men by judicious marriages during several consecutive generations.”¹⁰³ Such “judicious marriages” could be achieved by compiling and publishing “a ‘golden book’ of natural nobility,” listing those members of society with superior heredity so that they may intermarry.¹⁰⁴

Eugenicists claimed that inferior genetic material from southern and eastern European immigrants, blacks, and “degenerates” posed the greatest threat to the propagation of superior stock. Unsurprisingly, eugenicists supported immigration restrictions, anti-miscegenation laws, Jim Crow policies, and forced sterilization policies in the United States. According to conservative estimates, over forty-five thousand individuals were sterilized in thirty states pursuant to state statutes aimed at “socially inadequate” persons.¹⁰⁵

G. Immigration, Assimilation, Whiteness and the Race Concept

The racial theories of Social Darwinism and eugenics were invoked to buttress arguments for the restricted immigration of persons of “inferior stock” to the United States. The Chinese were the initial targets for the new found xenophobia of the late nineteenth century. In particular, California amended its state constitution in 1879 to declare Chinese people “a menace” to the state, and called for measures aimed at the “burdens and evils arising from the presence of aliens.”¹⁰⁶ The amendment, which prohibited the employment of Chinese, stemmed from growing concern that Chinese laborers were causing economic hardship to whites.¹⁰⁷

Congress eventually passed the Chinese Exclusion Act of 1882, which excluded new Chinese immigrants from entering the United States and required Chinese immigrants already residing in the United States to obtain special certificates of employment.¹⁰⁸ While concerns of economic competition were cited as partial justification for restrictive immigration, the exclusion of Chinese persons from the United States was principally aimed at maintaining a northern-European-inspired “American” identity and population.¹⁰⁹ The legislative history of the Act demonstrates that Congress was principally concerned with protecting the “Anglo-Saxon” race and culture.¹¹⁰ Senator Salsbury proclaimed that he:

Would not close the gates against the immigration of the Chinese to

¹⁰³ *Id.* at 46 (quoting FRANCIS GALTON, *HEREDITARY GENIUS: AN INQUIRY INTO ITS LAWS AND CONSEQUENCES* 1 (London, MacMillan 1869), available at http://galton.org/books/hereditary-genius/galton-1869-Hereditary_Genius.pdf).

¹⁰⁴ *Id.* at 47.

¹⁰⁵ TUCKER, *supra* note 1, at 61.

¹⁰⁶ CAL. CONST. art. XIX, § 1 (repealed 1952).

¹⁰⁷ The prohibition of Chinese labor included in the amended California Constitution was invalidated a year later. See *In re Tiburcio Parrot*, 1 F. 481, 518 (C.C.D. Cal. 1880).

¹⁰⁸ See Chinese Exclusion Act of 1882, ch. 126, 22 Stat. 58, 58-61 (repealed 1943) (stating further that Chinese immigrants living in the United States could re-enter the United States if they traveled abroad, provided they had valid re-entry certificates); see also Scott Act, ch. 1064, 25 Stat. 504 (1888) (repealed 1943) (providing for the permanent exclusion of Chinese immigrants and declaring re-entry certificates to be void).

¹⁰⁹ Gabriel J. Chin, *Segregation's Last Stranglehold: Race Discrimination and the Constitutional Law of Immigration*, 46 U.C.L.A. L. Rev. 1, 28-29 (1998).

¹¹⁰ *Id.*

this country simply upon the ground that they enter into competition with labor, but I put it upon another ground, which is that it introduces a distinct race of people with a different civilization from that which we are accustomed, wholly incapable of assimilation with our people. In my opinion, their presence among us will not improve their condition morally or in any other respect . . . while it may lead to discord and possible collision with the Anglo-Saxon race among they live.¹¹¹

Race and whiteness were framed not only in terms of genetic superiority and evolutionary potential, but also in terms of assimilatory potential. The U.S. Supreme Court relied on these race concepts when it upheld the constitutionality of the Chinese Exclusion Act in *Chae Chan Ping v. United States*.¹¹² In upholding the Act, the Court stressed that the immigration restrictions were necessary to the “preservation of our civilization,” and that without such measures the country “would be overrun by [Chinese immigrant laborers].”¹¹³ In particular, the Court found that it was “impossible for them to assimilate with our people” due to the “differences of race.”¹¹⁴

The United States also experienced a tremendous increase in immigration from eastern and southern European countries during the late nineteenth century and early twentieth century. These immigrants, including the Irish, Jews and Italians, were initially characterized as non-white and biologically inferior. The Social Darwinists and eugenicists did not limit their genetic inquiry to members of the “Negroid” or “Mongoloid” races, but also believed that genetic differentiation could be made with respect to the varieties of the “Caucasoid” race. The new European immigrants were regarded as being genetically inferior to northern Europeans, and thus a threat to the genetic purity of Americans. Indeed, a prevailing view at the end of the nineteenth century was that “the best remedy for whatever is amiss in America would be if every Irishman would kill a negro and be hanged for it.”¹¹⁵

Accordingly, the eugenicists supported the use of mental tests to exclude inferior immigrants from entering the United States. By 1911, eugenicists received permission to visit Ellis Island in order to administer intelligence tests to incoming immigrants.¹¹⁶ Unsurprisingly, the tests verified the eugenicists’ pre-existing racial beliefs that the vast majority of southern and eastern European immigrants were “feebleminded” and thus deportable.¹¹⁷

The anti-immigrant fervor eventually led Congress to pass the National Origins

¹¹¹ *Id.* (quoting 13 CONG. REC. 1584 (1882)).

¹¹² 130 U.S. 581 (1889).

¹¹³ *Id.* at 594-95.

¹¹⁴ *Id.* at 595.

¹¹⁵ TUCKER, *supra* note 1, at 34 (quoting Oxford University professor Edward A. Freeman).

¹¹⁶ *Id.* at 78. “An accurate measurement of every one’s intelligence would seem to herald the feasibility of selecting better endowed persons for admission into citizenship – and even for the right of having offspring.” *Id.* at 73 (quoting Charles Spearman).

¹¹⁷ *Id.* at 78, 81. The eugenicists concluded that “83 percent of Jews, 80 percent of Hungarians, and 79 percent of Russians were feebleminded” and thus deportable. The mental tests developed by eugenicists were also administered to soldiers in the U.S. Army around 1920. *Id.* at 79-81. Once again, the results of the tests indicated that northern Europeans scored the highest, while blacks and southern and eastern Europeans scored the lowest. TUCKER, *supra* note 1, at 79-81.

Act of 1924, which severely restricted the influx of immigrants from southern and eastern European countries. The Act's explicit purpose was to restrict the ability of such immigrants to legally enter the United States by placing numerical per-country-limits on southern and eastern European countries.

Those European immigrants able to enter the United States were caught in an "in between" racial status amid those groups traditionally conceived of as non-white (e.g., blacks and Asians) and the northern European descendants generally thought of as "white."¹¹⁸ These new immigrants were eventually able to assimilate into whiteness by adopting American cultural norms, by strongly embracing a white American racial identity, by contrasting their racial status with the status of non-white groups such as blacks and Asians, and by accumulating political power.¹¹⁹

The Immigration Act of 1924 also explicitly tied entry into the United States to the right of naturalization. The 1790 Naturalization Act restricted U.S. citizenship to "white persons" for almost one hundred years. After the end of slavery, the Reconstruction Amendments extended citizenship rights to "aliens of African nativity . . . or descent." From that time until the Immigration Act of 1952, the naturalization right was only accorded to "whites" and African-Americans. The naturalization limitation spawned a series of cases where the courts had to legally interpret race and the meaning of "whiteness."

