

# Intersectional Discrimination and Substantive Equality in Margot Lee Shetterly's *Hidden Figures*

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## Abstract

*Hidden Figures* is a nonfiction novel written by the African American Writer, Margot Lee Shetterly. The main plot of *Hidden Figures* traces the evolutionary track of three black women at Langley who worked in NACA and NASA during the period of the second world war. The story exemplifies the contributions of courageous African- American women who offered a great part during the time of crisis as 'Human Computers'. Using Kimberlé Crenshaw's concept of intersectionality, this study intends to witness how the triumph of the representative characters (Katherine Johnson, Dorothy Vaughan, and Mary Jackson) against adversity with their irreplaceable talent and uncompromising attitude broke the barriers and attained substantive equality which eventually inspired and paved the path for other African American Women. This study also attempts to recognise the contribution of women during the early, fundamental revolutionary years of the American dream.

**Keywords:** Spacecraft war, Intersectionality, Oppression, Black Women, Discrimination.

## Introduction

*Hidden Figures* is a nonfiction novel written by the African American Writer, Margot Lee Shetterly. The story takes place during the Second World War when the United States and the Soviet Union competed in science to achieve the first master spacecraft. To win the space race the US government poured wealth into science so that it could aid them in the process of aircraft war. Shetterly characterizes the middle of the twentieth century in the United States as a period of social and mechanical progression. Though the period was highly advanced in science and innovation, it lacked social and mechanical justice. Langley's women population is dense and highly involved in the production of Space Flight. Their contribution and sacrifices were overshadowed in mainstream American literature. Margot Lee Shetterly started a virtual Museum in 2013 to acknowledge the contribution of all African American women during the period of the space race who worked as human computers in NASA and NACA.

The archive is named 'The Human-Computer Project'. Shetterly's Human Computer Project, a project whose objective was to identify and gather data on every woman who worked at the National Advisory Committee for Aeronautics and the National Aeronautics and Space Administration during the height of the space race from the nineteen sixties to the nineteen eighties as a computer scientist, mathematician and engineer. As the United States teetered on the brink of World War II, mathematicians were captivated by the need

for aircraft invention. The NACA and NASA hired math assistants, data analysts, engineers, and scientists from the 1930s until the 1980s. Hundreds of women were hired and worked as 'Human Computers' for the NACA and its successor NASA. They made their way through the structure like walking computers, saving the professionals from having to complete laborious computations. It reveals the untold chronicles of the African American women who contributed to the triumph of the space race to achieve the American dream. Shetterly started looking into these women with a sudden spark of curiosity. In this case, Shetterly discovered more about 'Human Computers' as she dug deeper. As the United States approached war, the desire for aviation innovation grew to the fore and piqued the interest of mathematicians. Langley's female population is soaring, sharp and efficient. Unlike men specialists, few women have been rarely recognized for their contributions to the efforts on the path toward space achievement. Among the women Shetterly traces the evolutionary tracks of three black women namely Katherine Johnson, Dorothy Vaughan, and Mary Jackson from the archive in her non-fiction *Hidden Figures*.

The story illustrates the innermost feelings and contributions of these courageous African-American women who offered a great part during the time of crisis as 'Human Computers'. These representative characters played prominent roles during the time of the space race. When the three women are together, the science between them is so rich. Being African American women they had to face much discrimination and challenges to achieve success. Their victory proves that prejudices and oppression must be overcome, by any stretch of aspiration and persistence.

### **Conceptual framework**

The term 'Intersectionality' was first used in 1989 by American Civil Rights advocate and well-known expert on Critical Race Theory Kimberlé Williams Crenshaw. According to the concept of intersectionality, disparities resulting from discrimination based on gender, race, colour, sexual orientation, gender identity, disability, class, and other factors 'intersect' to produce specific dynamics and effects. According to the concept, oppression does not exist independently of their intersects at different levels. Many diverse biological, social, and cultural categories, including gender, colour, class, ability, sexual orientation, religion, caste, age, nationality, and other sectarian axes of identity, interact on numerous levels, frequently and concurrently. The concept investigates the range of overlapping or intersecting social identities, as well as any accompanying repressive, hegemonic, or discriminatory activities in the name of institutions. It also aims to understand the mechanics of this interaction.

