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Research and Racial Hierarchy Creation: A Return to
Scientific Racism

A Dissertation submitted in partial satisfaction
of the requirements for the degree of

Doctor of Philosophy

in

Sociology

by

James William Love

August 2014

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The Dissertation of James William Love is approved:

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ABSTRACT OF THE DISSERTATION

Scientific Research and Racial Hierarchy Creation: A Return to
Scientific Racism

by

James William Love

Doctor of Philosophy, Graduate Program in Sociology
University of California, Riverside, August 2014
Dr. Augustine Kposowa, Chairperson

The racial bias embedded in scientific inquiry is a seldom explored topic; however, this project employed a qualitative coding methodology to develop themes reflective of racism in three areas of scientific inquiry: Biomedical, Behavioral, and Social. The results of this analysis reveal racial hierarchy creation remains an ever-present feature of scientific inquiry, although taking a more subtle and hidden form. This racism is primarily evident through the use of race as an etiological variable and attempts to indict “cultural differences” as justification for differences. This study reveals that despite being educated analysts, the work of scholars and scientists alike is largely a reflection of the racist society in which they are embedded.

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Chapter 1: Introduction

At the start of twentieth century, empirical social scholarship took an evolutionary approach to race by suggesting hierarchies and difference using the scientific zeitgeist of the day. Scientific racism became the term to describe this enterprise and the use of scientific techniques and hypotheses to support a belief in racism, racial inferiority, and racial superiority proliferated. W.E.B. Du Bois took exception to this established view of race and formulated the first empirical repudiation of an evolutionary based justification of racial differentiation in *The Philadelphia Negro* (1899). After an in-depth, empirical study of race in the city of Philadelphia, he demonstrated how biological notions of racial inferiority were rooted in ideology.

In the present, the term eugenics has become obviated and ostracized from the general lexicon. Nevertheless, as this project argues, the connection between race and science continues to create and form racial hierarchies through the use of so-called “objective methods of scientific analysis.” My goal in this project is to address the changing nature of race and its relationship to scientific analysis. As Omi and Winant (1994) have argued, race is a social concept that is constantly in flux – definitions are changing through interplay of macro and micro forces. In the present, this had led to overt claims of racial difference disappearing and more covert and subtle forms taking precedence (Bonilla-Silva, 2004).

The connection between race and science was also altered following the eugenic experiments of the Nazi’s during WWII – race and its connection to science was forced

“underground” and seldom discussed in open and overt terms. Based upon these “new” racisms and the alteration of the social landscape as a result of the Nazi atrocities, connections between race and science have become largely hidden behind code words and other subtle factors.

Despite the subtle and covert nature of race in the present, a scientific analysis remains an important tool for the creation of racial hierarchies, just as it was for the eugenicists of the past and the Nazi’s. This dissertation will explore how three general areas of scientific analysis – Social, Biomedical, and Behavioral – reproduce and form racial hierarchies in possibly new and different ways. This work addresses the limitations of contemporary scholarship, which largely fails to address the intentional and unintentional racial biases in scientific research and I explore the origins of racism in science, the manner in which it is communicated through research, and the impact of science on the larger, racialized social world.

Nascent Science and Racism

The classification and explanation of difference in the world has been essential for scholars since the Enlightenment; however, this momentous period in human history and its attempts to use scientific thought had grave consequences for racial groups throughout the world. The Theory of “The Great Chain of Being” was a nascent theory at the time of the Enlightenment and was one of the first “scientific tools” used to further racial difference (Winant, 2001: 28). It argued for a hierarchy where lower beings in the chain were to serve higher beings: therefore, animals used plants, higher animals ate lower animals, men ate animals and had power over them, and a god had power over men.

Problems arose with this system, as some organisms did not fit neatly into the mold, such as the “space” between men and animals. In 1699, when the chimp was first introduced to Britain, the human-like traits it possessed were redefined to suggest it fit this ambiguous space, although it was a poor fit (Jackson and Wiedman, 2004).

In 1677, Dr. William Petty came up with a solution. He announced in a scientific paper that the missing link they had been looking for consisted of “savages”, beings that fit between Caucasians and other organisms (Jordan, 1974: 102). Thus, he concluded that since they were lower on the Great Chain, they were brought into being to serve the beings superior to them. Carolus Linnaeus used this notion and suggested, in part, the inferiority of the “negro race” (1758).

Science and Racism – Making the Connection

The modern incarnations of science, which is a systematic and institutionalized enterprise that builds and organizes knowledge in the form of testable explanations and predictions about the universe, was first connected to race by Carolus Linnaeus (1707-1778). He is considered a pioneer researcher in the biological defining of race as he transferred many of his concepts about flora and fauna to humans. In *Systema Naturae* (1758), he established five categories in which all members of the human race should fall. These categories were based upon origin and skin color and suggested that each group had innate, biological characteristics. For example, the *Europeanus* were considered to be of white skin, gentle character, and inventive; while the *Africanus* were black-skinned, relaxed, and had negligent character. Each of the characteristics of the five groups were largely selected from social convention of the time and applied to biology, which reified

the concept of race greatly (Gould, 1981: 35).

Linnaeus's system held prominence until the beginning of the 19th century, when an additional theory of race and science arose – polygenism¹. This theory, which was largely religious at its advent, moved quickly into the scientific realm and suggested that human races had been created along different lineages and subsequent hierarchies based upon intellect, and other factors, quickly arose. While there was little debate as to the inferiority of the “Negro race,” polygenist science was quickly employed to justify these ubiquitous ideas. Louis Agassiz, Samuel Morton, Josiah Nott, and George Robins Gliddon used various scientific methods in an attempt to support the polygenist argument. Their methods, including the measurement of cranial sizes, largely failed to support any genetic difference based upon race.

Despite scientific polygenism and Linnaeus's taxonomic effort to prove a racial hierarchy, these scholar's efforts were largely failures. Charles Darwin's theory of evolution overcame the limitations of previous efforts and provided the primary theory of logical evidence to address the origin and maintenance of biological diversity. His theory succeeded where others had not and provided directly observable biological phenomenon, such as the resistance to pesticides and antibiotics, the ability to produce new food crops, and the postponement of the aging of laboratory animals (Graves, 2002: 59). Darwin's theory of evolution, although not a racial theory, had such an impact on

¹ Polygenism argues that humans of different “races” have distinct creation origins. This is in contrast to the monogenism perspective that suggests all humans have the same creation origin.

the social and scientific world that any subsequent ranking of human beings by specific criteria would require scientific justification.

Herbert Spencer (1820-1903) furthered Darwin's concepts as he attempted to explain growing social inequality in Europe and the United States. Spencer adapted Darwin's natural and biological theory to the social world and concluded that millionaires, in particular were the product of natural selection, the bloom of the competitive society (Shipman, 1994: 107-111). Spencer's social Darwinism mirrored the work of the polygenist without the religious connotations. Nevertheless, in Spencer's model successful groups of people, whether based upon race or some other factor were products of biologically superior genetic inheritance. This thinking ignored many of the social factors that could lead to intelligence and income, for example, and would lead to the formation of the areas of eugenics and psychometry, which were largely developed by Sir Francis Galton.

The Advent of Eugenics

Sir Francis Galton first coined the term "eugenics" in 1883, which meant "well-born." Initially he centered his focus on *positive eugenics*, which sought to encourage healthy people of above-average intelligence to bear more children, thereby building an "improved" human race. Galton built upon Darwin's ideas whereby the mechanisms of natural selection were potentially thwarted by human civilization. He posited that, since many human societies sought to protect the underprivileged and weak, those societies challenged the logic of natural selection responsible for extinction of the weakest (Galton, 1869). The solutions to this problem were to change social policies to avoid

government intervention or selectively breed the unwanted segments of society out of the human population.

Galton used scientific, statistical analysis to support many of his conclusions and suggested that it was possible to produce a highly gifted race of men through selective breeding. He advocated human breeding restrictions to curtail the breeding of 'feeble-minded'. This selective breeding was based upon a notion of "higher" and "lower" races and he used data garnered from the social world to extol the positive traits in white, Europeans and the negative traits of Jews, Blacks, and others (Galton, 1869). He posited that the African people were "two grades" below Anglo-Saxons' in the frequency distribution of mental ability, which supported the scientific claim of Africans' mental inferiority compared with Anglo-Saxons (Jensen, 2002).

Many of the eugenicist ideas were not limited to Europe but had a large impact on the United States. Some have argued that Nazi Germany garnered many of their ideas regarding eugenics from scholars and activists in the United States (Lombardo, 2011). Nevertheless, the long history of eugenics in human societies made its way to the United States and was rooted in the ideas of Sir Francis Galton and furthered by Madison Grant, Margaret Sanger, and others. The movement in the United States was also largely funded by corporate interests, which included The Carnegie Institute, The Rockefeller Foundation, and Harriman Railroad. Eugenics in the United States took a very similar tone as it had previously in Europe and suggested that American society could be "improved" through the selective breeding and sterilization of certain racially defined groups.

Groups impacted by race and its connection to science in the United States were those considered to be non-whites, lower class, and poor and had catastrophic effects. Immigration restrictions were some of the first results of eugenics in the United States as groups sought to block certain peoples from entering the United States based upon the idea that social and sexual involvement with these less-evolved and less-civilized races would pose a biological threat to the American population. With the passage of the Immigration Act of 1924, eugenicists exerted a great deal of influence in Congressional debates. The act, absorbed the science of the eugenicists belief in the racial superiority of "old stock" white Americans as members of the "Nordic Race" and strengthened the existing laws prohibiting race mixing (Eckerson, 1966).

Compulsory sterilization in the United States was also justified by the scientific logic of eugenics and focused on racial minorities. For example, United States Senate testimony in the early 1970's revealed that at least 2,000 sterilizations had been performed on poor black women without their consent or knowledge. Subsequent investigations revealed that the surgeries were performed in the Southern United States on black welfare mothers with multiple children. Evidence revealed that many of these women were threatened with an end to their welfare benefits until they consented to sterilization (Ward, 1986). Native American women were also victims of forced sterilization up into the 1970s; these women were threatened: if they had more children, they would be not receive welfare benefits (Lawrence, 2000). The cases of Black and Native American forced sterilizations were supported by the scientific analysis that was used to justify the American eugenicist movement. These acts were the result of the

theoretical ideas of the eugenicist that attempted to prove biological inferiority to Whites and those with European stock.

Nazi Germany soon followed the lead of the American eugenics movement and became one of the most overt examples of science and racism as they employed brutal tactics to subjugate racially identified groups (Lombardo, 2011). The Nazi's used racial doctrine to specify scientific legitimacy, which was combined with eugenics and forced sterilizations. The policies did not just target Jews, but also Gypsies, homosexuals, handicapped people, ethnic poles, and Russians. Each of these groups was labeled "inferior" in a racial hierarchy that placed the *Herrenvolk*, or master race, at the top (Shirer, 1988).

The Nazi's clearly employed overt race-based cleansing of the populations as is evident by the numerous death-camps erected throughout Europe during WWII. Despite this, the Nazi's also used more "benign, covert, scientific" measures to support and further racialization. Few are aware that IBM was one of the Nazi's biggest customers. Hitler's war-drive, and plans for population surveillance and racial identification, needed information and to be organized and cataloged. This was accomplish through the use of punch cards and high-speed sorting, which was invented in the 1880's by Herman Hollerith for the census needs of the US government (Black, 2001).

IBM soon became the Nazi's biggest overseas customer and represents a major event in history where racism was institutionalized and support through science. The speed of the IBM machines took years off the laborious processes that were needed to implement Nazi racial policies. IBM ran the Nazis' censuses in 1933 and 1939 that were designed to

identify Jews. IBM technology was central to the Nazis' eugenics program designed to weed out “inferior racial stock” through forced sterilizations (Black, 2001).

Race and Science in the Present

In the post-WWII era and despite the travesties witnessed by such historical events as the Nazi Genocide, scholars have continued to connect race to science in an effort to explain numerous factors, including poverty, educational success, and crime. Of particular influence is the *Culture of Poverty* argument that suggested poverty and lack of success in life was largely the result of cultural group differences. This scientific perspective attracted academic and policy attention in the 1960's, survived harsh academic criticism, and made a comeback at the beginning of the 21st century.² It offered one way to explain why poverty exists despite anti-poverty programs, as Oscar Lewis notes: “The subculture [of the poor] develops mechanisms that tend to perpetuate it, especially because of what happens to the world view, aspirations, and character of the children who grow up in it (1969: 199).” Daniel Patrick Moynihan also advocated a perspective of society that blamed groups for many of the challenges faced in society. For example, he suggested the main obstacle blocking the elimination of poverty among African Americans is the Negro family: “At the heart of the deterioration of the fabric of Negro society is the deterioration of the Negro family. It is the fundamental source of the weakness of the Negro community at the present time (1965: 51).” This perspective largely ignored the structural and institutional causes of poverty and uses institutional, scientific, and anthropological techniques to suggest a social outcome was the result of

² http://www.nytimes.com/2010/10/18/us/18poverty.html?_r=0

reduced and essentialized racial characteristics, group's culture, and ethnicity.

In addition to the *Culture of Poverty* argument, *The Bell Curve* (1994) represents another recent incarnation of scholars connecting race and science. This work built upon historical attempts to and attempted to scientifically “prove” the observed differences in the results of IQ tests of different races. They add to the classic arguments by suggesting that IQ differences between racial groups are the result of genes:

“We have already explained why the bias argument does not readily explain the ethnic differences and also why we say that genes may be part of the story. Our own appraisal of the situation is that Jensen's main contentions regarding Spearman's hypothesis are intact and constitute a major challenge to purely environmental explanations of the B/W difference [that is, the black/white difference in cognitive performance on IQ tests] (Herrnstein & Murray, 1994: 312).”

Despite this, the work has been criticized for using measures that did not actually measure IQ and also using covert language, such as “cognitive ability,” to create and further racial hierarchies.

More recent scholarship has taken the IQ test of racial difference further by basing intelligence upon advancing scientific techniques such as DNA sequencing to argue for genetic and racial superiority. Cochran and Harpending (2009) use *single nucleotide polymorphism* to make the case that Ashkenazi Jews are predisposed for intelligence. They suggest racial hierarchies by couching their argument in a supposed unbiased measure, such as DNA sequencing.

Population growth and the desire to control and manipulate it also remain essential issues in the present. With the increase of minority populations in America, in particular, many have begun targeting these groups, through the use of birth control, to

limit their numbers. Other tactics have arisen, such as fetal screening for Down's syndrome and other development disabilities have become the more modern way to selectively produce offspring.

Finally, through the increased specialization and advancement of medical and biological scientific research, increased attention has been paid to genes, genetic data banking projects, and Human Genome projects; and, the first "racial drug" – BiDil – is now on the market, which is targeted directly at African Americans, who are seen to be genetically predisposed to heart disease.

The Research Problem

This purpose of this dissertation is to explore the idea that scientific research furthers and justifies racism. I argue that contemporary researchers have continued the legacy of scientists, such as Samuel Morton, to create, justify, and further racial hierarchies. Past scholar's work, despite its intended objectivity, produced biased results as revealed by Stephen Jay Gould's reexamination of Samuel Morton's cranial studies (Gould, 1981: 50-69). I argue that scientists in the present, when using racial categories in their research, repeat the mistakes of past scholars and produce biased and invalid results. Biased results, for example, arise when race is thought of as a biological feature of humans and assumed to have a direct relationship to genetic markers. I suggested in this dissertation that race should not be understood as biological, but as a set of social process that can produce biological consequences. The research of the present, with the multiple guidelines that attempt to remove prejudices, likely continues to produce and support racial hierarchies in intentional and unintentional ways.

Scholars of the present are similar to those of the past who attempted to define and understand the world around them. Linnaeus's taxonomy, for example, reflected the prevailing thinking of his day and placed Europeans at the top of genetically based, social hierarchy. Therefore, it is argued that scientists of the present engage in a similar endeavor, and, like Linnaeus, incorporate racial ideologies into their contemporary research, which in the present, is largely subtle and covert.

The goal of this project is to answer the general questions: What is scientific racism and how does it operate through three specific realms of scientific analysis? These questions, along with others, will be explored to focus on the nature of racism in science, the manner in which racism in science is employed to further and support societal racism, the intent behind racism incorporated into scientific research, and the impacts of this scientific research.

1. What is scientific racism?
2. Is racism embedded within science?
 - a. Are scholars incorporating racial ideas from the society in which they live and using them in their research?
 - b. Are scholars incorporating racial ideas that are antithetical to the society in which they live and using them in their research?
3. Does racism operate within science?
 - a. Are scientists using established race-based ideologies to further and support racial hierarchies?
 - b. Are scientists creating race-based ideologies to further and support racial hierarchies?
4. Is racism in science an intentional or unintentional act of scientists?
 - a. Are scientists explicitly using racism in research to create hierarchies?
 - b. Are scientists implicitly and unknowingly using racism in research to create hierarchies?