In one of the first federal cases to analyze "whiteness" under the Naturalization Act, the Federal Circuit Court of California had to determine whether a Chinese person of the "Mongolian" race was a "white" person.¹²⁰ The *In re Ah Yup* court admitted that the words "white person . . . constitute a very indefinite description of a class of persons, where none can be said to be literally white, and those called white may be found of every shade from the lightest blonde to the most swarthy brunette."¹²¹ Nonetheless, the court relied on anthropological findings by Blumenbach and other race theorists that separated the world into five distinct racial groups: Caucasian, Black, Indian, Mongoloid, and Malay.¹²² The court also examined society's general understanding of the racial term "white" and determined that Chinese persons were not commonly understood by society to be white.¹²³

Other federal courts similarly relied on the anthropological theory of race espoused by Blumenbach and others to analyze whiteness. The Circuit Court for the Northern District of Georgia, for instance, held in *In re Najour* that a Syrian applicant for naturalization was "white" based on scientific anthropological findings that Syrians were part of the "Caucasian" race.¹²⁴ The *In re Najour* court was also concerned with racial appearance and assimilatory potential of the applicant, noting that the petitioner was "not particularly dark" and had the "appearance and characteristics of the Caucasian race."¹²⁵

Fifty years after *In re Ah Yup* was decided, the U.S. Supreme Court relied on the

¹¹⁸ James R. Barrett & David Roediger, *In-between Peoples: Race, Nationality and the "New Immigrant" Working Class*, 16 J. AM. ETHNIC HIST. 3 *passim* (1997).

¹¹⁹ *Id.*; see also NOEL IGNATIEV, HOW THE IRISH BECAME WHITE 1-2 (1996).

¹²⁰ *In re Ah Yup*, 1 F. Cas. 223, 223 (C.C.D. Cal. 1878) (No. 104).

¹²¹ *Id.*

¹²² *Id.*

¹²³ *Id.* at 223-24.

¹²⁴ *In re Najour*, 174 F. 735, 735-36 (C.C.N.D. Ga. 1909).

¹²⁵ *Id.* at 735.

case to find that a Japanese person applying for U.S. citizenship was not white.¹²⁶ Notably, in *Ozawa v. United States* the Court implicitly acknowledged the fluid nature of race by rejecting a skin color test:

Manifestly the test afforded by the mere color of the skin of each individual is impracticable, as that differs greatly among persons of the same race, even among Anglo-Saxons, ranging by imperceptible gradations from the fair blond to the swarthy brunette, the latter being darker than many of the lighter hued persons of the brown or yellow races. Hence to adopt the color test alone would result in a confused overlapping of races and a gradual merging of one into the other, without any practical line of separation.¹²⁷

Instead, the Court relied on the “common understanding” test employed by *In re Ah Yup* to hold that “the words ‘white person’ were meant to indicate only a person of what is popularly known as the Caucasian race.”¹²⁸ In doing so, the Court expressed a willingness to defer to “scientific” interpretations of race and whiteness; a willingness that continues to this day.

The Court, however, departed from a strictly scientific understanding of race when it decided *United States v. Bhagat Singh Thind*.¹²⁹ In *Thind*, the Court was faced with determining whether a Hindu from India was a white person within the meaning of the Naturalization Act.¹³⁰ Although the plaintiff petitioning for naturalization presented scientific anthropological evidence that Indian Hindus should be classified as Caucasian,¹³¹ the Court rejected the evidence, and instead applied precedent and the “common understanding” test.¹³² The Court held that Hindus from India are not white, explaining that it “is a matter of familiar observation and knowledge that the physical group characteristics of the Hindus render them readily distinguishable from . . . [those] commonly recognized as white.”¹³³ In reaching its holding, the Court not only relied on common understandings of whiteness, but also on the potential of Indian Hindus to assimilate among Americans based on their appearance.¹³⁴

The assimilatory potential of naturalization petitioners remained at the center of legal analysis following the *Thind* case. In *United States v. Cartozian*, the federal district court of Oregon had to decide whether a person from Armenia was “white.”¹³⁵ The district court determined that Armenians were indeed white, but did

¹²⁶ *Ozawa v. United States*, 260 U.S. 178, 196-98 (1922).

¹²⁷ *Id.* at 197.

¹²⁸ *Id.*

¹²⁹ 261 U.S. 204, 208-10 (1923).

¹³⁰ *Id.* at 204.

¹³¹ *Id.* at 210.

¹³² *Id.* at 209-10, 213.

¹³³ *Id.* at 215.

¹³⁴ *Thind*, 261 U.S. at 215. “[I]t cannot be doubted that the children born in this country of Hindu parents would retain indefinitely the clear evidence of their ancestry. . . . What we suggest is merely racial difference, and it is of such character and extent that the great body of our people instinctively recognize it and reject the thought of assimilation.” *Id.*; see also *In re Ahmed Hassan*, 48 F. Supp. 843, 845-46 (E.D. Mich. 1942) (holding that person from Yemen was not white under the common understanding test, and that the *Ozawa* and *Thind* Courts had established that skin color and anthropological findings were not dispositive regarding racial classification).

¹³⁵ 6 F.2d 919, 919 (D. Or. 1925).

not rely solely on anthropological findings provided by Franz Boas and others that Armenians could scientifically be considered “Caucasians.”¹³⁶ Rather, the court focused on the assimilatory potential of Armenians.¹³⁷ The court supported its finding of whiteness by noting that Armenians are Christians, they typically occupy a higher social and economic class, and they have been able to intermarry with white Americans and assimilate into American society.¹³⁸

The Naturalization cases demonstrate the courts’ willingness to rely on scientific theories of race to the extent that these theories reflected the “common understanding” of society’s perceptions of whiteness and assimilatory potential. The flawed assumptions of race theory at the time led to results that did not comport with conventional understandings of the meaning of whiteness. Accordingly, the courts resorted to other measures of whiteness, such as the potential of specific immigrant groups to assimilate into American society.¹³⁹ In this way, immigrants from southern and eastern European countries eventually acquired whiteness, while those from Asian countries and Mexico were generally denied whiteness.

H. Nazi Germany and World War II

Prior to World War II, the European eugenics movement became increasingly popular. Eugenics purported to offer a scientific methodology for applying biological theories of race to improve society. On the eve of World War II, both American and European eugenicists were calling for eugenic reforms. The Swedish Professor Herman Lundborg argued in 1931 that “*the inherently degenerate, should by confinement, sterilization, and other means be prevented from reproducing.*”¹⁴⁰ The prevalent fear at the time was that “[i]f strong measures in race hygiene are not taken in time, the [superior white] race will meet with dissolution and extinction. . . . *We must at any price keep the quality of the [white] race at a high level.*”¹⁴¹

German scientists and political leaders were quite interested in the findings of Social Darwinists and eugenicists, and eventually concluded that the nation’s post-World War I economic decline was due to racial biological degeneration. Attributing the country’s economic woes to state expenditures for the benefit of the biologically inferior ironically resonated with the working class.

The newly established post-World War I Weimar government earnestly began to investigate the possibility of applying eugenic principles to society. Germany’s government established “race hygiene” – *Rassenhygiene* – centers to develop medical policy that accounted for the health of the “race.” German scientists soon

¹³⁶ *Id.* at 920-22.

¹³⁷ *Id.*

¹³⁸ *Id.* at 920-21; accord *United States v. Balsara*, 180 F. 694, 696 (2d Cir. 1910) (holding that a Persian Parsee was white, based in part on findings that the Parsees were intelligent and wealthy).

