

**From Medical Innovation to Sociopolitical Crisis:  
How Racialized Medicine Has Shifted the Scope of Racial Discourse and  
its Social Consequences**

by

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## Introduction

In May 2002, the “health” section of the *New York Times* published a controversial article by Dr. Sally Satel which explicitly argued, in theoretical and practical terms, for the use of racial identification and differential treatment in prescription dosages and medical examination. The article argued that cursory racial markers could be used to provide more personalized and effective medical treatment, based on the assumption that these racial demarcations were strong indicators of a patient’s reaction to medications or treatment plans. The article, provocatively entitled “I Am a Racially Profiling Doctor”, introduced the public to a critical, but hitherto insular, debate within the medical and scientific community about racial considerations and efficacy as a sound medical characteristic. Satel’s article, as the first to address these medical issues in such a widely circulated public forum, garnered much academic, legal, and medical review. One of a series of events that paved the way for a surge in race-specific medical practices and debate, it helped set into motion a new discourse on science, genetics, race, and the underlying questions that intertwine all three.

Satel justified race as a medical criteria because of a perceived tendency for racial groups to share similar genetic coding, subsequently responding similarly to prescription regimes. A psychiatrist, she maintained that “race plays a useful diagnostic role” (Satel, 2002) and that, for example in her personal experience, blacks metabolized antidepressants more slowly than Caucasians or Asians, evidence of a need for her to *not* remain colorblind in her efforts to safely and efficiently prescribe medication for her patients. Satel argued that acknowledgement of racial nuances in medical treatment and prescription ultimately saves lives. The article admits the imperfect nature of race

designation, acknowledging that race is “a rough marker” for the complex multiplicity of ancestors and gene makeup of each individual. Race, for Satel, was an admittedly imprecise clue to medical and diagnostic success, yet had enough clinical implications to further medical goals.

As ethical debates about the legality of a racial genetic construct and its medical possibilities were stoked in the legal and medical fields, Satel’s article became a sound-bite for the argument of race-specific medical practice. Many, however, came forward to publically reject Satel’s “simplistic” argument, claiming that her understanding of racial difference in America “belittle[s] the immense burden of suffering that has resulted from erroneous associations between biological traits” (Brower, 2002). Others, moreover, criticized the introduction of a race narrative in medicine as a façade for scientific racism, “in this field devoted to human well-being, those who see race as a useful biological tool can sidestep the implied link between essentialist race and racism by casting their support of racial categorization as part of a humanitarian and antiracist health agenda” (Morning, 2011; 134). As the first intellectual notion of race-specific medical practice to enter the public domain, the Satel article introduced the public to a key issue plaguing genetic and racial research and the beginning of a revolution in medical genetic analyses sparking monstrous debate about the appropriateness of a racial genetic query.

The medical discoveries born after Satel’s article and the renewed intellectual energy dedicated to discussing them publically and dangerously implicated race within the medical field as connections between race and genetics became further cemented and socially accepted under the auspices of medical innovation. Opportunistic pharmaceutical companies saw medical treatment demarcated by race as a profit making opportunity to

garner a pharmaceutical foothold or niche within a specific racial demographic. But in order to do so successfully, the social world had to readily accept race as a biological construct. It soon became apparent that the public notions of race already leaned towards understandings of race as inherent, fixed, and most importantly, biological and genetically relevant (Satel, 2002, Temple & Stockbridge, 2007, Morris, 2011). This delineates the human race along racial or ethnic lines at a fundamental biological level, prompting concerns about perilous social consequences such as new forms of prejudice and racism enshrined in genetic validation, racial hierarchy, and scientific fact. The process and possibility of personalized and racialized medicine brings forth a new understanding of race as an institution and interjects a new intelligibility about the notion of race altogether. What did the revised pursuits of the racial identity quandary mean for the medical community, for contemporary understandings of race, and for the social world at large?

Advocates of race-specific medicine argue that linking race to genetics provides new opportunities for specialized and critically potent medicine, while opponents fear the potential for a new arena of legitimized mass prejudice which echoes of a sordid historical past of scientific racism like eugenics, anti-miscegenation, and the Hitler “master race” campaign. What does the politics of racialized medicine and the subsequent formulation of new racial identities and understandings do to the social fabric of race and the imbedded understandings of race in our social world? How does linking race to genetics and human biology affect and compare to a conventional sociological perspective of race and how do these ideologies play out in the modern medical field?

What is the future of race politics in light of these sensationalist claims rooted in supposed science?

In this essay I explore the political, economic, and social implications of racialized medicine which spans political, economic, scientific, and social institutions through a case study of a single race-specific medication, BiDil, patented in 2005 as a congestive heart failure treatment for African Americans. First, I identify the major questions and issues that racialized medicine have created through a brief history of BiDil and analysis of the dilemmas and discourse left in its wake. Second, as I explicate contemporary scientific pedagogy about genetics, race, and medicine, I dissect how societal fascination with the scientific fact, truth value, and knowledge power, have further affirmed and empowered the practice of racialized medicine while obscuring race as a socially, not genetically, relevant construct. And third, using sociological theory, I endeavor to explain how racialized medicine has rooted so deeply in the social conscience and how this has effected a new wave of racialized body politics, extrapolating through concrete evidence some of the major problematics and ethical issues that have arisen or have the potential to form because of racialized medicine and the “little orange pill”.

### Historical Background

Both sociological and biological interpretations of race have fertile histories. Race has strongly underscored scientific ideology and policy for at least three centuries. As early as the 18<sup>th</sup> Century, writers sought to explain race by creating distinct racial groups based largely on geographic origin (Yudell, 2011). In 1775, philosopher Immanuel Kant added to genetic literature by quadchotomizing the human race; European, Asian,

American, and African. Only a year later, anthropologist and physician Johann Friederich Blumenbach developed a new theory of five distinct racial groups; Caucasian, Mongolian, Ethiopian, American, and Malay (Fausto-Sterling, 2004). These racial categories, while no longer formally recognized as scientifically accurate, represent the human desire to explain racial difference in scientific terms and illustrate that the bedrock of these understandings is that race is as arbitrary and geographically or ancestrally tethered. As Anne Fausto-Sterling explains in her article, our “intellectual devotion to the gene as an explanatory precept” (Fausto-Sterling 2004: 2) has colored medical and scientific research of human evolutionary history and modern race and genetic classifications. Throughout history, the pattern of human fixation with genetic and scientific value has clung to the social interpretation of race.

The eighteenth and nineteenth century studies of race and race types were colored by Platonic notions of ideal racial types, using aesthetic and physical “visual cues of human variability, such as skin color, eye shape, and hair texture” (Fausto-Sterling 2004: 4) to further explore and perfect racial classifications. By the late 19<sup>th</sup> Century and early 20<sup>th</sup>, there was a boom in biological determinism theory linking race to biological genetic traits, assuming it to be fixed and inherent within the individual. Such imprecise logic was soon to become exploited and abused on a massive scale in one of the greatest human rights horrors of modern history, Germany’s Nazi eugenics programs, racial policies, and racial genocide which claimed scientific legitimacy of a master race (Hoffman, 2005). The 18<sup>th</sup> Century attempts to better understand race through a regimented scientific lens had turned into a precisely articulated regime of horror that used scientific untruths to perpetrate a racist and gruesome political agenda.

At the end of WWII in 1945, the Nazi abuse of biological racial pedagogy took international stage. In an instant, curiosity in biological determinism turned to unimaginable disgust and the theory lost all of its social and political power (Ossorio, 2011, Hoffman, 2005). Biological determinism and scientific race studies, having been stigmatized as scientific racism, were publically and formally denounced both in theory and practice by the 1950 antiracist statement “The Race Question”, published by the United Nations Educational, Scientific, and Cultural Organization (UNESCO). The publication stated “the biological fact of race and the myth of ‘race’ should be distinguished. For all practical social purposes ‘race’ is not so much a biological phenomenon as a social myth. The myth of 'race' has created an enormous amount of human and social damage.” (UNESCO, 8). This public condemning halted scientific and medical studies of race, for the time being.

