

A LITERARY ANALYSIS-BASED APPROACH TO IDENTIFYING SYSTEMS OF
RACISM IN SCIENCE FIELDS

By

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Abstract

Racism within science is abundant, and yet this is a little acknowledged fact in society. Scientific racism thrives under the common misconception that science is objective or free from racial bias, resulting in little scrutiny and reform of scientific policies, techniques, and research. Although reasons for why scientific racism is perpetuated can range from simple ignorance to blatant attempts to spread white supremacist ideals, there is a need to increase awareness of the history of racism within science and how this history impacts scientific methods today. Part of this awareness involves bringing attention to how dramatically and negatively science racism affects racially minoritized groups in the United States. To do so, this thesis takes an interdisciplinary approach to demonstrate how literary analysis can serve as a helpful guide to identifying scientific racism. Thus, by conducting a literary analysis of Toni Morrison's black characters in her novels, *The Bluest Eye* and *Song of Solomon*, with a scientific lens, the author aims to promote the use of applying interdisciplinary approaches to tackling racism in science and society.

Introduction

There are particular myths that people are inclined to believe about the field of science. One of these myths is that science is purely fact-based, unbiased, or entirely objective. This, however, could not be further from the truth. The definition of science, as “the systematic study of the structure and behavior of the physical and natural world through observation, experimentation, and the testing of theories against the evidence obtained,” lends itself to this myth (Merriam-Webster). It implies that science as a field deserves trust because the data, or the “facts,” acquired have been discovered through extensive testing that warrants this trustworthiness. But this is a common misconception. Science, like other fields of study, suffers from the pitfalls of subjective thinking that, in turn, reduces the reliability of scientific data (Callwood et al. 2). As stated by Jonathan Marks, a professor in anthropology at the University of Northern Carolina - Charlotte, “scientists think like everybody else, and are beset by the same kinds of aspirations, insecurities, and disappointments as everybody else” (54). Scientists are not spared from the distinctly human characteristic of personal bias, stemming from their own personal histories and experiences, and yet there are little official parameters set in place to prevent these personal biases from seeping into the practice.

For instance, blind data recording, “meaning that experimenters are unaware of the identity or treatment group of their subjects while conducting research,” is vital in producing unbiased data in research (Holman et al. 2). However, “despite strong evidence of its importance, blind data recording is often neglected” in various branches of science (Holman et al. 2). It was found that “across 960 empirical studies in five animal behavior journals” only “6.3% of the sampled studies were conducted blind” and, “in a sample of 234 meta-analyses of clinical trials” for medical research, “33% of the meta-analyses did not contain any double-blind studies” even

though it is considered standard in this field to practice this method of collecting experimental control data (Holman et al. 2).

Personal biases may not only influence the results of the research either; personal biases may also cause researchers to “unintentionally treat subjects differently based on their treatment group” (Holman et al. 2). This ultimately leads into the more dangerous and damaging issue from scientific bias: scientific racism, which involves the manipulation of scientific theory and research to support the concept of racial superiority between humans (Jackson and Weidman 66). Under the umbrella of the science field and scientific study, scientific racism has long been an issue and continues to thrive in today’s climate. Because it has existed for such a long time, scientific racism manifests in a multitude of different forms, but it consistently and continuously perpetuates misrepresentation of minoritized racial groups in research and results in the mistreatment of the people in these communities (Nelson 441). Though the concept of racial superiority—and the fallacious beliefs that subsequently stem from these concepts—have been disproven on various occasions, it still has not been eradicated from common systems of thought in the modern day, nor has it prevented the spread of the racial biases that are perpetuated in science research, science education, and science workplace environments (Nelson 441).

Because racism has been so ubiquitous in both modern and scientific society, languages, and interactions, it has become more difficult to root out. Racism is ordinary, and “ordinariness, means that racism is difficult to address or cure because it is not acknowledged.” (Delgado and Stefancic 8). On top of this, certain groups do benefit from the perpetuation of racism. As stated by Nature Editorial, “the research system has justified racism — and, too often, scientists in positions of power have benefited from it. That system includes the organization of research: how it is funded, published and evaluated” (313). And this issue is only furthered by the

unwavering faith that people from all backgrounds have that science is an objective, unbiased system that dispenses “truths” about the world (Callwood et al. 2). The scientific community’s influential reputation leads to a reluctance to oppose the concepts presented by them.