Intersectionality is interdisciplinary in nature and it has roots in 'Black feminism' and 'Critical Race Theory'. It is a tactic, state of mind, heuristic, and analytical tool. The phrase was coined by Kimberlé Crenshaw to address how African American women are marginalised not only within anti-discrimination law but also within Feminist and Antiracist theory and politics in her seminal Essay "Demarginalizing the Intersection of Race and Sex: A Black Feminist Critique of Antidiscrimination Doctrine, Feminist Theory and Antiracist Politics." Crenshaw (1991). In "Mapping the Margins: Intersectionality, Identity Politics, and Violence Against Women of Color," Crenshaw expanded on the

paradigm, She used intersectionality to draw attention to the ways that social movement activism and organisation around violence against women obscured the vulnerability of women of colour, especially those from immigrant and underprivileged areas. By using intersectionality as a critical tool to analyze the select work *Hidden Figures*, we could understand that oppression does not exist independently; they are intersectional in nature. The aim of this study is to associate the triumph of representative figures with the intersectional challenges as a triumph of whole communities which would inspire black women to conquer great heights with their strength, courage and genius.

## **Analysis**

*Hidden Figures* uncovers the dream of America and the revealed story of the unsung heroes who were behind the successful American Aircraft war. It was the period when African American Women had to overcome oppression as women and as African Americans. Race, education, sexuality, ability, age, gender, ethnicity, culture, language, and class are important challenges of intersectionality. In *Hidden Figures*, when we trace the evolutionary life of the main characters through the lens of intersectionality, we could understand that the oppression faced is overlapping and intersecting.

Katherine, the first African-American woman employed by NASA as a mathematician at the spacecraft research centre, is a widow with three young children. She was the first woman of African American descent to hold the position of a mathematician. In the NASA office at Langley, Katherine was discriminated against in multiple ways. Her irreplaceable talent and consistent work prove to help her overcome the challenges. While working at the Langley research centre, she has to bear hostility from her white peers. She was treated cruelly and sarcastically at Langley, especially by the chief Engineer Paul Stafford, who is indifferent to her. She has gone through many obstacles like her peers to prevent her from using a common coffee pot, they place a separate pot labelled as coloured. She was not allowed to use the toilet, those facilities were only reserved for whites in the office. Undoubtedly, the most poignant part was when Katherine spoke up against the prejudice she has experienced in the workplace only for being an African American woman. Her superior Al Harrison was horrified to discover that Katherine needs more than 30 minutes to use the restroom by walking to the next building when he unexpectedly discovers her leaving her workstation at a crucial point. Harrison ultimately breaks the signboard in front of the restroom and lets everyone use it. Gradually with her unattainable talent, Katherine sits in a position to instruct Harrison's staff members and the white co-workers about a challenging scientific concept, everyone is intrigued.

Mathematicians eventually lost their jobs, and soon electronic computers took their place. Katherine was transferred to the Analysis and Computation Division due to the circumstances mentioned above. Even though she was not permitted to participate in the 'Mercury 7' Spacecraft's official launch at that point, Katherine was requested for her presence by Glenn, the Astronaut and Harrison to accompany and help the control system at the research centre. A heat shield issue is indicated by a warning light on the 'Friendship 7' Space Capsule. Glenn asks Katherine to verify the calculations before accounting for the 'IBM 7090' dispatch issues for the case's arrival paths. Katherine responds swiftly and

updates the control room about the situation. She gave Harrison the report so they could inform Glenn of the findings together. Katherine chooses to land it after three instead of seven rings. Katherine suggests that the retro-rocket be attached to a heat shield after discovering the problem. She gives the order, and 'Friendship 7' enters the water safely. Shetterly rightly comments about Katherine as "Katherine knew: once you took the first step, anything was possible"(HF 246). Katherine from all these struggling life events and triumph over them demonstrate her talent and convince readers that, with the right talent and consistent, earnest effort, even the societally idealized heights of women, especially African American women, are genuinely attainable.