However, use of race as a scientific or biological construct lay dormant only temporarily, coming back into the limelight only decades later in the form of anti-miscegenation controversy. Anti-miscegenation laws, which enforced racial segregation of marriage and intimate relations as early as the initial thirteen American colonies, were back in the foreground of societal discourse. Anti-miscegenation law was founded on the principle that sexual relations and intermarriage of races was unnatural at a biological level, based on the premise that races are genetically different and incompatible. When the 1960’s civil rights movement forced America to consider a change in its ideology about racial equality, anti-miscegenation laws became an important campaign plug, forcing America to reconsider the negotiation between biological and racial identity. Anti-miscegenation law was disbanded in the 1967 *Loving v. Virginia* Supreme Court

case, yet reintroduction into mainstream racial debates renewed issues of the biological racial construct (Roberts, 2011). Even as recently as five decades ago, this country was struggling, on legal and social scale, with genetic racism and its parables. By focusing the civil rights movement on the issue of racial biological proclivity, these events pinpointed genetics as key to racial construction and paved the road for the modern racialized medical debate.

As scientific technology continued to advance at the turn of the century, complex genetic research became more and more accessible and interesting to the public eye. Race became, once again, a defining factor of genetic work as scientists sought to interpret the human genome and scientific evidence of human genomic ancestry with the initiation of the Human Genome Project in 1990 (Fausto-Sterling, 2004). The Human Genome Project was a governmentally funded research project that explored the human genome with the primary goal of identifying, sequencing, and mapping the entire genomic blueprint. In September, 2003, a document prepared by the Project entitled “Exploring Genetics Issues Relevant to Minority Communities”, concluded that “studies of human variations have determined that there is no scientific basis for race and that ‘races’ cannot be distinguished genetically” (Human Genome Project, 2003). A sub community of the scientific world had found no trace of a conclusive “race gene” just as scientific questioning of race had reached pinnacle.

Backed by the Genome Project, The American Anthropological Association, and other critically acclaimed geneticists, Harvard geneticist Richard Lewontin issued a statement that “no justification can be offered” for tethering race to the genetic or biological (Roberts, 2011). It seemed that the questions of race had finally been answered

and the scientific world would forever condemn any link between race, biology, and genetics. However, the social fascination with race and racial genetic origins refused to abate and instead only transformed into new form; that of the practice of racialized medicine. As the case of BiDil will show, efforts to reinstate race as a biologically valued distinction are still rampant, only now within the American medical field, leading to new interpretations of racial identity theory reappropriated as an antiracist health agenda. Modern understandings of race remain a complex negotiation between sociological and biological interpretation, manifesting in many forms including, but not limited to, the practice of race specific genetic testing and prescription grounded in the racialized medical movement.

#### Contemporary Debate of Race as a Biological or Social Construct

Interpretations of the historic and contemporary events of racial magnitude fall generally into two polemic camps; those believing in the validity of biological racial construction, and those believing that race is socially constructed. This oversimplified attempt to understand and instate race inform media, social, and scientific interpretations of BiDil, the story of BiDil's creation, and the recourse of racialized medicine. I will delve into the messily and poorly constructed intellectual mine field that is biological determinism while simultaneously deconstructing its rhetoric and critiquing its supposed claims. Social constructionist theory, directly contradictory of BiDil's claims and agenda, refutes the concept of race as biological and provides an important antidote to the claims of biological determinism.

Theoretical ideologies that favor claims of race as a biological construct heavily inform the movement of racialized medicine. Known as biological determinism, these

theories stem from an understanding of race as innate, biological, and genetically pre-determined (Levin 2002, Mayr 2002, Wood 2001). These theories implicate race as an inherent component of an individual's genetic framework, that "race evidently correlate[s] with a biological substrate" (Levin 2002: 34). Biological determinist theory utilizes phenotypic genetic traits, such as hair texture, skin color, and eye color, as representative proof of race as a genetically feasible instrument.

Biological determinist theories arguing the biological and genetic specificity of race continue to be articulated in scientific and medical journals by a small but vehement sect of academics who poison popular discourse. Questions of race as genetic have beleaguered scientific study through out modern history, stemming from historic ideology such as anti-miscegenation and eugenics that inoculated and naturalized racial discrimination at the biological level. Evolutionary biologist Ernst Mayr's 2002 article "The Biology of Race and the Concept of Equality", for example, argues for genetic racial identity by likening the human species to all other species of animals, which are marked by racial genetic differences (Mayr, 2002). Another like-minded academic, Michael Levin, defends genetic race claims that "races, to deserve the name, must be distinguished by unique genetic factors" (Levin, 2002: 25). The scientific use of genetic variance by race is forcefully articulated in these theories; "racial and ethnic differences in drug responses have now been well described for a range of drugs and reflect genetic differences," (Wood, 2001: 1394) concluding that "racial distinctions in medicine have already yielded positive results (e.g., BiDil)" (Morris, 2011: 1269). Despite the findings of the Human Genome Project, racial genetic difference remains a prolific ideology in the medical and scientific world.

Many of these biological determinist theories articulate genetic race through the example of geographic race, making ancestry, even ethnicity, the lynchpin of their biological determinist rhetoric. Mayr divides the human race based on “geographic races” (Mayr, 2002: 90), an homage to the idea that race is determined by genetic profile and the geographic history of one’s ancestors. In order to articulate their scientific evidence of genetic race, Mayr, Levin, and other biological determinists rely on the idea that races are genetically connected because of the genetic history of geographic similarity. The argument is cemented upon the logic that if all African Americans originated in Africa generations ago, the geographic proximity of their ancestors will define genetic similarity in the modern.

However, the scientific founding behind the distinction of race based on geographic ancestry is highly questionable, and theorists in favor of social construction philosophy seeking to uphold race as a social construct refute the ancestry-race connection, calling it an antiquated and generalized treatment of the multifarious and intricate notion that is racial identity and heritage. By locating race within one’s ancestral historic place of origin, biological determinism fails to acknowledge the constant “migration and gene flow [which] have spread human genes around the world in a myriad of ways. Successive migrations, conquests, absorptions, intermarriages, alliances, and extinctions of populations have produced a constant, never-ending shuffling of human genetic material” (Alland 2002: 47). How can biological determinism account for the massive population of mixed race?

At the core of biological determinism theories is the deprecating confusion of geographic ancestry and race. For example, Senegalese, Jamaican, and African American

are all considered part of the same conglomerate race: black. All Chinese, Japanese and Koreans are Asian. Polish, German, French, and Canadian; white. Race, “as used by the average educated speaker of English, connotes *geographic ancestry*” (Levin 2002: 25) that has then been messily combined into general genetic racial groups. However these peoples, of vastly differing geographic location but the same socially constructed racial group are almost guaranteed to have very drastically different genetic profiles because of the connection between geographic ancestry and genetics. Two people considered the same race but from separate poles of the world will not be genetically similar, yet two people from the same location but of considered different races are very likely to share very similar genomes due to ancestral intermarriage and proximity.

Even diseases that have been naturalized within a rhetoric of race-specific, such as sickle cell anemia among black peoples and Tay Sachs disease among Ashkenazi Jews, is contingent not upon one’s race but upon one’s inherited geographic ancestral gene pool. Both of these diseases, which have been accepted among scientific and popular conscious as race-related, are in fact geographically related (sickle cell being an evolutionary prevention against malaria in high-risk and malaria-heavy African countries and Tay Sachs being limited to a historically isolated *small sect* of the Jewish population). Conceptualizing these diseases as race-specific rather than geographically-specific makes the mistake of naturalizing a connection between race and genetics that is scientifically premised on a geographic ancestral genetic link, rather than a racial one. The grave mistake here is the social tendency and scientific inaccuracy to conflate geographic ancestry and race and in doing so, make overarching and generalized assumptions about *all* members of a single race.

A portion of social constructionist theory roots its arguments in the demystification of scientific claims about these racialized ancestral and genetic connections. There are drastically different phenotypic traits among those considered the same race, and as much variability as exists between social groups or races. Race is “highly fluid and that most genetic variation exists *within* all social groups - not *between* them” (Foster & Sharp 2002: 848). However, the element of political and social validity that typifies different phenotypic traits as greater racial indicators, such as eye color, skin color, and hair texture, in comparison to others magnifies their social and scientific importance while ignoring hundreds of genetic traits that are underemphasized by racial politics and naturalized as part of wholly human, rather than racial, identity traits.