American literature has been constructed alongside a discussion of racial issues. Many pieces of American literature often describe the racism occurring in humanities, home-life, education, and other settings that are not directly related to the environments in which scientific racism is occurring. This is, in part, because the overlap between science and literary media is arguably small when compared to other scopes of academic learning. Any literature that does target both the concept of racism and the consequences of its existence in scientific environments are not abundant or mainstream. However, American literature does not need to have direct, explicit correlations to science in order for it to be relevant in a discussion of scientific racism. In the words of Josie Gill, a lecturer in Black British Writing at the University of Bristol, UK, “literature can help us see how older racial ideas seep into the present,” drawing “attention to ways in which we can’t easily separate science from the imaginary or the fictional” (Chresfield). Science should not exist in a vacuum; it should be taken into consideration with the wider scope of discussion of racism. The ties between these sciences and literature are interconnected; scientific racism can be and must be seen in American literature, even if it may not be immediately apparent, and this can be achieved through constructing a literary analysis of racism with a science-based lens. Using this approach, the idea that science exists above racism can be combated to allow for an increase in awareness of these issues in both the general public and within the scientific community.

Therefore, it is the goal of this thesis to remove the field of science from the pedestal that the public, including science researchers themselves, often put it on and provide insight into just

how subjective and biased science can be through a literary analysis-based approach in order to raise awareness of how impactful and abundant racism within science is. By analyzing Toni Morrison's novels, *The Bluest Eye* and *Song of Solomon*, and connecting fictional events to real world problems, I aim to construct a framework with which science communities, who may be unfamiliar with the concepts of racial justice, can more easily expand upon their understanding of systemic racism. In this way, they can be included in the push to counter systemic racism within the United States.

Solving racial injustices begins with awareness, and awareness begins with productive communication in terms that an audience can understand. In the words of Kimberlé Crenshaw, “when the facts do not fit with the available frames, people have a difficult time incorporating new facts into their way of thinking about a problem” (Crenshaw 00:03:29-00:03:38). This notion isn't just limited to the general public. This discrepancy between knowledge and awareness can be found within every community, even within the communities with the leading experts in academic fields of study. By drawing parallels between more explicit racism within literary works and real world examples, individuals within these science communities may establish the framework necessary to recognize and halt the perpetuation of systemic racism within their fields.

However, it is important to note that my aim is not to sow suspicion in the public that indiscriminately targets all or even most science research, nor is it to falsely label members of the science community as distrustful. Rather, my goal is to provide the audience—science researchers and the general public alike—with confidence to engage in their own research and to critically engage in scientific discussion rather than blindly trust the findings of others as the truth. I ask the audience to take part in a more holistic approach to viewing science, as it is a field

that harbors inevitable human error just like any other, and to accommodate for these errors as best as we can.

Analysis of *The Bluest Eye*

Toni Morrison uses her characters' experiences, specifically their struggles, to portray the heavy consequences of living as members of non-white communities in a society ruled by white supremacist thinking; a struggle that can be directly compared to racial minority experiences in science fields. In *The Bluest Eye*, dolls are representative of not only a white standard of beauty, but also a white standard of existence that is forced into the belief systems of the black characters. This concept is first seen with the white doll that Claudia is gifted for Christmas. Despite her rejection of the gift, she is still compelled to realize that "all the world agreed that a blue-eyed, yellow-haired, pink-skinned doll was what every girl child treasured" (*The Bluest Eye* 22). Each of these separate aspects that Claudia notices in the doll are characteristics distinct of only the Anglo-Saxon race. Thus, because of their appearance in toy dolls, it can be assumed that these traits are considered desirable and held to high esteem—as dolls are manufactured with the purpose of capturing the ideal beauty of the times (Byrd 186). Thus, the statement that this toy "was what every girl treasured" indicates that the traits associated with this particular doll that Claudia was given, specifically the color of its skin, eyes, and hair, are desired by all girls. Aside from the blatant sexist appeal, this is particularly problematic when this concept is observed being instilled in black girls from a very young age through the toys that they receive, as it is a process that effectively introduces and maintains a white supremacist perspective among racial minorities. This is evidenced by both Frieda and Pecola's infatuation with Shirley Temple—the living image of the very dolls that Claudia is given—which can be seen in their "loving conversation about how cu-ute Shirley Temple was" (*The Bluest Eye* 20). Frieda and Pecola,

both slightly older than Claudia, are prime examples of this concept of racial inferiority having become internalized and accepted.

