LOOKING FOR THE DRIVING WHILE BLACK PHENOMENA: CONCEPTUALIZING RACIAL BIAS PROCESSES AND THEIR ASSOCIATED DISTRIBUTIONS

DONALD TOMASKOVIC-DEVEY
North Carolina State University

MARCINDA MASON
University of the Virgin Islands

MATTHEW ZINGRAFF
North Carolina State University

This article describes four bias mechanisms that might produce the "driving while Black" phenomena. First, some officers may be racially prejudiced and so consciously target minority drivers. Second, most officers have access to cultural stereotypes and their associated cognitive biases. This mechanism will produce a diffuse tendency to stop minority drivers at higher rates than majority drivers. This bias mechanism should be present among both minority and majority officers but operate more strongly on average for majority officers. Racial profiling, the organizational practice of stopping individuals because they "fit" a profile that includes race/ethnic characteristics, will produce racial bias in stops at very high rates among both majority and minority officers. Finally, if the police are deployed more heavily in minority communities, this will also produce high rates of minority stops. Neither organizational mechanism requires any bias in officer or organizational intent, although they will produce biased policing.

Keywords: *racial profiling; racism; cognitive bias; vehicle stops; neighborhood policing; baseline estimators*

For the past several decades, discretionary decision making within the criminal justice system has received wide attention from criminal justice policy

POLICE QUARTERLY Vol. 7 No. 1, March 2004 3–29
DOI: 10.1177/1098611103259858

makers, administrators, researchers, and the public. This attention is well warranted. Laws enforced by the criminal justice system routinely affect the privacy, liberty, and lives of its citizens. At its core, the principle of law is quite simple. In a free and democratic society, criminal justice agencies must ensure that the enforcement of law is designed to benefit all members of society. Likewise, it should be established that law enforcement is not intended to, nor does it, disproportionately invade the privacy of, or place at special disadvantage, any specific segment of society. The single-most current and visible controversy that challenges the heart and foundation of the principle of law is differential enforcement of traffic laws on our nation's highways and in our cities.

Minority citizens for some time have argued that they are singled out for traffic law enforcement and that, once stopped, they are at greater risk for more invasive investigations and their vehicles are searched at rates that far surpass any reasonable level of expectation based on either their infractions or presence on the roads (American Civil Liberties Union [ACLU], 1999). A recent national survey suggests that this belief is shared by a majority of the White community as well (Newport, 1999). Indeed, some would argue that this practice is so pervasive that it should be referred to as the crime of "driving while Black" (Gates, 1995). "Driving while Black" refers to the practice of targeting drivers of color, especially African Americans, for unwarranted traffic law enforcement. These stops, in addition to the obvious and direct costs to citizens associated with the various discretionary decisions afforded the officer, serve to heighten and exacerbate the general mistrust of the police in the minority community.

The problems associated with driver targeting or profiling are not merely those of perceptions on the part of the minority community. Indeed, media accounts (see, e.g., Adams, 2000; Antonelli, 1996; Bell, 1992; Goldberg, 1999; Jackson, 1995; McFadden, 1996), statistical analyses that provided the foundation for litigation in New Jersey and Maryland (see Lamberth, 1996), the first interim report on racial profiling completed by the New Jersey Attorney General (Verniero & Zoubek, 1999), and some early empirical research (Browning, Cullen, Cao, Kopache, & Stevenson, 1994; Norris,

---

This project was supported by Grant No. 199-MU-CX-0022 awarded by the National Institute of Justice, Office of Justice Programs, U.S. Department of Justice. Points of view expressed in this article are those of the authors and do not necessarily represent the official position or policies of the U.S. Department of Justice. The germ of this paper was developed in conversation with Barbara Tomaskovic-Devey. The first draft was written with the generous support of SOFI at the University of Stockholm. Bruce Western, Richard Lundman, and Bill Smith have contributed suggestions to the article, although they bear no responsibility for its limitations. Contact: Don_Tomaskovic_Devey@ncsu.edu.

Fielding, Kemp, & Fielding, 1992) suggest that the targeting of minority motorists is quite real, at least in some jurisdictions. Certainly, the phenomenon and practice deserves serious consideration, further and more sophisticated analysis, and explanation. More important, recent research with greater attention to, and sophistication in, design and measurement generally provide evidence in support of the differential enforcement of traffic laws by race theme (see, e.g., Gaines, 2002; Meehan & Ponder, 2002; Smith & Petrocelli, 2001).

Only recently have scholars begun to give serious scholarly attention to research design, measurement, and analysis issues inherent to the study of "driving while Black." Certainly, these issue must be addressed as we learn more about the phenomenon, and the developmental nature of new research areas (here, "driving while Black") surely guarantee that researchers will be successful in improving the methodology necessary to study racial bias in police stops. Still, an unfortunate consequence of increased attention to measurement and analysis may be that the level of sophistication in that arena will not be matched by better conceptualization of racial profiling or our ability to interpret the findings. Little attention has been paid to conceptualization, theory, or interpretation (but see Engel, Calnon, & Brenard, 2002). In this article, we attempt to clarify for the policy and scholarly audience that there are at least four different bias mechanisms that we believe will be useful to researchers and policy analysts to examine when investigating suspicions of racially biased police stops.