Organization

In Chapter 2 of this dissertation I provide a review of the relevant literature of this topic and provide the essential theories that are the underpinning of this research.

Chapter 3 provides an examination of the research design and methodology while

Chapter 4 reports the data, which is taken from scholarly publications in Social,

Behavioral, and Biomedical sciences. Chapter 5 will discuss the findings noted in

chapter 4 and provide concluding remarks that address the possible consequence of

racism in science as it pertains to specific changes in American society.

Chapter 2: Review of Literature and Theoretical Frame

A large body of research on the interaction of race and science informs this study. This chapter explores the theoretical and empirical research related to the topics of behavioral, biomedical, and social sciences and demonstrates the fact that science is often used to create and buttress racial hierarchies. Despite the numerous topics regarding the scientific study of race, I explore some of the more prevalent theories in the disciplines. I begin by describing the concept of race and then its connection to science. I subsequently review the literature on racial study and science in the behavioral, biomedical, and social sciences. I conclude by suggesting that race remains an essential topic for scientific study, albeit an endeavor that must be carried out responsibly and ethically.

The Concept of Race

The concept of race is largely a *modern* phenomenon and is not a feature of human behavior that is intrinsic. Rather, race was *created* when European explorers discovered peoples who looked different from them as these groups challenged the existing concepts of the origin of humans. Religion was enlisted, through the polygenist argument, to suggest the inferiority of non-white, non-Europeans. Soon, residents on the “New World,” were thought to be without souls and were distinguished from Europeans. This view of the world justified the inhumane treatment of many non-whites.

Biology was soon found to be a better argument for racial differentiation than religion. Supported by the classification systems of several scholars, including Linnaeus, race became thought of as primarily a biological concept. However, despite the efforts of

numerous scholars and scientists, including Dr. Samuel Morton's study of cranial sizes, to give a precise definition of race as a biological concept, one has yet to emerge.

Race as a biological concept has nevertheless become entrenched in folk beliefs, which incorporate the assumption that racial categories reflect dramatic, underlying, essential differences between racial groups. To many observers, individuals of different races look and act very differently from each other, and these observable differences must reflect some fundamental, underlying causal mechanism—genetics. From its origins in the scientific literature, race was thought of as an intrinsic feature of individuals who shared distinctive physical characteristics. Racial groups were thought to represent *natural* boundaries within which people are essentially similar and between which people are essentially different. Human races are often analogized to families, implying a fundamental affinity and close, shared descent among all members of any one race (Marks, 2002).

More recent scholarship in the social sciences has challenged this argument that races are natural and therefore engender intrinsic traits (Omi and Winant, 1986). Rather, scholars, myself included, agree with the notion that racial groups are social constructions that are embedded in a particular socio-historical period. Race is a social concept by which categories and meaning are given concrete expression through specific social relations and historical contexts. Subsequently, racial categories are not fixed or static features of human biology, but racial meaning varies over time and different societies (Omi and Winant, 1986: 60-62).

Although additional perspectives of racial understanding exist in the literature, such as ethnicity-based, class-based, nation-based, and critical theory, the primary argument between scientists in the behavioral, biomedical, and social sciences focuses on whether or not race is a biological or social concept. This debate has resulted in myriad of theoretical and empirical perspectives regarding race and scientific study; however, it remains essential to note the specific connection race has to science.

Science and Racism

Scientific racism can be thought of as pseudo-scientific techniques and hypotheses that support a belief that some groups of humans are superior and others are inferior. As a category of theory, scientific racism appears in numerous disciplines including anthropology, sociology, psychology, biomedical research, and other research endeavors. Scientific racism is thought to have been most common during the *New Imperialism Period* (1880–1914) where it was used in support of European imperialism (Shipman, 1994). The perspective largely fell out of favor following the revelation that the Nazi's, during WWII, used scientific racism to justify genocide of specified human populations. Following the war, racism in science arguably persisted, but in new and varied forms. The advent of genetic research is one of these areas in the present that seeks to connect social features of human society to biological feature of humans, much like the scientific racism scholar of the past.

Basic sociological texts are full of descriptions of how science has been used to create and buttress racial hierarchies, but some of the most relevant literature on the historical formation of scientific racism can be found in *The Mismeasure of Man* (Gould,

1981). This book is both a history and critique of the academic methods and cultural motivation underlying *biological determinism* – the belief that “the social and economic differences between human groups arise from inherited, inborn distinctions and that society, in this sense, is an accurate reflection of biology (20).” This principal theme – that social worth can be given to individuals and groups by assessing biological or genetic features through scientific measures – has been analyzed using numerous methods, including craniometry and psychological testing. Gould notes that these methods harbor two fallacies – reification and ranking – that contribute to the creation and buttressing of racial hierarchies. In the end, Gould’s work attempts to thoroughly debunk science and race by suggesting that science, in particular, is another social structure that is employed to create race-based hierarchies.

Unfortunately, scientific racism is not a historical fact lost in time; rather, it remains an ever-present feature of society. The most well known of these texts, *The Bell Curve* (Herrnstein & Murray 1994) uses subtle and hidden language to create hierarchies between racial groups; they assert that race and genes are evidence of differential IQ rates among different racial groups, with a particular focus paid to the “inferiority” of blacks. Its central argument is that intelligence is influenced by inherited factors and is a predictor of personal dynamics, income, job performance, unwanted pregnancy, and crime. This post-racial attack using science ignores other structural factors, such as educational differences, and strongly influences how people think and act regarding race.

Evidence of scientific racism in the present can also be found in the work of Gregory Cochran and Henry Harpending. Their text, *The 10,000 Year Explosion* (2009),

argues that the largest Jewish population in the world – Ashkenazi – has higher IQ rates than other groups due to of a specific genetic combination. They note:

“We propose that the Ashkenazi Jews have a genetic advantage in intelligence that arose from natural selection for success in white-collar occupations during their sojourn in northern Europe. Strong selection for intelligence also produced some unpleasant side effects, in the form of alleles that boost IQ in carriers while causing harm to homozygotes (189).”

Although careful to avoid the terms eugenics and the use of racialized language, the authors clearly espouse a view that suggests certain racial and ethnic groups are more intelligent than other, based upon genetic difference. Their work echoes the texts and thoughts produced by eugenicist scholars, such as Madison Grant and Henry Fairchild Osborne over one hundred years ago (McKee, 1993: 59). This primary difference is their work uses “modern” scientific techniques and attempts to hide racism in the language of subtle and covert descriptors.

Contemporary Theories of Race and Scientific Analysis

Numerous research projects in the fields of Behavioral, Biomedical, and Social Sciences explore race and its connection to aspects of human social and biological life. In the section below, I review several of these prominent theories and research in each of the three selected areas of study. In the Behavioral field, I focus on the area of psychometrics – a sub-discipline that has, over the last 150 years, continued to vacillate between taboo and accepted scientific field. Psychometrics, in the present, continues to be applied as a valid sub-discipline of racial study, which seeks to examine and compare the intelligence of different racial groups. Second, in the field of biomedical research and race, I focus on five general themes related to race, health, and disease that have been

employed to essentialize and reify the relationship between race and genetics. I then explore prominent theoretical and empirical work in the Social Sciences, which seeks to relate genetic traits often correlated with race to criminality.

Behavioral Sciences: Race and Intelligence

Rather than measuring brain weight or skulls sizes of different races, scholars of the twentieth century have focused on psychometrics: a technique of psychological research, which includes the measurement of knowledge, abilities, attitudes, personality traits, and educational achievement. The psychometrics that originated in the twentieth century mark a sharp distinction between the research programs of the past that sought to objectively measure cognitive ability and then relate the data to biological determined racial variation. Nevertheless, their goals remain largely the same – to use scientific measures to create and support existing racial hierarchies.

The foundations of American psychometry rest on the work of several scientists. Alfred Binet (1857-1911), a French scholar, invented an instrument to ascertain at which level individuals “learned”(1905). This tool was specifically intended to help identify children that required special education, but was soon co-opted for racial classification in 1908, when Henry Goddard employed the test to explore the intelligence of children at his school – The Training School for Feeble-Minded Girls and Boys. Subsequently, in 1912, William Stern revised Binet’s version of the IQ test, and, despite his altruistic intentions, the test was quickly employed by others to create and buttress racial hierarchies (Graves, 2001: 157-158). Following the creation and refinement of the IQ

test, research programs were launched in psychometry by many scholars, in different locations, and centered on the following core principles:

1. Every individual had an underlying intellectual capacity.
2. This capacity could be accurately tested by means of standardized tests.
3. Variation in individual intellectual capacity was innate.
4. An individual's genetic intellectual capacity was related to his or her racial origin.
5. The intellectual and reproductive capacities of races were inversely correlated.
6. The differential reproductive or immigration or both of inferior races was lowering American intelligence.

With these guiding principles in hand, the American psychometrics movement influenced race relations greatly. Intelligence became a key factor in ascertaining racial difference as, for example, the U.S. army used these tests to help bias immigration quotas in the 1920's (Richards, 2004: 89). Nevertheless, the intelligence test ultimately had the goal of connecting acumen, a genetic category, to race, a social category.

The psychometric movement remained on the fringes of American society after WWII until the work of Arthur Jensen. His work best epitomizes the return to scientific racism in the post-WWII period and, in 1969, he published an article in the *Harvard Education Review*, which revived the psychometric debate. Here he suggested that genetics, not environment, were responsible for intelligence differences among racial groups. He argued that compulsory education had failed and America was in danger of dysgenesis, which was largely the result of the integration of inferior African stock in to

the supposed, superior European stock. In addition to the dangers of interbreeding, he supported racial hierarchies by scientifically demonstrating the supposed, genetic inferiority of African Americans in particular. Moreover, this inferiority, and its impact on the larger American society, was compounded because, as Jensen argued, African American's had a higher reproductive rate than whites that would lead to genetically inferior individuals dominating the population. Finally, he argued that the U.S. government should stop funding early intervention programs, since they had no impact on the genetically limited intelligence of blacks (Morris, 1971).

Jensenism soon became a powerful force in American society and was largely supported by others, including Richard Herrnstein's 1971 article titled, simply *IQ*. In this article, Herrnstein suggested that because American society is largely based upon merit, intelligence was the most important factor related to individual success. Therefore, because mostly genes determine IQ, American racial stratification was not the result of discrimination but rather genetically determined cognitive ability.

Despite the numerous critiques of racial psychometrics during the 1970's and 1980's, research in this field continued and reached its pinnacle with the publication of *The Bell Curve* – a book that repackaged eugenics for the modern age (Herrnstein and Murray, 1994). The authors make a similar claim to that of Jensen and attempted to prove the link between race and IQ and make their claim using subtle and covert language to describe race and race-based traits.

Their evidence was based upon the National Longitudinal Survey of Youth 1979 that found a 1.21 standard deviation difference between whites and blacks on the Armed

Forces Qualifying Test (AFQT). Their sample included 6,502 whites and 3,022 blacks and they claimed their research supported IQ difference between racial groups. They further argued intelligence differences between racial groups by suggesting that the results were robust and reflect a continuity of this difference over the 20th century. In addition, they argue that the black-white differential does not disappear when parental socio-economic factors are considered.

Despite the obvious limitation of scholars attempting to connect race to genetic factors, the claim of 20th century robustness does not allow enough time for genetic alteration among different groups. Moreover, when the mean IQ's of whites and blacks are examined, evidence suggests that both groups IQ's have increased by about 15 points over the last 30 years (Flynn, 1987).³ This would suggest an environmental influence on intelligence, but Herrnstein and Murray dismiss this critique by suggesting the increase is simply the result of better testing, rather than a real change in IQ.

Such racial essentialism reveals the basic inconsistencies with psychometric research and these scholars' limited understanding of evolutionary genetics. Herrnstein and Murray's evidence is largely based upon phenotypic data and the supposed genetic difference in IQ between groups is then based not on race, but some indirect measure, such as a standardized test. Despite the established limitation of standardized tests, Herrnstein and Murray advocate the false logic of group heritability.

More contemporary research on race and intelligence, particularly in the era following the publication of Jensen's article (Post-1969), continued to measure and

³ This phenomenon is known as the Flynn effect.

explain difference among racial groups. Despite the limitations of intelligence tests and the use of the category of race in research, the debate over race and its connection to intelligence, can be placed into two general perspectives: *culture-only* (0% genetic–100% environmental) and *hereditary* (50% genetic–50% environmental). Each of these viewpoints is founded upon the average difference in racial group intelligence and each explores the following ten categories to support their perspective:

1. Global distribution of test scores
2. *g factor* of mental ability
3. Heritability
4. Brain size and cognitive ability
5. Transracial adoption
6. Racial admixture
7. Regression towards the mean
8. Related life-history traits
9. Human origins research
10. Hypothesized environmental variables

The *culture-only* position does not posit any genetic causation of intellectual differences between races but suggests that the cause is based upon environmental factors, such as race-based social-structural impediments. Based upon research, these scholars argue that if the environments for all individuals could be equalized, the observed group differences in average IQ would disappear. They posit that there are different learned mental skills, or intelligences, and observed differences in cognitive performance are the result of environmental factors.

Alternatively, the *hereditary position* originated in the work of evolutionary scholars and was elaborated by Sir Francis Galton (1869, 1883). Based on research, this view contends that a substantial portion of both individual and group differences in human behavior is genetic. This perspective argues, that if group equality were achieved,

average group differences in intelligence would not disappear, though they might diminish, supporting a genetic influence on intelligence. Generally, the hereditary group argues that all individuals possess some level of general mental capacity that influences cognitive activity; therefore, the observable differences between individuals and groups regarding intelligence is the result of genetic differences.

A third, and somewhat hybridized position exists, that attempts to synthesize the *cultural-only and hereditary positions*, such as gene–environment interaction scholars. This research falls into one of the two primary categories based upon whether the research predicts a significant heritable component of average group difference in IQ.

Race–IQ Differences

The Race-IQ debate became a worldwide phenomenon when it was demonstrated that East Asians scored higher on IQ tests when compared to Whites, both in the United States and in Asia (Lynn, 1977, 1978, 1982; Vernon, 1982). Data reveals that around the world, IQ for East Asians centers around 106; for Whites, about 100; and Blacks, about 85 in the United States and 70 in sub-Saharan Africa. Most of this research had been completed in the United States, but some was also performed in Canada and the Caribbean (Eysenck, 1971; Kamin, 1974). This same order of mean group differences is also found on supposed “culture-fair” tests and on reaction time tasks. Numerous studies have claimed to confirm the three-way racial pattern of race-based intelligence, which is grounded in IQ tests (Lynn & Vanhanen, 2002; Rushton, 2000).

Racial-group differences in IQ seem to appear early in childhood. For example, Black and White 3-year-old children in a sample of the Stanford–Binet IV show a 1

standard deviation difference after being matched on several categories, including gender, birth order, and maternal education (Peoples et. al., 1995). Similarly, Black and White 2 1/2- to 6-year-old children in the sample of the Differential Aptitude Scale have a 1 standard deviation mean difference. No data are available for East Asian children at the youngest ages. On the Differential Aptitude Battery, by age 6, however, the average IQ for East Asian children is 107, 103 for White children, and 89 for Black children (Lynn, 1996). The size of the average Black–White difference does not change significantly over the developmental period from 3 years of age and beyond (Jensen, 1998).

The hereditary scholars support their data with results drawn from standardized IQ test, which they claim are a valid tool for measuring IQ. They assert the tests are valid, because they show similar patterns of item consistency and predictive validity for all racial groups. Moreover, because similar differences are found on supposed culture-free tests, many psychometricians have concluded that the tests are valid measures of racial differences (Wigdor & Garner, 1982).

In response to the hereditary scholars support for genetic causes of race-based intellectual differences and their use of standardized tests, *culture-only* scholars have raised serious questions about the validity of using IQ tests for racial comparisons. They challenge the hereditary position by noting that very few tests of intelligence actually measure an individual's ability to learn. These standardized IQ tests, except for dynamic tests (Sternberg & Grigorenko, 2002), do not require learning at the time of the test or measure ability to learn. Rather, traditional tests focus much more on measuring past learning, which can be the result of differences in many factors, including motivation,

opportunities to learn, and other environmental factors.

Moreover, culture-only scholars claim the invalidity of the test because they are largely culturally biased and scholars, in the hereditary tradition, in particular, cannot agree upon a definition of intelligence. Scholars using IQ test to claim differences in racial intellect, generally rely upon Boring's (1923) definition of intelligence that suggests intelligence is whatever IQ tests measure. This definition is unsatisfactory for numerous reasons, including that it is a tautology. Additionally, scholars have demonstrated that it is not clear that tests of IQ measure the same construct among all people to whom the tests are applied (Mackintosh, 1998).