The variability of all people makes any race classification or use of race to decode genetics scientifically questionable. Deconstruction of race’s genetic role, as Stephen Morris has done in his article “Preserving the Concept of Race: A Medical Expedient, a Sociological Necessity” has revealed that “identifying racial groups according to genetic ancestry is often arbitrary and fairly useless” (Morris 2011:1267). It is society, through a systematic politicizing of specific genetic traits (especially phenotypic ones that aesthetically differentiate people) that have formed racial distinctions, based loosely on notions of geographic ancestry and further motivated by social and political understandings of aesthetic difference.

Social constructionist canon characterizes the political, economic, social, and cultural interpretations and manifestations of race divorced from scientific understandings. One of many of these arguments highlights the varying definitions of race groups both throughout history and within contemporary societies as evidence of

racial identities' cultural origins. If race were a scientifically cemented phenomenon, race would be acknowledged in the same way, regardless of the political, social, or cultural structures of international societies (Ellison 2007). This is far from the case. As social constructionist theorists show, definitions of race shift regionally because of political or cultural philosophical influence. There is no universal consensus about what race and ethnicity mean, rendering the concepts themselves more appropriate for social, political, or cultural interpretation (Cornell & Hartmann 1998, Ellison 2007). This idea is proof of social constructionist theory, allocating race as a crucially and fundamentally socially constructed practice.

Due to the multiplicity and porous nature of definitions and classifications of race in academic camps and cultural locations, race, in its present form, cannot be considered scientifically valid. Racial meanings “are implicated in discourses, institutional power arrangements, and social practices” (Harrison 1995: 58). Varied at such a systemic level, racial meaning exists purely as a fluid and social manifestation. Social constructionist theories cite the changing political, cultural, and social climate and context of racial definitions as explicative of race's constant re-invention (Morning 2011, Krimsky & Sloan 2011). Social constructionist theory cites the political, economic, and social institutional transformation and influence of race and the multiplicity of racial meanings in differing contemporary cultures as incriminating proof of race's existence as a socially constructed, and inability as a biologically pre-determined, phenomenon.

Biological determinist beliefs and sociological constructionist contestation simultaneously inform discourse surrounding BiDiI and racialized medicine. They provide a framework for the social and scientific climate that allowed and perpetrated, or

criticized and combated the personalization of the medical along racial lines. The production of racialized medicine sought to better tailor treatment of prescription drugs to be more specifically suited for each individual client on the inaccurate premise that race has valuable genetic meaning. Regardless of what influenced the promotion of racialized medicine, whether it be the promise of medical improvement (Satel) or economic motivation (as I will show with BiDil), sociological understandings of race as political and social condemn racialized medicine as ethically problematic in its enshrinement of race as a biological construct.

### BiDil: The Story Behind Embodiment of Racialized Medicine

Spearheading the racialized medicine movement is BiDil, a congestive heart failure medication patented only for African Americans by the United States Trademark & Patent Office (USPTO) and the U.S. Food and Drug Administration (FDA). The uniqueness of BiDil's evolution into a racialized medicine reveals a questionable story of economic incentive and sociopolitical influence. Analysis of BiDil reveals that its race-specific genetic claims originate from a particular economic and political framework. Political, social, and economic institutions and agendas have all molded BiDil into the race-specific drug it is today, and in doing so have reified an understanding of race-based biological difference.

BiDil was not originally intended as an ethnic or racial drug. It first appeared on the USPTO ballot in 1989 under the control of the pharmaceutical company Medco, who held intellectual property rights to the patent. Medco conducted clinical trials called Vasodilator Heart Failure Trials (V-HeFTI) on BiDil that revealed the successful capacity of the pill in combating congestive heart failure. The V-HeFTI trials consisted of patients

of all races, yet race was found to be an insignificant variable in the effectiveness of the drug (Rusert & Royal, 2008, Roberts, 2011, Kahn, 2011). The patent (U.S. Patent No. 4,868,179) was granted on September 19, 1989 with no race indication or specificity.

The drug entered the pharmaceutical market, where it remained relatively unnoticed and unimportant. It was only after Medco went back to work on BiDil as the expiration date of the 1989 patent drew near that BiDil started to become racially interesting. Because patent applications require a new component to the application (whether it be a change in the chemical compound, dosage, or target group), the drug was re-created as a combination of two other generic drugs, isosorbidedinitrate and hydralazine hydrochloride, known as the H-I combination. By creating a more convenient and desirable drug regimen compared to the multi pill regimen typical of congestive heart failure patients, Medco hoped to secure economic success. However, this time, in 1997, the FDA rejected the drug's still race-neutral application due to inconclusive and insufficient clinical trials (details unknown). It was this FDA rejection of re-patenting *as* race neutral that "began the complex transformation of BiDil into a race-based medicine" (Rusert & Royal, 2011: 80). Because of its patent rejection, the company's stock plummeted and Medco sold the intellectual property rights of the drug to a Massachusetts biotech company, NitroMed, Inc., a move which would decisively change the BiDil narrative (Kahn, 2011).

Under its new assignee, NitroMed, Inc. with Jay N. Cohn as principal investigator, BiDil took on a substantial re-characterization. With the clear agenda to revitalize the drug, gain re-patenting, and consequently re-introduce it to the market, Cohn set about medically legitimizing BiDil through a series of new clinical trials. As

early as 1999, Cohn and colleague Peter Carson revisited the original V-HeFTI trials from a decade earlier and “parsed the data by racial classification of the patient” (Rusert & Royal, 2011: 81). The pharmaceutical market for congestive heart failure is vastly overcrowded and Cohn knew he needed to develop a unique drug in order to gain a market foothold. He chose race. Their analysis proved favorable and Cohn followed the race-specificity in BiDil’s third patent application, this time with a conspicuous and systemic demarcation based on racial distinction.

NitroMed’s newest tests, named the African American Heart Failure Trial (A-HeFT) were started in 2001 after the company received approval from the FDA to conduct clinical trials based on race in their 2000 patent application. A-HeFT studied the effects of the H-I combination on 1,050 self-identified black patients in comparison to a placebo group of black patients who were already receiving standard medication for congestive heart failure. The A-HeFT tests were composed entirely of self-identified African Americans, an issue that would arise later in critiques of BiDil that questioned the scientific validity of tests executed without a non-black control group<sup>1</sup>. The A-HeFT tests were so successful that they were stopped early, in 2004, because NitroMed claimed it was unethical to continue prolonging such valuable treatment to the group of patients receiving the placebo. The final application of BiDil was introduced to the FDA Cardiovascular and Renal Drugs Advisory Committee in their June 16<sup>th</sup>, 2005, meeting.

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<sup>1</sup> The scientific method, the chief body of techniques which influence and advise any type of scientific experiment (from medical trials to grade school class project), require a series of checks and controls to maintain the integrity of any scientific experiment. One of these is called a scientific control, which is a group that is not tested on so as to minimize the affects of any variables besides the independent variable. For example, a scientific experiment on the efficacy of a medication will have two groups, one of which takes the medication and one of which doesn’t, so as to prove that the independent variable, the medication, was the key variable in any differentiating results. In the case of BiDil, in order for NitroMed to claim efficacy based on African-American race, the BiDil clinical trials needed a control group of *non* African-Americans to adequately prove, via the standards of the scientific method, that it was in fact race, and not another variable, which was the deciding variable.

Those present included six Committee Members, Committee Chair Steven Nissen, MD, and open public hearing speakers who were experts in their respective fields and spoke both in favor of and against BiDil. These included Congresswoman of the Congressional Black Caucus Donna M. Christensen, CEO of the American Association of Black Cardiologists Waine B. Kong, JD and PhD, and vocal anti-BiDil critique, Professor of Law Jonathan Kahn (FDA Meeting Transcript, 2005). Some testimonies praised BiDil's medical innovations, while others echoed questions of the scientific validity of race-based medicine. Some even pleaded with the Committee to consider BiDil's patent with the caveat of race-neutrality to avoid the major social issues manifest in the enshrinement of race as biological. Regardless, the new BiDil, exercising racial distinction of patients, was approved for patenting on June 23, 2005 (Kahn, 2011), forever entering the public, governmental, and medical lexicon of race, medicine, and genetic understanding.