We believe that this approach will make a substantial contribution to policy and practice. In June 1999, Attorney General Janet Reno convened the "Strengthening Police-Community Relations" conference in Washington, DC. Although some states and locales had already begun to collect data on law enforcement practices as they relate to traffic stops, this national event played a significant role in bringing some of the issues pertinent to data collection to the attention of policy makers and activists alike. At the time Ramirez, McDevitt, and Farrell (2000) presented their resource guide for profiling data collection, it was estimated that more than 400 police agencies throughout the country were involved in data collection in one form of another. At this time, it is safe to say that hundreds more law enforcement agencies (indeed, legislation in Missouri alone provides information on 609 departments beginning August 2000) are now actively collecting data meant to address the simple but significant question: Do police stop what they see or who they see?

What seems striking is that many, if not most, agencies collecting data are not in the position to determine what they will do with it when they have

it. This is particularly troubling for those law enforcement agencies that have voluntarily begun to collect data or those that view mandatory data collection as an opportunity to better understand a facet of their work that has a profound impact on citizen trust and evaluations of their own integrity. Those in need of assistance with analysis, of course, are encouraged to "partner with an academic institution." That assumes, at the least, that the agency knows who to call, that the academic institution will offer its services, and that the academic institution is in a position to know what to provide.

We believe that what we offer below is a rather simple beginning point that any law enforcement agency can use to examine "in-house" the data generated. Straightforward review of the distributions of stops would enable agencies, with and without substantial internal resources, to assess where they stand. Such internal review would create a better understanding of the outcomes of activities, provide them the opportunity to think through the results, and perhaps identify potential problems and potential explanations. In short, having some degree of understanding and control over the data they themselves generate would enable agencies to either know what things might be addressed (e.g., rationales for patrol deployment) or whether outside assistance with more sophisticated analysis is needed. Furthermore, in-house understanding of what they have will enable agencies to participate in a "conversation" with the partner. To do so, agencies must have some idea of what they might be looking for. For academic partners, we provide a conceptual roadmap to help design data collection and guide analysis.

CONCEPTUALIZING BIAS PROCESSES

There are at least four general bias processes that may generate disparate racial outcomes in police stops. These four processes are generic bias processes and so should be expected to occur occasionally in any realm where race-sensitive choices by powerful actors take place. That is, the police are not inherently different from other powerful decision makers. They have organizational rules that encourage them to make some choices but not others, and they have personal tendencies that do the same. Except in the extreme case when race is the basis of power (e.g., apartheid or slavery), most decisions are not about race. In the case of the police, they are often about public safety. Similar decision-making processes occur most commonly in employment. Although employers may on occasion intentionally discriminate on the basis of race for organizational or personal reasons, the

vast majority of decisions are not directly about race. Descriptions of these various sources of bias will be developed in this article, with occasional reference to the employment literature and applied to traffic stops by police officers.

In this article, we are going to assume two types of information are available to evaluate whether there is evidence to suggest different types of racial bias. The first is officer-level counts of the race distribution of vehicle stops, citations, or searches.[1] We focus on stops in the examples below, but the actual choice will be governed by data availability and the focus of investigation. The second piece of information is an officer-level estimate of the race distribution of people at risk to be stopped.[2] In practice, this number is less likely to be collected routinely by police forces and so will be a larger practical problem. Race distributions of the resident population, registered drivers, drivers in accidents, drivers stopped for no- or low-discretion stops, and observational surveys of who is actually on the road are potential candidates. For very small police forces, this might simply be census or DMV data on the race distribution of a town. For city or state police forces, these estimates would more normally match the unit patrol district geography that officers typically work within.

An odds ratio compares the risk of some event (e.g., being stopped) of one group to another. An odds ratio of 1.00 means two groups have the same chance of an event given their incidence in the at-risk (i.e., driver) population. An odds ratio higher than 1 means minorities are stopped at higher rates than majority drivers. A 2.00 would be twice the rate, a 3.00 would be 3 times the rate, and so on. An odds ratio less than 1.00 means minorities are being stopped at lower rates than majority drivers given their estimated incidence in the population of at-risk drivers. For research on police behavior, we would typically compute first the odds of a minority person being stopped, then do the same for the majority, and then take the ratio of the two.[3]

$$\text{Odds}_{\text{minority}} = \text{Percentage of All Stops Minority}_{\text{officer}} / \text{Estimated Percentage of all Drivers Minority}_{\text{patrol geography}}$$

$$\text{Odds}_{\text{majority}} = \text{Percentage of All Stops Majority}_{\text{officer}} / \text{Estimated Percentage of All Drivers Majority}_{\text{patrol geography}}$$

$$\text{Odds Ratio}_{\text{minority/majority}} = \text{Odds}_{\text{minority}} / \text{Odds}_{\text{majority}}$$

It is useful to first picture what the absence of bias in traffic stops might look like. Figure 1 displays such a distribution. For both minority and White