This problem is exacerbated when people are more culturally distinct as this results in a greater difference in what items are measured. This is the result, in part, because IQ test items are measures of achievement (Sternberg, 1999, 2003). Items requiring knowledge of vocabulary, comprehension, and mathematical problem solving—measures called *crystallized abilities* (Horn, 1994)—are clearly measures of achievement and not intellect. Additionally, items requiring fluid abilities, such as abstract reasoning were once thought to be culturally fair (Cattell & Cattell, 1963), but have been shown to be even more susceptible to effects of culture and environmental factors than tests of crystallized abilities (Flynn, 1984; Neisser, 1998). Therefore, the culture-only theorist undercut the hereditary argument by suggesting that IQ tests do not actually measure intelligence and are culturally biased.

The hereditary scholars continue to push an approach to intelligence and race that ignores structural factors and claims that culture-only scholars have not provided data to

support their conclusion. However, a cursory reading of the literature reveals that the most common argument made for perceived intellectual differences among racial groups is Socioeconomic Status. Moreover, the culture-only scholars have provided numerous, specific support that suggest differences in intelligence are due to social-structural constraints applied to non-white individuals. These include: lack of reading material in the home, poor cultural amenities in the home, weak structural integrity of the home, foreign language in the home, low preschool attendance, no encyclopedia in the home, low level of parental education, little time spent on homework, low parental educational desires for child, low parental interest in school work, negative child self-concept (self-esteem), and low child interest in school and reading. Nevertheless, despite the data provided by culture-only scholars, hereditary scholars, continue to claim a genetic influence on intellect as primarily measured through IQ tests.

Biomedical Sciences: Race, Health, and Disease

In the biomedical field, race and health predisposition is an important topic. This research community has long focused on non-white communities, but recently has avoided the language of overt racial description. The language used to describe non-whites in this research has taken the form of covert language and centers, largely, on the term: *special populations*. The term special populations include numerous categories, including racial groups, genders, and the disabled. This descriptor reveals the additional limitations of imprecise decisions found in much of the research regarding health and race and in accordance with most research endeavors on the topic of race, the biomedical field's use of imprecise definitions leads to invalid and compromised results. These

results are compounded by the fact that many researchers in the biomedical field are continuing to work with the notion that race is a biological concept and therefore, see all health related difference among racially defined population as dependent upon genetics.

For generations, science, the study of health, disease, and racial group identification have been inseparably linked. In the vein of most forms of race-based scientific analysis, the study of health has been socially constructing the inferiority of African Americans for centuries. Since the first case of *Winterbottom's sign* (African trypanosomiasis) and the concerns over African's with *yellow fever*, the attempts to intervene in the health affairs of Africans was not to aid them, but to prevent miscegenation and the spread of disease to whites.

Slaveholders also worked to scientifically construct the health of Africans when slave actions and fitness were antithetical to their desires. Slaves were said to have *dysesthesia* (a disease that caused slaves to work in a lazy manner) or *drapetomania* (a disease that gave slaves an intense desire to run away). The cure for these desires was to treat slaves in brutal and paternalistic ways (Bankole, 1998).

The health and science communities' primary interest in non-whites was to prevent the spread of diseases to other groups and to protect against the spread of "inferior genes". Of particular concern were communicable diseases that might spread to whites, such as syphilis, and the cost associated with untreated blacks. The Tuskegee syphilis project, for example, marks one of the greatest tragedies in the history of American public health and was undertaken because many physicians felt that race was a

meaningful biological category with the ability to accurately predict disease susceptibility.

Many historical events regarding research on race, health, and genetics have been shown to produce false results or were demonstrated to be highly unethical. However, despite these historical events researchers continue to attempt to associate race, health, and genetic traits. Heart disease continues to be a highly profitable and a contested terrain of racialized biomedical research. Generally, African Americans are seen to have the highest incidence of heart disease, which many researchers equate to genetic causes. Additionally, researchers often ignore the social structural factors that are intertwined with racial identity.

In the constantly fluctuating uses and meanings of the race in society, it is possible to discern five positions circulating in the biomedical literature, each with differing conceptualizations of race and assumptions about disease etiology.

One position, represented in the Institute of Medicine report *The Unequal Burden of Cancer: An Assessment of NIH Research and Programs for Ethnic Minorities and the Medically Underserved* (1999), interprets race as a social category and calls for the substitution of ethnicity for race. These scholars assert that the use of race in scientific research is problematic, an invalid tool for scientific research, and should be replaced with the terms: ethnic or ethnic groups. They define ethnicity as a recent term that involves how one sees oneself, how others see one as a member of a group on the basis of presumed lineage sameness, and the sharing a common purpose with others on the basis of this background. Common threads that may tie an individual to an ethnic group

include skin color, religion, language, customs, ancestry, and occupational or regional features (Kaufman & Cooper, 2001). Ethnic group identification may be associated with behavioral and environmental factors that may increase or decrease the likelihood of illness, which are not as easily found when the racial category is used (Haynes & Smedley, 1999: 38).

Moreover, the authors suggest that the category of “race” has limited scientific value. They suggest that there is only one race – *Homo sapiens* – and that racial groups are actually entire population that should be described within five macro-ethnic groups (White, African American, Hispanic, Asian American (including Pacific Islanders), and Native American) (Haynes & Smedley, 1999: 84). This arrangement recognizes the similarity of the human race and the unique differences found in ethnic groups and, according to the authors, does not hinder data collection. The study of these ethnic groups permits an improved assessment of the factors contributing to cancer, in particular, than studies based on “race”.

Unfortunately, this perspective never clearly delineates the relationship between race, ethnicity, and disease susceptibility and thus does not provide any operational guide for research. Moreover, they fail to recognize the primary influence that the social consequences of racial identification have on individual and group health. Despite, their standard assessment regarding ethnicity, social conditions, and disease susceptibility, they fail to elucidate the unique effects that the social impacts of racial identification can have on individuals. As the authors note, there is no genetic relationship between health and race, but they fail to note the social effects of race on health, which could include:

white racism, race-based employment discrimination, and race-based differential access to education. Each of these factors, which are contingent upon the social influence of racial identification, can have significant impacts upon health.

A second position, articulated by public health researchers, such as epidemiologist Nancy Krieger (2000, 2003) and sociologist David Williams (1997), assert that race and ethnicity are socially constructed categories; however, the health consequences of racial discrimination are mediated biologically and cannot be reduced to group-specific genetic differences. Kreiger (2003) defines race as a social construct and argues that it has no biological basis. Race does have biological consequences, but health consequences are indirect and related to the social conditions based upon racial definitions. She critiques current research and suggest the following two issues must be addressed. First, biological expressions of race must draw attention to the harmful physical and psychosocial nature of racism and its adverse influence on human biology. Second, racialized expressions of biology, which refer to the arbitrary biological traits that are construed as markers of innate “racial” distinctions, must be avoided.

This perceptive has found little favor among biomedical researchers as it suggests the racial category be totally eliminated. This is an untenable solution for biomedical researchers as no scholar has suggested an alternative, operational method for exploring the health effects that are now describe as race-based. Moreover, Krieger (2003) and Williams (1997) have confronted a problem of research paradigms. Although critiquing biomedical researchers from a social science perspective, they fail to provide biomedical researchers a satisfactory method for replacing racial categories.

A third, distinct perspective, reflected in the work of Kaufman and Cooper (2001), suggests that race is a social entity, but categorization at the level of continental ancestry is too crude to be meaningful for genetic studies of racial and ethnic disparities in disease. These researchers question the public health and clinical significance of self-reported race and ethnicity, arguing that the focus of investigation of racial disparities in disease should be racism, not “race.” They suggest that race is not directly related to biological phenomenon, but can be mediated by socioeconomic factors and racism. However, to address the limitations of race as a direct cause in etiologic research, an indirect cause, and/or a covariate, they suggest some corrections to current research strategies.

When scholars seek to examine the “Total Effect of Race/Ethnicity” (Kaufman & Cooper, 2001: 296) in research they must be concerned with surveillance, health care epidemiology, and the ethnic paradigm in etiologic research. In terms of *surveillance*, the authors argue that results separated by race/ethnicity can be crucial for revealing existing inequalities and observing disparities over time. This is an important activity for assessing the population burden of disease, but the inadvertent reification of race as a biomedical quantity is very possible and problematic.

For research concerning *health care epidemiology* – the behaviors of patients and health providers, interactions between patients and providers, and other aspects of social relations that can influence care-seeking and evaluation – the effects of race/ethnicity are potentially valid, interpretable, and important. However, scholar must remember that race, in this case, is viewed as a social construction influencing action and not a

biological or genetic determining factor.

Related to the *ethnic paradigm in etiologic research*, there should not be a causal interpretation to total race effect in the context of etiologic research. It is questionable, therefore, whether this should ever be a variable of interest for biomedical researchers. In the event that a researcher desires to include race as a causative variable, the authors suggest that covariate sets must be chosen cautiously. Additional factors may confound the effect measures for race and other social constructs that are often measured in biomedical research, such as sex and gender, age, and genetic factors.

The authors recommend that when race is examined with the desire to ascertain direct and indirect effects, serious issues arise. In studies of health care epidemiology, valid covariates are considerably less limited by consideration of causal order than in other studies, such as individual pathophysiology. The authors use an example of the study of the etiology of heart disease and suggest that when race/ethnicity is the factor of interest the causal process is external to the participant. In this case, a comorbid condition, such as diabetes, is not causally subsequent to the exposure of interest, that is, the racial identity of the individuals. Therefore, attempting to suggest a casual argument where race/ethnicity causes diabetes, for example, is highly unethical and can produce invalid results.

A fourth perspective, represented by James F. Wilson, et. al. (2001) proposes an elimination of the race variable in biomedical research, calling for the “race-neutral” approach of genotyping groups instead of classifying people based on self-identified race and/or ethnicity. Individual-level genotyping, then, would ultimately replace population-

level genotyping; however, the extent to which self-identification is correlated to genetic clusters remains an unexplored point.

Based upon the primary limitation that race is an imprecise term, the authors recommend the race-neutral approach (Wilson, et. al., 2001: 240). They argue, that while the numbers of certain allelic variants and mutations vary among people with similar geographic origins, such ancestry is not reflected in the commonly used racial categories—American Indian, Asian, Black, White, Hispanic, or other. Although the authors seem to be suggesting that race has no biological basis, they do not make this point and fail to provide an alternative when racial categories are excluded.

Schwartz (2001) challenges this position and suggests that ignoring race or subsuming it into another category is futile. He suggests that the continued attempt to connect race to genetics or some biological fact is highly problematic and medically misguided. He notes:

“In March 2001, under the search term ‘Negroid race,’ Medline contained 13,592 citations, of which 1301 appeared in 1999 or 2000. Among these studies are race-based investigations of lipid metabolism, renal function, responses to vasodilators, sexual maturation, drug metabolism, neurodegenerative diseases, and even Dupuytren's contracture. Such research mistakenly assumes an inherent biologic difference between black-skinned and white-skinned people. It falls into error by attributing a complex physiological or clinical phenomenon to arbitrary aspects of external appearance. It is implausible that the few genes that account for such outward characteristics could be meaningfully linked to multigenic diseases such as diabetes mellitus or to the intricacies of the therapeutic effect of a drug (2)”.

Schwartz cautions scholars in the biomedical field to connect race to physiological phenomenon and, when these connections are made, therapeutic intervention, is highly unethical.

The final position, exemplified in the work of Neil Risch (2002) and Buchard, et. al. (2003) puts forth a clear interpretation of decades of population genetics research and its meaning for biomedicine. Drawing on the results of population genetics research, these authors argue that genetic polymorphisms⁴ cluster into five major continental groups worldwide, which are African, Caucasian, Asian, Pacific Islander, and Native American. Due to the fact that these clusters “roughly” correspond to self-reported race and ethnicity in the United States, the authors argue that these five categories are the only groups that should be included in biomedical research relating to race. This position has become a popular theory in contemporary biomedical research.

Unfortunately the Risch (2002) and Buchard, et. al. (2003) positions fall into a reductionist and essentialization trap that is exemplified by many biomedical researchers. Any attempt to place human variability into genetically defined continental populations, to specify genetic clustering as static categories, to assign people to these categories, and to use the groupings analytically in studies of health, genetic, or disease etiology, has numerous consequences. Despite the prevalence of the genetic polymorphism position in current biomedical research, Jonathan Kahn (2003) reminds scholars that such practices racialize the problem of health disparities, reify difference, and encourage uncritical acceptance of certain disparities.

Shields et. al. (2005) has also pointed out that the use of social categories of race and ethnicity in genetic studies confuses the effective use of these categories in the U.S. for monitoring health disparities. Although Shields et. al. (2005) does not provide an

⁴ In biology, polymorphisms refer to the occurrence of two or more clearly different phenotypes that exist simultaneously in the same species.

alternative to the use of socially constructed categories of race and ethnicity in biomedical research, the authors argue that they should not be included in any form of medical research.

Finally, the Risch (2002) and Buchard, et. al. (2003) position is hindered as it ignores the social, economic, and political impacts on health, based upon racial identification. The continued search for genetic explanations of racial health difference have become very effective at obscuring the social stigma that is attached to some racial groups.

Social Science: Race, Genetics, and Crime

As biomedical and behavioral scientists continue to debate whether race is real or genetically discernable through intelligence tests, correlations with health, and other factors, social scientists have used many of these techniques to develop methods for genetic profiling in the realms of crime and the judiciary. Such profiles may identify individuals with exceptional accuracy, but they may also involve a genetic version of racial profiling (Evetts, Gill, Scragg, & Wier, 1996; Lowe, Urquhart, Foreman, & Evetts, 2001). As genetics moves into law enforcement, in particular, the search for “genes of the criminal” has begun to proliferate.

Genetic-based technologies and other scientific discoveries claim to hold promise for producing safer and more effective medical treatments, but they can also be used in law enforcement. Scientists now have the ability to test 13 highly variable regions of human genetic makeup and, with these specialized regions, can create a genetic profile that is unique to every individual. However, the areas of the genome that are able to

create identifying profiles are not genes, but are regions of human DNA termed *noncoding regions* (Ossorio & Duster, 2005: 120). These regions are segments of DNA that do not encode information informing cells how to make useful molecules, such as RNA. Identifying so-called DNA profiles can subsequently be stored in computers as bar codes or as a series of numbers that describe a unique pattern of DNA variants (Bamshard, et. al. 2004).

The use of this stored information has both positive and negative effects for society. DNA profiling in criminal and judiciary cases has been employed to free more than 140 prisoners, who were wrongly convicted of a crime (Dwyer, Neufeld, & Scheck, 2000). Also, law enforcement officials are often able to apprehend a suspect who leaves genetic material at a crime scene, because the offender matches DNA that already exists in a known database. The use of this technology is well known and highly controversial. Numerous scholars and crime officials have called for an expansion of collecting and storing genetic materials. Policy analysts have proposed that law enforcement obtain samples from all convicted felons, arrestees, and suspects (Puri, 2001). Additionally, Kaye & Smith (2003) suggests that the entire population of the United States should have DNA profiles. There are those, of course, that oppose the suggested policy implications and caution that the collecting of genetic material for crime related purposes could lead to race-based profiling.

Law enforcement currently employs three approaches to the collection of genetic material and criminality. The first practice is the use of genetic material in post-conviction situations to determine whether there was a wrongful conviction, a practice

that can help to free the innocent. The second practice is to collect and store genetic material to form profiling database that can be used for numerous purposes, including identification. Currently, many states collect genetic material from people convicted of a many types of crimes. Some even collect DNA from suspects or arrestees in pretrial circumstances. Finally, law enforcement agencies use genetic material to test ambiguous crime scene material in a search for information that could be used to create a physical or behavioral profile of a suspect. This process is highly controversial and works quite differently than the traditional fingerprint as it includes additional information about an individual, such as health and ancestry, and could be erroneously correlated with behavioral or psychological traits.

The Revival of Phrenology

Many scholars of the present laughingly claim that phrenology was a pseudo-science of the past that had little validity or scientific merit. However, the same methodological errors employed in the 19th century, when scholars, such as George Combe (1788-1858), used brain weights and skull sizes to claim the superiority of the European “race” and the innate aggressiveness of Africans are still in use today. Just like the phrenologist of the past used already subjugated populations to substantiate findings, scholars of the present use already-incarcerated populations to claim that a gene related to aggressiveness and criminality is more readily apparent in some racial groups. Researchers, in the present, often deploy computer-based DNA profiles and attempt to correlate them with the crimes of those occupying the criminal justice system. The findings assume the institutional and cultural authority of genetic research and further the

belief that racial minorities are in prison because they are genetically predisposed to aggressiveness and criminality (Nelkin & Lindee, 1995).