When Claudia interrupts their conversation to suggest Jane Withers as potential candidate to rival Shirley Temple's appeal, Fredrica and Pecola brushed her off, judging her statement as "incomprehensible, and continued their reminiscing about old squinty-eyed Shirley" (*The Bluest Eye* 21). Jane Withers was considered a very popular child star herself during the 1930s, but, with her brown hair and brown eyes, even she is unable to compare—the very act of attempting to do so is deemed "incomprehensible" (Brehe). Their extreme reaction demonstrates how strict and unattainable this concept of an ideal beauty is for an individual belonging to any race, but it is particularly damaging for members of minoritized races. The act of upholding this standard of beauty, like Freida and Pecola demonstrate, results in the categorization of all other characteristics as unworthy of beauty. This perception, then, ensures that it is impossible for a black individual to be considered beautiful—a belief system that captures the concept of racial prejudice. Additionally, by adhering to these standards of beauty constructed solely with a white supremacist gaze, Freida and Pecola unknowingly contribute to the perpetuation of these racist ideals within their own lives and circles. For instance, their rejection of Jane Withers reinforces this racialized mindset to Claudia and their continuation of the conversation without her input demonstrates to her the consequences of challenging this mindset, which is essentially ostracization. It demonstrates the cyclical nature of racism that allows it to survive in all social and scientific contexts even to this day.

For instance, within the science field, there is a noticeable lack of representation of black scientists in images that are portrayed in scientific journals, articles, and library archives, especially when compared to the abundance of images portraying white scientists and their work.

Like the white standard of beauty and its absence of black representation depicted in Morrison's work, society upholds a white standard of what science looks like, in which many minoritized groups are similarly not included, resulting in the inability for minoritized groups to view themselves as scientists or capable of pursuing a scientific field of work. Physicist Elmer Imes is just one example of this erasure occurring. Despite Dr. Imes' claim to the title as "the second African American to be awarded a PhD in physics in the United States" and his many important contributions to his field of study, he has virtually no photos available in any significant database, including in commercial photography companies, university archives, and the United States Library of Congress (Nature Editorial 626). And yet, there is an abundance of images available depicting white scientists from the same time period Imes was contributing to his field (Nature Editorial 626)). Without proper representation of minority groups in science fields, minoritized groups are often unable to nurture what is commonly called a "sense of belonging," or the belief that they are accepted and valued members in the scientific community, allowing them to build a science identity (Kricorian 2). Consequently, without this sense of belonging, underrepresented students are less likely to see science as a field they'd like to pursue in the future (Kricorian 2). By giving racially underrepresented scientists the recognition they deserve, the cycle of racism that Freida and Pecola were unable to break in their own narrative can be fought against in the scientific community.

However, this process is slow and fraught with set-backs, and the lack of photographic proof of black scientists is just one factor that contributes to the minimal representation of black scientists in the science field. Black scientists who are attempting to bring awareness to scientific racism and break its cycle by producing research on these issues are at a large disadvantage. For instance, it has been discovered that black scientists working in biomedical sciences are

significantly less likely to receive funding from the United States National Institute of Health (NIH) for their research than white scientists (Ginther et al. 2). One of the three most racially significant reasons for this is topic choice. Due to their history as marginalized and oppressed members of society, black scientists are more likely to propose research topics addressing issues on the community level, which typically have lower award rates, rather than on a mechanical or theoretical level, which typically have higher award rates (Hoppe et al. 2). While this reasoning may not initially suggest the presence of racial bias, it is because the funding process is so deeply undercut by the systems of racism that this difference in topic-based funding exists. For instance, a large majority of the reviewer committee that oversees the direction of funding are white with only 2.4% of reviewers identifying as black or African American, which can reasonably be concluded to play a part in the difference in reception of topics (Hoppe et al. 8). A lack of advocacy for black scientists' research topics is associated with the sparse representation of black scientists in the review community. If this representation were to increase, it can be assumed that the significance of community-level research topics would also increase (Hoppe et al. 8). Once again, themes of this struggle in science can be identified in Claudia's discussion of Shirley Temple, or lack thereof, with Freida and Pecola. Claudia's acknowledgment of Jane Withers can be seen as her attempt to work against the racial belief, just as black scientists continue to do in the present day. However, the ineffectiveness of her attempt and the almost immediate rejection of her thoughts symbolizes the large disadvantage black scientists and allies are at when trying to advocate for racial change, especially when they are denied by others who have already so firmly integrated the belief system into their own thinking and have lived by it for most of their lives.