When the FDA Committee approved BiDil's patent application, it conclusively approved the use of medical prescription based on race. BiDil was not a scientific revolution as it was lauded to be: the NitroMed laboratory had not discovered a new drug as BiDil was the combination of two generic drugs (H-I combination) which were both sold separately as heart failure medications, and all the A-HeFT trials had proven was that BiDil was successful in black patients without any comparison to its efficacy in members of other races, making its race claims inconclusive. Approval of BiDil fueled issues raised by Satel's article and was the catalyst for a wave of race-based patents and a flurry of discourse that either naturalized race as biological or sought to dismantle it. However even more important was that this was the first time that the government, the

FDA, had approved race-based medication and introduced it into the public lexicon. As Ann Morning opined in her 2011 book addressing the nature of race and racialized medicine, “the fact that a race-targeted medicine has entered the American pharmacopoeia and others are in the pipeline sends a powerful signal to the public about the nature of racial difference” (Morning, 2011; 214).

Reactions to BiDil were diverse and far-reaching. Interestingly, both anti and pro BiDil discourse were operating their campaigns under the auspices of advancing civil rights: both sides claimed the ethical, moral, and humanitarian position. Those in favor of BiDil used civil rights rhetoric and historic examples of medical racial exploitation to praise the first ever race-specific drug, which, they argued, prioritized minorities in the medical field for the first time. NitroMed itself announced the astonishing statistics of mortality from heart failure in America; African Americans are “2.5 times more likely to die” than Caucasian counterparts (Duster, 2005) and proclaimed BiDil an effort to focus the medical world’s attention on the typically under acknowledged, neglected, or even exploited African American community. Given NitroMed’s media characterization of BiDil, it was not a surprise that many black advocacy groups such as the National Association for the Advancement of Colored People (NAACP) and the American Association of Black Cardiologists hailed BiDil as the coming of a new civil rights era which targeted American health disparities commonly associated with socioeconomic class and race leading to a disproportionately affected minority community. President of the New England Area Conference of the NAACP, Juan Cofield, congratulated BiDil as the first major effort to fix the disproportionate disease and health disparity among minority groups (Boston.com, 2007).

Anti-BiDil activists called BiDil's enshrinement of biological race as the worst kind of racial discrimination, crying civil rights catastrophe as it legitimized notions of inequality and racial subordination at the supreme genetic level (Duster, 2011, Roberts, 2011, Kahn, 2006, 2007, 2009, 2011). Many claimed that "race is a scientific myth and a social reality" (Krimsky & Sloan, 2011: 2) and therefore the study itself was fraudulent having been based in bad science and blatant methodological disregard. Others engaged the scientific findings as possible, even plausible, though not yet conclusive. However, they argued, the possibility of BiDil being effective as treatment for black patients was outweighed by the long term social mayhem the entrenchment of race as biological would cause. Cries of misappropriation of race as biological echoed throughout the academic and legal community, fearful of the potential that the introduction of such a loaded gun afforded. Anti-BiDilians framed creation of BiDil as an issue of equality and civil rights, arguing that the practice of racialized medicine would instigate an onslaught of new and even more potent racial discrimination.

The evolution of BiDil into a racialized drug, with clear economic and political incentives to do so, coupled with public reactions to the drug centered around a framework of civil rights, develops an intelligibility of BiDil transcendent of mere medical invention. It is with this understanding of the unique positioning of BiDil that I delve into the controversies that epitomized the drug for the academic world; as issues of social justice, socioeconomic and racial influence on health disparity, and negotiation of genetic and social constructs overwhelmed BiDil, NitroMed, and the burgeoning field of racialized medicine.

### BiDil Within a Civil Rights Framework

BiDil's approval incited massive debate within the medical, legal, and political field. Pro-BiDil supporters focused their efforts three fold; on the scientific validity of racial genetic difference (imbedded in biological determinist theories), on the titanic effectiveness of the drug based on its clinical trials, and by implicitly or explicitly redeeming such medical injustices as the Tuskegee Syphilis Experiment, thus involving BiDil in the cause to resurrect and appease racial health disparities.

Drawing on concepts of biological determinism, proponents of BiDil within the medical field utilized this discourse as well as the success of A-HeFT trials as proof of BiDil's efficacy and legitimacy. However, much of the pro-BiDil discourse acknowledged that race is a crude marker, or proxy, for deeper genetic factors which scientific research is still exploring (Temple & Stockbridge, 2007, Duster, 2005). However crude current race categories may be, they represent the first step towards a more personalized and tailored medical industry that can establish more effective medical regimes based on the specific genetic makeup of the individual patient; starting first with what they see as overarching similarities based on race (as Satel explicates). Those in favor of BiDil as race-specific admit that while this is only a first imperfect step towards personalized medicine, this should not overshadow the medical benefits of BiDil.

They argue that the use of BiDil in saving lives outweighs any potential for social misappropriation or abuse. More testing of BiDil to expand racial constraints, such as clinical trials on its effectiveness on whites or non-blacks, would take an implausibly long time and withhold a valuable drug from those who need it immediately (Temple & Stockbridge, 2007, Hutto, 2012). For the time being, race is an imperfect but adequate proxy for genetic demographic characteristics, given that lives are at stake. Pro-BiDil

discourse prioritizes practical use over theoretical problematics and sociopolitical implications.

The last angle of pro-BiDil dogma situates BiDil as an answer to medical civil rights injustices against minorities, especially African Americans. The most omnipresent example is the infamous Tuskegee Syphilis Experiment which studied the natural progression of syphilis in poor, rural black men from Tuskegee, Alabama. They were intentionally misinformed that they were being treated, when in reality their outbreaks were merely observed, rather than treated, and they were fatally condemned. The scandal in exploiting black patients for medical research epitomized racist views about inferior black identity and importance. Its ramifications still scar black communities' relationship with the medical world as "long-lasting manipulation of trust are keys to Tuskegee's cultural power in memory and fears" (Reverby, 2008: 480). The scars of Tuskegee provide a convenient historical racial logic for the opportunistic strategy that NitroMed utilized when it claimed redemption at the prescription of BiDil.

While Tuskegee was not discussed at length in the FDA Advisory Committee meeting on BiDil, June 16<sup>th</sup>, 2005, its presence was palpable. The meeting transcript was colored with language of historical injustice, denial, neglect, and exploitation; all implicitly referencing the grossest of all: Tuskegee. Committee Chairmen Steven Nissen, Cleveland Clinic cardiology chief even stated that with BiDil, "We were putting [Tuskegee]...to rest" (Reverby, 2008: 478). In light of Tuskegee, which was the worst and most widely acknowledged example of racism in scientific and medical research, pro-BiDil supporters claimed BiDil as redemption for historic injustice.

Those in favor situated BiDil as the solution to gross inequality of the American healthcare system, systemic disparity, and colossal medical injustices like Tuskegee. Donna Marie Christensen, Chairwomen of the Congressional Black Caucus and public speaker at the FDA BiDil Meeting exalted BiDil as an “opportunity to significantly reduce one of the major health disparities in the African American community and, in doing so, to begin a process that will bring some degree of equity and justice to the American healthcare system” (FDA Meeting Transcript, 2005). It seemed to many, both medical professionals and minority advocacy groups, that BiDil was the first of its kind to not only acknowledge black bodies in medicine, but also to prioritize them.

The anti-BiDil camp is equally large, vocal, and aggressive, citing both scientific flaws and social crisis as stains on BiDil’s claims of medical genius. Immediate criticisms of BiDil focused on the scientific inaccuracy of its A-HeFT trials, on the interchangeability and confusion of key racial identifiers like black or African American, and the alternative economic and political incentives of NitroMed in the creation of BiDil. Critiques who took these issues with BiDil sought to poke holes in its legitimacy by deconstructing BiDil’s patent language, scientific methodology, and ulterior motives of economic incentive. These claims refuting BiDil as a medical creation provided the initial stepping stones for the deeper and larger social and cultural rebuttal of the racialized medicine movement.

