FEATURES

The bias detective

Psychologist Jennifer Eberhardt explores the roots of unconscious bias—and its tragic consequences for U.S. society

By Douglas Starr; Photography by LiPo Ching

Jennifer Eberhardt has devised virtual reality programs for training police to conduct traffic stops more respectfully.

When Jennifer Eberhardt appeared on *The Daily Show* with Trevor Noah in April 2019, she had a hard time keeping a straight face. But some of the laughs were painful. Discussing unconscious racial bias, which she has studied for years, the Stanford

University psychologist mentioned the “other-race effect,” in which people have trouble recognizing faces of other racial groups. Criminals have learned to exploit the effect, she told Noah. In Oakland, California, a gang of black teenagers caused a mini–crime wave of purse snatchings among middle-aged women in Chinatown. When police asked the teens why they targeted that neighborhood, they said the Asian women, when faced with a lineup, “couldn’t tell the brothers apart.”

“That is one of the most horrible, fantastic stories ever!” said Noah, a black South African.

But it was true. Eberhardt has written that the phrase “they all look alike,” long the province of the bigot, “is actually a function of biology and exposure.” There’s no doubt plenty of overt bigotry exists, Eberhardt says; but she has found that most of us also harbor bias without knowing it. It stems from our brain’s tendency to categorize things—a useful function in a world of infinite stimuli, but one that can lead to discrimination, baseless assumptions, and worse, particularly in times of hurry or stress.

Over the decades, Eberhardt and her Stanford team have explored the roots and ramifications of unconscious bias, from the level of the neuron to that of society. In cleverly designed experiments, she has shown how social conditions can interact with the workings of our brain to determine our responses to other people, especially in the context of race. Eberhardt’s studies are “strong methodologically and also super real-world relevant,” says Dolly Chugh of New York University’s Stern School of Business, a psychologist who studies decision-making.

“She is taking this world that black people have always known about and translating it into the principles and building blocks of universal human psychology,” adds Phillip Atiba Goff, a former graduate student of Eberhardt’s who runs the Center for Policing Equity at John Jay College of Criminal Justice.

Eberhardt hasn’t shied away from some of the most painful questions in U.S. race relations, such as the role of bias in police shootings. “What’s distinctive about her work is how bold she is,” says Susan Fiske, a psychologist at Princeton University who wrote the authoritative textbook about social cognition. “She’s not the only one working in social cognition or on police issues or on implicit bias. But she dares to go where other people don’t.”

Eberhardt, a MacArthur Foundation “genius grant” award winner in 2014, has long been putting her insights to work. At Stanford, she co-directs Social Psychological Answers to Real-world Questions, a group of researchers who aim to solve problems in education, health, economic mobility, and criminal justice. Eberhardt has been especially active in criminal justice, playing a key role in the court-ordered reform of the Oakland police department, which has a history of toxic community relations.

“She has been working tirelessly on this issue and brought a whole new series of concepts to the department,” says Jim Chanin, an attorney whose class action suit prompted the court order and who has seen the department’s record improve. “The whole culture has changed, and Dr. Eberhardt has been part of that.”

EBERHARDT HAS AN EARNEST manner that suggests a deep sense of mission. After growing up in a black Cleveland neighborhood, she had a formative experience in middle school when her family moved to a predominantly white suburb. Contrary to her fears, her new classmates were welcoming. But as much as she tried to reciprocate their attention, she had trouble telling them apart. So she trained herself to recognize features she had never paid attention to before—“eye color, various shades of blond hair, freckles,” she wrote in her book, Biased: Uncovering the Hidden Prejudice That Shapes What We See, Think, and Do. It also became clear to her how different her world was from that of her classmates—how her relatives routinely got pulled over by the police, for example, whereas those of her classmates almost never did.

Those memories never left her as she made her way through her undergraduate years at the University of Cincinnati and her Ph.D. in cognitive psychology at Harvard University. Still, she hadn’t planned to study race until the issue came up while she was a teaching assistant. She introduced the class to the quizmaster test, in which one student poses as a quiz show host, like Alex Trebek on Jeopardy!, and another poses as a contestant. Observers almost always say they see the quizmaster as more intelligent, despite knowing that’s simply because the host already has the answers. It’s a textbook example of what’s known as the fundamental attribution error, a tendency to credit or blame other people for actions or qualities for which they bear no responsibility.