Additionally, Pecola's insistent obsession with blue eyes in the novel is an indicator of the inevitability of partaking in these belief systems when one is raised in an environment constructed on top of these ideals, in spite of the inherent limitation of continuing to use white ideals to judge oneself, particularly as a black individual. In her desperation, Pecola even goes so far as to seek counsel from Soaphead Church to make her eyes blue, who sees her as she is: "A little black girl who wanted to rise up out of the pit of her blackness and see the world with blue eyes" (*The Bluest Eye* 158). The "pit of her blackness" refers not to her actual identity, but the oppression and racial prejudice she has had to experience due to her identity. Her desire to "see the world with blue eyes" is simply her wish to live without the burden of oppression, rather than a wish to truly change her race. But this suggests that a world without racism is so unrealistic and out of reach to her from the perspective of a black child that she resorts to hoping for a change in her eye color instead of wishing for freedom from these oppressions. By portraying this struggle, Morrison captures the severity of continuing to live in a society fraught with systems of racism; it is more ideal to hope for one's miraculous change in appearance than to hope for a change in the system. It is a hopelessness that is similarly experienced by black scientists or other minoritized groups in science. Despite efforts to diversify the science fields and increase racial minorities' representation in science, progress is slow-going and seems to halt entirely at times. For instance, "black people accounted for 9% of the STEM workforce in 2019," which is the "same proportion as in 2016, suggesting a lack of progress at a time when many companies and universities had pledged to promote diversity" (Woolston 805). These statistics are disheartening and lend themselves to fueling a sense of hopelessness rather than a sense of belonging in science. It once again demonstrates the difficulty of advocating and pushing for change in a

society that has upheld racist beliefs for centuries, like was shown with Claudia's interaction with Pecola and Freida (Jackson and Weidman 66).

On top of this, Morrison demonstrates that judgment of beauty, or scientific ability, is interwoven with self-acceptance and self-worth, as can be seen by Pecola's view of attaining blue eyes as her salvation. These beauty standards don't only mess with Pecola's understanding of her physical beauty; they also destroy her self-worth, which, in turn, entirely destabilizes her mental and emotional well-being. It renders her entirely incapable of caring for herself and fulfilling her individual potential. She spends the remainder of her life flailing "her arms like a bird in an eternal, grotesquely futile effort to fly... a winged but grounded bird, intent on the blue void that it could not reach—could not even see" (*The Bluest Eye* 184). By comparing Pecola to a bird, she is associated with the sense of freedom that comes with a bird's ability to soar above physical boundaries as they desire, and the appearance of blue imagery is once again a reference to a white standard of living, free from racist oppression. Her attempt to fly like a bird, therefore, is symbolic of her attempt to bring herself above the systemic boundaries that stand in the way of her personal freedom, above the racial oppression and racialized standards of self-worth. However, as a "grounded bird," her attempts to free herself are in vain (*The Bluest Eye* 184). Despite her best attempts, the "blue void," or a life free from racial discrimination, was never in reach for her to begin with, and her continuous efforts are what lead down the path of further destruction (*The Bluest Eye* 184). In the process of accepting a white standard of beauty, Pecola accepts all white standards, even standards that don't pertain to physical beauty. It is an act of self-imposed imprisonment where Pecola cages her true identity in an effort to reach her ideal identity. Because she is never able to reach the criteria for what is considered beautiful or worthy, nor is she able to free herself from her attachment to these standards, her identity and her mental

ability collapses, and she is doomed to endlessly flap in a last ditch effort to somehow finally free herself.

There are similar themes involving the metaphorical destruction of mental abilities within science, although more rooted in production of research. Historically, there have been many scientific assertions that differences in intelligence exist between the races, which then have resulted in claims of racial superiority in humans. But each of these studies have been disproven as pseudoscience and highly flawed with no real scientific basis. For instance, Samuel Morton, a physician during the nineteenth century, used a collection of human skulls to argue that skull size was indicative of how intelligent an individual was or could be, regarding white people as biologically more inclined to higher intelligence than other races of people (Baker 119; “Bibliography”). This produced “the study of craniology and phrenology, linking the size and shape of skulls to intelligence,” and it was used throughout Europe and in America “to justify racism and slavery” (Baker 120). Louis Aggasiz, a highly respected biologist and the founder of Harvard University's Museum of Comparative Zoology, advocated for polygenism, or the theory that different races have different origins and are genetically distinct (Baker 120). While humans do have a large amount of genetic diversity, this diversity is not distinct between racial groups and cannot be associated with race (Templeton 262). In other words, race is not biological or genetic; it is a reflection of social and cultural construct within society (Baker 121).