Scientific inaccuracy of the A-HeFT trials was the foremost hurdle that NitroMed faced from critics. The scientific method, an elementary body of techniques necessary to an accurate study, was ignored in the BiDil study, many critics claimed (Roberts, 2011). The lack of scientific control groups outside of self-identified black patients made the

racialized nature of the pill obsolete, given the lack of comparable data from other racial groups. Had all patients in the trial been left-handed, would the drug be targeted at left-handed patients? For many, the claims of race-based medication were equally audacious and genetically irrelevant.

Further issues of scientific relevance and legitimacy arose from BiDil's trials in the form of ethical questions of trial patients. Historically, it had been exclusively white men who had been used in clinical research because they were considered the "scientific norm" for human research. (Kahn, 2009, Roberts, 2011). While this reflected a white paternalistic elitism that dominated the medical field, it more importantly for our purposes spoke to the invalidity of race in clinical trials. Historically, white males had been used as test patients because it was believed that they were biologically representative of *all* people and that race was nugatory. This white paternalistic elitism in scientific study was dismantled in the 1980's after feminist demands to diversify research subjects and acknowledge gender differences instigated a more critical valuation of scientific research patients based on gender and subsequently race. The feminist demands for equal scientific attention facilitated a broader discussion about the validity of different demographic kinds of genetic makeup in clinical research, a pertinent segway to the topic of race and genetic. But the differences between gender and race genetics are large and significant; gender is a more viable and concrete argument for genetic difference, whereas race is a convoluted and arbitrary misappropriation of geographic ancestry. The purpose of comingling race and gender in this section is to convey how social concerns about marginalized groups played out in medical research diversification efforts. While

these efforts were plausible for gender-based studies, they unintentionally introduced a rhetoric of race-specific study that has led to the modern problematics of BiDil.

Upon BiDil's controversial introduction into medical society, critics of race specific medicine focused on the specific language of the patent, claiming the interchangeability of race terms made it incumbent upon the FDA and NitroMed to solidify the racial terms of the BiDil patent which is, by law, available to the public. BiDil's patent (U.S. Patent No. 6,465,463) claimed that the H-I combination pill was "a method of reducing mortality associated with heart failure, for improving oxygen consumption, for improving the quality of life or for improving exercise tolerance in a black patient" (Cohn, 2000). However, at no point in the patent is "black patient" ever defined. In other race-specific medical patents similar to BiDil, "black" and "African American" are used interchangeably with no efforts to define either or negotiate the conflict. Racial identity became codified, and "the imprecise use of race and population in the clinical trials, patenting, and FDA trials ultimately allowed marketers to continue to use the categories of 'black' and 'African American' in strategic, but technically imprecise, ways to market the drug within the U.S." (Rusert & Royal, 2011). Muddled and unclear use of racial categories indoctrinates racism by ignoring clear distinctions of ethnicity; not all blacks are African American as the distinction between geographic ancestry and race revealed earlier. Such conflation pontificates an oppressively discriminatory and subjugating rhetoric of white versus non-white that has no place in the precise and supposedly objective world of the medical field.

A third immediate practical critique of the transformation of BiDil into a racialized medicine targets the underlying and motivating economic and political

incentives of its creation, rather than scientific, genetic, and biological truths. Surges in pharmaceutical company political power and manufacturing production have resulted in overcrowded medical markets, especially the case of congestive heart failure. The American Heart Association lists over sixty different kinds of heart failure medications (American Heart Association, 2012), which made it essential for NitroMed to not only patent its findings, but to also make BiDil stand out in some way to secure economic profit. Being the first race-specific drug of its kind, “not only helped NitroMed gain patent protection, it defined a market niche. The use of civil rights rhetoric for BiDil masks the NitroMed’s real [economic] goal” (Mahar, 2008). NitroMed’s fears of financial ruin if BiDil was rejected by the FDA spurred the creation of a niche pill under the guise of racialized medicine. The reason that BiDil had been tagged as the harbinger of a new and progressive age of personalized drug development was not because of its scientific genius, but rather its strategic economic and commercial marketing. It utilized a racialized discourse in an effort to secure a specific congestive heart failure demographic by solidifying a niche in an overcrowded economic market.

### Social Consequences of BiDil

Ideological critiques of BiDil were, and still are, rooted in the belief that enshrining race as a biological construct would have severe and irrevocable social consequences. Staunch critics of the medical movement cite the massive social implications of enshrining race as a medically and genetically significant construct. In doing so, the medical field may legitimize deep-seated racism by rooting it in the supposedly infallible scientific domain. This has the potential to “create newly stigmatized populations, lead to genetic discrimination in the workplace, or simply

reinforce old prejudices, making it more difficult than ever to address the social problems of racial discrimination in all of its negative aspects” (Fausto-Sterling 2004; 30). These claims of stigmatization and discrimination are indicative of the twofold social effects of BiDil and its recourse.

The first concern is the social naturalization of racial difference and presumed genetic hierarchy facilitated by the oversimplified and one-dimensional media reports of racial medicine. A study of media interpretations of race based on the news coverage of BiDil reported that news coverage “explicitly focused on the racial dimensions of BiDil...and in so doing, naturalized racial difference as genetic” (Caulfield & Harry, 2008: 488-89). American media outlets chose flashy and scintillating titles for their stories and focused on the more stirring and innovative aspects of the narrative. As a result, media coverage of BiDil focused almost explicitly on its scientific “discovery” of race as genetic and “argued that BiDil is ushering in the era of so-called personalized medicine” (Rusert & Royal, 2011: 80). They even so much as dubbed BiDil the new “race based drug”, reifying and naturalizing the idea that race was genetic.

The reaction of media sources and the information they disseminated to the American public has worked, intentionally or not, to legitimize biological determinist theories thanks to the jargon used to describe and report on racialized medicine, “stories in the popular media have, nonetheless, continued to suggest that the differential response to the drug is rooted in a genetic difference” (Rusert & Royal, 2011). By oversimplifying the medical discourse in news reporting, media buzz around BiDil and race medicine managed to naturalize claims of biological determinism. Omission of an account of the controversy clouding racialized medicine, such as BiDil’s exploitation and manipulation

of race for market economic gain or lack of a scientific control group, naturalized public understanding of race as genetic and applauded BiDiI as the race drug. Governmental, specifically FDA and USPTO, approval of race-specific patents was the first step in naturalizing race as genetic; however media interpretations of the medical news then disseminated to the public a simplified and effective story of the “discovery” of race as a genetic and biological reality.

The second social consequence of BiDiI is the massive social misunderstanding that evolves from relocating the root of health disparity problems from environmental and socioeconomic factors to genetic, hereditary, or biological ones. The creation of race as a biological construct and its association with health maladies like congestive heart failure divorce health disparity in the U.S. from its authentic socioeconomic factors. Health status in America, as public health activists and sociologists alike have argued, is fundamentally an issue of socioeconomic status and opportunity (Williams, 1994, Risch, 2002, Mahar, 2008, Roberts, 2011, Smart, 2012). Socioeconomic status and opportunity in America, while definitely not strictly aligned with racial demographics, is still stunted in its attempts at racial equality. For the sake of simplicity and at the risk of over-generalizing, most urban poor are minorities and most suburban elite are white.

Urban indigent communities are the most vulnerable to socioeconomic health risks. One study revealed that urban minority populations are disproportionately exposed to hazardous environmental toxins, “an analysis... showed that race was the strongest predictor of the location of hazardous waste facilities,” (Williams, 1994: 34). Low income communities lack beneficial resources and, even more detrimental, face daily exposure to risk factors such as hazardous living environments, food deserts, high stress,

lack of exercise, and lack of consistent and effective health care. These factors reflect “the primacy of large-scale societal factors as determinants of health status” (Williams, 1994: 35). Health disparity in the U.S. is racialized because of the overarching differences in political or economic opportunity based on minority status. As Dorothy Roberts asserts, “race is not a biological category that naturally produces health disparities because of genetic differences. Race is a political category that has staggering biological consequences because of the impact of social inequality on people’s health” (Roberts, 2011: 129). The vicious cycles of health disparity, marked by socioeconomic class and racial demographic, are produced through a combination of influential social factors that dictate the American system of opportunity.

The demographics of congestive heart failure patients nationwide are representative of the racial and class breakdown of modern America. According to the National Health and Nutrition Examination Surveys, prevalence of congestive heart failure is at least 25% greater among the black population than among the white population and mortality rates among black men and women are almost double that of white men and women (National Institute of Health, 1999). Wealthier Americans are privileged in their quality of life and healthcare, which all combine to produce typically healthier people or at the very least, sick people with more prolific and attentive health care.