Mary Jackson was the first remarkable African American female Engineer to enter the mission of the aeronautical section of the space race. Mary's senior scientist who noticed her interest and talent in scientific physics suggested that she can pursue engineering to gain and enhance her skill, to become unique in the workplace which would also help them to achieve in the Space Race. But that was a great deal for African Americans particularly a woman of that day. However, Mary had a flame as well as a deep desire to become an Engineer, something which had never happened in American history and she achieved success. "Mary was seeking to make herself more useful to her country, and yet it was she who had to go hat in and to the school board"(HF 144). Mary adheres to the advice of her senior and needs special permission from the town of Hampton in order to enrol in classes at a high school where every student is white. To attain the degree, Mary had to appear in court and persuade the relevant judge to allow and enrol in night classes at a university that is only open to white people. She used the judge's successes as the first member of the coloured community to do so and made them acquire a college degree by highlighting the importance of becoming the first black woman to enrol in a graduate programme at a mostly white university. "Whatever pain securing the permit exacted, it was more than offset by the victories lying in wait"(HF 145). Mary was the first black woman and the only black student admitted to the institution, which was solely for white people, and she also had to deal with her husband's guilt for not staying at home with their kids. Mary had to battle many challenges similar to these to fulfil her dream of becoming an engineer. Her unwavering commitment and selfless pure thoughts gained her the reputation that she well deserved for her patriotism. Mary's uncompromising attitude allowed her to inspire other African American women to achieve their goals.

Dorothy, the first black female supervisor of West Area Computers, served as a 'Human Computer' and mathematician. First, she was first at risk of getting fired and was prohibited from using the public libraries, her persistence, not just securing her job but of all other African American women in the process. Dorothy was a person most likely to advise the others to keep their mouths shut and if at all possible, avoid getting into a fight, but if she has any power over it, she won't let others get away with it. Though she was a well-deserved and skilled person to be a supervisor, she is consistently ignored and rejected for promotion by Vivian Mitchell, a white superior. "Her work was making a difference in the outcome of the war (HF 59). When Dorothy found that her intellectual chances would be constrained and will be replaced by IBM Electronic Computers, she understood that her position in the firm was at risk. So she visited a public library to make herself familiar with the upcoming dominant electronic computers, where the librarian

reprimands her for seeking in the whites-only area for a book on (FORMulaTRANslator) FORTRAN. To prevent herself and her West Area employees from getting fired, she learns FORTRAN, despite being forbidden from the library. Dorothy has equal access to resources as everyone else as a citizen, due to racial discrimination she was not allowed to access it. So Dorothy stole the book and upgraded herself and assisted other workers to learn. During an emergency situation when white employees found difficulty and unfamiliarity in operating the electronic computers, Dorothy enters the room with the coworking 'Human Computers' and turns on the electronic IBM. Dorothy was requested by her superior to assist other white co-workers in the process as supervisor. She protested by denying the proposal demanding job security and proper recognition for all other black women in the firm. Finally, her demand was accepted and she was appointed as a supervisor in 1949. This act of Dorothy was appreciated and inspired many other black women to follow in her footsteps.

There are numerous instances of discriminatory behaviour in *Hidden Figures* example the car wreck scene in the opening episodes of the book demonstrates the intersectional oppression faced by African American Women during that period despite their position and importance in society. The three women were unfairly interrogated and forced to show their IDs on the street, which was not at all customary for white people. Though the three women stated their professional work with ID proof the police refused to believe them. With an account of the disbelief, police escort women to Langley. When this brutal act of police was interpreted by the women in a light way: a car of African American was chasing a white police officer's car. The unconventional aspiration and imagination of the representative characters were also evidenced in this episode. The intersectional discrimination experienced by African-American women was vividly addressed through the perspectives of the novel's key protagonists. Through their unrivalled brilliance and unyielding attitude, the representative characters' success enabled them to overcome their obstacles and achieve real equality, which in turn served as an example and paved the way for other African-American women.

## **Conclusion**

In *Hidden Figures*, there are several incidences where discriminatory actions were evidenced at the intersectional level. According to the concept of intersectionality many diverse biological, social, and cultural categories, including gender, colour, class, ability, sexual orientation, religion, caste, age, nationality, and other sectarian axes of identity, interact on numerous levels, frequently and concurrently. It is a non-fiction work inspired by the Human-Computer Project which reveals the untold narrative of the Black Women who contributed to the triumph of the space race and the American dream. Among those African American women the three women namely Katherine Johnson, Dorothy Vaughan, and Mary Jackson were taken as the main focal point. In the work, there are several incidences where discriminatory actions were evidenced. Through the viewpoints of the main characters in the novel, the intersectional discrimination faced by African American women was clearly addressed. The triumph of the representative characters through their irreplaceable talent and uncompromising attitude helped them in breaking the barriers and

attaining substantive equality which eventually inspired and paved the path for other African American Women.

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