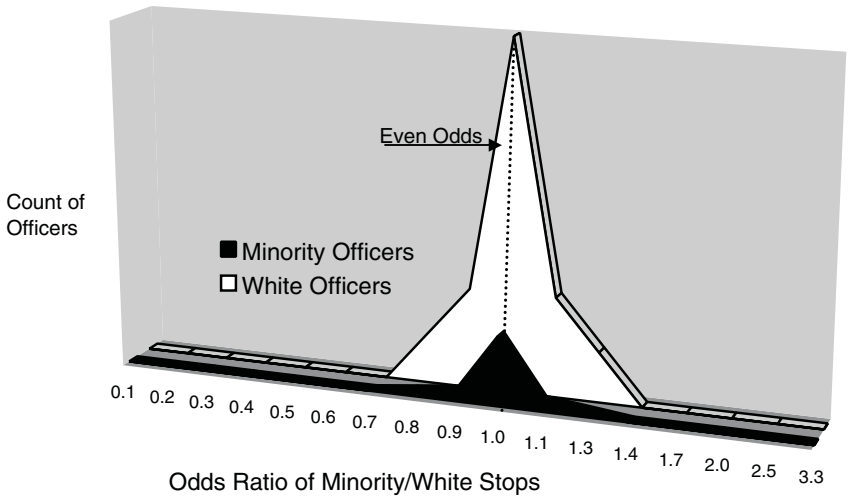

FIGURE 1: Race Distribution of Stops in the Absence of Racial Bias

officers, the distribution is centered on the odds ratio of 1.0. This means the odds of a minority or a White stop, adjusting for the race composition of at-risk drivers, are equal. We display two distributions, one for majority officers and one for minority officers. They are the same in this example. The distributions are very peaked, with little variance around the mean. In such a distribution, we would expect a highly positive kurtosis[4] and relatively low standard deviations. The small observed variance is presumably the result of measurement error in the adjustment for the race composition of at-risk drivers or random variation in the race distribution of the drivers each officer encounters in the course of his or her work. Variance in observed distributions will tend to increase as measurement or sampling error increases in the baseline estimate of at-risk drivers. Even in the presence of sampling or measurement error, the distribution, in the absence of racial bias, will generally be centered around even Black-White odds of a stop. When there is no discrimination, we expect all officers to stop minority and White drivers with nearly equal probability, given the limits of sampling and measurement error and given their incidence in the population of at-risk drivers.

The four bias mechanisms discussed are prejudice and racial animus, racial profiling, cognitive bias and stereotyping, and race-sensitive police deployment. There are, of course, nonbiased mechanisms that may produce the appearance of racial disparity in stops. These most prominently would include race differences in driving behavior, race differences in the number

of miles driven, and other bases for police stop discretion, such as gender or age. For the sake of our discussion here, we assume that the research and analysis design has accounted for these sources of disparity in the required baseline estimate of at-risk drivers or as statistical controls in a more formal modeling exercise.

PREJUDICE AND RACIAL ANIMUS

This bias mechanism is motivated by active racism. Conscious racial prejudice or active dislike of minorities can encourage individual actors to discriminate. This is what Gary Becker (1971) has called "taste" discrimination in the employment realm. To the extent that active animus reflects the mechanism of racial bias in police stops, this form should be largely limited to a relatively small number of White officers. Recent survey research provides ample evidence that overt racial animus has declined over the last 40 years. For example, 10% of White respondents in the 1996 General Social Survey (GSS) reported the belief that racial differences in jobs, income, and housing arise "because most minorities have less in-born ability to learn" compared to 26% in 1972. Support for formal segregation also has diminished. In the 1996 GSS for example, 33% of White respondents disapproved of marriage between minorities and Whites, down from 73% in 1972. Similarly, support for school segregation has declined over the years. In 1964, 37% of White respondents believed that Whites and minorities should not go to the same school, whereas in 1995 only 4% of White respondents supported school segregation (Schuman, Steeh, Bobo, & Krysan, 1997, p. 159).

Because active racial animus has clearly declined in the United States, one would expect only some—perhaps even only a very few—officers to be racially bigoted in this way. In discussions of police bias, this is often referred to as the search for "Bad Apples." Most police forces formally proscribe active racist behavior, so the actual expression of racist tastes in police stop or search decisions should tend to be even rarer than the incidence of racial prejudice or animus among officers. It is possible, of course, for some organizations to have more Bad Apples than others. This might be the case if recruitment or training processes encourage the development or expression of racial animus. It could also be expected if the prohibition of racist behavior (i.e., a zero-tolerance policy) was not or only symbolically enforced. Thus, there are three propositions about observed Bad Apple behavior.

1. Bad Apples are observed as officers with high levels of racial disparity after accounting for the race distribution of at-risk drivers.
2. Bad Apples should be relatively rare in most police forces.
3. Bad Apples should be more prevalent in police organizations whose training or supervision encourages or tolerates the expression of active racial animus.

Figure 2 describes the expected race distribution of stops by White and minority police officers if the generative mechanism is Bad Apple officers—police who just do not like minorities and who act on their dislikes. The vast majority of both minority and White officers are expected to be race neutral in their stop decisions. The White distribution contains a second smaller peak at the high end of the distribution. This peak represents the work of a few Bad Apples in the organization.[5] The observed distributions will only look like this if the race bias generative mechanism is limited to a few Bad Apple officers. Except for the second smaller peak at the high end, this distribution is very similar to that seen in Figure 1 because it portrays the vast majority of officers as race neutral in their stop decisions.