While not all diseases are socioeconomic (many, of course, are entirely genetic), congestive heart failure is the epitome of a socioeconomically triggered disease because it can be acquired over a person’s lifetime due to poor diet, obesity, constant exposure to negative health experiences, and other social, economic, and political factors. Lack of

exercise, fatty and unhealthy cheaper foods over healthy and nutritious but expensive ones, and lack of accessible and consistent health care all play major roles in one's propensity for congestive heart failure. Congestive heart failure is the epitome of a socioeconomic and environmental disease. However, BiDil's genetic pedagogy circumvents larger social responsibility for accessible preventative socioeconomic welfare measures and absolves government, health organizations, or other institutions of control from responsibility or blame for perpetuating systems of inequality leading to such health disparities.

When BiDil made the statement that congestive heart failure was both racialized and genetic, it provided political institutions the opportunity to circumvent social responsibility or blame for systemic health disparity by placing emphasis on biological, rather than social factors. It interjected an intelligibility that, at its core, framed explanation of racial health disparity as a problem of genetic propensity rather than socioeconomic and social opportunity. These problems amalgamate to create a powerful social message of racial genetic difference, which has massive potentiality for abuse and misappropriation as collective conscious forms opinions about which races are genetically superior or inferior due to what is in actuality a social issue of economic and political power and opportunity rather than a genetic or biological one.

BiDil's proclamation that congestive heart failure can be cured with a little orange pill undermines a social history implicating larger social factors based on socioeconomic and racial minority status as chief aspects in the growing health gap in America. BiDil's little orange pill confronts these social issues of health disparity by refocusing the issues at hand from their environmental and social origins to a fraudulent and falsified position

of genetic racial relevancy. Not only is this harmful to ideological and theoretical understandings of race and healthy disparity, it is also practically damaging in its potentiality for weakened infrastructure and welfare systems due to an absolution of the responsibility of political, economic, and social institutions towards the healthcare of American citizens. By locating disease like congestive heart failure as genetically rather than socially problematic, it justifies health disparity along racial lines as a physical, biological *weakness* of minorities and African Americans and neglects the more important and monumental socioeconomic and environmental issues at hand.

### BiDiI in Sociological Terms

With so much scientific evidence to discredit genetic race and so much social unease at the concept, it was a true feat that NitroMed effectively legitimized BiDiI within the scientific, medical, and sociopolitical world. In what ways did the characterization of BiDiI exploit social and sociological pedagogy for its own economic gain? This section addresses the many frustrating and infuriating instance of the BiDiI analysis where one wondered exactly how BiDiI managed to survive and flourish. Canonical sociological discourse that, by definition analyzes the behavior of social institutions, can help to explain how the interaction of social frameworks created a culpable social climate enabling and facilitating BiDiI's ascendance. Contemporary scientific pedagogy, Foucaultian conceptions of knowledge power, identity politics, and the sociology of the body informed by paternalistic racialized body theory are all at play in the social characterization of BiDiI. The case of BiDiI is a strategic and powerful combination of social institutions and ideological frameworks that fuse to create one of the greatest civil rights, racial, body, and power discourses of our modern age.

When Fausto-Sterling spoke about the “intellectual devotion to the gene as an explanatory precept” (Fausto-Sterling, 2) she touched on a fundamental issue with the BiDil case; the strong loyalty society feels towards the seemingly concrete truth value of scientific fact. Social interpretation of race is predicated on phenotypic aesthetic differences which distinguish people by racial identity because physicality is the first and foremost tool at our daily disposal. Therefore, society readily agrees with the idea that race is genetic, based on cursory social factors such as physical aesthetic that we use to demarcate racial identity. BiDil’s message was not questioned by the larger community, but rather accepted because of social apathy towards the curious and complex link between race and genetics.

The social tendency to accept, rather than critique, scientific knowledge has had a drastic affect on BiDil’s ascendance. The implicit hierarchy elevating the scientific fact of genetic race over social constructionist race noticeably affected the events of the FDA Committee Meeting on BiDil. The power born from scientific knowledge overshadowed other knowledge iterations and manipulated the nature of the Committee Meeting. The specifics of the June 16<sup>th</sup>, 2005 meeting were split unequally between the analysis of the medical opportunities BiDil provided and theoretical speculation about the social dangers of enshrining race as biological. Throughout the meeting, theoretical and social concerns were “shunted to the margins of the debate” (Reverby, 2008: 482), dedicating the meeting to the science behind BiDil’s conception and giving social concerns marginal consideration. The scientific considerations of the FDA meeting were presented by NitroMed, the principle investigator Jay Cohn, and the FDA Committee members. Their

control over the meeting meant the tenor of the discussion was biased towards a non-critical and positive discussion of BiDil.

The most alarming consequence of NitroMed's control over the scientific aspect of the meeting was the way scientific invalidity, in the form of A-HeFT trial's lack of control group, was handled. The attention to scientific deliberation only included a superficial discussion of the issue taken with A-HeFT trials. Concerns about the lack of control groups and the flawed methodology of the A-HeFT trials were brought to the Committee's attention when the Committee was asked to opine on whether the V-HeFT, V-HeFT II, and A-HeFT trials all supported BiDil's efficacy against congestive heart failure. Only a single question about race was asked, "How strong is the evidence that BiDil does not work in patients excluded from A-HeFT?...what should [race] labeling say about the underlying genetic or cultural bases for the observed difference?" (FDA Meeting Questions, 2005). Arguably the most important questions asked during the eight and a half hour meeting, was quickly countered by FDA employees, Robert Temple MD and Norman Stockbridge MD, PhD, who waived any and all allegations. Their testimony was later published, in a 2007 print of the *Annals of Internal Medicine*, entitled "BiDil for Heart Failure in Black Patients: The U.S. Food and Drug Administration Perspective" which highlighted BiDil as race-specific was "a scientifically reasonable, data-based decision, one that provided a major benefit in a group that is particularly burdened by congestive heart failure" (Temple & Stockbridge 2007; 61). Their assertion of BiDil's scientific methodology was suspiciously too brief and too concise as Cohn redirected to another topic in the Committee Meeting. If NitroMed was determined to focus the meeting on the scientific findings of BiDil in black patients with congestive heart failure,

the company was equally determined to silence questions about the patent's scientific validity.

The FDA Committee Meeting did not provide the adequate arena for the analysis of social consequences of BiDil, giving gross preference to scientific deliberation. Instead, the meeting, representative of a knowledge power discourse that favors scientific truth value over social speculation, stifled social questions in favor of hard science investigation. Social debate was further quelled by a second NitroMed ploy, when two A-HeFT Trial patients, Debra Lee and Diana Wells, testified in what became an emotional praise of BiDil's role in saving their lives. Ultimately, NitroMed and the FDA manipulated the course of the meeting to marginalize social concerns and scientific scrutiny and proselytize about BiDil's scientific and medical genius, their success attributed to the societal enthrallment with the genetic explanatory power and scientific omnipotence.

BiDil's ascendance was facilitated by social ambivalence towards race as an aesthetic and phenotypic expression of underlying genetic composition. This underlying source of BiDil's power and ability to alter (or some would argue, fortify) social perceptions of race and genetics is through the power drawn from the elite knowledge site and expert discourse of the medical and scientific field (Palmi, 2012). The concept of a knowledge power discourse and the power invigorated by elite sites of knowledge was first introduced to the sociological world in the canonical text *Discipline and Punish* by French social theorist Michel Foucault. Foucault argued that the production of knowledge comes from sites of power; that power produces knowledge and then knowledge

produces power as well (Foucault, 1984). Science, Foucault argued, is a monolithic institution that classifies, manages, and thereby oppresses in a seamless way.

The unitary system of medicine, Foucault argued, evolved to become a form of social control, “a ‘medico-administrative’ knowledge begins to develop concerning society, its health and sickness” (Foucault, 1984: 283). From a position of power as an elite site of knowledge production, the scientific and medical field was able to articulate, mold, and manipulate racialized medicine, even as the case of BiDiI for non-scientific, political, or economic gain. This disseminated an interpretation of race knowledge that went against social constructionist theories and worked to fortify the misunderstandings of race as a phenotypic demarcation sourced from genetic origins.