Both Morton and Aggasiz’s attempts to prove a biological or genetic understanding of race within humans are examples of the racist foundation that science has been constructed upon, and yet, despite having been disproven, similar sentiments continue to be produced in science to this day. For instance, *The Bell Curve*, co-authored and published by psychologist Richard Herrnstein in 1994, argued “that IQ is largely genetically determined, sets one's intellectual fate,

and differs across large demographic swaths of the American public” (Marks 11; Conley and Domingue 520). Additionally, in his book published in 2014, *A Troublesome Inheritance*, Nicholas Wade, a scientific journalist, claims that race is biological and that neither politics nor personal bias influence science (Marks 26). The effect that these blatantly racist “scientific” claims have on minoritized groups mirror the effects that racism has on Morrison’s characters. By believing their intelligence and capabilities have a genetic basis and, thus, cannot be changed, a black individual may come to the belief that it is virtually impossible for any non-white race to compete with a white individual, which may lead to a lack of self-confidence and motivation. Like Pecola’s obsession with blue eyes, this belief prevents these people from reaching their full potential, causing them to deny themselves opportunities. It renders the efforts of minoritized groups as hopeless. If a person in power believes in these incorrect claims, specifically in science, it may encourage them to favor other white people over minoritized people when making decisions, further removing these opportunities from them and maintaining the power of privilege within the white racial group (Clark and Hurd 774).

Additionally, Pecola could have easily been saved had there been someone else to reach out to her to support her mental illness and introduce her to a framework of thought that places value on her rather than on a white standard of living. But the resources to help Pecola address this and treat her mental health issues simply did not exist for racial minoritized groups, and they continue to be difficult to gain access to in the real world. It stands as another instance of racist science. “Clinical psychology largely has ignored and has not prioritized research on mechanisms that explain mental-health disparities” between races (Adams and Miller 389). There are remarkably few research studies available in clinical psychology that focus on “racial and/or ethnic minoritized individuals’ experiences at all” (Adams and Miller 403). Furthermore,

any racial minoritized groups, like African Americans and Hispanics, “are less likely than whites to receive guideline-based care for depression and anxiety, and African Americans are less likely than whites to be treated with atypical antipsychotic drugs” in situations when it would be deemed necessary for a white patient (Primm et al. 2). This racial bias in treatment is what warrants Pecola’s fall into such an extreme case of mental illness. The system is constructed to prevent aid from being easily granted and, without it, she can only continue searching for her salvation in her own desperate way.

While it has been shown that Pecola’s life was spent combating the onslaught of racism from the world and herself, the cycle that maintains racism began before she was even born. It began with her mother, Mrs. Breedlove, and her experience as a pregnant black patient in a healthcare system constructed to favor the wellness of white patients over black patients. When Mrs. Breedlove was going through labor, she could only watch as an old white doctor, teaching younger white doctors about the labor process, stated that black women “don’t have any trouble...they deliver right away and with no pain. Just like horses” (*The Bluest Eye* 113). This crude comparison strips Mrs. Breedlove of her humanity, rendering her to the level of animals by the very medical professional that she went to seeking care. It damages her perception of herself, damage that has already been shown to have been pressed onto her daughter, Pecola—a testament to the intergenerational trauma of racist beliefs. Additionally, this wrongful, racist assumption that black women can simply push through the process of labor, untouched by pain, is a very real and serious issue within the medical community to this day. It was discovered in a study conducted in 2016 that black patients “are systematically undertreated for pain” and this racial bias in medical science exists because half of the white medical students and residents in this study still continue to believe that there are biologically significant differences between races

(Hoffman et al. 4296). These same participants also “rated black (vs. white) patient’s pain as lower and made less accurate treatment recommendations” (Hoffman et al. 4296). Additionally, 73% of participants in this study “held at least one false belief about the biological differences between races” (“Racism in Healthcare”). Although the concept of race having a basis in biology has been disproven a multitude of times, as previously stated, this is yet another example of the minimal awareness of racist concepts in science, allowing these concepts to continue thriving in the science field (Perez-Rodriguez and De la Fuente 37).