¹³⁹ At other times, the courts interpreted race in political terms. The United States entered into the Treaty of Guadalupe Hidalgo with Mexico in 1848 to end the Mexican-American War. The Treaty provided that Mexicans occupying land could acquire U.S. citizenship, however, the Naturalization statute at the time limited citizenship to whites and African-Americans. Accordingly, the courts often determined Mexicans to be white for purposes of naturalization. See, e.g., *In re Rodriguez*, 81 F. 337, 354-55 (W.D. Tex. 1897) (holding that Congress intended Mexicans to be white for naturalization purposes pursuant to the Treaty of Guadalupe-Hidalgo).

¹⁴⁰ Herman Lundborg, *Race Biological Perspectives*, 9 SOC. Forces 397, 400 (1931) (emphasis in original).

¹⁴¹ *Id.* (emphasis in original)

proposed sterilization programs for the biologically inferior that were modeled after the sterilization statutes in the United States.¹⁴² The German eugenicists also came to see merit in adopting anti-miscegenation laws similar to those existing in the United States.¹⁴³ However, the anti-miscegenation laws proposed by Weimar eugenicists not only aimed to prevent “whites” from reproducing with “blacks” or “non-whites,” but also sought to promote Nordic and Aryan purity by preventing intermarriage with non-Nordic Europeans.¹⁴⁴ Many German eugenicists particularly wanted to prevent the mixing of Nordic and Jewish “blood.”

Eugenic scientific findings therefore supplied scientific credibility to the “Nordic” movement in Germany. Led by Hans F.K. Gunther, who would later be regarded as the founder of Nazi racial ideology, the Nordic movement sought to eliminate threats to the racial purity of German citizens by preventing intermixture with non-Nordic blood.¹⁴⁵ According to Gunther, the eugenic institutes, sterilization programs, and restrictive immigration policies established by the United States were “only the first step . . . to still more definite laws dealing with race and eugenics.”¹⁴⁶ Nonetheless, the Weimar government was slow to implement the sterilization programs proposed by German scientists.¹⁴⁷ As a result, eugenicists turned their support to the growing Nazi political organization, led by Adolf Hitler, which had seemed to co-opt the Nordic movement as its own.¹⁴⁸

After Adolf Hitler and the Nazi party seized control of Germany in 1933, the basic scientific principles developed by geneticists and eugenicists formally became applied science.¹⁴⁹ The German “Biological” state had come to fruition. The Nazi government initially passed compulsory sterilization laws for people suffering from various so-called hereditary diseases: feeble-mindedness, blindness, deafness, alcoholism, and deformities.¹⁵⁰ After the sterilization laws were passed, Germany established medical colleges to train all physicians as “genetic doctors,” whose primary concern was the genetic racial health of the nation, rather than the individual patient.¹⁵¹ The Nuremberg Laws were passed a couple of years later, which barred marriage between Aryans and Jews, and also restricted Jews from occupying government positions.¹⁵²

Because Nazi leaders felt that the sterilization and anti-miscegenation laws were not eliminating racial genetic impurities in a timely manner, the leaders implemented euthanasia programs, initially directed towards the physically and mentally handicapped.¹⁵³ These euthanasia programs, however, were quickly broadened to target all genetically inferior non-Aryan persons, including Jews, Romas and Slavs.

¹⁴² TUCKER, *supra* note 1, at 112.

¹⁴³ *Id.* at 113.

¹⁴⁴ *Id.* at 113-14.

¹⁴⁵ *Id.* at 115.

¹⁴⁶ *Id.* at 116 (quoting H.F.K. GUNTHER, *THE RACIAL ELEMENTS OF EUROPEAN HISTORY* 245 (Kennikat 1970) (1927)).

¹⁴⁷ TUCKER, *supra* note 1, at 117.

¹⁴⁸ *Id.*

¹⁴⁹ *Id.* at 118-19.

¹⁵⁰ *Id.* at 119-20.

¹⁵¹ *Id.* at 120.

¹⁵² TUCKER, *supra* note 1, at 122.

¹⁵³ *Id.* at 127.

The “Final Solution” was specifically aimed at annihilating the Jewish population, who were deemed to be a “parasitic race” that posed a direct biological threat to Germany’s Aryan racial community.¹⁵⁴

The Holocaust unquestionably serves as one of the gravest reminders of the inherent dangers in ascribing to a value-laden biological theory of race. In many ways, Nazi Germany was simply applying the demented lessons of early racial genetic theory in an effort to facilitate the human evolutionary process. As a result, approximately two-thirds of the Jewish population of Europe – six million persons – was murdered.¹⁵⁵ Millions of other Europeans died in forced labor camps or from the euthanasia programs.¹⁵⁶ The racial genocide did not end until the Allied Forces defeated Nazi Germany on March 7, 1945.¹⁵⁷

I. Post-World War II Developments in Race Theory

The unconscionable attempted genocide of an entire group of people shocked the world into rejecting biological theories of race. The newly formed post-war United Nations created the Educational, Scientific and Cultural Organization (“UNESCO”) in 1948, and tasked it with developing an authoritative scientific statement on race to combat race prejudice.¹⁵⁸ UNESCO drew upon leading anthropologists, medical doctors and biologists to scientifically debunk the biological conception of race. On July 18, 1950, the UNESCO commission made the following observations regarding race:

1. Scientists have reached general agreement in recognizing that mankind is one: that all men belong to the same species, *Homo sapiens*. It is further generally agreed among scientists that all men are probably derived from the same common stock; and that such differences as exist between different groups of mankind are due to the operation of evolutionary factors of differentiation such as isolation, the drift and random fixation of the material particles which control heredity (the genes), changes in the structure of these particles, hybridization and natural selection.

. . . .

14. In these ways groups have arisen of varying stability and degree of differentiation which have been classified in different ways for different purposes. The biological fact of race and the myth of ‘race’ should be distinguished. For all practical social purposes ‘race’ is not so much a biological phenomenon as a social myth.¹⁵⁹

¹⁵⁴ *Id.* at 127-28.

¹⁵⁵ United States Holocaust Memorial Museum, The Holocaust, <http://www.ushmm.org/wlc/article.php?lang=en&ModuleId=10005143> (last visited Nov. 5, 2008).

¹⁵⁶ *Id.*

¹⁵⁷ *Id.* (noting how the “death marches” employed by Nazi Germany continued up until the day of surrender).

¹⁵⁸ Harry L. Shapiro, *Revised Version of UNESCO Statement on Race*, 10 AM. J. OF PHYSICAL ANTHROPOLOGY 363, 363 (1952).

¹⁵⁹ UNESCO, *supra* note 2, at 5-14.

The UNESCO statement rejected the pseudo-scientific claims of the physiogomists, Social Darwinists, and eugenicists that racial differences existed in regards to genetic inferiority or superiority. As a whole, the statement adopted the prevailing trend in race theory that racial difference was the result of environment and culture, rather than nature and biology: “given similar degrees of cultural opportunity to realize their potentialities, the average achievement of the members of each ethnic group is about the same.”¹⁶⁰

Progressive anthropologists decried that “race isn’t very important biologically,”¹⁶¹ that “the difference between negroes and whites is to be credited to social heritage rather than to race,”¹⁶² and that it might “be better if the term ‘race’ were altogether abandoned.”¹⁶³ Franz Boas, in particular, discredited scientific explanations of racial difference and noted that there was no evidence of racial difference in brain structure that “will endure serious criticism.”¹⁶⁴ Rather, Boas and other modern anthropologists believed that only cultural and geographical variations could account for racial difference.