Eberhardt’s students committed the same error—except when the quizmaster was black and the contestant was white. “The effect was just flat,” she says: The student observers did not see the quizmaster as any more intelligent than the contestant. “And I was like, wow, because normally this experiment always works.” She began to wonder

how unconscious bias influences our perceptions. For her dissertation, she decided to study one of the best-known examples—the “other race” face recognition bias.

To explore how hardwired the effect might be, Eberhardt and colleagues at Stanford recruited 10 black and 10 white students and put them in an MRI machine while showing them photographs of white and black faces. When students viewed faces of their own race, brain areas involved in facial recognition lit up more than when viewing faces of other races. Students also had more trouble remembering faces of races other than their own.

Same-race recognition isn’t inborn, Eberhardt says. It’s a matter of experience, acting on biology: If you grew up among white people, you learned to make fine distinctions among whites. “Those are the faces our brain is getting trained on.”

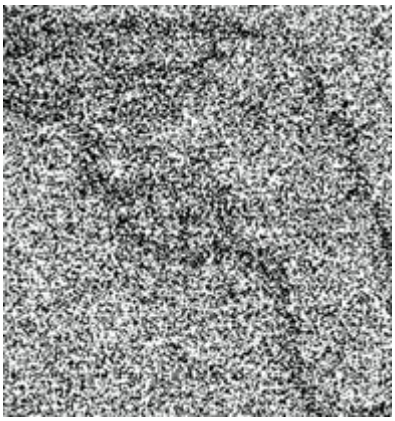
Such learned perceptual biases, she thought, might shape reactions, too—in particular those at work in tense confrontations that can have a tragic outcome, such as when a police officer shoots an unarmed black man. She and colleagues did a series of experiments using the dot-probe paradigm, a well-known method of implanting subliminal images. She asked subjects (largely white) to stare at a dot on a computer screen while images—of a black face, a white face, or no face at all—flashed imperceptibly quickly off to one side.

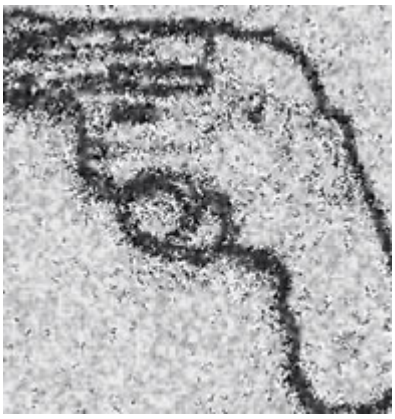
Then she would show a vague outline of an object that gradually came into focus. The subjects, who included both police officers and students, were asked to press a key as soon as they recognized the object. The object could be benign, such as a radio, or crimerelated, such as a gun. Subjects who had been primed with black faces recognized the weapon more quickly than participants who had seen white faces. In other words, seeing a black face—even subconsciously— prompted people to see the image of a gun.

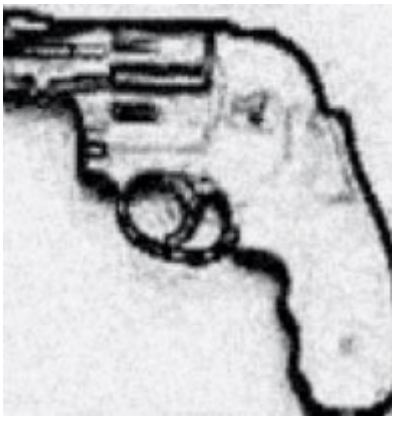
Then the researchers tried the experiment in reverse, flashing subliminal images of crime objects, such as a gun, followed by a brief image of a face in various parts of the screen. Those subjects primed by crime related objects were quicker to notice a black face.

Eberhardt’s finding, added to earlier studies showing similar associations, suggests a dangerous sequence of cognitive events, especially in situations when adrenaline runs

high. But the subconscious link between black faces and crime remains strong even when people have time to think, as other studies have shown.