RACIAL PROFILING

Racial profiling refers to police organizations creating and acting on a set of characteristics, which include race, that are used to describe a typical offender or offending population. Although racial profiling may seem to be a useful tool for police work, it is also a form of institutional discrimination. Institutional discrimination refers to organizational practices that produce racial inequalities. These practices may or may not be directly intentioned to disadvantage minorities or to advantage majorities. For example, prior to the civil rights movement, there were very few African American professionals. The few that did exist were trained primarily in African American institutions of higher learning, none of which were in the northeastern United States. The absence of minority lawyers in big New York City law firms was then not primarily a result of direct discrimination against African American applicants. These law firms hired lawyers from northeastern law schools, schools that largely excluded African Americans from admissions. Thus, racism in this example is produced by race-neutral recruitment rules at the level of the firm. In policing, a similar type of institutional racism might be a standard practice of stopping and questioning pedestrians or drivers in wealthier neighborhoods who are not residents (Meehan & Ponder, 2002). If the rich neighborhoods are largely racially homogenous, the likelihood that many or most minorities traveling in such neighborhoods

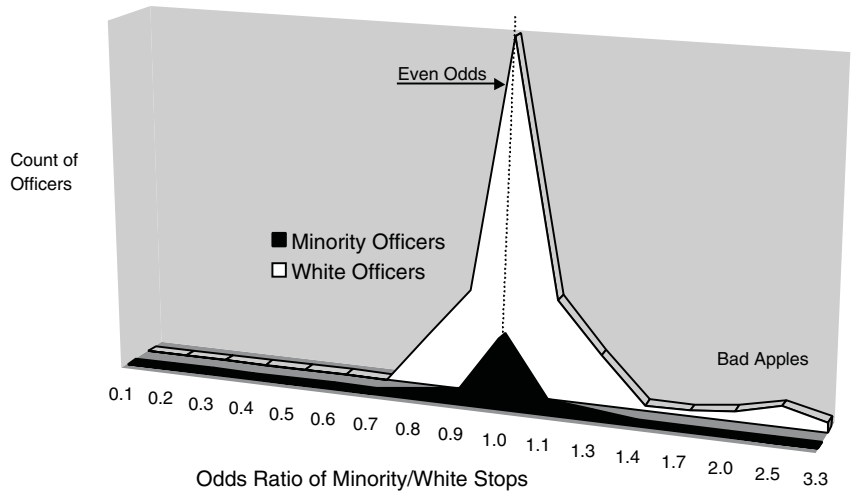

FIGURE 2: Race Distribution of Stops When Bias Mechanism Is Bad Apples

may be stopped will be greatly increased as it will be assumed that they are not residents.[6] Thus, although the practice may be directed at any and all persons found to be "out of place," the disadvantage is likely to fall disproportionately on minority citizens.

Much of traffic enforcement can be considered to be proactive rather than reactive policing in that the police-citizen encounter is initiated by a decision made by the officer. In proactive policing, patrol officers actively search for violations, suspicious individuals, and suspicious behavior. This differs from reactive policing in which police respond to calls for assistance from victims or witnesses of illegal activity. With reactive policing, some information about an event or offender is typically available due to victim or witness descriptions. Proactive policing is seldom carried out with such specificity. One solution to the lack of information on offenders is the development of criminal profiles. A profile is intended to identify typical traits of individuals who are thought to be associated with criminal propensity. The identified characteristics and behaviors tend to be based on crime statistics and the past experiences of police, which point to the "typical" offender for various criminal activities.

The use of profiles by police organizations is similar in many ways to statistical discrimination practices in employment (Kirschenman & Neckerman, 1991; Tomaskovic-Devey, 1993; Tomaskovic-Devey &

Skaggs, 1999). Such research notes that employers seeking to fill job openings often have limited information about applicants. Concerned with the possibility of making poor hiring decisions, employers rely on beliefs (that often reflect group stereotypes) that they possess about different groups to aid them in making hiring decisions. As a result, groups believed to be less productive (i.e., women and minorities) may not be hired because it is believed that such a hiring decision would potentially be more costly than hiring groups (i.e., Whites or men) thought to be more productive. Even though these hiring decisions are believed to be rational and probably even viewed as fair by the employer, statistical discrimination is a form of bias that may contribute to gender and racial inequality in the workplace.

The use of profiles in law enforcement is thought to increase the efficiency of officers and, consequently, the police organization as a whole.[7] Unfortunately, criminal profiles are often based on stereotypes of characteristics related to different groups. In turn, group membership becomes a proxy for suspected criminality. An obvious result of group generalizations in policing is that a widely cast net subjects many noncriminal minorities to police scrutiny even though criminal and noncriminal Whites escape similar costs. Criminal status no longer represents an individual characteristic but is shaped by group racial status.