Nonetheless, the UNESCO statement was flawed in many respects. Some of the inadequacies of the UNESCO statement can be traced to the fact that the statement was first and foremost a political document reacting against the racial policies of Nazi Germany. For instance, the UNESCO statement retained the flawed tripartite division of humans into three “races”: Caucasoid, Mongoloid, and Negroid.¹⁶⁵ But as the anthropologist S.L. Washburn observed over forty years ago, “[t]here are no three primary races, no three major groups. The idea of three primary races stems from nineteenth-century typology; it is totally misleading to put the black-skinned people of the world together.”¹⁶⁶

The UNESCO statement also used conditional language that implied that while science had not *yet* established the biological inferiority or superiority of specific races, perhaps one day it would. In particular, the statement acknowledged that it may be “possible . . . that some types of innate capacity for intellectual and emotional responses are commoner in one human group than in another,” but that the “best available scientific evidence” had not yet established such biological differences.¹⁶⁷

Finally, the UNESCO statement was flawed in that it urged society to interpret human difference through the lens of ethnicity rather than race: “it would be better when speaking of human races to drop the term ‘race’ altogether and speak of *ethnic groups*.”¹⁶⁸ The difficulty with an ethnicity approach to race lies in its liberal assumption that racial prejudice and inequality can be achieved solely through integration, assimilation and equal opportunity civil rights laws. The goal of meaningful integration has become increasingly difficult to achieve. The Supreme Court’s recent decision in *Parents Involved in Community Schools v. Seattle School*

¹⁶⁰ *Id.* at 7.

¹⁶¹ S.L. Washburn, *The Study of Race*, 65 AM. ANTHROPOLOGIST 521, 524 (1963).

¹⁶² Wilson D. Wallis, *Race and Culture*, 23 THE SCIENTIFIC MONTHLY 313, 315-16 (1926).

¹⁶³ Ashley Montagu, *The Concept of Race*, 64 AM. ANTHROPOLOGIST 919, 919 (1962).

¹⁶⁴ Franz Boas, THE MIND OF PRIMITIVE MAN 105-06 (1911).

¹⁶⁵ UNESCO, *supra* note 2, at 6.

¹⁶⁶ Washburn, *supra* note 161, at 523.

¹⁶⁷ UNESCO, *supra* note 2, at 9.

¹⁶⁸ *Id.* at 6 (emphasis in original).

Dist. No. 1 demonstrates this difficulty.¹⁶⁹ Relying solely on equal opportunity programs to remedy racial inequality fails to address the historical effects of systemic racial discrimination.¹⁷⁰ Further, most non-white racial groups find assimilation to white cultural norms undesirable and unavoidable.¹⁷¹ As such, ethnicity approaches to race “have devolved into neoconservatism, which can do no better than reprove racially defined minorities for their continuing race-consciousness and supposed failure to take advantage of civil rights reforms.”¹⁷²

PART II. MODERN CONCEPTS OF RACE: DEFINING THE “OTHER”

Modern race theories largely adopt the findings of the UNESCO commission and explain race in terms of socio-political and historical process. Race is thus commonly defined along the lines of “a concept that signifies and symbolizes sociopolitical conflicts and interests in reference to different types of human bodies.”¹⁷³ Race is viewed as a social and political construction, its meaning and content derived not from biological fact but from political and class struggle. Race is regarded as an “ideology of inequality devised to rationalize European attitudes and treatment of the conquered and enslaved peoples” and as a “strategy for dividing, ranking, and controlling colonized people” to maintain existing power dynamics.¹⁷⁴ As Professor Angela Harris succinctly states, the prevailing view is that “race does not exist in the body but rather is the product of a socially-produced understanding.”¹⁷⁵

Modern race theory is therefore characterized by an explicit rejection of biological accounts of “racial” difference. The sociologist Howard Winant summarizes the vast scientific and social literature by observing that:

Although the concept of race appeals to biologically based human characteristics (phenotypes), selection of these particular human features for purposes of racial signification is always and necessarily a social and historical process. There is no biological

¹⁶⁹ 127 S. Ct. 2738, 2768 (2007) (holding that allegedly compelling interest of diversity in higher education could not justify districts’ use of racial classification in student school assignments and districts failed to show that use of racial classifications in their student school assignments were necessary to achieve their objective of racial diversity).

¹⁷⁰ See Christian B. Sundquist, *Equal Opportunity, Individual Liberty, and Meritocracy in Education: Reinforcing Structures of Privilege and Inequality*, 9 GEO. J. ON POVERTY LAW & POL’Y 227, 235-36 (2002) (arguing that equal opportunity education reforms reinforce structures of privilege).

¹⁷¹ See Winant, *supra* note 6, at 179; *infra* Part II.

¹⁷² Winant, *supra* note 6, at 179.

¹⁷³ *Id.* at 172. See generally Anthony Paul Farley, *All Flesh Shall See it Together*, 19 CHICANO-LATINO L. REV. 163, 166 (1998) (“There is no such thing as ‘race’ save as a ‘social construction.’”).

¹⁷⁴ American Anthropologist Association, *AAA Statement on Race*, 100 AM. ANTHROPOLOGIST 712, 712 (1999); see also IAN HANEY LOPEZ, *WHITE BY LAW: THE LEGAL CONSTRUCTION OF RACE* (1997) (analyzing the legal construction of white identity by examining a series of early twentieth-century cases where state and federal courts sought to determine and define who was “white” enough to naturalize an American citizen).

¹⁷⁵ Angela Harris, *From Color Line to Color Chart?: Racism and Colorism in the New Century*, 10 BERKELEY J. OF AFR.-AM. L. & POL’Y 52, 68 (2008); see also JOE R. FEAGIN & CLAIRECE BOOHER FEAGIN, *RACIAL AND ETHNIC RELATIONS* (5th ed. 1996) (“Human populations singled out as ‘races’ are simply groups with visible differences that Europeans and European-Americans have decided to emphasize as important in their social, economic, and political relations. Such racial categorizing is neither objective nor scientific.”).

basis for distinguishing human groups along the lines of race, and the sociohistorical categories employed to differentiate among these groups reveal themselves, upon serious examination, to be imprecise if not completely arbitrary.¹⁷⁶

Courts in the United States have largely adopted the mantra of modern race theory and, as a result, have struggled to legally ascertain a person's race. In *Saint Francis College v. Al-Khazraji*, the Supreme Court considered a 42 U.S.C. § 1981 employment discrimination claim filed by a U.S. citizen born in Iraq.¹⁷⁷ The district court granted summary judgment in favor of the employer on the grounds that the plaintiff was admittedly of the "Caucasian race" and was thus unable to establish a prima facie claim under § 1981 because of this racial status.¹⁷⁸ The Court of Appeals for the Third Circuit reversed, finding that the plaintiff had properly alleged racial discrimination under § 1981, even though Arabs were currently classified as Caucasian.¹⁷⁹ The Court began its analysis by noting in a footnote that modern biology and anthropology "criticize[d] racial classifications as arbitrary" and that race is "for the most part sociopolitical, rather than biological, in nature."¹⁸⁰ From this premise, the Court examined the legislative history and held that § 1981 was intended to protect "identifiable" classes or persons from intentional discrimination based on their "ancestry or ethnic characteristics."¹⁸¹ The Court found that such discrimination is "racial discrimination . . . whether or not it would be classified as racial in terms of modern scientific theory."¹⁸² Fortunately, the Court stated that a showing of "distinctive physiognomy is not essential to qualify for § 1981 protection," and that proof of ancestry is sufficient.¹⁸³ Accordingly, the Court affirmed the determination of the court of appeals that the plaintiff had established a valid claim of racial discrimination.¹⁸⁴

Similarly, in *Perkins v. Lake County Department of Utilities*, a district court in Ohio adopted a sociological view of race in addressing a Title VII¹⁸⁵ racial

¹⁷⁶ Winant, *supra* note 6, at 172; see also David Brion Davis, *Constructing Race: A Reflection*, 54 WM. & MARY Q. 7 (1997) (noting that "responsible scientists have long discredited any biological or genetic definition of racial groups" and that "historians have increasingly recognized that the so-called races of mankind are the fortuitous and arbitrary inventions of European and American history, the by-products, primarily, of Europe's religious, economic and imperial expansion across the seas of the earth"); Sipress, *supra* note 56, at 175-85 ("The tripartite division of humankind into 'Negroid,' 'mongoloid,' and 'Caucasoid' occupies a position in the biological sciences equivalent to that of the Ptolemaic model of the universe in astronomy.").