Additionally, doctors may be unconsciously partaking in these acts of racism—still not the most preferable situation because doctors who are unaware of the consequences of their actions, even with the best intentions in mind, can spread these concepts further in training or in their interactions with other patients (Hoffman et al. 4296). Oftentimes, these beliefs are taught either between peers or from teacher to students. As Mrs. Breedlove observes, “The old [doctor] was learning the young ones about babies. Showing them how to do” (*The Bluest Eye* 113). The spread of misinformation or false beliefs is a process that is akin to a chain reaction that could be stopped with greater awareness on both sides of the discussion. The cause of this unconscious racism can be found, in part, once again due to racism in the research that doctors subscribe to, like the lack of representation of black patients in research. For example, “even though Covid-19 disproportionately affects black Americans, when physicians describing its manifestations have presented images of dermatologic effects, black skin has not been included” (Evans et al. 274). Racist medical research and a misinformed doctor can result in doctors incorrectly treating a patient’s illnesses despite a genuine desire to help. The consequences of enabling doctors and scientists to endorse these concepts have dire effects on the treatment of minoritized racial groups, specifically black patients like Mrs. Breedlove. “Black women are three to four times

more likely to die a pregnancy-related death as compared with white women” (Howell 1). Because false beliefs are held towards black patients, they are much less likely to receive proper medical care, greatly increasing their chances of serious injuries or even death when complications do arise (Howell 1). This is why it is so important to raise awareness of science racism, not only in the general public, but with individuals who work within the science field.

Additionally, Mrs. Breedlove’s crippled form is another symbol of scientific racism within the novel. The concept that black individuals—or any individual who is not of European descent—are inferior to white people is manifested visually through her “crooked, archless foot that flopped when she walked” (*The Bluest Eye* 101). While Pecola is a symbol of the belief that white people have mental superiority over other races, her mother is the physical counterpart. This, again, lends itself to the concept of a biological or physical analysis of race, justifying the racist thought that black people are racially inferior. Moreover, Mrs. Breedlove’s crippled physical condition can be compared to Pecola’s crippled mental condition in that they both demonstrate the limitations that come with living with racial discrimination. Neither of these characters are able to escape nor can either of them hope to, as one is being physically incapacitated while the other is mentally incapacitated.

White supremacist thinking makes itself known in other ways beyond the deconstruction of black people’s identities as well. In the scene where the white men identify Cholly and Darlene during sex, there is the cruel and constant image of a light from the white men’s flashlight, directed at Cholly and having “wormed its way into his guts” as the white men pressure him to continue against his wishes (*The Bluest Eye* 135). The light in this scene is a form of the color white, which, in turn, is symbolic of white racism against black people. The light is used to bring emotional harm and humiliation to both Cholly and Darlene, altering what

would have been an intimate moment into a humiliating regret. In this way, this whole scene is symbolic of the way in which white people may flaunt their power and privilege only for their own gain at the expense of the black community or, in this case, for their entertainment at the expense of Cholly and Darlene's dignity. It is through this act that the white men are able to solidify their power, ensuring that both Cholly and Darlene's first direct encounter with systemic racism is memorable in the worst possible way. It introduces them to the uncomfortable racial power dynamic that continues to exist in both society and science.

Also, this act of flaunting white power and privilege has the additional negative effect of encouraging black individuals to harm each other. Because these individuals are subjected to this ideology and come to believe that they cannot challenge it, their anger is turned towards each other rather than to those in power. This effect can be seen with Cholly who, as a result of his humiliation, turns his hatred of the situation towards Darlene rather than the white men. From his perspective, "They were big, white, armed men. He was small, black, helpless" (*The Bluest Eye* 137). In the face of his helplessness and the hopelessness, he does the only thing he can do to bring him some sense of control over the situation: "he hated the one who had created the situation, the one who bore witness to his failure, his impotence. The one who he had not been able to protect, to spare, to cover from the round moon flow of the flashlight" (*The Bluest Eye* 137). As a black woman, Darlene has no choice but to be the outlet for Cholly's anger, for he believes that she is inferior to him and, thus, can be hated by him.