The "war on drugs" has certainly heightened the use of profiles in law enforcement and serves as the most well-known case in point. A Drug Enforcement Administration agent originally developed a drug courier profile in the early 1970s for use in identifying drug traffickers in the Detroit airport. By the late 1970s, a drug courier profile was used in more than 20 airports in this country. Drug courier profiles were later developed for traffickers traveling by other modes of transportation, such as those traveling on highways (Allen-Bell, 1997). The drug courier profile was introduced for use on the nation's highways in the mid-1980s (ACLU, 1999). A highway drug interdiction program known as "Operation Pipeline" was initiated, which trained patrol officers to use profiles of drug couriers and pretextual stops to increase the effectiveness of the war on drugs. Since the program started in 1986, more than 27,000 police officers representing 48 states have been trained to use drug courier profiles that either implicitly or explicitly encourage the targeting of race and ethnicity, along with other factors, to apprehend drugs and drug traffickers (Allen-Bell, 1997). Because of the historical and contemporary connection between race and crime, profiles result in greater suspicion of minority drivers by police (Cole, 1999). The following are examples of drug courier profiles used by police organizations:

> The Virginia State Police Department utilized a drug courier profile that attached suspicion to Black and Latino males driving Florida rental cars northward.
>
> The Eagle County sheriff's office uses the following drug courier profile on Interstate 70 in Colorado: presence of fast-food wrappers strewn in the car, out-of-state license plates, and dark skin.
>
> Delaware's drug courier profile commonly targets young minority men driving late model cars and carrying pagers or wearing gold jewelry. The profile also considers the ages of the car and whether it is a rebuilt car with compartments; similarly, a profile was used to stop suspects based on the fact that "they were three young minority male occupants in an old vehicle." (cited in Allen-Bell, 1997, p. 5)

Drug interdiction profiling and the stopping of minority drivers in search of drugs or in rich White neighborhoods to prevent burglaries are examples of racial profiling. If race-based profiling is the generative mechanism producing high rates of minority stops or searches, not only should the distribution look similar to the one described below, but there should also be specific organizational practices or locations that can be pointed to as generating those distributions. For example, racial profiling, when it is operating, might best be observed in searches (drug interdiction profiles) or in stops of minority citizens in White neighborhoods. Racial profiling is not a likely mechanism for routine speeding stops or stops of minority drivers in minority neighborhoods.

Racial profiling, in this case, centers on organizational rules that either directly (drug interdiction profiling) or indirectly (stopping people from outside the neighborhood) produce race-sensitive police interventions. Racial profiling, because it is produced by organizational rules presumably followed by most or all individuals in the organization, encourages all officers to act in racially biased ways. Figure 3 displays the expected distributions for White and minority officers when the generating mechanism producing racial bias is some form of profiling. Here, minority and White officers have the same basic distributions; they all stop minorities at high rates because it is built into the protocols of their jobs. There are three propositions about observed distributions if the generating mechanism is institutional racism.

1. All or most officers will have high levels of racial disparity in stops (or searches).
2. Uniformly high levels of racial disparity across officers will happen only for activities or locations in which there are organizational rules that directly or indirectly are linked to the race of the driver.
3. Racial profiling, because profiles encourage officer initiative in stopping drivers, will be most likely to occur in proactive (rather than reactive) policing.

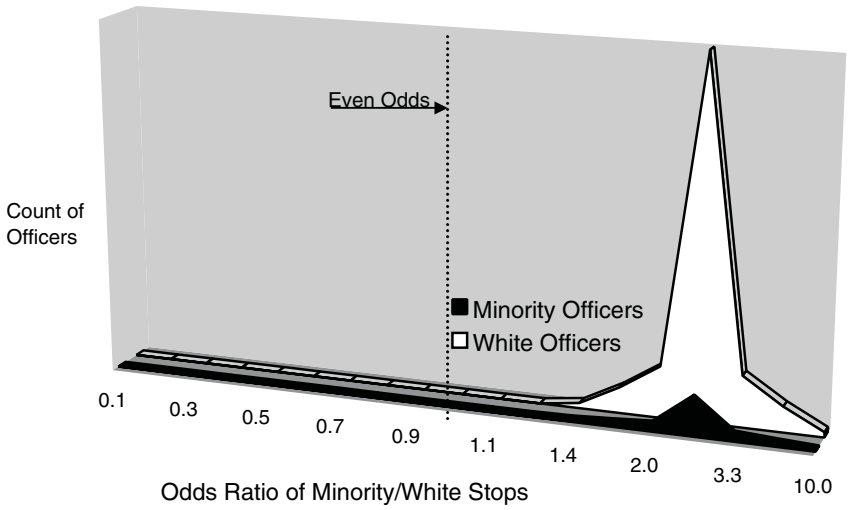

FIGURE 3: Race Distribution of Stops When Bias Mechanism Is Racial Profiling

COGNITIVE BIAS AND STEREOTYPING

Another possible mechanism that could produce disproportionate stops of minority drivers is cognitive bias. There is ample research demonstrating that stereotyping, and associated cognitive biases against African Americans in particular, are widespread. Social cognition theorists suggest that the primary way people create a more simple and manageable structure when confronting new information is by reducing that information into categories (Allport, 1954; Bodenhausen & Wyer, 1990). Categorization provides cognitive efficiency because it allows us to organize and make decisions about information with less time and effort than would be possible otherwise. In this way, the use of categories prevents cognitive overload (Hamilton & Trolier, 1986).