¹⁷⁷ 481 U.S. 604 (1987).

¹⁷⁸ *Al-Khazraji v. Saint Francis Coll.*, No. 80-1550, 1985 WL 9627, at *2 (W.D. Pa. Mar. 12, 1985).

¹⁷⁹ *Saint Francis*, 481 U.S. at 607.

¹⁸⁰ *Id.* at 610 n.4.

¹⁸¹ *Id.* at 613.

¹⁸² *Id.*

¹⁸³ *Id.*

¹⁸⁴ See generally *Pourghoraishi v. Flying J, Inc.*, 449 F.3d 751, 757 (7th Cir. 2006) (noting that Supreme Court precedent requires that courts "view race broadly" in holding that a person of Iranian descent had established a valid Title VII claim); *id.* (finding that "strict adherence to taxonomical, biological, or anthropological definitions" is "inconsequential" in determining race); Revisions to the Standards for the Classification of Federal Data on Race and Ethnicity, 62 Fed. Reg. 58,782, 58,782 (Oct. 30, 1997) ("[Federal racial classifications] represent a social-political construct designed for collecting data on the race and ethnicity of broad population groups in this country, and are not anthropologically or scientifically based.").

¹⁸⁵ 42 U.S.C. §§ 2000e to 2000e-17 (2006).

discrimination action.¹⁸⁶ The plaintiff alleged that he had been subjected to racial discrimination on account of his Native American descent, but the defendants moved for summary judgment on the grounds that the plaintiff was not Native American and thus was not a member of the class protected by Title VII. The district court observed that the term “race” was of such “doubtful sociological validity as to be scientifically meaningless.”¹⁸⁷ The district court then struggled to determine the plaintiff’s race, based on conflicting evidence presented at trial.

In support of their motion for summary judgment, the defendants presented the expert testimony of a genealogist to demonstrate that the plaintiff was white. The genealogist examined documentary evidence such as birth certificates, death certificates and census materials to conclude that the plaintiff had “no significant percentage of Indian blood.”¹⁸⁸ In response, the plaintiff presented evidence that he always believed he was a Native-American and holds himself out as such; that stories of his family history demonstrate that he is a Native-American; that plaintiff was listed as a Native-American in the defendant’s employment records; and testimony from a Native-American that the plaintiff “appeared to look like an Indian to me.”¹⁸⁹ Based on this evidence, the district court determined that race analysis is conducted by examining subjective perceptions of race, physical appearance, the relationship between the person and the racial community they are claiming membership in, and self-identification and representation. In particular, the court found that documentary evidence such as birth and death certificates and census records were “not dispositive” due to their notorious inaccuracy.¹⁹⁰ Accordingly, the court held that there was insufficient evidence that the plaintiff was not Native-American and dismissed the motion for summary judgment.

The Court of Appeals for the Third Circuit focused on non-ancestral markers of race in *Bennum v. Rutgers State University*,¹⁹¹ a Title VII racial discrimination case in which the court affirmed the lower court’s determination that the plaintiff was Hispanic. The defendant argued that plaintiff had not established a prima facie racial discrimination case because his mother was born in Romania, his father was born in Israel, and plaintiff had conceded that his parents were not Hispanic.¹⁹² The court nonetheless held that the plaintiff had established that he was Hispanic based on “his birth in Argentina, his belief that he is Hispanic, identifies with and continues to adopt Spanish culture in his life and speaks Spanish in his home.”¹⁹³

As the cases reviewed above illustrate, federal courts in the United States have generally embraced the modern rejection of biological theories of race. Instead, modern courts have focused on racial “markers” such as ancestry, physical appearance, language, outsider perception, and self-identification to determine race.

¹⁸⁶ 860 F. Supp. 1262 (N.D. Ohio 1994).

¹⁸⁷ *Id.*

¹⁸⁸ *Id.*

¹⁸⁹ *Id.*

¹⁹⁰ *Id.*; see also Christopher A. Ford, *Administering Identity: The Determination of “Race” in Race-Conscious Law*, 82 CAL. L. REV. 1231, 1259 (1994) (documenting the “arbitrary” consideration of race in birth certificates).

¹⁹¹ 941 F.2d 154 (3d Cir. 1991).

¹⁹² *Id.* at 171.

¹⁹³ *Id.* at 173.

PART III. MODERN “RACE SCIENCE”: DNA INTERPRETATIONS OF RACE

The historical view of race as a social and political construct devoid of biological meaning is being displaced by the growing belief that DNA technology and genetic science are able to isolate one’s true biological racial essence. Genetic ancestry companies promise to determine individual race based on saliva samples; pharmaceutical companies market “ethnic drugs” tailored for specific races;¹⁹⁴ law enforcement increasingly relies on DNA databases to create racial profiles of suspects; and courts in the United States are willing to admit probabilistic estimates of race based on DNA analysis. Notwithstanding the post-war rejection of biological race, contemporary society has unquestioningly assumed that race has some genetically-determinable essence.

A. The Science of DNA

Deoxyribonucleic acid, otherwise known as “DNA,” is a complex molecule that is found in every cell of a person’s body.¹⁹⁵ DNA provides a genetic map of the human body by storing biological information in four subunits of nucleic acid: adenine (A), guanine (G), cytosine (C), and thymine (T).¹⁹⁶ The DNA molecule contains a long sequence of these subunits, in a shape resembling that of a double helix or “ladder.”¹⁹⁷ This DNA bundle, which is tightly compressed into chromosomes located in the nucleus of each human cell, contains “about three billion chemical nucleotides encoding roughly 30,000 genes, discrete chunks of DNA that are translated into individual proteins.”¹⁹⁸ The chromosomes containing genetic DNA material come in pairs,¹⁹⁹ with one chromosome inherited from the father, and the other inherited from the mother.

While scientific investigation has conclusively determined that humans share ninety-nine percent of their genetic DNA material, every person has a unique DNA distribution of such genes. A person’s DNA molecular signature can be detected in almost every sample of human tissue. This fact has obvious forensic implications, and law enforcement has long relied on DNA analysis to identify criminal perpetrators.

B. Forensic Genetic Determinations of Race

The advent of DNA technology has nonetheless ushered in a new era of “racial” discovery and investigation. Private genetic companies increasingly claim the ability to scientifically determine race based on DNA samples. One such company, DNAPrint Genomics, boldly states that it has “applied the most recent advancements

¹⁹⁴ See, e.g., Erik Lillquist & Charles A. Sullivan, *The Law and Genetics of Racial Profiling in Medicine*, 39 HARV. C.R.-C.L. L. REV. 391, 391-92 (2004).

¹⁹⁵ National Library of Medicine, *DNA*, <http://www.nlm.nih.gov/exhibition/visibleproofs/education/dna/dna.pdf> (last visited Apr. 21, 2008).