With the advent of genetic investigation, social researchers have furthered studies that have attempted to correlate genetics and group traits, while also studying between-group genetic differences. These studies have largely furthered the questionable methodologies that were evident in the phrenology research of the past and, in large part, have come to similar conclusions regarding genetically based traits of racial groups. Those who study social behavior have rushed to find genetic markers and genes that can be associated with very complex behaviors. Recently, scholars and laypersons alike have seen claims linking DNA and genes to *cognitive ability* in children (Chorney et al., 1998), *crime* (Jensen, Fenger, Bolwig, & Sorensen, 1998), *violence* (Caspi et al., 2002), and *attention-deficit/hyperactivity disorder* (Smalley et al., 2002). In *Science*, a leading publication of genetic researcher claims that:

“All pharmacogenetic polymorphisms studied to date differ in frequency among ethnic and racial groups” and this “marked racial and ethnic diversity . . . dictates that race be considered in studies aimed at discovering whether specific genotypes or phenotypes are associated with disease risk or drug toxicity” (Evans & Relling, 1999: 488).”

This statement, among others, led social science research to attempt to make connections between genes and numerous types of social behavior, namely crime.

The MAOA Gene as a Predictor of Violent and Criminal Behavior

Crime and its subsequent definitions can be seen as a social act. As John Curra (2000) makes clear in his discussion of numerous types of violence, crime, in particular, is relative and varies based upon time and location. Therefore, what constitutes a crime

is highly variable and often reflects particular norms and values of socially prevailing groups. Nevertheless, numerous scholars have attempted to correlate crime to genes, with particular focus paid to the MAOA gene.

Monoamine oxidase A, also known as MAOA, is an enzyme that in humans is encoded by the MAOA gene. A version of this gene has been referred to as the *warrior gene* and is present in many humans. The frequency distribution of variants of the MAOA gene differs between ethnic groups and has led many scholars to claim high rates of incarceration of Africans, in particular, is a result of this particular gene. According to recent studies, 59% of Negro men, 56% of Maori men, 54% of Chinese men, and 34% of Caucasian men carry the 3R allele associated with the MAOA gene (Lea and Chambers, 2007).

The 3R allele is of particular interest as scholars argue a connection between this and numerous types of antisocial behavior (Caspi, et. al., 2002). The MAOA gene has not been found to have a main effect on antisocial behavior, but an indirect effect has been found. According to Caspi, et. al. (2002) maltreated children with high levels of MAOA were unlikely to develop antisocial behavior. Low MAOA activity when combined with childhood abuse resulted in an increased risk of aggressive behavior as an adult. High testosterone, maternal tobacco smoking during pregnancy, low living standards, dropping out of school, and less than average IQ were seen as triggers for violent behavior in men with the low levels of the MAOA 3R allele (Fergusson, et. al., 2012). Additionally, the MAOA gene has been linked to higher levels of aggression when an individual faces social exclusion or ostracism, is provoked, or seeks retaliation (Gallardo-Pujol, 2012).

In addition to the serious ethical and methodological questions regarding the connection between genes and social behaviors, scholars in this area of inquiry have also attempted to suggest that medical intervention could alter the genetic makeup of these individuals and lead to a reduction in antisocial behaviors. As Caspi et. al. (2003) note:

“... 85% of cohort males having a low activity MAOA genotype who were severely maltreated developed some form of antisocial behavior. Both attributable risk and predictive sensitivity indicate that these findings could inform the development of future pharmacological treatments (853).”

The idea that scientists can intercept and then treat antisocial behaviors assumes that this supposed correlation is reflective of a causal connection between genes and social behaviors. Irrespective of the complicated social dynamic of client treatment, these scholars fail to understand that criminality and antisocial behaviors are constructed concepts that are highly variable and often, in the case of crime, selectively enforced.

This attempt to correlate genes with social behavior, such as crime, is at its core a racial issue. Scholars argue that 2/3 of African men possess the *warrior gene* – more than any other group – which supposedly predisposes this group for increased criminality and antisocial behavior. However, criminality is partly about the individual, but more substantially it is about individuals with membership in particular social groups, upon which the criminal justice system is disproportionately focused. For example, the U.S. war on drugs, which accounts for more than half of all those incarcerated in U.S. jails and prisons, has been unwaveringly directed at African Americans and Latinos (Cole, 1999; Reinerman & Levine, 1997).

Theoretical Frame

Conceptualizing Race

Because the concept of race is such contested terrain through numerous scientific disciplines, it is essential that I clearly state how it will be conceptualize throughout this dissertation. My understanding of the concept follows contemporary racial theory definition that race is a social construction and has limited biological or genetic efficacy:

“... the social construction thesis holds that race and races are products of social thought and relations. Not objective, inherent, or fixed, they correspond to no biological or genetic reality; rather, races are categories that society invents, manipulates, or retires when convenient. People with common origins share certain physical traits, of course, such as skin color, physique, and hair texture. But these constitute only an extremely small portion of genetic endowment, are dwarfed by what they have in common, and have little or nothing to do with distinctively human, higher-order traits, such as personality, intelligence, and moral behavior (Delgado and Stefancic, 2001: 7-8).”⁵

Given this definition of race, I synthesize the following two theories to explore the concept within the institution of scientific inquiry.

The synthesis will include core tenets from *Racial Formation Theory* (Omi and Winant, 1994) and *Racialized Social System* approach (Bonilla-Silva, 1997). As this project will explore the evolution of racial language, each of these theories are essential to exploring race in the present and suggest that race and racism are social factors that are constantly in flux and highly variable facets of social life. Moreover, they claim that race and racial definitions cannot and should not be reduced to some other social phenomenon.

⁵ There are numerous writings, within sociology and other disciplines that support this position. See: Smedley & Smedley, 2005; Fujimura & Rajagopalan, 2011; Goodman, 2000; Carter, 2007; Soo-Jin Lee, et. al., 2008.

In *Racial Formation in the United States* (1986), Omi and Winant present an overview of United States racial formation – a sociohistorical process in which racial categories are created, destroyed, and transformed over time. These processes of “changing racisms” link structure and agency in a given historical period to historically specific “racial projects.” This is an ideal theory to apply to the idea of scientific racism as it allows the explanation of how race and its connection to science changed over time. “Scientific racism” can be considered a racial project – one that has continued to be altered over time and location and more accurately described as racialized research. Concurrent with this evolution of racism is the changing language and definitions of racial categories and their expression. As Omi and Winant, suggest, the evolution of racism is seen through the “new” forms that arise.

Omi and Winant’s theory supports the idea that, due to many historical events, science is devoid of direct racialized language. This evolution in language, in particular, suggests that racism remains an ever-present factor of society, but is simply communicated differently. Moreover, this theory allows for the noting of levels of analysis in which race is an applicable unit of analysis. To be elucidated with this theory is how scientific racisms has changed over time and the form it takes in the present. Each of these will be considered a “racial project” and “new” forms of racism.

In *A Racialized Social System Approach* (1997) Eduardo Bonilla-Silva suggested that race cannot be reduced to some other social phenomena and is the primary determinate of “life chances” for “people of color” in the U.S. He builds upon Omi and Winant’s perspective, by noting the specific nature that race takes in the present. He

specifies, not just the evolution of racism, but the specific language used to express race-based hierarchies in the present. He argues that the U.S., in particular, is a racialized social system, which refers to societies in which economic, political, social, and ideological levels are structured by the placement of actors in racial categories. The nature of these structures is highly racialized, but the crucial point is that the social relations between races become institutionalized, co-opt, and influence social life, irrespective of intent. This is an essential point for this study: as science represents a knowledge and ideological structure, it is embedded with race based ideas, thoughts, and behaviors, irrespective of the fact that these expressions of race-based hierarchy are conveyed differently than the past.

The synthesis of these two theories allows for the examination of racism in science in the present. It allows for an analysis of the evolution of racialized research, which counters the notion of a post-racial society. Employing Omi and Winant's theory supports the idea that although racism has changed over time, it remains an essential part of society – it evolves, changes, and even “disappears” based upon numerous factors. Bonilla-Silva's position represents the analysis of a “new racial project” – that is often described as colorblind and institutional. The *Racialized Social System Approach* provides a basis for elucidating, with specificity, the nature that racism takes in the present. His support of “code words,” in particular, will allow the nature of racism in science to be specifically elucidated.

Conclusion

It is logical that many scholars and laypersons alike would suggest that racism in science is not a topic that needs study because racism no longer exists, is not longer an problem in the U.S., or is simply the problem of a “few bad apples.” This notion is not supported in this work and I accept the fact that racism remains an ever-present feature of society. This “few bad apples” approach is referred to as post-racial or color-blindness and suggests that systemic processes, in particular, are devoid of racial preference, discrimination, and prejudice (Brown, et. al., 2003). The Civil Rights Movement is a historical event that is often championed as evidence of post-raciality and the recent election of Barack Obama has further supports this argument by arguing that if a “black” man can be elected president, then, logically, there can be no racism in the U.S. Of course, this study suggests that racism remains a central factor of many people’s lives, but its communication, in particular, has been altered by history.

Due to the fact that many aspects of social life in the U.S. are patterned by racism, scholars add to the post-racial perspective by arguing that many demographic variables are potential confounders for racial comparisons (Kaufman, Cooper, & McGee, 1997). Despite the challenges of the post-racial perspective, this dissertation accepts “post-raciality” as a “new racial project” and suggests the scholars who study race produce invalid or questionable results though scientific analysis. Therefore, below are listed several reasons why race remains an essential part on scientific inquiry and should be questioned whenever employed.

First, race effects are not always reducible. The lifetime accumulated effect of

multiple race-based experiences and exposures may result in distinct physiological responses that are not dictated by allele frequency differences among racial groups or reducible to current demographic variables (Freeman, 1998). Of course these different responses are not the result of intrinsic features of a person's race; rather, they are the results of how society treats certain individuals that are defined as a given race.

Therefore, we cannot and should not reduce the totality of a groups experience to their socially constructed categories of Black, White, Latino, etc. – it is arguably more prudent and ethical to understand the social consequences of racial definitions.

Second, numerous studies have outlined the differential access to health care and treatment of individuals in different racial groups (Fiscella, et. al., 2002); therefore, including race, in addition to a variety of other demographic variables, may help identify the effects of racism on health and treatment outcomes. However, the inclusion of race in these studies must proceed with alterations and seek to void essentialism and reductionism. Third, although researchers should not employ race as a substitute for other factors that effect affect health, such as income, they often do not know which factors play a causal role in the outcome being investigated.

Finally, by collecting information about *effects of racial definitions*, researchers and scholars may gain a more complete understanding of how race manifests and how race-based social stratification leads to the racialization of bodies. When scholars employ race variables, they should be utilized with attentiveness to the social consequences of racial definitions and note that observed differences have limited efficacy in explaining outcomes (Krimsky & Sloan, 2013; Cooper & Kaufman, 1998).

Chapter 3: Methodology

This chapter explores and details the methods used in completing this study, giving special attention to the analysis of data. I use a content analysis methodology combined with inductive coding, which will analyze three general areas of scientific research – biomedical, social, and behavioral – to explore the manner in which race is used and expressed in these research areas. Specifically, I employ a summative approach to content analysis, with the unit of analysis being words and phrases found in peer-reviewed journals by creating key words that are based upon existing literature.

The General Perspective

Content analysis has a long history in social research, dating back to the 18th century but only began to be used in the United States in the beginning of the 20th century (Rosengren, 1981). Initially, the method was used as either qualitative or quantitative, but soon evolved into an analytical strategy that was primarily quantitative in nature. This included the coding of data, using text, into explicit categories and then describing and analyzing the counts using statistics. More recently, content analysis has returned in its qualitative roots and has increased in popularity (Nandy & Sarvela, 1997).

Qualitative content analysis is one of many research methods used to analyze text-based data. Research using qualitative content analysis focuses on the character of language as communication with attention to the contextual meaning (Budd, Thorp, & Donohew, 1967; McTavish & Pirro, 1990). Text data can take many forms such as, verbal, print, or electronic. The origins of the data can also come from numerous sources

including narrative responses, open-ended survey questions, interviews, focus groups, observations, or print media, such as articles, books, or manuals (Kondracki & Wellman, 2002). Qualitative content analysis is not simply the counting of words to examine language to classify text into an efficient number of categories that represent similar meanings; rather, these categorizations are further refined and analyzed to represent either numerous forms of communication (Weber, 1990). Therefore, qualitative content analysis can be defined as a research method for the subjective interpretation of the content of text data through the systematic classification process of coding and identifying themes or patterns.

The Research Context

Scholars in many disciplines have noted the different forms of content analysis, but Hsieh and Shannon (2005) note three general types: conventional, directed, and summative. Conventional content analysis can be considered a purely inductive approach that is used with a study design whose aim is to describe a phenomenon. This design is appropriate when theory or research literature on a phenomenon is limited. Researchers avoid using preconceived categories and instead allow categories to originate from the data.

Directed content analysis can be considered a deductive method where researchers highlight the role of theory. The goal of a directed approach is to validate or extend an existing theoretical framework. This method can provide predictions about the variables of interest or about the relationships among variables, thus helping to determine an initial coding scheme or relationships between codes. Content analysis using a directed

approach is guided by a more structured process when compared to the conventional approach; researchers begin by identifying key concepts or variables as initial coding categories and produce definitions for each category as directed by the theory (Potter & Levine-Donnerstein, 1999).

The third perspective, the summative, begins with identifying and quantifying certain words or content in text with the purpose of understanding the contextual use of the words. This quantification is an attempt not to infer meaning but to explore usage. This analysis of the appearance of a particular word or content in textual material is referred to as *manifest content analysis*. If the analysis ended at this point, it would be quantitative, focusing on counting the frequency of specific words or content.

A summative approach adds a qualitative component and goes beyond word counts to include *latent content analysis*, which refers to the process of interpretation (Holsti, 1969). In this analysis, the focus is on discovering underlying meanings of the words or the content (Morse & Field, 1995), which is primarily found through the inductive method. Researchers using content analysis from this approach in studies generally analyze manuscript types, such as journals or textbooks.

Specifically, this project will employ a summative, content analysis method. A summative approach, as a type of mixed-method approach, has certain advantages, as it is an unobtrusive way to study the phenomenon of interest while providing basic insights into how words and phrases are actually used. Additionally, this method blends qualitative and quantitative analyses while preserving the essential features of each – it respects context in the qualitative tradition, while simultaneously generating data with the

methodological rigor required by quantitative study.

First, data analysis will begin with searches, in the four selected databases, for occurrences of identified words and phrases, which are derived from existing literature and represent the deductive portion of the analysis. From these articles, equal numbers will be randomly selected from each of the disciplines to achieve parity for analysis. Next, exploration of *latent content* – an inductive approach that interprets underlying meanings of words or themes, such as the exploration of explicit and implicit language – will be undertaken to find codes throughout the data. Finally, these codes will be analyzed to generate themes that appear throughout the articles.

Types of Content Analysis	Study Begins With	Timing of Defining Codes or Keyword	Source of Codes or Keywords
Conventional	Observation	Codes are defined during data analysis	Codes are derived from data
Directed	Theory	Codes are defined before and during data analysis	Codes are derived from theory or relevant research findings
Summative	Keywords	Keywords are identified before data analysis	Keywords are derived from interest of researchers or review of literature

Table 1: Major Coding Differences Among Three Approaches to Content Analysis

Types of Data To Be Analyzed

Within qualitative content analysis, the examination of latent content falls into two categories: patterned and projective (Potter and Levine-Donnerstein, 1999: 259). Using a pattern content approach, the researcher puts precedence with the content and seeks to find a pattern that all coders can uncover. In contrast, when using a projective approach, the researcher puts precedence with the coders' judgments and allows the content reviews

to access pre-existing mental schema to judge the meaning in the content. For the qualitative portion of this project, the patterned method will be employed.

Methodology

Temporal Sampling Frame

This project employs a temporal sampling frame that ranges from 2000-2005. In 1994, *The Bell Curve* was published and revived the long-dead debate regarding scientific racism. Conversely, in 2003, the Human Genome Project was completed and by examining articles two years after this time point allows for an in-depth analysis of data. The specified range will allow for the greatest number of articles for the chosen topic. Finally, research has suggested that articles discussing racial differences in genetic bases of disease and other supposedly “inherent” features of non-whites increased significantly between 1985 and 2008. These articles were significantly less likely than non-health-related articles to discuss the social implications of race, genetics, and inequality (Phelan, et al., 2013).

Units of Analysis

The units of analysis for this project are words, phrases, thoughts, and ideas employed in articles from three general areas of scientific research – Behavioral, Social, and Bio-medical. Data will be collected from peer-reviews, published works in the three areas using three online-search engines:

- A. Behavioral - Education Resources Information Center (ERIC)⁶ and PsycINFO⁷
- B. Social – Sociological Abstracts⁸

⁶ <http://www.eric.ed.gov/>

⁷ <http://www.apa.org/pubs/databases/psycinfo/index.aspx>

⁸ <http://search.proquest.com/socabs/advanced/>

C. Bio-Medical – PubMed/Medline⁹

Categories and Coding Schema

The first part of the data analysis will be to employ a key-word search in the four search engines noted above. The creation of key word categories is based upon earlier work such as theories, models, mind maps and literature reviews (Sandelowski 1995; Hsieh & Shannon 2005). Based upon these, the following key words will be employed to search the existing literature and are grouped based upon their discipline; however, all the noted key words will be searched in all four-search engines. Duplicate articles and those articles deemed not relevant, such as non-empirical articles, will be eliminated from the data.