Importantly, people tend to categorize themselves and others into groups automatically and unconsciously (Bower & Karlin, 1974; McArthur & Baron, 1983). Often, people are not even aware that they are organizing information into categories (Taylor, Fiske, Etcoff, & Ruderman, 1978). When encountering people, we tend to use social categories that are immediately apparent, especially when we have little or no prior individuating information about people. Lacking substantial and valid individual information, people are likely to categorize others on the basis of highly visible

and easily attributable characteristics such as race, gender, and age (Brewer, 1988; Stangor, Lynch, Duan, & Glass, 1992). In turn, these categories have an almost automatic effect on our perceptual process once persons are categorized (Devine, 1989), influencing our impressions of them and often our behavior toward them (Sagar & Schofield, 1980). Cognitive bias and stereotyping have been identified as the most widespread mechanism producing employment discrimination (Bielby, 2000; Reskin, 2000).

This general tendency to make in-group and out-group distinctions has implications for racial bias in police stops. Because there is a tendency toward automatic display of in-group favoritism on making the in-group and out-group distinctions, officers may process information about driver threat in the context of race of both driver and officer. Some suggest that in-group favoritism results from our fundamental need to feel positive about ourselves (Tajfel & Turner, 1979), and one way we accomplish this is through feeling that our group is better than other groups (Tajfel, 1978). Thus, racial categorization is problematic because it often leads to discrimination as we more highly value those belonging to our group than those outside our group (Brewer, 1979; Tajfel, 1969; Tajfel & Turner, 1979; Turner, 1987).

In-group bias is also found in attributions made about in-group versus out-group behavior. The strongest form of evaluative bias is represented by what Pettigrew (1979) referred to in his article title "The Ultimate Attribution Error." Desirable behaviors tend to be attributed to internal, stable (personality) causes when involving in-group members, whereas similar behaviors are more likely attributed to external or situational causes when involving out-group members. Conversely, undesirable behaviors are more likely to be seen as more internally caused when exhibited by out-group members than by in-group members. For instance, research finds that blame for an accident or other negative outcome is more likely to be attributed to the personality of the driver when the driver was of a different ethnicity than the observer (Hewstone, Bond, & Wan, 1983; Wang & McKillip, 1978). According to Pettigrew (1979), "the ultimate attribution error will be greatest when the groups involved have histories of intense conflict and possess especially negative stereotypes of each other" (p. 469).

Intergroup bias in perception, processing, and recall of information may also have consequences for behavior toward in-group and out-group members. For instance, people often favor in-group members by being more positive and helpful with them than with out-group members (Brewer & Brown, 1998; Pettigrew, 1979). In-group members are also favored in

reward allocations (Tajfel, Flament, Billig, & Bundy, 1971) and in esteem (Rabbie, 1982). In contrast, people are more likely to avoid and derogate out-group members. Although categorization may result in out-group bias such as hostility or aggression, it is more often the case that categorization initiates pro-in-group orientation than anti-out-group orientation (Gaertner & Dovidio, 1986). These types of processes might not lead to different rates of police stops by race/ethnicity but might encourage different levels of post-stop sanctions such as ticketing or searching of the car.

When one racially categorizes a person, not only is intergroup bias initiated, but also schemas stored in the memory are invoked. Hinton (2000) defined schemas as "knowledge structures that organize our knowledge about an object, person, or event" (p. 179). Schemas influence the way we interpret and remember information, and they impact inferences made about people and events. The schema invoked as a result of racial categorization includes stereotypes that are associated with the racial category. Members of a society are informed of racial stereotypes through media representations and daily interactions with others in society. Indeed research shows that both high- and low-prejudiced members of society are aware of existing racial stereotypes due to regular exposure (Devine, 1989; Kawakami, Dion, & Dovidio, 1998).

Although all racial categories have accompanying stereotypes, the degree of negativity of these stereotypes will vary by racial group. The least powerful racial and ethnic groups, such as African Americans, have especially negative stereotypes associated with their group (i.e., lazy, violent, lack intelligence). In contrast, powerful racial groups, like Whites, are more likely to have positive stereotypes associated with their groups (i.e., hard-working, intelligent, disciplined).

As soon as people racially categorize someone, respective racial stereotypes automatically and often unconsciously become activated (Bargh, Bargh, & Burrows, 1996). Some research suggests that stereotype activation is related to individual differences in stereotype endorsement (Kawakami et al., 1998). Other research has found that regardless of one's endorsement of stereotypes, there is automatic activation following the priming of racial categories (Devine, 1989). It has also been found that when information must be processed quickly, stereotype activation is stronger (Devine, 1989; Pratto & Bargh, 1991)

The discussion of categorization, and the resulting activation of stereotypes, describes a potential racial bias mechanism that might influence police stops. When engaging in proactive policing such as patrolling a

neighborhood or the interstate, officers are attempting to process large amounts of information in short time periods, with little individuating information. They observe many people doing many things in dynamic settings. Acting as "cognitive misers," they attempt to process the information in a way that allows them to be efficient in evaluating all that is observed. Placing information into categories is a primary way that this is accomplished. These categories trigger stereotypes that help determine what seems suspicious or out of place. The types of information police routinely focus on are those that tend to be associated with criminality and public safety. Police can be expected to focus in particular on behavior, language, vehicle qualities, and appearances (i.e., clothing, jewelry) and settings that invoke images of criminality or threats to public safety. When the officer is making discretionary choices about who to pull over and who to cite, this type of cognitive bias may make cars driven by minority drivers seem slightly more dangerous.[8]