¹⁹⁶ *Id.*

¹⁹⁷ *Id.*

¹⁹⁸ *Id.*

¹⁹⁹ *Id.*

in human genomic technology for the deciphering of an individual's race."²⁰⁰ DNAPrint offers a forensic product called "DNAWitness," which is "a genetic test for the deduction of the heritable component of race"²⁰¹ that purports to provide "the percentage of genetic make up amongst the four possible groups of Sub-Saharan African, Native American, East Asian, and European."²⁰² According to DNAPrint, law enforcement and district attorney's offices "from various cities," such as New York, Los Angeles, and Chicago, have used DNAWitness.²⁰³

The police in Baton Rouge, Louisiana recently sought out the services of DNAPrint to aid in the investigation of a serial killer. The criminal investigators initially targeted white suspects in the killings before sending a crime scene genetic sample to DNAPrint.²⁰⁴ The sample was analyzed as belonging to a person who was eighty-five percent African ancestry and fifteen percent Native American, and thus the police in Baton Rouge shifted their focus to "black" suspects. When a black man, Derrick T. Lee, was eventually arrested and convicted for the murders, the genetic test was hailed as being able to accurately determine race based on forensic samples.²⁰⁵ Unsurprisingly, the case was eventually solved by using other evidence.

Similar news has surfaced in Canada, where law enforcement departments are reportedly submitting forensic samples to genetic labs to "tell police if the offender . . . is white, black, Asian, native, or of mixed race."²⁰⁶ Likewise, the forensic science laboratory used by the police in Birmingham, England has claimed the ability to differentiate between "Afro-Caribbeans" and Caucasians by analyzing DNA samples.²⁰⁷

A genetics study recently appearing in the American Journal of Human Genetics has also claimed the ability to scientifically determine race. Challenging "the widely held belief that race is only a social construct,"²⁰⁸ the study argued that "genetic cluster analysis showed near-perfect correspondence with the self-reported race/ethnic categories."²⁰⁹

C. Population Genetics and Race

State and federal prosecutors and law enforcement departments have willingly embraced genetic science that purports to determine race. DNA analysis of crime-

²⁰⁰ Ted Kessiss, *Racial Identification and Future Application of SNPs*, Presentation at Forensic Bioinformatics 3rd Annual Conference: DNA from Crime Scene to Courtroom (Aug. 21, 2004), available at http://bioforensics.com/conference04/Racial_Identification/ (last visited Apr. 21, 2008).

²⁰¹ *Id.*

²⁰² DNAPrint Genomics, <http://www.dnaprint.com/welcome/productsandservices/forensics/> (last visited Apr. 21, 2008).

²⁰³ *Id.*

²⁰⁴ Nicholas Wade, *Unusual Use of DNA Aided in Serial Killer Search*, N.Y. TIMES, June 3, 2003, at A4.

²⁰⁵ *Id.*; DNAPrint, *supra* note 202 (touting the "role DNAWitness had in the resolution of this case").

²⁰⁶ Carolyn Abraham, *Molecular Eyewitnesses: DNA Gets a Human Face; Controversial crime-scene test smacks of racial profiling, critics say*, TORONTO GLOBE AND MAIL (CAN.), June 25, 2005, at A6.

²⁰⁷ Ian W. Evett, J.S. Buckleton, A. Raymond, & H. Roberts, *The Evidentiary Value of DNA Profiles*, 33 J. OF THE FORENSIC SCI. SOC. 243 (1993).

²⁰⁸ Troy Duster, *Explaining Differential Trust of DNA Forensic Technology: Grounded Assessment or Inexplicable Paranoia?*, 34 J.L. MED. & ETHICS 293, 298 (2006) (quoting J. Zhang, *New Study Links Race and DNA Material*, STANFORD DAILY, Feb. 4, 2005).

²⁰⁹ H. Tang et al., *Genetic Structure, Self-Identified Race/Ethnicity, and Confounding in Case-Control Association Studies*, 76 AM. J. HUM. GENETICS 268, 268-75 (2005).

scene genetic material has been a staple of law enforcement forensics for well over a decade. The DNA Analysis Backlog Elimination Act of 2000²¹⁰ compels individuals convicted of certain federal crimes to submit a genetic DNA sample to law enforcement authorities.²¹¹ The Act also provided for \$170 million in federal funds to support state efforts to collect DNA samples from state criminal offenders.²¹² As a result, every state now maintains a DNA collection program.²¹³

At the federal level, DNA samples from qualified federal offenders are submitted to the Federal Bureau of Investigation (“FBI”) for analysis.²¹⁴ The FBI then creates a DNA profile of the sample by using short tandem repeat technology (“STR”). The STR process analyzes the presence of alleles²¹⁵ located at thirteen markers (also called “loci”) in the DNA sample. The thirteen STR loci are located at nongenic portions of DNA that are not recognized as producing traits. Indeed, these particular STR loci located on “junk DNA” were “purposely selected because they are not associated with any known physical or medical characteristics.”²¹⁶ Despite their nongenic nature, there is sufficient variance in the representation of alleles at the STR loci that the possibility that two randomly selected individuals will share the same allele representation is infinitesimally small.²¹⁷ Accordingly, the FBI generates a STR (DNA) profile of each sample, and records the result in a large DNA database

²¹⁰ 10 U.S.C. § 1565 (2006); 42 U.S.C. §§ 14135, 14135a-14135e (2006).

²¹¹ 42 U.S.C. § 14135a(d). The qualifying federal offenses that mandate submission of a DNA sample include murder, voluntary manslaughter, aggravated assault, child abuse, sexual abuse, kidnapping, burglary, robbery, arson, and conspiracy to commit such crimes. *Id.*

²¹² *Id.*

²¹³ See DNAResource.com, <http://www.dnaresource.com/domestic.html> (last visited Apr. 23, 2008) (summarizing state DNA legislation); Federal Bureau of Investigation, CODIS-NDIS Statistics, <http://www.fbi.gov/hq/lab/codis/clickmap.htm> (last visited Apr. 21, 2008).

²¹⁴ See 42 U.S.C. § 14135b(b) (“The Director of the Bureau of Prisons or Agency (as applicable) shall furnish each DNA sample collected under subsection (a) of this section to the Director of the Federal Bureau of Investigation, who shall carry out a DNA analysis on each such DNA sample and include the results in CODIS.”).

²¹⁵ NAT’L COMM. ON THE FUTURE OF DNA EVIDENCE, NAT’L INST. OF JUSTICE, U.S. DEPT. OF JUSTICE, THE FUTURE OF FORENSIC DNA TESTING 35 (2000), available at <http://www.ncjrs.org/pdffiles1/nij/183697.pdf>. Alleles refer to “genic variants” that are responsible for producing certain traits. *Id.* The following provides a useful example:

[A] specific allele of a particular gene is responsible for the enzyme that converts the amino acid phenylalanine into tyrosine. When this enzyme is missing or abnormal, the child develops the disease, phenylketonuria, or PKU. The result is severe mental retardation unless the child is treated; happily, with a specific diet the child develops normally. A child will develop PKU only if both representatives of the appropriate chromosome pair carry the abnormal allele. If there is only one PKU allele and the other is normal, the child will be normal; the amount of enzyme produced by a single normal allele is enough

[Because] about 97 percent [of DNA is nongenic, and because] these nongenic regions show the same genetic variability that genes do, in fact usually more, . . . the words commonly used for describing genes (e.g., allele, homozygous, polymorphic) are carried over to [nongenic] DNA regions.

Id. at 11-12.

²¹⁶ H.R. REP. NO. 106-900(I), at 27 (2000).

²¹⁷ See, e.g., *United States v. Kincade*, 379 F.3d 813, 818 (9th Cir. 2004) (describing the FBI’s analysis of DNA samples).

called the Combined DNA Index System (“CODIS”).²¹⁸ The CODIS system records DNA profiles submitted by both federal and state DNA collection programs. As of July 2008, CODIS had logged the DNA profiles of over six million criminal offenders and 225,400 crime scene samples.²¹⁹

Law enforcement can use the DNA profiles contained in the CODIS database in a number of different ways. The police can use CODIS to compare DNA samples obtained from different crime scenes in order to connect unsolved or multiple crimes. The police can also use CODIS to connect crime scene DNA samples to a specific DNA profile of an offender. Finally, the police and federal and state prosecutors can use CODIS to compare crime scene DNA samples to the DNA sample obtained – willingly or not – from a criminal suspect.