Subjects recognize a gun that gradually comes into focus faster when "primed" with a glimpse of a black face. IMAGES: EBERHARDT ET AL.; JOURNAL OF PERSONALITY AND SOCIAL PSYCHOLOGY, 87, (2004) 876

Black people convicted of capital offenses face the death penalty at a higher rate than white people. (They also tend to face longer prison terms for similar crimes.) To suss out the cognitive component of sentencing, Eberhardt obtained data from hundreds of capital cases in Philadelphia. Without explaining the purpose of the study, she showed photos of the defendants to panels of students and asked them to rate which ones seemed most stereotypically black. In cases when the victim was white, the criminals who appeared the most "black" were more than twice as likely as others to have received a death sentence.

Such work explores "the very soul of our country," Chugh says. In 2016, Eberhardt and colleagues published a study in the Journal of Experimental Psychology: General showing that people who saw photos of black families subconsciously associated them with bad neighborhoods, no matter how middle-class those families appeared. Another study of unconscious bias found that teachers were more likely to discipline black students—not on the first offense, but on the second: The teachers apparently were quicker to see "patterns" of bad behavior in black children. And last year, in the *Proceedings of the National Academy of Sciences (PNAS)*, Eberhardt and colleagues reported that implicit bias affects leaders in the asset allocation industry—a $69.1 trillion business that helps universities, pension funds, governments, and charities decide where to invest. When given virtually identical portfolios of successful investment firms that differed only in the race of the principals, the study indicated, financial managers tended to choose white-managed firms.

SUCH RESULTS MIGHT UPSET a woman whose great-great-grandfather was born into slavery. But Eberhardt says using science to study racial bias drains it of its mystery and power. "As a scientist, I made it my role not to just be a member of a group who could be targeted by bias but to do something about it," she says, "to investigate, understand it, and communicate with others."

One series of studies tested her ability to remain detached. In the 19th century, prominent scientists such as Louis Agassiz and Paul Broca embraced "racial science," which saw black people as an evolutionary step between apes and white people. Long since discredited, such ideas have not disappeared. In the aftermath of the 1991 Rodney King beating and Los Angeles riots, patrol radio chatter revealed officers referring to black people as "gorillas in our midst," among other derogatory descriptions.

Eberhardt wondered about the staying power of those associations. Using the familiar dot-probe technique, she primed a group of students with subliminal images of black or white faces, followed by vague images of various animals, including apes. Students primed with black faces detected ape images more quickly. It didn't seem to be bigotry —the students completed a survey indicating that they did not consciously harbor bias. When she reversed the process, students primed with line drawings of apes directed their attention to black faces more quickly. In a follow-up study, students who viewed a video of police beating a black man after glimpsing an ape were more likely to say the beating was deserved.

The work, Fiske says, is "very disturbing but also spot-on in terms of the science." Eberhardt doesn't know how those ideas made their way into the minds of her study participants, mostly white undergraduates. Few had heard of 19th century race science. And she and her colleagues did the study before the Obama and Trump presidencies, when racist language resurged on the internet and in politics.

Eberhardt admits the findings shook her. "This wasn't just a bias, where you think, 'This group is not as good as my group,'" she says. "This was like placing African Americans outside the human family altogether."

ABOUT A 90-MINUTE DRIVE from Eberhardt's office is a police department with a troubled history, in one of the nation's most violent cities. The Oakland police have a long record of scandals. In the late 1990s, four officers calling themselves the Riders would brutalize and plant evidence on people. In a more recent outrage, a group of officers passed around a 19-year-old prostitute. The department has been the target of lawsuits and sanctions, including a $10.9 million payout in a class action lawsuit resulting from the Riders fiasco. The court-enforced agreement also required the department to reform itself, spelling out 51 tasks. In 2014, Eberhardt's group was enlisted to help with task No. 34—making traffic stops, the most common interactions between civilians and police, less discriminatory and confrontational.

Eberhardt saw a way to bring science to bear. Working with Deputy Chief LeRonne Armstrong, she collected 1 year's worth of "stop data" from forms Oakland police filled out when they pulled someone over. The data included reasons for the stop, the race of the driver, whether the car was searched, and whether the driver was handcuffed or charged with an offense.

