

# The Neuroethics of Predictive Policing: Exploring How Human Bias Affects Predictive Policing Algorithms.

## Abstract

In the wake of recent Black Lives Matter protests, many Americans have become aware of the problem of systemic over policing, and the anti-black violence that results from it. These issues are merely exacerbated by a new technology known as predictive policing that attempts to use historical crime data to predict crimes before they occur. This article attempts to examine how human bias often causes police officers and civilians to associate black people with criminality and why that often results in increased suspicion of black people. The article then transitions to assess why such human biases can make predictive policing and unreliable technology while also discussing the ramifications predictive policing can have due to such bias. Finally, it closes with a call to reexamine predictive policing technology to ensure that it is not used to harm black communities

## **The Case of Borden and Prater**

During the Spring of 2014 in Fort Lauderdale, Florida, Brisha Borden and her friend were going to pick up Borden's god-sister from school, when they noticed an abandoned bicycle and scooter. They grabbed both of them and decided to take a ride down the street. Just as they were about to disembark and return the bikes, a woman came chasing after them claiming that the items belonged to her child. Borden and her friend quickly dropped the items and profusely apologized but to no avail, as the woman had already notified the police. They were soon arrested and charged with burglary and petty theft.

A similar event happened last summer in the case of Vernon Prater, who was arrested for shoplifting in the same community where Borden was arrested. Not only was this a more serious crime than the one Borden had committed, Prater already had a history of armed robbery.

When both cases were taken to court, a computer algorithm was used to predict the likelihood of both Prater and Borden committing future crimes. Yet despite Prater, who is white, being the more serious criminal, it was actually Borden, who is black, who was rated as more likely to commit future crimes [1].

### **The Spread of Predictive Policing**

Algorithms like the one used on Borden and Prater are part of an emerging practice in policing known as predictive policing. Predictive policing attempts to use computer analysis and artificial intelligence to analyze large sets of crime data in order to determine where and when crimes are most likely to happen so that police department resources can be deployed more efficiently. Fort Lauderdale is not the only city attempting to use predictive policing. The Los Angeles Police Department, New York Police Department, and Chicago Police Department have all utilized predictive policing software [2].

However, despite the benefits that predictive policing might bring in preventing future crimes, it has proven to be very inaccurate at times, especially when race enters the picture. In fact, studies show that predictive policing algorithms are 77% more likely to rate black people at a high risk of committing a future violent crime than any other race. (Angwin 16) This is because people tend to associate people of color with criminality, and thus police officers often report people of color for suspicious activity at higher rates. When computer algorithms learn from historical crime data, that data shows a consistent pattern of associating people of color with suspicious activity, causing the algorithm to do so as well. Thus, the unconscious racial bias that humans experience makes its way into predictive policing tools, with many negative consequences for people of color [3].

### **The Human Bias Involved in Policing**

There is clearly an inextricable connection between predictive policing and Neuroscience, and it's important that we understand that relationship if we are to ever make Predictive Policing fair and impartial. Research done by Jennifer Eberhardt, professor of psychology at Stanford University, shows that we subconsciously associate black people with criminality. She conducted an experiment, where both police officers and students stared at a black dot on a computer screen, while either a black face, white face, or no face flashed on the screen. Then an outline of an object would slowly come into focus, and the participants were required to press a button when they recognized the object. The objects shown could be something as harmless as a radio or something as dangerous as a gun.



Figure 1. Examples of Images Shown to Participants of Eberhardt's Study [7]

Subjects who were previously shown an image of a black face, were more likely to recognize an image of something dangerous such as a gun, meaning that subconsciously, they were linking black faces with danger [4].

Not only are black people perceived as dangerous, but they're also not even seen as human beings. Neuroscientists Lasana Harris and Susan Fiske conducted an experiment in which they showed images of various people to a group of subjects all while monitoring their brain using functional magnetic resonance imagery (fMRI). In particular, Fiske and Harris were monitoring their medial prefrontal cortex, which activates when someone perceives another person as a human being. The results of the experiment clearly showed that whenever a subject saw a person of color, their medial prefrontal cortex didn't activate, even though it did activate when they saw Caucasians, indicating that the subjects distrusted people of color on a neural level. According to Harris and Fiske, since the police are far more likely to be suspicious of people that they view as inhuman, they will always be more suspicious of black people [5].

## The Ramifications of Bias

Research such as this calls into question whether or not predictive policing should even be utilized as a tool to catch criminals. Predictive Policing software is being trained to think like a human, using data collected by humans, so it's no surprise that the algorithms are experiencing the same prejudices that humans have, and the situation is exacerbated by the fact that the technology is merely trying to predict criminal activity rather than stop it. Algorithms will predict that blacks will commit crimes at a disproportionately high level, causing a high number of police to be sent to black communities. Systemic over-policing has major ramifications for black communities, and it's the reason why African-Americans are 2.5 times more likely to be killed by a police officer than white people. [6] These numbers illustrate that the status quo already sees too much anti-black violence, and that problem will only be compounded by racially biased predictive policing algorithms.

In the wake of the killing of George Floyd, and the subsequent BLM protests that occurred, millions of Americans became aware of how unjust the American policing system is for black people. In light of these events, it is crucial that we take a closer look at the methods that police use to predict and prevent criminal activity. Stories such as that of Borden and Prater are not uncommon, and it is clear that as it is now, predictive policing will merely serve to exacerbate the anti-black violence that we are already seeing.

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### References

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