The comparison of DNA samples is often made by genetic scientists employed by the FBI or state forensics departments, but state prosecutors increasingly rely on private genetics experts to provide such analysis. In any event, the genetic scientist will declare a “match” if all of the DNA segments on the STR loci are identical. The discovery of a match does not mean that the criminal suspect is without question the only possible contributor to the crime scene sample, but merely that the suspect is a *potential* contributor of the crime scene sample. Therefore, the second step of the DNA identification process involves producing a probability estimate of the chance that someone other than the criminal suspect could have contributed the crime scene sample.

The probability analysis can produce two different statistical estimates. First, the expert can simply compare the tested samples with information collected about the general population, and thereby determine the frequency with which the particular DNA profile appears in the general population. This method of statistical interpretation does not appear to create any tension with modern race theory, as the profile is merely compared to the frequency distribution existing in the general population, without regard to race.

However, the second method of probability analysis is problematic. This method of statistical interpretation relies heavily on the scientific findings of “population genetics.” “Population genetics” refers to the study of genetic differentiation and diversity present in a specific human population, or subset of a particular species. While neutrally defined and titled, the term “population genetics” is often a mere proxy for the study of genetic racial differentiation. Understandably concerned with the potential for controversy stemming from the biological study of race, geneticists have developed a coded lexicon to safely discuss race by using such terms as “population group,” “geographic region,” and ancestry. Accordingly, in using this second method of probability analysis the geneticist compares the DNA profile to a specific human population group – e.g., Black, Hispanic, Asian and Caucasian.

Relying on principles of population genetics, criminal prosecutors present expert determinations of the frequency with which a criminal suspect’s DNA profile appears in that suspect’s “racial” group. While post-war courts in the United States traditionally embraced the notion that race is a socio-political construction with no biological meaning, modern courts are increasingly receptive of such expert

²¹⁸ *Id.*

²¹⁹ See Federal Bureau, *supra* note 213.

testimony regarding the genetic probability that a person is a member of a particular race. It is now common for courts to admit into evidence probabilistic expert estimates that only 1 in 2600 “American Indians,”²²⁰ 1 in 41 million “Blacks,”²²¹ or 1 in 35,000 “Caucasians,”²²² would produce a DNA sample matching that of the criminal defendant.²²³

D. Reconciling Modern Race Theory with DNA Race Science

Similar to the development of pseudo-scientific principles in the nineteenth century to justify racial discrimination, the modern use of genetics and DNA analysis to determine race misconprehends the nature of race and human difference and fails to interrogate culturally learned assumptions about race. It is without question that “race” is entirely a social and political construction, with absolutely no biological meaning that can be discerned from genetic analysis. As demonstrated by the preceding discussion of the historical evolution of the race concept, a person’s racial categorization has nothing to do with that person’s biological or genetic make-up. Rather, “race” is an unstable and continually contested “brand” of categorization that attempts to accord physical, moral, and intellectual attributes to such perceived human differences as ancestry, skin color, language, nationality, hair texture, and phenotype. The entire notion that there are three to four distinct categories of human races was developed in order to permit unequal treatment of specific human populations, justified by long-since-rejected pseudo-scientific principles grounded in anthropology, biology and genetics. The history of the race concept itself belies any argument that race has some biological essence that can be discerned through DNA analysis.

A socio-biological understanding of race fails as an intermediate approach. Such a construction would acknowledge the historical dimension of race as socially constructed to preserve patterns of political inequality, yet would maintain that race could nonetheless be ascertained based on the .001% of “junk DNA” that accounts for human differentiation, such as skin color and hair. Such an understanding of “race” fails as a person’s constructed or perceived race may be completely disconnected from that person’s appearance, skin color, or ancestry. A distinction must be made between “race” (a social construction devoid of genetic meaning) and physical differences in phenotype (which are not per se encoded with racial meaning). It is certainly true that differences in morphological traits, such as skin color and hair texture, do exist among humans. However, “[a] widespread misconception is that the analysis of morphological traits, such as skeletal measures or skin colour [sic], demonstrates a clear racial subdivision of humankind.”²²⁴ The small morphological differences that result from the .001% of variant genetic code

²²⁰ United States v. Martinez, 3 F.3d 1191, 1193 (8th Cir. 1993).

²²¹ Govt. of the Virgin Is. v. Penn, 838 F. Supp. 1054, 1065 (D. Virgin Is. 1993).

²²² United States v. Bonds, 12 F.3d 540, 563 (6th Cir. 1994).

²²³ See Christian B. Sundquist, *Forensic Genetics and the Ascendancy of Modern “Race Science”*: *Establishing the Inadmissibility of DNA Estimates of Race*, 25 HARV. BLACKLETTER L.J. (forthcoming 2009) (critiquing the admission of racial probabilistic estimates at trial).

²²⁴ Lorena Madrigal & Guido Barbujani, *Partitioning of Genetic Variation in Human Populations and the Concept of Race*, in ANTHROPOLOGICAL GENETICS: THEORY, METHODS AND APPLICATIONS 19, 20 (Michael Crawford ed., 2007).

can have no racial meaning, as race is an arbitrary social construction devoid of substantive meaning.

Genetic studies that utilize racial population structures assume that there has been some consensus on the number of human “races,” and the meaning and content of each racial category. However, no such consensus exists. As our troubled history of race science demonstrates, scientists at various times have estimated the number of human races to be as few as three and as many as two hundred.²²⁵ Even contemporary studies of human genetic population diversity rely on different assumptions regarding the number of races.²²⁶ It is apparent that analysis of purported genetic differentiation among human races is simply impossible if the definition of race remains unsettled. “If races are biological realities, they must be the same everywhere, whereas forensic race catalogues differ across countries.”²²⁷

The vast majority of geneticists have affirmed that race has no biological meaning. The DNA molecule simply does not give biological meaning to extant historical categories of race. Geneticists have discovered that the greatest genetic variation occurs *within* so-called “racial” population groups.²²⁸ As such, genetics has demonstrated that “allele frequency comparisons among human populations rarely show discontinuities that map onto racial boundaries.”²²⁹ Numerous genetics studies have determined that there is no scientific basis for a division of humans into genetically defined groups.²³⁰ Other genetic studies have similarly ascertained that classifications by race were poor descriptors of genetic variation.²³¹

The Yale geneticist Kenneth Kidd explains that there is “a virtual continuum of genetic variation” throughout the world, and that “there’s no such thing as race in *Homo sapiens*.”²³² It is particularly interesting that Africans possess the greatest degree of genetic variation, both when compared to other Africans, and when compared to non-Africans.²³³ Therefore, from a genetic standpoint the “Black” racial category is particularly disjointed given that two unrelated Black Africans or African-Americans are less likely to be genetically similar to one another than are two people of other races.²³⁴

The assumption that racial groups conveniently form genetically distinct population structures for scientific analysis is therefore problematic. The identification of a population structure refers to the analysis of whether clusters of different loci appear in the same location of other population groups.²³⁵ Various studies have purported to find genetic clusters for Africa, Europe, Western Asia, East

²²⁵ See *id.*

²²⁶ *Id.*

²²⁷ *Id.* at 27.

²²⁸ Pilar Ossorio & Troy Duster, *Race and Genetics: Controversies in Biomedical, Behavioral, and Forensic Sciences*, 60 AM. PSYCHOLOGIST 115, 116 (2005); Madrigal & Barbujani, *supra* note 224, at 21-22 (citing genetic studies).

²²⁹ Ossorio & Duster, *supra* note 228 (citing genetic studies).