Behavioral

- Race and Transracial Adoption
- Race and Brain Size
- Race and g Factor
- Race and Cognitive Ability
- Race and Heritability
- Race and IQ

Biomedical

- Race and Obesity
- Race and Diabetes
- Race and Hypertension
- Race and Heart Disease
- Race and Cancer

⁹ <http://www.ncbi.nlm.nih.gov/pubmed>

Social

Race and Aggression
Race and Alcohol
Race and Ancestry
Race and Antisocial
Race and Behavior

Database Management

Each of the databases employed in this dissertation facilitate sophisticated search procedures. Each allows for “advanced searches” with the following limits employed:

1. Publication Date: Restricted to the temporal sampling frame of this project, which is 2000-2005.
2. Publication Type: Only peer-reviewed articles were collected.
3. Search Terms: The search terms were allowed to appear anywhere in the article.
4. Elimination criteria:
 - a. Duplicate Articles
 - b. Non-Empirical Articles

Given the limits employed within the databases a total number of 460 articles were garnered and a random sample of 10%¹⁰ was taken from each area to ensure parity, which produced total of 46 total articles: 18 from biomedical (N=180), 14 from behavioral (N=140), and 14 from social (N=140). Although the biomedical discipline produced 4 more articles than the others, this does not skew the results, but is an actual representation

¹⁰ 10% was selected as an appropriate sample size to complete the project in a timely manner.

of the data. This suggests that the topic of race, related to the keywords, in the biomedical field, has produced a larger number of peer-reviewed articles.

Qualitative/Latent Content Analysis

Based upon the article selection, which was guided by the keywords, latent content will be examined and reported in Chapter 4. The goal is to identify important themes or categories within the articles, to describe how scholars are discussing race within their given disciplines, and to provide a rich description of the social reality created by those themes/categories. Mayring (2000) notes the empirical nature of the research: qualitative content analysis is “an approach of empirical, methodological controlled analysis of texts within their context of communication, following content analytic rules and step by step models, without rash quantification (2).”

Once a final sample of articles is selected through the search of keywords, texts will be read using an inductive approach and coded accordingly (Glaser & Strauss, 1967). When the three areas of analysis have been examined a preliminary check of coding accuracy will be undertaken. A small, random sample (10% in each area of scientific inquiry) will be selected to check consistency using the inter-coder reliability method Cohen’s kappa. Coding text, checking coding consistency, and revising coding rules is an iterative process and will continue until sufficient coding consistency is achieved (Weber, 1990).

Data Analysis

This process includes open/grounded coding, which means that codes are derived from the data and not specified. After open coding, the lists of categories are grouped

into logical, ontological order (Dey 1993). The purpose of creating categories is to provide a means of describing the phenomenon, to increase understanding, to generate knowledge (Downe-Wamboldt 1992,). Moreover, categorical grouping is employed to reduce the number of categories by collapsing those that are similar or dissimilar into higher order categories (Cavanagh 1997). Finally, when formulating categories by inductive content analysis, the researcher comes to a decision, through interpretation, as to which words and phrases to put in the same category, using content-characteristic words.

Conclusion

The quantitative and qualitative approaches to content analysis are not mutually exclusive and can be used in combination. As suggested by Herman W. Smith, “qualitative analysis deals with the forms and antecedent-consequent patterns of form, while quantitative analysis deals with duration and frequency of form (1975: 218).” Weber (1990) also points out that the best content-analytic studies use both qualitative and quantitative operations. Therefore, the summative content analysis approach is the best methodological approach for this project as it allows for a quantification of data and a further understanding of context in which data is embedded.

Chapter 4: Results

This chapter elucidates the themes derived from the qualitative analysis of randomly selected peer-reviewed scientific articles. Based upon a population sample of 460 articles, a random sample of 46 articles were selected for this project, which were taken from three areas of scientific inquiry – biomedical (N=18), behavioral (N=14), and social (N=14).

As I have argued, scientific racism remains an ever-present feature of modern scientific research, which is conceptualized as scientific inquiry that perpetuates, buttresses, and creates racial hierarchies. The themes noted in this chapter will elucidate the new and modern manner in which scientific racism is communicated.

I begin by noting the most prominent themes that existed in all three areas of scientific inquiry: the use of race as a causal variable and the use of culture to define and justify difference. Subsequently, I examine specific themes related to certain topics in each of the three areas of research. In the biomedical discipline, I note how discussions of genes and health are used to further racial hierarchies. Next, I explore themes in behavioral science and note that scholars discuss IQ, cognitive ability, and mental illness in a manner that creates and buttresses race-based hierarchies. Finally, the social discipline is explored and I note that scholars employ antiquated racial stereotypes towards non-whites, such as increased aggression and antisocial behavior.

The data presented reflects “colorblind racism,” which is the dominant racial ideology in the late 20th century and early 21st century. This new “racial project” focuses on avoiding direct references to “color” as justification for differences seen between

racial groups on numerous features of human existence.¹¹ Nevertheless, the communication of race-based differences continues to be communicated through subtle statements that retain the power to communicate racism. Moreover, this language used throughout the sample minimizes the significance of “systemic racism” and places the blame on individuals or groups that have minority status.

Thematic Similarities: Biomedical, Behavioral, and Social

Following a detailed review of articles in the three disciplines, two prevalent themes arose that further racial hierarchy and occurred in all articles: race as a etiological variable and culture as justification for difference.

The Limits of Race as an Etiological Factor in Research

The concept of race as an etiological, quantitative, independent variable in scientific research was seen throughout the data as scholars claimed a relationship between racial definitions and life outcomes. The primary concern with this method is that race has no relationship to biological, behavioral, or social outcomes of life, as race is a socially constructed phenomenon (Omi & Winant, 1994). An individual’s subjective, variable, and *socially constructed* race cannot and does not cause something to occur (Delgado and Stefancic, 2001: 7); however, scholars claim that race *causes* diabetes, race *causes* mental illness, and race *causes* increased aggression.

¹¹ This perspective represents a synthesis of Omi and Winant’s *Racial Formation Theory* and Bonilla-Silva’s *Racialized Social Structure* perspective. Although Omi and Winant do not explore “color-blind” racism, their perspective allows for this new form of racism, largely outlined by Bonilla-Silva, to be defined as a racial project. The lack of intent in institutional racism is a “new” racial project and represents the evolution/changing nature of race and racism.

This method reveals that when scholars attempt to employ race as an etiological factor, the research presented is incongruent and illogical. Moreover, this methodology presents a subtle, possibly unintentional, technique used to racialize research as much of the scientific literature suggests non-whites are inferior to whites. Therefore, the use of race as an etiological factor in scientific research is arguably a form of pseudo-science that facilitates the buttressing and creation of racial hierarchies. Despite the noted limitations of race as an etiological factor in research, numerous authors in the three noted research fields argued that race has a *causative* influence on life.

Biomedical

“US blacks of African origin are more prone to hypertension, **type 2 diabetes mellitus**, and obesity (Smith, et. al. 2005).”

“Despite these relationships, there appears to be an **added effect of race [African American] on the obesity-hypertension** relationship (Cosscrow and Faulkner, 2004).”

“**Racial differences** in the relation of sex hormone concentrations to body fat distribution may also provide an explanation for the different weight-loss patterns of the **white and black women** (Weinsier, et. al. 2001).”

“Specifically, in the absence of the indices of SES, **race** was a significant predictor of Time-1 CES-D scores, such that African-Americans reported higher levels of **depressive** symptoms than did Whites (Sachs-Ericsson, et. al., 2005).”

Behavioral

“This study examined **Black** ($n = 298$) and **White** ($n = 1,691$) children on Planning, Attention, Simultaneous, and Successive cognitive processes (PASS theory of intelligence) as operationalized by the Cognitive Assessment System (CAS) (Naglieri, et. al., 2005).”

“The study addresses three major questions: 1) Are there differences in how specific groups (e.g., **African Americans** vs. **Whites**) differ in the cultural reasons caregivers give for providing care? 2) What caregiver characteristics (i.e., gender, age, education, income, work status, and relationship to the care recipient)

predict cultural reasons for caregiving? and 3) Does **race** moderate the influence of caregiver characteristics on cultural reasons for providing care? (Dilworth-Anderson, 2005).”

“To address this, we compared **white** and **minority** bipolar patients in four main areas: (a) the clinical characteristics of acute bipolar disorder such as the polarity of index episode and presence of psychosis, (b) the co-occurrence of other psychiatric comorbidities including anxiety and substance use disorders, (c) key psychosocial factors including homelessness and abuse history, and (c) treatment characteristics (Kilbourne, 2005).”

“**Race** explained more variation in verbal IQ (15%) than in either sexual partners (1 %) or birth weight (2%). The odds ratio of having a sexual partner was 1.72 in the **African American** vs. **White** parental populations (Rowe, 2002).

Social

“This data set was analyzed for **black-white differences** in numbers of sexual partners during the last 5 years and for frequency of sexual intercourse. The general pattern of the results was for **blacks** to report more sexual partners than **whites** and for **black** males to report greater frequency of sexual intercourse.... (Lynn, 2000).”

“The analysis finds that children’s age, **race**, and sex and experiences of child neglect all have an impact on subsequent adult arrests (Grogan-Kaylor, 2003).”

“**Race** was also a significant predictor of later **arrests**, and again, **non-Whites** were more likely to be **arrested** than **whites** (Grogan-Kaylor, 2003).”

“Using data from the National Longitudinal Survey of Youth, latent growth curve modeling was used to examine relationships between trajectories of child hyperactivity and antisocial behavior symptoms for **African Americans** (n = 680), **European Americans** (n = 1195), and **Hispanics** (n = 432) (Schmitz, 2003).”

In each of the three areas of scientific inquiry race was, too often, employed as a causal variable. Although it is difficult to ascertain the intent of scholars, the data is presented in such a way as to ignore the fact that a person’s phenotype does not cause an outcome; rather, the concern should be focused the effect of social definitions.

The use of race as a causal variable within the biomedical sciences appeared without any effort to contextualize or explain the variable. This is a common practice found throughout the data and implies that the biological differences seen are a product of the categories themselves. When race is employed in this manner scholars are not taking an objective, scientific position – whether intentional or unintentional, the presentation of race in this manner reduces the concept to a purely biological one. Without discussing how *experiences* of race have resulted in different outcomes for individuals who face *different racialized experiences* is to conceptually understand race a fixed, biological category and further racial difference and racial hierarchies.

In much of the data found in the behavioral field, race was an accepted and unquestioned causal variable. However, this variable, and its relationship to outcomes, was quite subtle and covert. Rather than stating outright that race was a cause of some outcome, *code words*¹² such as “more prone to,” “the added effect,” and “significant predictor,” were employed to equate race with biological outcomes.

At the very least the data analyzed for this project attempted to convince the reader that non-whites have inferior health, impaired mental capacity, and increased propensity towards anti-social behavior when related to whites. Moreover, the reason for this inferior status as a human being is explained largely by an individual’s race, which presents numerous ethical and methodological problems for research and because race is

¹² Racialized code words can be considered classic racial stereotypes in slick, modern gear. For definitions and conceptual framing, see Bonilla-Silva, 2002 and Edsall and Edsall, 1992.

such a variable and changing concept, across time and location, it is often unclear what scholars mean when racial categories are employed.

Additionally, the use of race as an etiological factor in research reinforces reductionism and essentialism. Very complex categories such as African American, Asian American, and White are reduced to focus on a few, limited number of traits. Each racial category contains numerous subcategories, but scholars often ignore this fact. Finally, even those scholars that rely on self-reported racial categories seem to be unaware of the ambiguity of this concept. Research suggests that even self-reported racial categories are incongruent and flawed concepts when employed in research (Twine & Warren, 2000). The use of race as an etiological factor in all forms of research leads to results that are illogical and unclear and promotes racial differences and hierarchies as scholars continuously state distinctions between racial groups in their findings.

Culture as Justification for Difference

In addition to the three disciplines using race as a causal variable, cultural differences were employed to justify differences seen in research outcomes. When differences were seen on particular variables, cultural differences were frequently claimed to be the result of these difference in all three areas of research. The justification of culture differences implies pathological tendency among non-white cultures that make it difficult for these groups to assimilate. Moreover, employing cultural differences as reasoning for difference indicts individuals or groups and avoids discussing socially structured barriers and inequalities.

The culture or ethnicity theory of race, which has been applied throughout the data, was largely based upon Robert E. Park's assimilation model where he outlined four steps to assimilation: contact, conflict, accommodation, and assimilation (1950; Lyman, 1968). Instead of explaining the structural marginalization of non-whites in American society, the theory claims that inferior status was the result of failure to assimilate to mainstream, American norms. The effects of this failure to assimilate supposedly had serious effects on individuals and explained their marginalized status in America

Throughout the data, scholars in the three fields employed the terms "lifestyle," "behavior," "community," and "culture" to explain differences in research outcomes. The indictment of culture was included with the indictment of numerous other variables and despite scholar's best efforts to note economic, environmental, and even structural culture remains an ever-present reasons for difference. Each of these terms attempts to indict non-white cultures in America and argues that these groups have retained detrimental traits that are not part of mainstream American culture.

Unfortunately the indictment of culture as justification for difference is not a new phenomenon with academic and non-academic circles as was noted in Chapter 1. *The Culture of Poverty* argument and contemporary IQ positions, seen in *The Bell Curve*, have continued to argue that innate cultural differences lead to differential social, behavioral, and biomedical outcomes.

Biomedical

"The fact that the obesity excess observed among **black** women, **Hispanic** Americans, American Indians, Pacific Islanders, and Native Hawaiians predates the current epidemic suggests that many of **these factors preexisted in these communities**...(Smith, et. al., 2005)."

“Age, gender, **race**, **lifestyle habits**, and access to medical care are potential confounders and/or plausible mediators of an SES-health link, and were assessed by participant self-reports on interviewer-administered questionnaires... (Karlamañglaa, et. al., 2005).”

“... **minority populations** (blacks, Hispanic Americans, and American Indians) at high risk for diabetes, provides compelling evidence that **lifestyle modification** and weight reduction results in a substantial diabetes risk reduction in these populations...(Smith, et. al., 2005).”

“Race/ethnic differences in **lifestyle behaviors** and economic disadvantage may account for some of the race disparity in obesity-related diseases and disease outcomes...(Cossrow and Faulnker, 2004).”

“...have demonstrated that **racial** disadvantages persist for **black** renal transplant patients regardless of the degree of HLA or haplotype matching, and suggested instead that non-HLA genetic, socioeconomic or **behavioral factors** may contribute to racial disparities...(Pallet, et. al., 2005).”

“Additionally, differences in health care access and **health care seeking behavior between African Americans and whites** may result in diagnostic and treatment delays as well as increased disease severity at the time of diagnosis (Woodward, et. al., 2004).”

“The prevalence of obesity-related diabetes is greater in **Mexican Americans**, whereas the prevalence of hypertension is greater in **African-Americans**. Environmental factors, including **health-related behaviors or lifestyles** and economic disadvantage, contribute to some of the **race/ethnic disparities** in the prevalence of the diseases associated with obesity (Cossrow and Faulkner, 2004).”

“More recently, medical researchers have employed innovative strategies to reach high-risk populations such as **African-Americans**. For example, numerous programs aimed at reducing cardiovascular disease risk factors through lifestyle modification have been implemented in **church settings** and have shown promising results. Health promotion efforts have also been successfully tied to locations such as **beauty salons and barber shops**, providing valuable health information in a **culturally familiar setting** (Woodard, et. al., 2005).”

Behavioral

“If **African Americans** are more likely to use the regional names, their response is more likely to be rated as incorrect, and their performance then appears to be poorer. Thus, **cultural factors** related to familiarity and language may also determine level of performance and could help to explain the differences in naming found here. Such **cultural factors** should play a lesser role where recall is concerned, because initial level of performance, which may be affected by cultural factors, is controlled (Whitfield, et. al., 2000).”

“Further, knowledge and processes are influenced by membership in particular social and **cultural** milieus. Knowledge, therefore, interacts with processes but is separate and should be measured distinctly from the four **cognitive processes** included in the PASS theory (Naglieri, et. al., 2005).

“**African Americans** had stronger **cultural reasons** for providing care than Whites, education levels were inversely related to CJCS scores, and the influences of gender and age on cultural reasons were moderated by race (Dilworth-Anderson, et. al., 2005).”

“**Cross-cultural** studies of performance on standardized tests of neuropsychological functioning consistently indicate that **European Americans**, on average, have a higher level of performance than **African Americans**, even when demographic characteristics are controlled (Whitfield, et. al., 2000).”