Knowledge dissemination from the scientific world gained an ironclad truth value that the social world did not evaluate, “what authorities claims as ‘scientific knowledge’ are really just means of social control” (Stokes, 2003: 187). Media representations of the scientific and medical findings of race specific drugs coupled with the social tendency to accept rather than evaluate scientific fact facilitated an ambivalent acceptance. But racialized medicine, while a pill easily swallowed by the community at large, was not unanimously accepted by the medical or academic community. While it resides as a source of knowledge production and thus a site of power appropriation, other sites of power production and knowledge power did not unanimously agree. Scientific studies like the Humane Genome Project provided internal contention on the connection between race and genetics, complicating the sociological theory of knowledge power and scientific truth value. In fact, some of the most substantive claims *against* BiDiI emerged

from within the scientific field, such as the Project and scientific critiques of the A-HeFT trials lack of control groups.

These contestations from within the medical and scientific field express a two-fold interpretation of scientific truth value and power. Both Human Genome Project claims of the nonexistence of a race gene, coupled with the calls for inauthentic clinical trials from FDA Committee Meeting participants, reveal a value-laden fission within the scientific field. The science utilized by NitroMed during the A-HeFT trials had clear economic incentive, which mitigated the kinds of questions they asked in developing their race-specific drug. In contrast, the Human Genome Project asked a very different series of questions, which led them to very different scientific conclusions. While BiDil's claims of racial genetics was able to infiltrate the social conscious because of the emphasized superiority of scientific dissemination power, what people talked about in its aftermath challenged the very stake of scientific fortitude as an ironclad objective truth value by revealing the opportunity for bias and subjective judgment in scientific study.

The challenges to BiDil that came from within the scientific field highlight the great fallacy in the "misplaced concreteness" (Duster, 2005: 1050) of scientific claims of truth-value. Science is not unbiased and value free, since "cultural norms, and political agendas shape scientific research" (Williams, 1994: 27) including, but not limited to, the kinds of questions scientists ask and the political or economic outcomes the researchers hope to draw from the study. Foucaultian conceptions of power hierarchies established from sites of knowledge production and dissemination are at work in NitroMed's conceptualization of its product. Scientific and medical truth-value is not ironclad, and the production of scientific knowledge is inundated by social institutions and their

influence. Attitudes of racial medicine so distinctly dichotomized between the general public, who relied exclusively on disseminated knowledge and media interpretation, and the medical and scientific elite prove a challenge to Foucault's portrayal of science truth value as universal. So, while BiDil was able to exist under the guise of scientific unyielding truth, its critics dismantled the monolithic characteristics of science by revealing internal friction and disagreement about the objective and ultimate genetic findings claimed in BiDil's patent and biological determinist theory.

Knowledge dissemination permeates beyond the internal demands and debates of the scientific field. Themes of knowledge and the power in its dissemination are further explored in Ann Morning's study and work, *The Nature of Race*, which studies sites of knowledge production, from high school textbooks to University professors and student interviews about race, examining how concepts and understandings of race are diffused among the social science and biological academic fields. BiDil's claims and the race discourse it pontificates informs classical understandings of race that are indoctrinated in all manner of social life, from academic literature to daily interaction (Jones, 2005). Morning's analysis of how racial identity is understood, manifested, and explained in academic and literary annals, reveals that scientific understandings of race inform all other daily and academic characteristics of race.

Morning's argument is a very clear Foucaultian interpretation of the power of the dissemination of knowledge, "the scientific enterprise is central to American thinking about race because its claims are often the bedrock upon which academic, business, and government interpretations of the nature of race purport to rest" (Morning, 2011: 4). Morning selected twenty three of the most widely used high school textbooks in biology,

anthropology, and other social sciences. In her analysis of their treatment of race, she concluded that, race as a social and cultural product and not a biological one, “is disseminated only in a few social science curricula” (Morning, 2011: 100) and the rest of the textbooks treated race as almost an exclusively genetic and biological trope. Most alarming to Morning was how biological difference was only applied to blacks, whereas all other races differentiated by cultural practices; a discourse she refers to as black biological exceptionalism that was implicitly rampant in the textbooks she read.

Her findings revealed a troubling pattern in academic dissemination; the preference of scientific biological determinist theory over social constructionist interpretations about the nature of race. Her Foucaultian discourse about the social power of knowledge stemming from the medical field criticized the modern academic construction of race in America. Scientific and medical innovations, such as BiDiI, inform social institutions about racial structure and, in the case of academic definitions, disseminate an understanding of race as a scientific and genetic phenomenon, further authenticating BiDiI’s claims.

While sociological theories of knowledge-power and scientific pedagogy informed understandings of *how* BiDiI and racialized medicine was able to grow as an intellectual race ideology, sociological theories about identity politics, biopolitics, and the power of bodily control inform some of racialized medicine’s gravest consequences as perpetrator of a laser-like attention to racializing and subjugating the physical body. Classical race theory focuses the scope of identity creation to a social, institutional, and cultural framework. Sociological theories of race and identity creation seek to aggressively challenge the dominant, implicit, and socially problematic presumption of

racial identity which has manifested in racialized medicine's enshrinement of race as biological. Identity discourse answers questions of what it means to be racialized from a strictly sociological and social perspective. Unfortunately, historic instances of scientific racism such as the Nazi movement, eugenics, and anti-miscegenation law all confront sociological interpretations of race with the unnerving reality that tenants of biological determinism have, and still do, dominate public views of race.

Critical race theorist Howard Winant proffers a social constructivist theory of how race is understood. His article, "Race and Race Theory", is applauded as an accessible purview of critical race theory. Its topics and analysis stem from Winant's earlier book, *Racial Formation in the United States*, published in 1986. Winant and his co-author, Michael Omi, coined the term racial formation theory which stipulated that race was a socially constructed identity and part of a larger sociological discourse, rather than a biological one. Winant summarizes racial formation theory in three parts; that it views race and racial identity "as unstable and politically contested" (Winant, 2000: 182), that racial formation is the intersection of discursive and institutional elements, and lastly, that the racial formation rhetoric sees this intersection as expressions of the meaning of race at the individual to global level (Winant, 2000). Modern interpretations of race are "vastly stimulated by the political, cultural, and demographic shifts that took shape in the postwar decades" (Winant, 2000: 171), confounding social and historical factors to shape understandings and manifestations of racial identity and racial demographic. The historical race odyssey paved the way for racialized medicine's current subversion of social constructionist theories in lieu of biological determinist theory.

Elaborating on Winant's texts, later race theorists locate racial identity formation along a spectrum of critical construction sites, an ideology that intentionally accredits socialization and the behavior of social institutions as the source of racial identity. Social construction discourse holds that race and races "are products of social thought and relations...races are categories that society invents, manipulates, or retires when convenient" (Delgado & Stefancic, 2000: 7). These philosophies claim that racial identity is fluid, malleable, and socially contingent (Cornell & Hartmann, 1998). Sociological understandings of identity creation cite all key arenas of formation and production as socially constructed systems; politics, labor markets, residential space, social institutions, cultural manifestations, and daily experience.

Sociological canon attributing the social world and external factors to the expression of racial identity conflict with the race-specific genetic variability of BiDiI's racialized claims. BiDiI internalizes racial identity and locates racial characteristics at the genetic and biological level. BiDiI exists as a method of control and power over the physical and genetic body, a theory first introduced to academic lexicon as *biopolitics* by Michel Foucault. The trend towards racialized medicine capitalizes on conceptualizing racial difference and hierarchy through the direct stigmatization and exploitation of the physical, individual body. Framing a discourse of racial difference as biological and genetic fixates on the body, making it a site of calculation, racialization, and inspection.

Mapping the body as a political entity explores the idea that racism condemns the black body through social and cultural imagery disseminated from those in power to the rest of the population. For Foucault, "power relations have an immediate hold upon it [the body]" (Foucault, 1984: 173) which situates biopolitics within a complex sociological set

of institutions. These sociological trends are echoed through out critiques of BiDil, as Dorothy Roberts explicates, “by approving BiDil only for use in black patients, the FDA emphasized the supposedly distinctive -- and, it is implied, substandard -- quality of black bodies” (Roberts, 2011: 177). Locating racial identity within the physical and biological body rather than within the social and cultural manifestation of race, imposes upon the body medical and scientific scrutiny and speculation which prioritizes the physical in our minds while simultaneously degrading it.