Within psychology, white supremacy and the uncomfortable power dynamic between and within races, as portrayed in literature by Cholly and Darlene's experiences, are continually observed. In an article released in 2013, Arthur R. Jensen, a psychologist at the University of California, Berkeley, commended the century-old concepts correlating human intelligence to the

size of human skulls, once more supporting a biological understanding of race and combating the criticism these concepts were receiving (Winston 425). The previously discussed and “discredited assertions on brains, intelligence...and evolution” have continuously been “refashioned and redeployed in new social contexts, with new intelligence tests, modern multivariate methods, brain scans, and revised conceptions of heredity” released as scientific research with the goal to maintain white supremacist perspectives (Winston 426). It redirects power towards white supremacist groups in science and in society, stripping racial minorities of their control over their own identities, which consequently influences their perception of others as well, as witnessed with Cholly’s hatred towards Darlene.

Analysis of Song of Solomon:

In Toni Morrison’s *Song of Solomon*, similar effects of racism can be seen in Guitar and Milkman’s increasingly contrasting perspectives as they grow from amicable friends to extreme enemies. Guitar’s journey towards self-acceptance in a racially-charged world can be likened to Cholly’s, as he settles on resolving his anger towards systemic racism by lashing out at his peers and fellow allies. For example, as Guitar grows to accept a racially-fueled hatred against whites, spurred on by the mission of the “Seven Days”, which is a terrorist group that has taken on the mission to commit violent crimes against white people for every violent crime committed against a black person by white people, he increasingly becomes estranged from Milkman, his childhood friend (*Song of Solomon* 157). Guitar takes in anger and a genuine desire to stop the racial injustice, but allows it to consume him and only responds with violence, deeming the terrorist group’s radical solutions as “necessary; it’s got to be done. To keep the ratio the same” (*Song of Solomon* 157). However, by using these violent solutions, Guitar is unknowingly contributing to the continuation of racial discrimination against black people through the phenomenon of

confirmation bias. Confirmation bias occurs when “new evidence is given more weight when it agrees with existing beliefs,” causing an individual to be more inclined to believe that their pre-existing belief has been justified even when the evidence presented is not substantial (Lange et al. 1). By reacting with violence, Guitar and the rest of the Seven Days provide others evidence to continue believing the racial stereotype that black people are more dangerous or more inclined to violence (Harrison and Esqueda 82). Of course, this only serves to worsen the discrimination experienced by black individuals rather than solving the issue of racial injustice, but it also serves to pit Guitar up against his potential allies—in this case, Milkman. The scene in which Guitar attempts to strangle Milkman out of disgust for his flippant way of living mirrors events in *The Bluest Eye* in which Cholly’s redirects his hatred towards white men to fall onto Darlene instead (*Song of Solomon* 278). It is a process that spurs self-destruction and self-hatred within racial minoritized groups, and it is a process that is still seen in the world of science today, as previously stated.

On the other hand, while Guitar subjects himself to white ideology more as he grows, Milkman’s growth allows him to rise above his initial acceptance of a racial and economic hierarchy, providing him the opportunity to find himself rather than simply accepting the identity that is thrust upon him by the people that surround him—an identity that, despite being upheld by other black people, stems from white supremacist ideology. For instance, his father, Macon Jr., prides himself on his wealth, believing that it elevates his status to that of white citizens and, thus, expects himself and his family to be treated similarly. This can be seen in his intent to find a house in “the wealthy white neighborhoods,” refusing to even consider homes in the less affluent areas of the town where most of the black community lives (*Song of Solomon* 35). Additionally, when Milkman is arrested, Macon Jr. blames his arrest on solely on Guitar, who he

considers the “Southside nigger,” adamant that the events would have played out differently had Guitar not been present with Milkman (*Song of Solomon* 183). Because of his father, white supremacist ideals regulate Milkman’s perception of himself, accounting for most of his beliefs, and this physically manifests in his limp. Like Mrs. Breedlove’s lame foot, Milkman’s limp is the physical manifestation of the limitations that white ideology places on minoritized groups. In both of these instances, the true ability, or potential, of these characters is held back by their adherence to white ideals; only when they reject these ideas can they grow into their true potential. And, while Mrs. Breedlove is never able to do this, Milkman is.