“...**depressive symptoms** amplify suicide risk in **blacks and whites**, but there may be important **race differences** in the contributions to suicide risk of antisocial behavior and substance use/abuse. The current study underscores the need for examination of **race differences** in the relationship between antisocial behavior and suicide. It will also be essential to examine other variables that were unavailable in the National Mortality Followback Survey data set, particularly racism, perceived discrimination, and feelings of alienation from the dominant culture. Research on the interplay of these **culturally relevant variables** and established psychiatric risk factors may be warranted (Castle, et. al., 2004).”

Social

“**European Americans** had significantly higher cognitive stimulation at home and significantly fewer children in their families than did **African Americans** and **Hispanics**. African Americans had significantly lower emotional support at home than did European Americans and Hispanics (Schmitz, 2003).”

“The findings of these studies support a **cultural context perspective**. Given the cultural context for **European American** families, physical punishment of a child is indeed associated with later externalizing problems. Given the context for **African American** families, however, parents employment of sub-abuse levels of physical punishment is not associated with long-term adverse externalizing problems (Lansford, 2005).”

“Clearly, **sociocultural** heterogeneity exists within the three racial groups in this study, and future research needs to examine more systematically critical aspects such as language use, migration patterns, and **cultural** legacies present within racial groups (Schmitz, 2003).”

“Persons with a **White** racial background were approximately twice as likely to report histories of emotional abuse and neglect, while persons with a **Black** racial background were 1.5 times as likely to report a history of physical neglect. There are several possible explanations for these differences. One possibility is that **cultural background** affects a person’s perceptions of or willingness to endorse some types of maltreatment (Scher, 2004).”

“**African Americans** were shown to have higher rates of dating violence...(Jones & Gardner, 2002).”

“There are **race differences** in long-term effects of physical discipline on externalizing behaviors problems. Different **ecological niches** may affect the manner in which parents use physical discipline, the meaning that children attach to the experience of physical discipline, and its effects on the adjustment of children and adolescents (Lansford, 2004).”

“The meaning of **race and ethnicity** has an emotional base and as such yields a wide variety of behaviors because they are socially constructed and people of different races, **cultures**, and ethnicities relate to each other as human beings from their emotional core (Smith, 2002).”

“One’s **race** can influence his or her attitudes and actions due to **cultural** factors and upbringing. What is accepted in some cultures is unacceptable in others. Also, opinions about domestic abuse can be affected by **one’s race** (Jones & Gardner, 2002).”

In each of the fields examined, innate cultural differences were presented, often in an extemporaneous manner, to explain differences in health, behavioral, and social outcomes. Throughout the majority of the data these cultures were implied to be inferior

through the use of *code-words* such as those in the biomedical field: “these factors preexisted in these communities,” “health-related behaviors or lifestyles,” and “church settings, beauty salons and barber shops, and a culturally familiar setting.”

Although the presentation of *code words* may seem innocuous, they access old knowledge about classic racialized science. Instead of employing directly racialized language, scholars use terms such as: “at-risk kids,” “welfare mothers,” or “bad part of town.” Although these terms do not directly tie themselves to racial talk, they indirectly draw up images and thoughts that are connected to racialized ideals. This is the same phenomenon is manifested in the data presented – scholars are communicating racism through language that is subtle, minimizes systemic racism, and blames the victim for their plight (Bonilla-Silva, 2003; Frankenberg, 1993).

It is important to note that when culture is mentioned in the data, it is often not a variable under study; rather, it is a justification for difference. In almost every case of its occurrence, statements regarding culture were extemporaneously added during discussions or conclusions to explain differences found in previous analysis. Therefore, the use of culture as an explanation for differences found in data presents numerous problems and facilitates hierarchy creation by suggesting that some groups have innate inferiorities.

Even in the social scientific field where culture is often a variable of study, it is used to justify difference and hierarchy. For example, scholars Jones & Gardner (2002), when discussing differences found in domestic violence rates suggest a group’s culture leads to more or less openness about interpersonal violence. This statement suggests that

depending upon your racial or ethnic group you and your family will be more accepting of domestic violence. Again, we see evidence in Jones & Gardner's (2002) work, and many of the other scholars analyzed, for classic racialized arguments of increased levels of violence, gender inequality, ignoring structural and systemic concerns, and connections to the *Culture of Poverty* argument.

The data presented notes that desired alterations to specific lifestyle, community factors, or cultural traits that are applied to different results in the three areas of research and fails to address the manner in which race complicates interactions with basic social and political structures. Moreover, this claim of cultural differences is overly simplistic as it ignores social structural factors that foster cultural separatism. Although some scholars note the interacting influence of socioeconomic status on health outcomes, the notation of cultural effects continues to perpetuate racial hierarchies and difference based upon antiquated notions of inferior group differences.

Discipline Specific Themes

In conjunction with an overview analysis of all the articles, themes were located that focused on discipline specific research endeavors and their perpetuation of racial hierarchies. In the subsequent discussion the most prominent themes that appeared separately in each of the three areas are reported. In each case, scholars present research on variables specific to their discipline and work to further and buttress racial hierarchies. In the biomedical field, the relationship between race, genetics, and health is analyzed; in the behavioral field, despite significant pushback against analyses of race and intelligence, scholars continue to present research that demonstrates a racially based

hierarchy of IQ and cognitive ability, as well as mental illness; and in the social field, scholars covertly access antiquated stereotypes of minority aggressiveness and antisocial behavior.

Biomedical

Genes/Heredit

The most prevalent theme found in the articles specifically related to biomedical research was the use of *genes/heredit* to explain health outcomes. This concept can be thought of as the “new physiognomy” as it attempts to place racially defined groups into distinct, biological categories based upon biological characteristics. This “new physiognomy” has already seen application in law enforcement as certain scholars have attempted to identify a “criminal gene” (Ossorio & Duster, 2005).

A relationship between behavioral and molecular genetics has claimed to identify a gene that leads to increased anti-social behavior. In a 2002 publication in *Science*, research was reported that stated, “evidence that a functional polymorphism in the MAOA gene moderates the impact of early childhood maltreatment on the development of antisocial behavior in males (Caspi et al., 2002: 853); the authors sum up their conclusions by suggesting pharmaceutical intervention may be beneficial in the future. “Moreover, 85% of cohort males having a low activity MAOA genotype who were severely maltreated developed some form of antisocial behavior. Both attributable risk and predictive sensitivity indicate that these findings could inform the development of future pharmacological treatments (Caspi et al., 2002: 853).” In addition to the concerns this research presents for the general populace and the fact that the criminal justice

system is overwhelmingly composed of non-whites, this form of behavioral genetic research may lead to the possibility of a genetically racialized criminal justice system.

This methodology has the potential to create numerous race-based hierarchies with possible disastrous effects on the human population. Nevertheless, scholars in the field of health research have not identified a gene tied to criminality, but do claim that genes are directly tied to a racialized health hierarchy.

The use of genetics to explain differences in health presents numerous problems for describing the health of non-whites when this justification is combined with the limitations of the etiological factor of race in health research. For example, when discussing kidney health related to transplants and the effects of hypertension, scholars note the limitations of black genes.

“The question of why **race** should affect outcomes following kidney transplantation is perplexing and the cause remains to be determined; possible explanations have included **genetic**, immunological and pharmacologic factors (Palleta, et. al. 2005).”

Gene frequencies influencing the response of the kidney to hypertension may differ greatly between **ethnic** groups and may provide an explanation for the observed excess of kidney disease in **African Americans** (DeWan, et. al., 2001).”

“Our best evidence for linkage to creatinine clearance was found, using the fully adjusted model in **African Americans**, on the long arm of **chromosome 3** with a peak multi- point LOD score of 3.61 at position 214.6 cM, which localizes to the cytogenetic band 3q27; no comparable peak was observed in the whites at this position. Using the fully adjusted model, we observed an additional locus at 57.9 cM on **chromosome 3** (LOD p 1.78) in African Americans (DeWan, et. al., 2001).”

Rather than claiming that polygenesis resulted in differences among races, different brain sizes exist between racial groups leading to differences in health outcomes, or other

physical features used to explain difference between racial groups, modern scholars claim genetics, at least in part, are the cause of differential health outcomes between racial groups, as was the case with this blanket statement regarding genes and obesity:

“**Genes** influence the individual predisposition [of black women, Hispanic Americans, American Indians, Pacific Islanders, and Native Hawaiians] to **obesity**... (Smith, et. al., 2005).”

The genetic argument in this case, and many others, appears to be “tacked on” with little or no justification or evidence for this purported difference. Therefore, the genetic, race, and health argument, whether it is made by contemporary health researchers with the support of genetic research or as a blanket, “tacked on” statement, endeavors to “profile” certain individuals based upon race, which leads to the creation of racial hierarchies by suggesting the genes of individuals or groups are inferior.

Inferior Genes: Race, Genes/Heredity and Heart Disease

In addition to the general description of the inferiority of non-white genes, numerous scholars explained detriments in non-white heart disease through the use of genetics. These scholars attempted to isolate or specify a particular gene or chromosome that was the cause of specific, inferior health condition. For example, when reporting research on cholesterol, African Americans, in particular, are seen to have genes to lead to increases “bad” cholesterol:

“Statistically significant evidence for linkage and low heterogeneity on chromosome 1q therefore suggest that this region may harbor a **gene underlying the inheritance of LDL in African Americans** (Malhotra, et. al., 2005).”

“More recently, we have observed suggestive evidence of linkage for **total cholesterol (TC) on chromosome 19 in African American** families from the Genetics of NIDDM (GENNID) study (Wu, et. al., 2002).”

“...**significant evidence for linkage and low heterogeneity for LDL was observed on chromosome 1q in African Americans** Together, these findings suggest that 1q may be an important locus for control of LDL levels in African Americans (Malhotra, et. al., 2005).”

“**Heredity** [of American Indians] explains a substantial proportion of the variability of aortic root size that is not accounted for by age, sex, body size, and blood pressure (Bella, et. al., 2002).

“Recognizing that **American Indian** populations have among the highest rates of diabetes worldwide, we reasoned that **genes** influencing diabetes status also may affect the pattern of these **CVD** [Cardio Vascular Disease] risk factors (North, et. al., 2003).”

“Our study indicates that a substantial proportion of the total phenotypic variance of aortic root diameter [in American Indians] (26%) is due to the additive effects of **genes**, after simultaneous adjustment for age, sex, height, weight, and systolic and diastolic (Bella, et. al., 2002).”

“It is generally accepted that **minorities (specifically blacks)** are at higher risk for **hypertension-related cardiovascular morbidity and mortality than are their white counterparts**. The reasons for this observation are not clearly understood, but they are believed to be related to a greater number of concomitant risk factors (eg, diabetes, obesity, low socioeconomic status), as well as possible increased **hereditary predisposition** (Smith, et. al., 2005).”

The prevalence of obesity and the obesity-related **cardiovascular diseases** are greater in **African-Americans** and **Hispanic/Mexican Americans** than in **Caucasians**. However, the toxic relationship of obesity with disease is not the same in each race. African-Americans have a less arthrogenic plasma lipid pattern compared with Caucasians, but have higher rates of **coronary heart disease** and stroke. The prevalence of obesity-related diabetes is greater in Mexican Americans, whereas the prevalence of hypertension is greater in African-Americans. Environmental factors, including health-related behaviors or lifestyles and economic disadvantage, contribute to some of the race/ ethnic disparities in the prevalence of the diseases associated with obesity. However, because these factors cannot explain all of the racial differences in expression and disease pattern, it is likely that there are **genetic or molecular factors** that also contribute to the racial differences in obesity-related comorbidities (Cosscrew & Falkner, 2004).

In much of the data, as in the above quotes, racial minorities are compared to whites and, in each case, whites are described as having superior health when compared to non-whites. This explanation for this difference, when discussing the majority of diseases, is genetics.

Race, Genes/Hereditry, and Hypertension

In addition to increased cholesterol relating to heart disease, hypertension, which is also a leading cause of heart disease, was linked to genes in non-white groups. It is well established within the medical community that non-whites are more likely to develop hypertension and due to supposed unique genetic structures.

It is generally accepted that minorities (**specifically blacks**) are at higher risk for **hypertension**-related cardiovascular morbidity and mortality than are their **white** counterparts. The reasons for this observation are not clearly understood, but they are believed to be related to a greater number of concomitant risk factors (eg, diabetes, obesity, low socioeconomic status), as well as possible increased **hereditary predisposition**. Factors such as delay in diagnosis, dietary habits, and disparities in health care have been recognized as contributing significantly to these adverse outcomes (Smith, et. al., 2005).”

“These are the first data to offer evidence of **genetic** linkage to creatinine clearance, an indicator of renal function, among hypertensive humans. Our data suggest that these influential regions **differ between ethnic groups** or are more easily detected in one ethnic group than the other. This difference between ethnic groups may be a result of the differing patterns of renal response to **hypertension, with African Americans exhibiting significantly higher rates** of hypertension-induced renal failure [...] and faster progression of renal failure. Therefore, it is plausible that the **influential genetic regions would differ by ethnicity**, as reported here (DeWan, et. al., 2001).”

“The prevalence of obesity-related diabetes is greater in **Mexican Americans**, whereas the prevalence of **hypertension** is greater in **African-Americans** [...] it is likely that there are **genetic** or molecular factors that also contribute to the racial differences in obesity-related comorbidities (Cossrow and Faulkner, 2004).”

Higher rates of high blood pressure in African-Americans are argued to be the result of genetic structures that are unique to people of “African descent.” Researchers also claim that people of “African descent” respond differently to hypertension drugs and are thought to be more sensitive to salt, which increases the risk of developing high blood pressure (Peters & Flack, 2000). However, the critique of non-white genes and their relation to hypertension as the result of unique genetic structure was not limited to African Americans, but some scholars argue that Chinese and Japanese are more likely to develop hypertensions as a result of genes:

“We demonstrated that in **Chinese and Japanese** families with a history of hypertension sibs with extreme levels of BP [Blood Pressure] i.e., HTN [Hypertension] and LBP [Low Blood Pressure] had significantly different plasma lipid levels and insulin sensitivities. The clustering characteristics and the significance of **heritability** estimation for these metabolic variables indicate that IRS is familial in nature and **hereditary** in Chinese and Japanese hypertensive families...(Wu, et. al., 2002).”

For genetic factors to be accepted, with any confidence, as a cause of hypertension in any group, it is not sufficient simply to show that there are racial differences in allelic polymorphisms, which most of the noted research has endeavored to demonstrate. This divisive, scholarly research simply continues to support and advocate a logic of group difference – a “new physiognomy” – that, in this case, is justified by medical and genetic research. If scholars desire to continue to connect racial definitions with genetics related to health outcome, it is necessary that observed differences *actually* account for the differences in blood pressure and other health related outcomes.

Behavioral

Intelligence

Despite the long history of debate and research into supposed intellectual differences between racial groups, much of this research had fallen out of favor until the publication of *The Bell Curve* (1994). Following the publication of this pseudo-scientific text, scholars in numerous fields again voiced concern over this topic and published research, editorials, and thought exercises that challenge both the methodology and results of the infamous book. Nevertheless, scholars in the field of behavioral sciences continue to produce scientific research that attempts to suggest that intellectual differences exist between racial groups. Scholars continue to employ IQ tests, despite their noted limits and introduce other concepts, such as cognitive processing, funds of knowledge, and emotional intelligence to explain supposed differences in race-based intellect.

“**African-American** subjects reported lower interpersonal, intrapersonal scores and lower total EQ-I [Emotional Intelligence] scores than **Caucasians**. The empirical data and research suggest that the dynamics of the socialization process with regards to emotion and their behavioral expression are different for men and women and that the same is true for **race** (Smith, 2002).”

“The **African Americans** had a lower birth weight, a **lower verbal IQ**, and a higher number of sexual partners than Whites (Rowe, 2002).”

“...processing is a better way to conceptualize intelligence and **that lower IQ scores** earned by **Blacks** may be influenced by their relatively **lower fund of knowledge**, which leads to **lower IQ scores** (Naglieri, 2005).”

“Although univariate comparisons indicated that racial differences in health status, health habits, or speed of performance favored **African Americans**, on average, the **European Americans** thought their health was better, averaged more years of education, and had a higher level of performance on each of the three measures considered: naming of the selected 18 items of the Boston Naming Test,

incidental recall of these items, and the proportional recall of the items named. This difference in performance replicates numerous previous studies that **show European Americans perform better than African Americans on measures of cognitive functioning** (Whitfield, 2000).”

“The results showed that at birth, 4 months, 1 year, and 7 years, the **East Asian** children in the study averaged larger cranial volumes than did the **White** children, who averaged larger cranial volumes than did the **Black** children. Within each race, the children with the larger head sizes had the higher **IQ** scores and by age 7, the **East Asian** children averaged an **IQ** of 110, **White** children an **IQ** of 102, and **Black** children an **IQ** of 90. Moreover, the **East Asian** children, who averaged the largest craniums, were the shortest in stature and the lightest in weight, whereas the **Black** children, who averaged the smallest craniums, were the tallest in stature and the heaviest in weight. Therefore, the race differences in brain size were not due to body size (Rushton & Rushton, 2000).”