After analyzing more than 28,000 traffic stops, Eberhardt and her team found that the data supported the residents' distress. Sixty percent of the stops involved black people, who made up only 28% of the city's population. Oakland police, who were both black and white, searched or handcuffed black drivers at nearly three times the rate for white drivers. Black people were also stopped more often than white drivers for minor violations and indistinct reasons rather than "actionable intelligence" such as a traffic violation or outstanding warrant.

"Before these results, our officers would have told you that close to 90% of those stops were based on intelligence," Armstrong says. "The data said it was actually under 5%." A more recent study by the Computational Policy Lab at Stanford showed the same pattern nationwide.

Equally troubling was the tone of those encounters, as Eberhardt's team documented in unprecedented detail. They collected body camera footage from 1 month's worth of traffic stops in 2014—981 stops by 245 officers—and hired professional transcribers to capture everything police said in those stops, nearly 37,000 utterances. Then the researchers used a combination of human raters and machine learning algorithms to analyze those utterances on scales of respect, formality, impartiality, and politeness.

The results, published in PNAS in 2017, confirmed that police routinely used less respectful language when speaking to black people than to white people. The researchers didn't hear ethnic slurs or overt insults. But phrases such as "I'm sorry to have to pull you over, but …" or "Drive safely, ma'am," were reserved mostly for white people, whereas black motorists more often heard phrases such as "All right, my man. Just keep your hands on the steering wheel real quick."

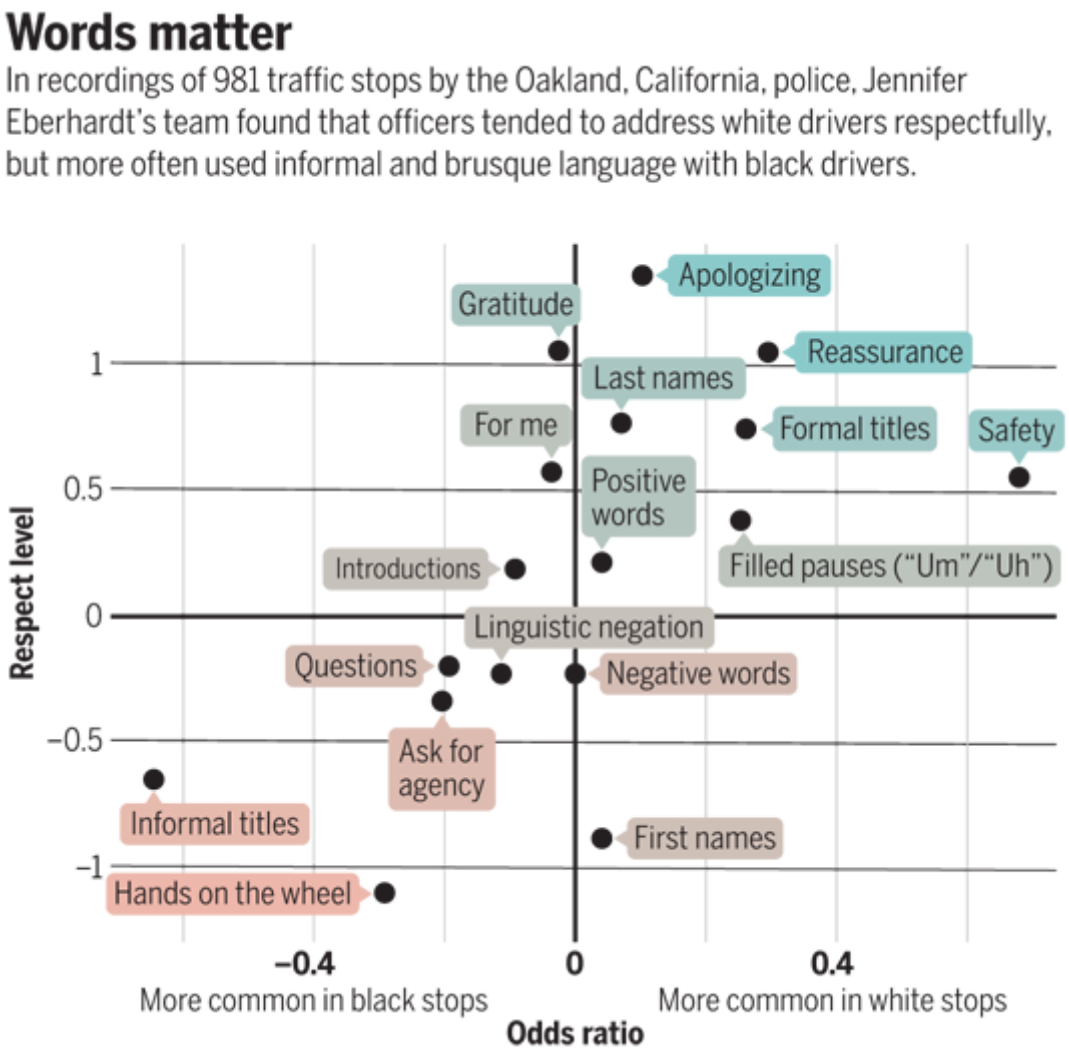
"You can see how the justice system plays out in day-to-day language and social interaction," says Rob Voigt, a computational linguist at Stanford who took part in the project. Both black and white police officers used similar disrespectful language with black motorists, which tells Eberhardt that although some of that behavior may be racist, most probably arises from unconscious patterns that somehow get transmitted during training or fieldwork. "It's one of the things we want to study more," she says.