²³⁰ See Madrigal & Barbujani, *supra* note 224, at 21-22 (citing studies).

²³¹ See *id.*

²³² Eliot Marshall, *DNA Studies Challenge the Meaning of Race*, 282 SCI. 654 (1998)

²³³ Madrigal & Barbujani, *supra* note 224, at 25 (citing studies).

²³⁴ See James H. Mielke & Alan G. Fix, *The Confluence of Anthropological Genetics and Anthropological Demography*, in ANTHROPOLOGICAL GENETICS, *supra* note 224, at 112, 122.

²³⁵ Madrigal & Barbujani, *supra* note 224, at 25.

Asia, Oceania, South America and even the Kalash of Pakistan.²³⁶ These findings have been seized upon as verifying that there are genetically distinguishable population groups that correspond with folk notions of race.²³⁷

However, such an interpretation is flawed. First, as noted above, it is clear that genetic variation within the suggested population group of Africa far exceeds the variation among other continents or other proposed population groups.²³⁸ This fact led the anthropological geneticists Lorena Madrigal and Guido Barbujani to conclude that “it is impossible to claim that a discontinuous population structure with well-identified clusters has emerged so far.”²³⁹ Additionally, many of these studies relied on DNA sampling based on “diverse” population groups that merely reflected folk conceptions of race.²⁴⁰

Other population geneticists rely on diagnostic gene variance, rather than clusters of alleles, to justify the use of race as a viable population structure for the study of genetic differentiation. Many of these geneticists have conducted studies to show a difference in frequencies of a specific diagnostic allele (or alleles) among “racial” groups in the United States; however, such studies have largely been restricted to the United States context, and thus excluded large global populations and regions that would contradict the United States view of race.²⁴¹ In any event, recent scientific studies indicate that population groups in the United States, such as Caucasians, African-Americans, Asian-Americans, and Hispanics, are genetically admixed, and should not be represented as genetically homogeneous and distinct groups.²⁴²

The claim by some population geneticists that race is a biologically meaningful concept is similarly belied by the very malleability of race. An individual may be regarded as “white” by some observers in the United States, while regarded as “black” by other American observers. Location and context also matter greatly in racial categorization, as a person may be deemed to be black according to the social customs of London, but regarded as white in Sao Paulo. Particularly troublesome is certain geneticists’ claimed ability to identify whether a person fits within the “Hispanic” racial category on the basis of a DNA sample.

The use of ancestry as a proxy for race in genetic testing is also problematic. Private genetic testing companies claim the ability to biologically discern race by utilizing “race-determining genetic markers.”²⁴³ Even those genetic ancestry companies that explicitly state that race is a social construction, nonetheless often provide the testee with a “certificate of ancestry” that utilizes conventional racial categories – e.g., Native American. Yet race does not equal ancestry generally or as measured by genetic ancestry tests. Racial categorization, as discussed throughout this article, is a complex social process that often depends on such factors as skin color, language, phenotype, nationality, and performance – in addition to ancestry.

²³⁶ *Id.* (citing studies by Rosenberg and Bamshad).

²³⁷ *Id.*

²³⁸ See *supra* text accompanying notes 232-34.

²³⁹ Madrigal & Barbujani, *supra* note 224, at 25.

²⁴⁰ *Id.* at 26.

²⁴¹ *Id.* at 26-27. Madrigal and Barbujani explain that studies that adopt a “racial view of human diversity excludes a few ‘pesky’ billion people from India, whose classification into racial boxes is problematic.” *Id.*

²⁴² *Id.* at 31 (collecting studies).

²⁴³ DNAPrint, *supra* note 202.

An individual's genetic profile of ancestry does not always match up to that person's subjective or objective racial identity. Two genetic studies conducted in 2003 both found that "people whose skin color is perceived as white can have genetic profiles indicating that 80% of their recent ancestry is West African, and people whose skin color is perceived of as black can have genetic profiles indicative of predominately European ancestry."²⁴⁴

CONCLUSION

There can be a certain allure to assuming that there is a genetic dimension to race. Race is omnipresent in modern society. Every day we implicitly or explicitly apply racial labels to others, and every day we are in turn similarly raced. We learn how to classify others by race from our own culture, as evidenced by the fact that the racialization process in the United States can at times be quite different than the racialization process in other countries around the world. It can be easy to perceive race and racial categorization as being natural, immutable and biologically determinable. This perception is misleading and wholly inaccurate.

There has long been a counter-movement to accepting the intoxicating logic of natural and biological races, beginning in earnest with the post-World War II rejection of biological conceptions of race as illustrated by the UNESCO statement and the subsequent development of a sociological theory of race. By examining the historical development of the race concept, modern historical, legal, sociological, anthropological, biological and genetic authorities have been able to conclusively determine that race is a mere social and political construct that has no biological relevance.

Even so, the advent of DNA technology and the study of genetic differentiation have led many geneticists, criminal prosecutors, and judges to assume that there is in fact a biological basis for race. However, the assumption that race has a discernable biological essence misapprehends the nature of race and genetic difference, and runs counter to a bevy of genetic studies that demonstrate that race is not a biologically meaningful category.

So why do we continue to see proclamations of scientifically valid tests for race, and the admission of racial probability estimates into American courts? Race, unconsciously or not, continues to affect the manner in which contemporary scientists understand and define genetic difference. Similar to the race scientists of the nineteenth century, many of today's genetic scientists are affected by their culture's folk notions about the fixed nature of race. As Professor Caudill points out, "the history of race science is a reminder that science itself is also a representation, thus any 'science of difference' will be constructed not only in accordance with observational and methodological conventions, but also in accordance with institutional, social, and rhetorical conventions."²⁴⁵

²⁴⁴ Ossorio & Duster, *supra* note 228, at 118 (citing Flavia C. Parra et al., *Color and Genomic Ancestry in Brazilians*, 100 PRO. OF THE NAT'L ACADEMY OF SCI. 177 (2003); Mark D. Shriver et al., *Skin Pigmentation, biogeographical ancestry and admixture mapping*, 112 HUM. GENETICS 387 (2003)).

²⁴⁵ David S. Caudill, *Race, Science, History and Law*, 9 WASH. & LEE RACE & ETHNIC ANC. L.J. 1, 11 (2003); *see also* Madrigal & Barbujani, *supra* note 224, at 31 ("As members of their culture, geneticists, medical and epidemiological practitioners have learned to classify humans in their own culture-specific manner . . . [but] they should not assume that their racial taxonomy is supported by genetic data.").

The increasing acceptance of DNA science that ascribes a genetic dimension to race has the potential to legitimize culturally-learned folk conceptions of race as biologically meaningful, as well as usher in a new era of scientific racism. Many scientists already warn that new data on genetic racial difference could be cited in support of debunked notions of white superiority and non-white inferiority.²⁴⁶ Society and the law should hesitate before succumbing to the charm of the espoused genetic view of race and strive not to repeat the mistakes of the past by unquestioningly shepherding in a modern era of “race science.”

²⁴⁶ Amy Harmon, *In DNA Era, New Worries About Prejudice*, N.Y. TIMES, Nov. 11, 2007 (“There are clear differences between people of different continental ancestries. It’s not there yet for things like I.Q., but I can see it coming. And it has the potential to spark a new era of racism if we do not start explaining it better. Nonscientists are already beginning to stitch together highly speculative conclusions about the historically charged subject of race and intelligence from the new biological data.” (quoting Marcus W. Feldman, Professor of Biological Sciences, Stanford University)); *see also id.* (“We are living through an era of the ascendance of biology, and we have to be very careful. We will all be walking a fine line between using biology and allowing it to be abused.” (quoting Henry Louis Gates, Jr.)).