After fighting off Guitar’s attempt to strangle him during his self-identification quest, Milkman finally walks on the earth “like he belonged on it” for the first time in his life; “his legs were stalks, tree trunks, a part of his body that extended down down down into the rock and soil, and were comfortable...he did not limp” (*Song of Solomon* 279). Growing past his limp is symbolic of Milkman finally rising above the limitations that had restrained him, namely the white ideology that he had lived by for most of his life. It is the first step to him reconnecting to his African identity that his father had severed to begin with. The final step is, then, taken when he goes to Susan Bogard’s house to learn about “the flying Africans” (*Song of Solomon* 317). The symbolism of flight makes a reappearance here from when Morrison first introduces it in *The Bluest Eye* with Pecola. These flying Africans achieve what Pecola is unable to achieve herself; they fly, “like a bird,” away from slavery and abuse they experienced in America to go “right on back to wherever it was [they] came from”—Africa (*Song of Solomon* 317). In *The Song of Solomon*, flight continues to represent one’s ability to rise above the ill-conceived notions of racial discrimination to accept an understanding of one’s self in terms that are not defined by white ideology. To fly is symbolic of an individual’s successful reconnection to their

true identity, or history. Thus, the flight that Milkman is implied to have taken at the end of the novel when “he leap...as fleet and as bright as a lodestar” is an indication that Milkman has not only rejected the identity that white ideology forces upon him but also finds his own personal identity in the process (*Song of Solomon* 331).

However, the question remains as to why Milkman is able to set himself free from white ideology, but Pecola cannot do the same despite being faced with similar situations. This lies in the irony of Milkman’s character. It is his privilege as a more affluent black man that gives him the opportunity for self-realization—a privilege that the Breedloves can never hope to have despite arguably needing it most. While there are many differences between Pecola and Milkman, the most significant difference for this paper is their age. Pecola is a child, Milkman is an adult, and this translates into a difference in advocacy and acknowledgement that is present in science as well. Pecola does not have Milkman’s opportunities available to her because she is a child who inherently does not have the experience of an adult to know how to advocate for herself, nor does she have anyone else to advocate for her. This is a particularly significant issue for black children, as children that belong to racial minorities often go overlooked or unnoticed in science research, subsequently lowering the chance for them to receive proper care (Pachter et al. 34). For instance, there is a lack of research on the effects of racism on minority children’s well-being despite the obvious health and mental strain that come with the experience (Pachter et al. 34). The difference between Milkman and Pecola tap into bigger issues of the intersectionality of racism, sexism, and age-discrimination, but—with consideration of the focus of this paper—this difference between the Pecola’s reality as a black child and Milkman’s reality as a black adult once again represents racism in science. There is little priority placed on researching the effects of racism on children belonging to non-white racial groups and, despite the fact that

there are currently more studies being released on this issue as advocating about racial injustice increases, it still has not widely been addressed in fields that are directly correlated with caring for minority children's health (Trent et al. 2). This results in less research being available overall on how to properly treat minority children, leading to potentially mistreatment by doctors who have no choice but to make their own judgements. This improper care "undermines the health equity for all children, adolescents, and emerging adults, and their families" (Trent et al. 1). Pediatrics is one example of a field in science, or medical health care, in which the unfortunate consequences of this are clearly seen. "Pediatrics as a field has yet to systematically address the influence of racism on child health outcomes and to prepare pediatricians to identify, manage, mitigate, or prevent risks and harms" (Trent et al. 1). Because of this, "a Black child in pain who is brought into the emergency department is 80 percent less likely to get adequate pain treatment for the same cause of pain than a White child" (Danielson 1683). This statistic lowers to 22 percent when accounting for black adults (compared to white child patients and adult patients) as well (Meghani et al. 151). It is this staggering difference in numbers that ultimately captures how scientific racism has caused science to fail minoritized children, a failure that is represented in Pecola's inevitable failure to fly while Milkman's ascent is relatively unhindered despite both identifying as black.

Conclusion

Through a literary analysis of Toni Morrison's characters in two of her novels, it is obvious that the racism experienced by minoritized groups has direct ties to the field of science, almost an equivalent exchange in which science perpetuates racism in the broader society and racism in society allows science to continue promoting racist techniques and beliefs. In the clearest terms, science is racist. Thus, science fields must be brought to awareness of the history

that they stand upon and be held accountable for the racism that runs rampant in the system. We can no longer allow myths and misconceptions to be acceptable excuses for use of blatant racist methods in health care, research, or in the science workplace. Since identifying these methods can be difficult with the ubiquity of racism in society, it is imperative that more interdisciplinary approaches are used to provide a clearer lens when advocating for racial injustices (Delgado and Stefancic 8). Literary analysis is but one method among the many and, as the science advocacy increases with movements like “Black Lives Matter,” hopefully more methods using a wider variety of media and outlets to identify racism increases as well.

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