Even before knowing the roots of the behavior, Eberhardt's team worked with the police department to change it by creating role-playing exercises to train police to conduct traffic stops more respectfully. Nowadays, Oakland's officers make stops only for

documented reasons and ignore minor violations such as double parking. As a result, the number of traffic stops dropped by nearly half from 2016 to 2018, and stops involving black drivers dropped by 43%.

Words matter

In recordings of 981 traffic stops by the Oakland, California, police, Jennifer Eberhardt's team found that officers tended to address white drivers respectfully, but more often used informal and brusque language with black drivers.



CREDITS: (GRAPHIC) N. DESAI/SCIENCE; (DATA) VOIGT ET AL., PNAS, 114 (2017) 6521

Eberhardt and her team are developing virtual reality programs to train officers in various traffic stop scenarios, and they are expanding their data-gathering and reform work to other urban police departments. The researchers are also looking at how traumatic incidents in one community, such as a police shooting, can affect police and citizen behaviors in another.

Some Oakland activists have questioned the need for the city to fund an ongoing relationship with researchers from Stanford to the tune of hundreds of thousands of dollars. Armstrong disagrees. “We’ve paid many consultants over the years to come in and do studies, but they’d leave us with their findings and would walk away,” he says. “Dr. Eberhardt’s team decided to stay on and help us through that process … and that’s why we got so much buy-in from our officers.”

THERE’S NO EASY ANTIDOTE for unconscious bias. The legacy of past policies, such as segregated neighborhoods and mass incarceration, creates conditions that trickle down to individual brains. Eberhardt argues that increased diversity in neighborhoods, workplaces, and schools could help, and she calls for studying the effectiveness of the antibias training that some institutions are introducing.

She, like other experts, says one effective countermeasure is to slow down, to move your thinking from the primitive, reactive parts of the brain to more reflective levels. The Oakland police department has tried to buy time for officers by changing its foot pursuit policy. Rather than chase a suspect into a blind alley, officers are encouraged to call for backup, set a perimeter, and make a plan before closing in. As a result, the number of police shootings and officer injuries dramatically dropped.

Another tack is to introduce what Eberhardt calls friction into the system. When the founders of the social networking company Nextdoor saw that too many “suspicious character” postings on its online bulletin boards were based solely on race, they called Eberhardt in to consult. From her advice, they created a checklist so people logging on had to specify suspicious behavior before describing appearance. That friction caused people to evaluate their reasoning before making bias-based assumptions, and the incidence of racial profiling fell by more than 75%.

But dealing with bias is also a personal enterprise of pausing and examining one’s assumptions. “We could practice adding friction to our own lives,” Eberhardt says, “by interrogating ourselves and slowing ourselves down … just being aware when we’re

beginning to make stereotypic associations." As she concludes in her book, "There is hope in the sheer act of reflection. This is where the power lies and how the process starts."

Douglas Starr is a journalist in Boston.