BiDil has come to fruition through a series of tangible economic and political agendas and motives, yet its very existence is contingent upon social discourse, which both explicates and implicates BiDil within a larger web of social control and power. The proliferation of racialized medicine fuels and is fueled by the subversion of racialized bodies through the manipulation and exploitation of language and the power of elite knowledge production. These systems, working in unison to form a racial divide understood as genetic, perpetuate a cataclysmic social and scientific environment compatible with and catalyst for racialized medicine rhetoric.

There is a sordid history of biological race theory infiltrating the social conscious and understanding. Even though social theory fundamentally advocates the social, rather than genetic, differences of human ethnicity and race, practices such as racialized medicine have the power to subvert these theories because of its prowess as a source of elite knowledge production. The ideology of race as biological has become something of an unacknowledged and unchallenged social fact through dissemination of knowledge inter-generationally. A purview of historic shifts in race understandings which have defined racial groups in different ways at different times reveals the opposite; that race is

not inherent or fixed but fluid, malleable, ever-changing and culturally contingent. However, modern scientific and medical research searching for genetic racial material as manifested in the case of BiDil are eerily reminiscent of historic ideologies about race that linked race to biological, rather than social, construction.

This begs the question, “are twenty-first-century technologies reinventing nineteenth-century theories of racial difference?” (Krimsky & Sloan, 2011: 256). Power allocation of scientific knowledge production is a key benefactor allowing racialized medicine to indirectly or unintentionally purport a genetic race ideology through the subjugation and isolation of racialized bodies. BiDil is the story of an opportunistic pharmaceutical company that, in setting out to find an economic market advantage, consciously or not participated in the evolving question about the racial role in biology and genetic study. BiDil became a powerful medical player due, in many ways, to the social world’s culpability and susceptibility to accept the racial facts as stated by BiDil. As a result, the social consequences of BiDil are drastic, as the story and power of BiDil becomes, in essence, a sociological phenomenon and object of study.

### Conclusion

This paper sought to report on and explain the detrimental social effects that BiDil’s recognition as a racially-specific medicine have had on the medical field, social institutions, and the racial intelligibility of modern society. BiDil was only the first of a new wave of racialized medicine that has irrevocably changed the face of the medical patenting field. Since, there has been an exponential rise in race-related patents and race-specific medications. In a 2004 issue of *Nature Genetics*, contributing authors Sarah Tate and David Goldstein wrote that “twenty nine medicines or combination of medicines

have been claimed, in peer reviewed scientific or medical journals, to have differences in either safety or, more commonly, efficacy among racial or ethnic groups” (Tate & Goldstein, 2004). Only three years later, in December 2007, the Pharmaceutical Research and Manufacturers of America (PhRMA) an industry trade group, released a report claiming that member companies were developing over six hundred and ninety one racialized drugs or medicines (Obasogie, 2011). The consequences of Satel’s New York Times article and the limelight afforded BiDiI have caused an exponential rise in race specific medicines and patents.

Racialized medicine and it’s governmental sanction in the form of FDA and USPTO approval provides a scientific legitimacy for a whole new racialized class of scientific study. This new scientific repertoire analyzes personal and genetic characteristics with race as a conscious and prolific variable. More and more research has been done that seeks to identify links between race, genetics, and pre-disposition to personality traits or life circumstances (Roberts, 2011). The bulk of this paper sought to delineate the theoretical and practical issues that come with the introduction of scientific and medical acquisition of racial validity. However, above and beyond its own problematics, racialized medicine has introduced a legitimacy to criminological and psychological study that seeks to find scientifically disingenuous links between race and other incriminating variables.

New obsessions with genetic omnipotence have infiltrated topics typically understood as social issues. A 2008 study entitled “Group Differences in Personality: Meta-Analysis Comparing Five U.S. Racial Groups” examined the Big 5 Personality Factors along racial divides and their influence in employment (Foldes, Duehr & Ones,

2008). The study “described several genetic, environmental, and interactive explanations of potential race differences in personality traits” (Foldes, Duehr & Ones 2008; 604). While the study could not pin point a definite and exclusionary relationship between genetics, race, and outcome, their introduction of race into the discussion disseminates an interpretation of racial importance *at the genetic level* for both scientific research and larger social interaction. This rhetoric and these studies set a precedent for connections between racial difference and genetic predisposition and characterization to be used systemically in scientific study.

Similarly, Florida State University criminologist Kevin Beaver’s research was reported in a June, 2009 article in the Associate Press headlined “Gang-Banging May Be Genetic”. The study claimed that desire to join a gang lay, in part, with genetic predisposition and the individual’s MAOA gene activity, “dubbed by the press as the ‘warrior gene’” (Roberts 2011; 298). The study and its outcomes devalue and deemphasize social factors in gang membership, such as lack of resources, educational opportunities, and economic desperation. In essence, “the two powerful and deeply flawed ideologies of biological race and genetic determinism are ascending in tandem” (Roberts 2011; 299) creating a scientific movement that simultaneously confirms myths about racial genetics while also dismantling the value of social safety nets and reifying social stereotypes and prejudice about gang members as typically minority males because of innate genetic predisposition.

While the majority of the criminology field discredits genetic determinist theory in favor of more potent, poignant, and omnipresent social constructionist and social environment theory, the debate still exists, even if marginalized (Wilson, 2011, Cohen,

2011). The question remains though; are some people genetically more pre-disposed to commit crimes than others? With scientific research and governmental sanction of racial genetic efficacy, in the case of BiDiL, studies like the Big 5 Personality Factors or the MAOA gene test will gain legitimacy. These questions of genetically racialized criminology and other studies linking personality traits (like impulsivity or violence) to genetics and even race, create a climate of misunderstanding that re-appropriates race and genetics as crucial indicators of life outcomes at the sacrifice of social indicators like access to resources, education, and employment. By diverting attention from social, political, and economic factors, these studies reinforce prejudicial stereotypes about African Americans and other minority groups.

Studies like these reify within contemporary medical, scientific, and psychiatric study the use of race and genetics as a valid scope of study even when analyzing personality factors, rational thinking, violence, or impulsivity. The MAOA gene study and the Big 5 Personality study are only two of the many new studies being integrated into classical scientific literary annals that utilize race as a plausible question associated with personality factors, social outcomes, and genetics. These studies authenticate the practice of including race as a legitimate or plausible variable and link between genetics and personality disposition thereby enshrining race as a biological, genetic, scientific fact.

What does this calamitous combination of scientific study mean for the greater social future? Are we inching towards a new understanding of the social world that acknowledges and legitimizes the grossly overrepresented minority population in American prisons because of the inaccurate and deadly premise that these individuals are genetically hardwired to be more violent, impulsive, or irrational? Will the American

government start to limit funding for social welfare programs in impoverished and indigent neighborhoods because the people that live there do so because they are genetically inferior? Will grassroots efforts to eliminate food deserts in urban neighborhoods lose virulence because the populace believes that African American men, women, and children are genetically pre-disposed to congestive heart failure and that environmental and social resources are not responsible or even effective? Will social progress be stunted in the American political agenda because the status quo is genetically fixed and outside the limits of social change? These questions, at first seem outlandish and offensive. But isn't the connection between race and genetics, which BiDiI has conquered, already the first step in coming to these terrifying and racist conclusions?

The medical field's attempts to personalize medicine for the betterment of medical efficacy has resulted in a racial paradox. It uses civil rights rhetoric to prioritize racial healthcare inequality, yet in doing so, manages to reinforce notions of racial difference as the main contribution to systemic healthcare inequality. The issue of BiDiI and racialized medicine muddles the intelligibility of race as a social construct, injecting biological mandates which forever taint social justice and racial identity. What might initially seem at worst a minor and inconsequential scientific inaccuracy or misguided focus and, at best, an advocate for racial equality, has perpetuated a malevolent message which colors how the social world understands, conceptualizes, and manifests one of the most controversial and core institutions of the modern age.

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