The above data notes that non-whites tend to be smarter, according to IQ tests, when compared to white counterparts. Despite the tumultuous events in the mid-1990’s after the publication of *The Bell Curve* and the numerous indictments of traditional IQ tests, scholars continue to claim intellectual differences are evident between racial groups (Feagin, 2013). What is more striking is even when new measures are created, as in the case in Naglieri, et.al., (2005) work, intellectual differences remain.

“The **4.8 estimated mean score difference** of the CAS Full Scale score between **Blacks** and **Whites** when controlling for demographic differences between the samples is in contrast to differences found between these groups on traditional IQ tests that require knowledge (Naglieri, et.al., 2005).”

Naglieri, et.al., praise the “smaller” mean score difference found in their updated IQ test, but they fail to note their test continues to reflect intellectual difference which, in this case, and many others, contributes to creation and buttressing of racial hierarchies.

The “new” language employed by these scholars reveals that intellectual differences between racial groups remain valid despite decades of research that claims it

is extremely challenging to measure differences in intellect. In an attempt to skirt the IQ-research black hole, scholars have employed *code words* such as “cognitive functioning (Whitfield, 2000)” and “funds of knowledge (Naglieri, 2005)” that work to buttress the existing race-based intellectual hierarchy, without directly referencing classic racialized terms.

Mental Illness

Drapetomania, a mental illness that caused black slaves to flee captivity, and Dysesthesia aethiopica, a mental illness that cause black slaves to be lazy were introduced in 1851 by Dr. Samuel A. Cartwright in an attempt to explain the numerous maladies of the African slave’s brain. In the present, these ideas are seen as ludicrous and clear evidence of pseudoscientific attempts to reinforce a racial hierarchy. Unfortunately, scholars who perform research on mental illness are not “creating” diseases that are unique to certain races, but they are performing research that claims non-white are more prone to depression, suicide, and other features of psychiatry.

“However, the trend toward greater rates of homelessness and **involuntary commitment** remain, suggesting that **minority status** *per se* may place one at risk for a more fragile treatment alliance (Kilbourne, et. al., 2005)”.

“Specifically, in the absence of the indices of SES, **race** was a significant predictor of Time-1 CES-D scores, such that African-Americans reported higher levels of **depressive** symptoms than did Whites (Sachs-Ericsson, et. al., 2005).”.

Although current descriptions of mental illness found in non-white groups are not as ludicrous as those presented by Samuel Cartwright research continues to claim that non-whites have higher rates of mental illness when compared to whites. This presentation is evident in the work of Sachs-Ericsson, et. al., (2005) who note that despite controlling for

numerous other factors, African Americans have higher rates of depression when compared to whites.

“... when only controlling for gender, age, and physical functioning, **race was significantly related to depression, with African-Americans** having a higher level of symptoms than did **Whites**. However, when the socioeconomic variables were included, **race continued to be significantly** related to depression... (Sachs-Ericsson, et. al., 2005).”

Unfortunately, the data and analysis is presented in such a way that reduces the totality of mental illness to minute feature of racial categories. Few scholars explored the structural or systemic concerns that could lead to mental illness instead choosing to focus on phenotype as cause. Moreover, much of the data analyzed was differentially comparative and claimed that non-whites had more mental illnesses than whites.

“**Blacks** are especially at risk of higher rates of substance use disorder, while homelessness and less stable treatment relationships appear more common among other minority groups (Kilbourne, et. al., 2005)”.

“We also found that **minorities** were more likely than **whites** to be diagnosed with **any substance use disorder** (Kilbourne, et. al., 2005)”.

“...there may be important **race differences** in the contributions to suicide risk of antisocial behavior and substance use/abuse. The current study underscores the need for examination of **race differences** in the relationship between antisocial behavior and suicide (Castle, et. al., 2004).”

In addition to the numerous physical illness attributed to race, non-whites are thought to suffer from mental illness at a higher rate than other groups. The data describes the mental state of essentialized racial groups and not the effects that structure barriers and discrimination have on these individuals. When it comes to discussion of the body and the mind of the non-white individual it is clear that scholars, with the support of research

data, see them as inferior. Moreover, this causal relationship between race and mental illness is rarely attributed to social or historical factors; rather, as in the case of physical illness, the fault of mental illness is the fault of the individual or racial group.

Social

Violence and Aggression

Scholars in the discipline of social sciences also engage in research that intentionally and unintentionally leads to the creation and buttressing of racial hierarchies. Unlike scholars in the biomedical and behavioral fields who most often deal with processes unique to individuals, social scientists engage in research that examines group or individual interactions with complex socially based structures. Throughout the data, scholars in the social realm of research claimed that non-whites were more likely to be violent and aggressive, legitimated violence more than whites, and aggressively impulsive.

Cesare Lombroso, an early writer in criminology, developed a theory that certain peoples were “civilized” and others were “savage.” In the latter category he placed people of color, with special attention paid to Africans. He believed that these “savages” were highly violent and criminal and that this criminality was a manifestation of innate qualities, such as shape and size of head, facial looks, and skin color (Beccalossi, 2010). Although scholars in the present avoid the terms “civilized” and “savage,” they do not hesitate to connect race with aggression and violence.

Lansford, et. al., (2004) demonstrates how racial hierarchies are buttressed and created through scientific inquiry in their study of spanking, which has become a socially

stigmatized behavior. To explain differences in the amount of spanking and the effects it has on children, Lansford, et. al. hypothesize ethnically different results in the interpretation of spanking.

“**Ethnic differences** in the meaning that children attach to being spanked may explain why physical discipline is related differently to their subsequent externalizing behavior. It is hypothesized, for example, that **African American** children may ascribe meaning to spanking as a legitimate expression of parental authority whereas **European American** children may regard it as an act of interpersonal aggression (Lansford, et. al., 2004).”

Tapping into old stereotypes about violence in African American communities, the scholars suggest that African American children may see spanking as a legitimate form of parental authority, whereas European American children see this same act as interpersonal aggression.

Lansford, et al., go further and suggest that spanking and other forms of violence directed at children are thought to be the result of ethnic differences. European Americans are framed as more “civilized” as their use of violence is simply the result of reserved biological impulsivity; conversely, and tapping into stereotypes of violence and savagery, African American parental use of violence is the result of planned parenting strategy. The *code words* and the direct reference to differences facilitate racial hierarchy creation and taps into very old stereotypes.

“It is possible that the positive association between **European American** parents use of physical discipline and their children’s externalizing behavior problems is the result of a **biological predisposition for impulsivity**; for parents, this may take the form of ignoring social norms for their reference group and using physical discipline in the heat of anger, whereas for children, this may take the form of externalizing behavior problems. If **African American parents, on the other hand, are not reacting with impulsive anger but instead are using physical discipline as a planned parenting strategy acceptable to their**

cultural group, their children's lower externalizing problems may also be related to dispositional characteristics shared with their parents (Lansford, et. al., 2004)."

Numerous other scholars connected race to other social phenomenon, such as violence and problem solving, domestic violence, dating violence and aggression.

"A better understanding of these mechanisms would likely lead to clearer **explanations regarding how African American adolescents are learning not to use violence to solve problems** when their parents use physical punishment to discipline them (Lansford, et. al., 2004)."

"One's **race** can influence his or her attitudes and actions due to cultural factors and upbringing. What is accepted in some cultures is unacceptable in others. Also, opinions about **domestic abuse can be affected by one's race** (Jones & Gardner, 2002)."

"**African Americans** were shown to have higher rates of **dating violence** (Jones & Gardner, 2002)."

"This study yielded some surprising findings. First, it was expected that **Blacks** would exhibit more **violent behavior than Whites**. For six measures of prior or current violence, they did (Gillespie, 2005)."

"**Aggressive personality**, prior street violence, and current drug abuse were all positively related to current violence among **Blacks** (Gillespie, 2005)."

The claims of these scholars, despite their supposed empirical support, remain extremely detrimental to social integration and work to support drug related policy by framing non-whites as "ominous" and "predators."

Anti-Social Behavior

In addition to violence and aggression, scholars claimed, through research, that non-whites were more likely to exhibit anti-social behavior than whites. This behavior took numerous forms such as trouble with police, drug related activities, disease, non-normative sexual activity, and teen parenthood.

“...after entering the effects of adolescent physical discipline and the adolescent physical discipline · race interaction, the main effect of race became significant in the **prediction of adolescent-reported violence and police trouble, with African American adolescents higher than European American adolescents** on the externalizing behaviors (Lansford, et. al., 2004).”

“At ages 9 and 11, **African Americans** had significantly higher mean **antisocial behavior** scores than both European Americans and Hispanics (Schimtz, 2003).”

“Also, the findings from the t-tests seem to suggest that **Blacks** engage in more **drug-related activities and violence** on the streets than **Whites** (Gillespie, 2005).”

“Another issue for which *r-K* theory has important implications is the spread of the AIDS epidemic. There is a substantially higher incidence of HIV and AIDS among **blacks** in the United States, sub-Saharan Africa, the Caribbean and Europe than among whites and Orientals. A number of social scientists have recognized that **a major factor responsible for this is the greater numbers of sexual partners of blacks, which spreads the infection more rapidly** (Lynn, 2000).”

“A similar configuration of personal characteristics was relevant for teen motherhood as for teen fatherhood. There are two possible differences: (1) **race** (i.e., **being African-American**) and low socioeconomic status seem to play larger roles in teen motherhood than in teen fatherhood... (Xie, et. al., 2001).”

Despite the fact that scholars in social sciences and other disciplines agree that race does not cause a person to be arrested, scholars presented data that equated non-whiteness to higher rates of arrest.

“**Race** was also a significant predictor of **later arrests**, and again, **non-Whites** were more likely to be arrested than **whites** (Grogan-Kaylor, 2003).”

Although quantitative data may reveal such a result, it is quite problematic to say that non-whites are more likely to get arrested when the majority of Americans understand that non-whites are often the targets of government initiatives, such as the *War on Drugs* (Alexander, 2010).

Antisocial or anti-normative behavior among non-whites is often explained through a number of factors including a single-mother household and poverty, which are references to classic stereotypes about non-white culture and families, as Lansford, et. al., (2004) note in relation to parental physical discipline:

“...physical discipline is endogenous to the family system and may grow out of child characteristics or other family context features which may be the real predictors of child outcomes. Difficult child temperament or child male gender may lead some parents to respond more readily with physical punishment and may also have a direct effect on child behavior problems. Family stressors such as low socioeconomic status and marital instability may make parents more emotionally volatile and less flexible, increasing the likelihood that they will resort to spanking to gain child compliance. Some of these contextual factors may be correlated with **ethnicity** and may even account for **ethnic differences** in parenting behavior.”

The explanation for anti-social behavior among non-whites is easily tied to established stereotypes of non-white families and economic status. As in the case of violence and aggression among non-whites, the reasoning for anti-social behavior is simply not explained or said to be the cause of individual, group, or cultural factors. Social scholars continue to reference, although indirectly, very old and harmful stereotypes.

Conclusion

The themes found throughout the three areas of scientific inquiry are tactics employed, whether intentionally or unintentionally, to buttress and further racial hierarchies. Each theme furthered this hierarchy by indicting non-whites' actions and physical traits, the mental state of these individuals, and often comparing this difference to whites. Although there remains a great deal of evidence to support racial difference on almost any feature of scientific inquiry, it is the argument of this project that none of

these attempts explained the *social fact of racism* that has a significant impact on the lives of non-whites.

Few scholars in the data used for this project argued, in any convincing manner, that structural barriers, such as racism, influenced the life outcomes of non-white individuals. When the topic appeared in any detail, it was seen in one article and was voiced by non-white participants in interviews and surveys – few scholars directly indicted racism and its relationship to inferior biomedical, behavioral, or social status of non-whites.

Based upon the data used for this project, it appears that many scholars are unable or unwilling to address the fact of racism, whether it manifests as individual or structural, and its influence on non-whites. Rather the more standard explanation for the universal inferiority of non-whites was based upon individual or group factors, which works to further a historical, race-based hierarchy. As I note in the next chapter, this tactic of “blaming the victim” has a significant impact on social policy, social integration, and inequality.

Chapter 5: Discussion and Conclusion

This project examined three areas of scientific research to ascertain prominent themes employed to perpetuate and buttress racial hierarchies. The results of the analysis reveal that many of the themes employed are presented in a “color-blind” manner, which suggest that little to no references to “color” are made. Despite this supposed “race-neutral” presentation of scientific research, the data reveal that racism continues to be communicated through subtle statements of difference.

In each of the three areas of research, race was used as an independent variable and said to “cause” outcomes in health, society, and the mind. Of course, this causal argument is highly suspect as this project argues that race has no connection to outcomes of human life examined in the specific research fields. When these supposed differences were found they were primarily explained by employing the idea of “cultural difference.”

In addition to the two overlapping themes found in all three areas, unique themes were found in each of the three areas of research that are employed to create and buttress racial hierarchies. In the biomedical sciences, genetic research, which I have termed the “new physiognomy,” is overwhelmingly employed to support and perpetuate difference between racial groups. In the behavioral sciences, the infamous and antiquated research into intellectual differences between racial groups remains an ever-present feature of scientific inquiry. Although the examined research is presented in a quite different manner than previous inquires, intellectual differences between racial groups persist to produce race-based hierarchies. Finally, scholars in the field of social science continue to

tap-into antiquated stereotypes of race-based aggression and anti-social behavior.

Although couched behind statistical analysis and sophisticated scientific language, these scholars continue to argue that non-whites are more likely to be violent, aggressive, and anti-social when compared to whites.

Discussion

Much of the research into racism and its use in scientific research has largely been theoretical, historical, and editorial since the turn of the millennium. These works have centered on the appropriateness of race as a variable in scientific research, the suitability of genes and race in research, and many other features of race and scientific research. This stagnate research over the last two decades has failed to assist both scholars and the general populace in understanding the new form racism has taken in scientific inquiry.

Therefore, this work is distinctive as it *thematizes* the manner in which scholars are discussing race throughout scientific research. This empirical work, which to my knowledge is quite unique in academia, marks a return by scholars to understanding scientific racism through empirical examination. The methodological and interpretative approach was perfectly suited for the research questions and data analyzed, as it was the most useful strategy for capturing the complexities of human existence found within textual data.

Although qualitative research does not seek to be probabilistic, the theoretical, directed method employed in this dissertation, which sought to find articles based upon theory and subsequently generate themes, achieved representativeness through several means. Randomization was achieved as articles were randomly selected for analysis

from a larger population of articles that was collected from numerous databases and discipline-specific journals. Although this selection process was conducted within the confined arena of researcher-selected disciplines, representativeness was achieved by selecting equal numbers of articles from the given areas. This method is quite unique as it applied some quantitative research techniques to the qualitative analysis of peer-reviewed journal articles. The randomization and sample size equalization allowed for reduction of bias, access to the largest amount of information possible, and the development of themes.

An additional unique feature of this dissertation is that analysis is examined directly at the source. Following the classic work on scientific racism, *The Mismeasure of Man* (Gould, 1981), where the author examined past scholarship on the topic and, for example, critiqued previous cranial volume studies by examining the same skulls past scientists employed as evidence of African American intellectual inferiority, few scholars have actually examined data employed by scholars and its impact on societal racial hierarchies. The attempts to erase race from the social milieu have seeped, possibly unknowingly, into the scientific realm and race and its challenges have largely been ignored. Like Gould's work, this study brings race back into the discussion and suggests race and racism persist as an ever-present feature of scientific inquiry.

Troy Duster's *Back Door to Eugenics* (2003) covers similar themes as this dissertation and argues that the combination of race and genetic research exemplifies a subtle and covert way to produce eugenic based research. Although Duster's work is largely theoretical and contains limited data-driven research, it is worth noting that it is

one the first works, since the turn of the millennium, to explore the complicated and tenuous relationship between race and scientific research.

Nevertheless, the findings of this project add to Duster's work by providing evidence for many of the concerns he raised – particularly the perpetuation of racial hierarchies through scientific research. Duster does not explore the possible racialized nature of scientific inquiry, but he does explore their consequences in the area of criminal justice. This work also adds to Duster's seminal text by providing themes through which to understand and discuss the many issues and concerns he raised, while also expanding the examination beyond the criminal justice and biomedical fields.

Additional empirical research into the current topic is reflected in the work of Phelan, et. al. (2013) who employed a multi-method approach, including content analysis of newspaper articles and survey research. Much like the work of Duster (2003), Phelan, et. al. (2013), only focus on genes, race, and their possible influence on society. Their conclusions suggest discussions of racial differences, genes, and disease increased significantly between 1985 and 2008 and they argue that antiquated race-based beliefs have been invigorated and revived by the genomic revolution, based upon a survey based media-vignette methodology.