Both the cognitive schema and stereotyping explanations of bias are relatively diffuse, largely subconscious processes. It seems reasonable to assume that the degree of cognitive bias varies within any population. It is also not likely to be the main or only reason for stopping drivers. A very high clocked speed of a passing car, for example, is much more likely to excite a stop because it is both a consciously observed entity and reinforced by organizational rules as a reason to stop. If cognitive bias and stereotyping are producing racial disparity, we should expect odds ratios higher than 1 but probably much lower than 2. That is, there is some race bias in decisions, but it is not particularly consistent across stop decisions even by a single officer on any given day. Figure 4 displays such a distribution. In Figure 4, the hypothetical White distribution has a mean odds ratio of 1.43, suggesting that after adjustments for relative at-risk status, minorities are about 43% more likely to be stopped than Whites by White officers. Although this is a heavy burden to bear if you are a minority driver, it is not motivated by organizational rules or racist behavior by the police. It is the product of a more subtle psychological bias process.[9] Indeed, some White officers even have scores below 1.0, signaling that they may have positive dispositions toward minority drivers.[10]

Figure 4 also displays a hypothetical distribution for minority officers. Like the White distribution, it is much more flat than the previous figures, reflecting that this is a much more diffuse process. Like the White distribution, the mean for minority officers is centered at an odds ratio higher than 1. This odds ratio is higher than 1 so as to indicate that African American

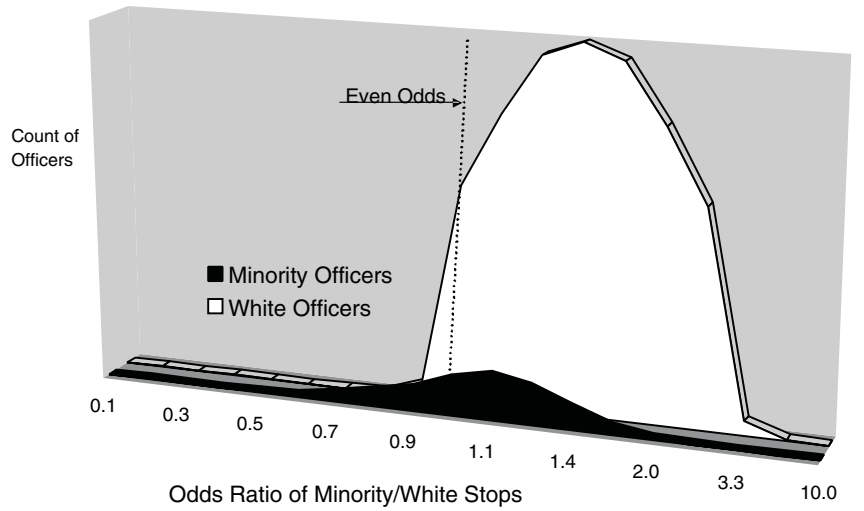

FIGURE 4: Race Distribution of Stops When Mechanism Is Cognitive Bias

officers are also expected to have cognitive biases toward minority drivers. On the other hand, a higher proportion of the minority officer distribution actually have predicted scores lower than 1.0, suggesting that minority officers are more likely than White officers to have positive stereotypes and cognitive schemas about minority drivers. The mean of 1.11 in the proposed distribution suggests, however, that on balance the effects of cognitive bias and conventional cultural stereotypes are somewhat stronger than in-group bias among minority officers. The expected difference in the White and Black officers' means, however, reflects an expectation that, in addition, in-group bias might lead White officers to release or not stop White offenders at somewhat higher rates.

If cognitive bias is producing racial disparity in police stops, then five propositions follow.

1. The average odds ratios across all officers, after adjusting for the at-risk population of drivers, will be higher than 1 but probably lower than 2.
2. There will be substantial between officer variation in the degree to which cognitive bias influences the stop decisions.
3. Cognitive bias mechanisms will be weaker when information on who should be stopped for legal reasons is available and unambiguous.
4. Cognitive bias mechanisms will be stronger when there is information overload or time pressures on decision making.
5. Minority officers will, on average, have less cognitive bias toward minorities of their own ethnic group than will majority officers.

RACE-BASED DEPLOYMENT

Police are seldom deployed evenly across areas in the community. Instead, police administrators are well aware that there are certain "hot spots" where the majority of the crime occurs (Sherman, Gartin, & Buerger, 1989), and these areas tend to receive a disproportionate share of attention. In addition to differences in deployment across communities, the predominant style of policing also varies across communities. Policing tends to be more proactive (i.e., aggressive) in areas with higher crime rates. In areas with lower crime rates, policing tends to be more reactive (Smith, 1986; Smith, Visher, & Davidson, 1984).

In the presence of racial residential segregation, differential enforcement in some communities impacts racial and ethnic groups unequally. Because crime rates tend to be higher in lower class communities where African Americans disproportionately reside, they are more likely to be subjected to aggressive policing (Krivo & Peterson, 1996). As a consequence, the people who live in these communities are subjected to high levels of police suspicion, stops, interrogations, and searches (Groves, 1968; Smith et al., 1984). In addition, research suggests that police are more likely to threaten or to actually use force in poor and minority areas than in other neighborhoods (Smith, 1986; Smith et al., 1984; Smith & Visher, 1981). The war on drugs probably further increased the targeting and aggressive style of policing in poor and racial minority communities as many of the law enforcement programs created to deal with illegal drugs at the street-level focus on minority communities (ACLU, 1999).