Although the work of Phelan and colleagues is quite revealing, they fail to address the racism of science by addressing the manner in which this information is interpreted by media. This assessment of media is not a novel assertion as numerous scholars have asserted how this institution has perpetuated and created racial hierarchies for decades (Feagin, 2006: 45-46). This dissertation adds to current scholarship by examining the

often-unexplored institution of scientific inquiry and avoids the limitation of analyzing the altered message of scientific inquiry in media representations, which is the primary method employed by numerous scholar.

Additionally, although the work of Phelan and colleagues and this work find similar results, although based upon different measures, regarding genes and race-based research, the current project does not limit the analysis of race and science to simply the biomedical field. Adding the research fields of social and behavioral to the current project produced a much more detailed picture of the scientific community and the implementation and use of racial hierarchies in their research.

What Is Scientific Racism in The Present?

Based upon the data presented in this project it appears that “scientific racism” remains a feature of scientific inquiry. However, this project argues that the scientific racism presented here takes a different form than found in the past. Rather than following the “classic” form of scientific racism, which included the following characteristics 1) claims that are not supported by the data given, 2) errors in calculation that invariably support the hypothesis, 3) no mention of data that contradicts the hypothesis, 4) no mention of theories and data that conflict with core assumptions, and 5) bold policy recommendations that are consistent with those advocated by racists (Graves, 2001: 8), contemporary scholars present their research in a more subtle and insidious manner.

Although other scholars, including Duster (2003), have described this as a “backdoor to eugenics,” this project argues that the data presented exposes, in part, the

status quo of racism in scientific inquiry. Therefore, this revealed form of scientific racism is a direct route to the creation of racial hierarchies through the “normal” operation of scientific inquiry. This “direct route” is facilitated, in part, by changing the words used to discuss race, employing code words, using race as an etiological variable, and through the normal operation of the institution of scientific research. This novel finding will be further explored through future research.

Therefore, the racism seen in the peer-reviewed articles is a “new” form of scientific racism that has evolved out of history, social norms, and other features of race-based inclusion and exclusion. Moreover, the data represents a form of racism that has only been noted through general societal analysis of race relations in the work of Bonilla-Silva (1997). The “scientific racism” seen in the data for this project has the following characteristics:

1. Subtle, covert, and often devoid of direct, racialized language
2. Institutionalized and part of the status quo of scientific inquiry (devoid of intent)
3. Normalized and Accepted
4. Embedded within ethical and sophisticated research
5. Avoidance of structural policy recommendation in favor of blaming individual or group culture

Although some may argue that this is not a new form of racism in scientific research, the data, when examined through the lens of contemporary race theory noted in Chapter 2, clearly reveals the creation and buttressing of racial hierarchies while providing numerous opportunities for further research.

Implications

Despite the claim that the majority of scientific inquiry is value-free and objective, this dissertation has clearly shown that this ideal has not been realized. Irrespective of intent, educated analysts continue to promote a race-based perspective of the world in which they are members. Culture, society, and few institutions are immune from the racism that is so pervasive throughout American society and, as this project has demonstrated, the racism of science is arguably a reflection of the culture in which it is imbedded. This realization is not simply a cause for concern for the scientific community, but for the larger *body politic* as well.

In addition to the hierarchical creation that is occurring in the field of genetics and race research that has been demonstrated in this project, scholars and the larger society should be ever-vigilant about of the possibility of genes being further employed to “engineer” humans and their existence. Although the scholarly work discussed in this project may seem innocuous, humans have demonstrated, throughout history, the willingness and means to subordinate and dehumanize other humans through scientific justifications (Gould, 1981; Shipman, 1994; Stern, 2005).

History provides numerous examples of instances when the combination of race and scientific research produced disastrous results. When limited vigilance is employed and social definitions of race are attached to human biology disastrous events are possible and can be seen throughout history, such as: United States led syphilis experiments in Guatemala, the Tuskegee syphilis experiment, the atrocities of the Nazi regime, and human experimentation in apartheid South Africa.

Unfortunately the attachment of racial definitions is not limited to the biomedical field, but also exists in the behavioral field. *The Bell Curve* represents one of the most infamous examples of an attempt to claim a hierarchy of intellect based upon race; however, as recently as 2010 scholars were claiming a hierarchy of intellect based upon race (Ruston & Jensen). Historically, the racialization in the behavioral sciences has caused some to call for reductions in funding for particular public schools and increase limitations to existing affirmative action policies (Morse, 2010; Gottfredson, 2005). In each of these cases, the connections between race and intellect have most definitely had deleterious affects on minority populations.

Finally, the social area of human existence continues to see minorities as inherently prone to criminality, violence, and antisocial behavior (Mercado-Crespo & Mbah, 2013). The overpopulations prisons in the present and decades of violence directed at racial minority populations suggests that the culture in which scholars find themselves embedded continues to argue certain racial and ethnic groups are more anti-social than others (Tonry, 2010).

Despite the long history of race and its use to create hierarchies, it should not be assumed that the combination of race and scientific research is entirely harmful or detrimental. Rather, genetic research, for example, when combined with particular heritages, can provide beneficial and life-saving results. For example, Ashkenazi Jews, Norwegian, Dutch, and Icelandic peoples, have a higher prevalence of harmful *BRCA1* and *BRCA2*¹³ mutations than people in the general population (Malone, et, al. 2006).

¹³ Tumor Suppressing Proteins

This knowledge, which has been achieved through scientific research, has the potential to save lives and possibly prevent cancers. However, these known genetic mutations should not be interpreted as evidence that the ethnic or racial groups is, in some way, biologically, socially, or mentally superior or inferior. Additionally, minority racial groups have been seen to have a higher prevalence of colon, genital cancer, and similar *BRCA1* and *BRCA2* genetic mutations as Ashkenazi Jews (Schabath, et al. 2013); however, this knowledge should not be used to support the argument that these groups are hypersexual, sexually aggressive, or somehow inferior when compared to other groups. The vigilance needed in scientific inquiry, when race is employed, is that differences seen in genes, culture, intellect, or any other facet of human existence, is not the result of definitions attached to socially constructed racial categories.

The primary concern with research, race, and any other status dimension is the search for difference and attempts to justify this difference through science. This project has revealed that troublesome research regarding race exists in biomedical, behavior, and social research. The search for difference since the turn of the millennium has seen scholars searching for genetic markers for very complex physical, social, and behavioral traits of human existence such as, heart disease (Romeo, et al., 2008), cognitive ability in children (Chorney et al. 1998: 159–66), crime (Jensen et al. 1998), violence (Caspi et al. 2002), attention-deficit/hyperactivity disorder (Smalley et al. 2002), and homosexuality (Gavrilets & Rice, 2006). This search for difference, when combined with racial thinking, presents the very real possibility of the implementation and enforcement of race-based, genetic, social, and behavioral hierarchies.

As noted, the major explanation seen throughout the data used to explain difference observed through scientific research in the biomedical, social and behavioral fields, was culture. The implications of blaming group culture are numerous, and include:

1. Distracts Attention from Institutions: When scholars only indict racial or cultural groups for differences observe, this exempts government, economics, the educational system, the scientific community, and numerous other institutions from blame. This perspective ignores the strains that are caused by inequalities within a system.
2. Systemic Change More Difficult: By excluding the existing order (i.e. institutionalized racism, scientific status quo) from blame it makes it that much harder to initiate institutional change as norms of racism sexism, and homophobia go unchallenged.
3. Reinforces Stereotypes: Indicting culture reinforces stereotypes, such as those revealed in this study (i.e. the poor are poor because they are lazy, inferior genes, inferior intellect).

When combined with etiological racism, the indictment of racial groups or cultures for differences seen in research creates and fosters an insidious and subtle form of racism. Unfortunately, as this project has noted, what scholars are most-often observing in their research is social and institutional discrimination, but this formulaic response to difference is to accept the status quo of racism and further discrimination through scientific inquiry.

Finally, the implication of scientifically claiming difference in intellect or cognitive ability could have disastrous influence on education reform and funding. The implication of scientifically claiming difference in violence or anti-social behavior could cause governments and private groups to increase repressive tactics and incarceration rate that target particular, racially defined group. Nevertheless, the most heartbreaking

implications revealed by this study are how racism influences non-whites – the affects of racism has been shown to influence negative health, academic, and social outcomes.

Limitations

The most pressing limitation in content analysis is reliability, which is the degree to which a code consistently measures what it is intended to measure. Because individuals could code data very differently, it is essential to include steps and measures that ensure coding is accurate across different individuals. Therefore, to counter the limitation of reliability in content analysis, inter-coder reliability, using Cohen's kappa (k), was employed.

Two volunteer colleagues were given a random selection of 5 articles included in the data set and each was asked to code the data using the noted key words. Both coders produced an inter-rater reliability of greater than .70, which is as the minimum threshold for satisfactory reliability.

Generalizability is also limited, particularly related to the sample sizes of the disciplines specific articles. Although generalizability in qualitative research refers to the extent to which theory developed within one study may be exported to provide explanatory theory for the experiences of other individuals who are in comparable situations, the sample sizes of these three research areas are too small to provide confidence for this endeavor. Nevertheless, the copious amounts of information found in the articles coupled with the goal of in-depth description provides a multifaceted understanding of the phenomenon and contributes valuable knowledge to the academic community. These themes may not be seen in similar articles, but this project has

succeeded in sensitizing and informing the scholarly community that these patterns persist in academic literature.

Recommendations for Future Research

The results of this dissertation should not be interpreted as support for the elimination of the race concept from scientific inquiry; rather, the results support the perspective that race should only be employed with vigilance, when the social definitions of race are included, and the social, economic, and political features of race that influence health, behavioral, and social outcomes are incorporated. When race variables are used in research they should be employed with attention paid to the interaction of numerous facets of human existence, such as the complicated interaction of biological and social factors, and scholars should avoid direct, causal sequences with race as an explanatory variable. A good start for scholars who are concerned about the implications of their research and race should examine the “Ten Commandments” of race and responsible research (Lee, et al., 2008).

Research and Race

Many investigators in this study employed race as an etiological variable despite the fact that numerous scholars agree that race should not be used as a causal variable in research and it is an untenable variable in statistical models. To deal with this issue, analysts, including Duster (2003) have suggested that race is acceptable as an interaction variable.¹⁴ This argument seems logical for quantitative and statistical research, as the

¹⁴ Interaction Variable exists whenever the effect of one independent variable depends on the level of the other.

numerous interacting variables would likely avoid treating race as a proxy and attempt to contextualize race within a larger social context.

Unfortunately, this proposal fails to deal with the main problem at hand and retains race as a causal, etiological variable. An interaction variable is actually an explanatory variable and suggests a causal relationship between race, additional variables, and a given outcome. This procedure has the affect of treating race as a biological variable and/or reducing and essentializing the concept to its simplest and most limited form.

To argue that race causes an individual to be predisposed to heart disease, have less intelligence, is increasingly prone to criminality, or interacts with class, for example, to cause a given outcome, is akin to arguing that race causes these traits of human existence like smoking causes cancer or that race is proxy for some biological relationship. This is particularly problematic, as this project has demonstrated, and I suggest, as Tufuku Zuberi has noted, “one cannot use race as a cause in statistical analysis (2001: 131).”

What is the Alternative to Race in Research?

One of the major recommendations of this project is to alter the manner in which race, as a causal variable, is employed in research. The reasons for this, based upon the results of this project, is that if we allow race to be defined, in any part or portion, as biological, it is likely to create a slippery slope that may lead us back to events such as slavery or the Holocaust. Additionally, causation and race have been demonstrated, throughout this project, to be a challenging endeavor when combined. This is because,

when race is employed, it is often not operationalized as scholars simply avoid the fact that the use of race as a variable produces “circular logic.” Moreover, when race is employed it is often used as an invalid proxy for some other phenomenon, such as poverty or health outcomes.

Numerous scholars have suggested that *ethnicity* or *geography* are suitable replacements for the race variable and its numerous problems within research. However, ethnicity suffers from many of the same conceptual and methodological problems that race does – it is also a social construct that has no biological basis and no etiological relationship with psychology or social outcomes.

Geography is also argued to be a suitable replacement for race; however, geography, which is often tied to genes, is limited. In addition to being a backdoor to eugenics, scholars who employ geography generally limit the total number of racial categories to four (Peregrine, et. al., 2003). Additionally, although geographic ancestry is thought to be major determinant of genetic structure in the U.S. population, the majority of research on the topic does not support this argument. Results differ in the assessments of a person's ancestry based on how far back in time the assessment goes, the notions of geographical ancestry do not always correlate with individuals' self identified race, and this concept revives ideas about the “major races,” as conceptualized in the 18th century by Blumenbach (1795). Further assessments of relationships between contemporary people and ancestral populations are layered with uncertainties, due in part to the lack of physical and genetic material with which to evaluate “ancestors”.

Therefore, I recommend that scholars address the following questions before using race in research.

Operationalize Race as a Social Construct (Particularly in Biomedical Research)

The definition or operationalization of race in current literature is largely either social or biological. When the variable is defined as biological, which is largely the case in the data used for this project, disastrous results are evident and hierarchies based upon racial definitions are furthered. At the very least, scholars must understand their race variables as social constructs, which actually do not cause anything – rather the relationship observed is simply wrong or the result of proxy factors that the variable of race is attempting to take into account. How scholars define the concept of race will likely influence the manner in which it is employed in research.

Avoid Using Race as Causal Variable

If race is seen in an ethical and responsible manner – as a social construction – it *cannot cause an outcome*. Rather, the results we think we see are not actually the direct or indirect effect of race; rather, the observed results, more often than not, are the result of the implementation and institutionalization (i.e. discrimination) of definitions that are tied to phenotype. These definitions are numerous, can be found throughout academic literature and colloquial discourses, and have the real affect of influencing life outcomes and life chances of millions of people. Therefore, race does not cause differential outcomes, but because race is real, humans define it as real (i.e. *The Thomas Theorem*), and these definitions tied to phenotype have significant impacts on human existence (Thomas & Thomas, 1928; Merton, 1995).

Avoid Using Race as a Proxy

Because race and racism are such integral parts of modern society and the affects of these definitions remain valuable to scientific inquiry, it is not advantageous to remove or eliminate the concepts of race and racism from research. Rather, I suggest that race should not be employed as a proxy for discrimination; rather, scholars should endeavor to create or modify indices that actually measure discrimination in its overt and covert form. Nancy Kreiger and Steve Sydney (1996) have attempted this as they make connection between African American participants perception of discrimination in the *CARDIA* study and increased blood pressure levels. As these scholars have demonstrated, it is possible to avoid suggesting that race causes differential health outcomes; rather, the focus should be on discrimination and institutionalized barriers that may lead to differential health outcome.

Contextualize Race Within Social and Historical Contexts

When race is employed within any type of research, the variables must be contextualized with larger historical or social factors. Avoiding an implementation of this perspective will likely reproduce essentialism and reductionism, which is one of the main outcomes seen in the current data of this project – race is largely reduced to biological and individuals dilemmas. This contextualization of race is generally accomplished with relative ease within most qualitative research; however, the challenge of contextualization arises very often in quantitative and/or statistical research. Future research will endeavor to design innovative protocols and indices that avoid

essentialization and reductionism and examine complex interactions between racial variables and historical and social forces.

Exploration of Additional Status Characteristics

Although this study focuses on race, future research must examine if similar phenomenon existence in relation to additional status characteristics, such as gender. Scholars have explored the idea of gender, genetics, and scientific inquiry, which includes the recent work of Daniels and Heidt-Forsythe (2012) who argue that “the unregulated free market in ART’s [assisted reproductive technologies] has produced a form of gendered eugenics that compromises choice for donors and exacerbates hierarchies of human value based on stratified norms of race, ethnicity, economic class, and gender (720).” Future research will explore gender, additional status dimensions, and their relationship with possible hierarchy formation in scientific inquiry.

Explore Additional Areas of Scientific Inquiry

Based upon the results of this project it is imperative that additional disciplines be explored using as similar methodology. This project, as one of the first of its kind, took a broad perspective to examine the thematic feature of race and scientific inquiry. Future research should take broad disciplines, such as a social science, and examine the relationship between race and science in much more specified disciplines, such as Anthropology, Political Science, and Economics. This endeavor will not only facilitate the growth of knowledge but also facilitate discourse across diverse disciplines.

Conclusion

This project has added a great deal to the literature on race and scientific inequality. First, by expanding the disciplines researched, this study has revealed that scientific racism is not limited to biomedical sciences or an extinct feature of scientific inquiry. Rather, the data reveals that scientific racism remains an ever-present feature of numerous disciplines of scientific inquiry. Second, through the use of qualitative coding, the project reveals, which few other project have done the past, the dominant themes that are employed to perpetuate, buttress, and created racial hierarchies.

The ultimate goal of this project is not label scholars as racists; rather, it is my hope this this project, along with future research, will foster enlightenment and inform future scholarship in numerous areas. Talking across disciplines is quite a challenging task, but I hope that this dissertation fosters communication and opens avenues for challenging the status quo of discrimination, not only for the benefit of minority groups, but also for the benefit of the entirety of the human race.

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