To the extent that deployment accounts for levels and intensity of police-citizen encounters, it is possible to have absolutely no racial bias in police stop decisions but a large race disparity in stops produced by police deployment and spatial variation in enforcement aggressiveness.[11] The distributions would look the same as Figure 1, but police activity would be concentrated in geographic locations with high minority populations. This is similar to the investment patterns of White-owned firms in the 1960s and 1970s described by William Julius Wilson (1978, 1987). In that case, many firms left minority neighborhoods in older central cities and relocated to the suburbs or even to other regions. The redeployment of capital left inner-city minority neighborhoods devastated because now the jobs were gone. Police deployment or effort in minority neighborhoods could be a very similar process. The interesting distribution here is not the odds ratio of minority-to-White stops because police treat everyone the same within each

neighborhood. They just spend more time in minority neighborhoods, police these neighborhoods more aggressively, and thus stop more minority drivers.

The interesting distribution is the association between the volume of stops in particular places and the race composition of those places. Figure 5 displays such a distribution. In this figure, the units are not officers but stops and the question is where in the racial geographic space police officers are making stops. If the police patrolled more and stopped more cars in White areas, there would be more White stops and less disparity. But, if as in Figure 5, deployment is linked to the race composition of neighborhoods, many more minority drivers will be stopped. This will happen in the absence of officer bias or prejudice or even those institutional rules discussed above that are biased against minority drivers. In this case, there is observed disparity that will probably be hard to justify. Still, it may not be the result of intentional bias. It may even be the case that the minority community itself welcomes a high police presence, all else equal. Deployment patterns as dramatically tied to race as those in Figure 5 would produce large racial disparities in police stops across neighborhoods, even when there was no disparity within neighborhoods. This discussion leads to a single proposition.

1. If police patrol minority neighborhoods or travel routes more intensely than majority neighborhoods or travel routes, this will produce racial disparity in police stops across places but not within them.

MIXED MECHANISMS

Of course, in the real world, mixed mechanisms can be expected. It is easy to imagine a police force composed of officers with the general cultural tendency toward cognitive bias and a few Bad Apples. Figure 6 displays such a distribution. It is different from Figure 4 in that the White officer distribution has moved slightly to the right and now has a right skew to it. The minority officer distribution has not changed relative to Figure 4 because we assume that minority officers display some social psychological bias against minority drivers but that minority officers are unlikely to be active self-conscious discriminators against minority drivers. Again, if minority officers end up in either tail of the distribution, or White officers in the left tail, this is empirically discoverable given the logic of thinking about distributional properties.

Pure racial profiling is unlikely to combine with either the active discrimination or cognitive bias mechanisms. This is not to say that police forces

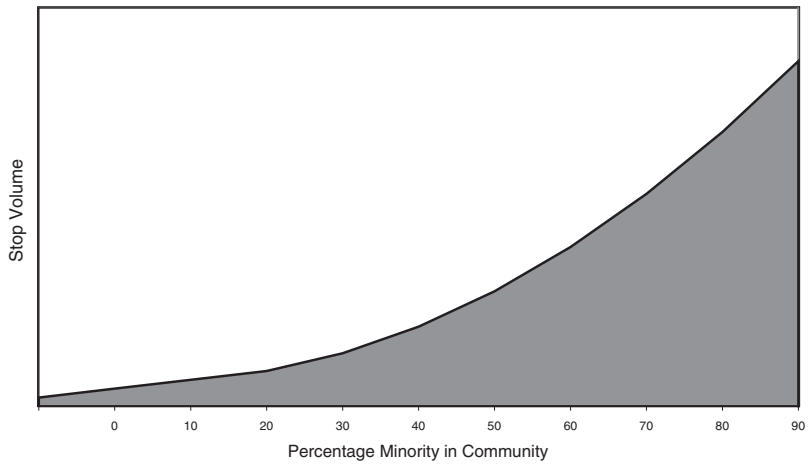

FIGURE 5: Stop Volume When Bias Mechanism Is Police Deployment in Minority Neighborhoods

that have institutionally discriminatory rules do not have prejudiced or cognitively biased officers. Rather, the institutional rules should force all officers, including those with no racial bias of either type, to target minority drivers. Of course, the more discretion that officers have in creating and using racial profiles, the more likely that individual officer bias might influence the development of personal profiles.

In the case of race-based deployment it is, of course, possible for both the Bad Apple and cognitive bias distributions to be discovered within neighborhoods. Thus, the possible racial disparity created by intensive policing of minority neighborhoods may be combined with within-neighborhood variation produced by cognitive bias or Bad Apple mechanisms.

Finally, all of these mechanisms happen in specific organizational contexts. Racial profiling mechanisms should typically be limited to specific organizational rules (e.g., drug interdiction profiling) and activities (e.g., drug searching or wealthy neighborhood patrols). Bad Apples are defined here behaviorally and so regardless of the distribution of individual officer prejudice, should be rarer in police organizations that discourage and actively supervise racist behavior. Conversely, Bad Apples may end up concentrated in organizations whose training or supervisory attention encourages or ignores racist behavior. Even cognitive bias, the most subtle and diffuse process, can be expected to vary across organizations. Where most police work is reactive (rather than proactive), there are clear decision rules

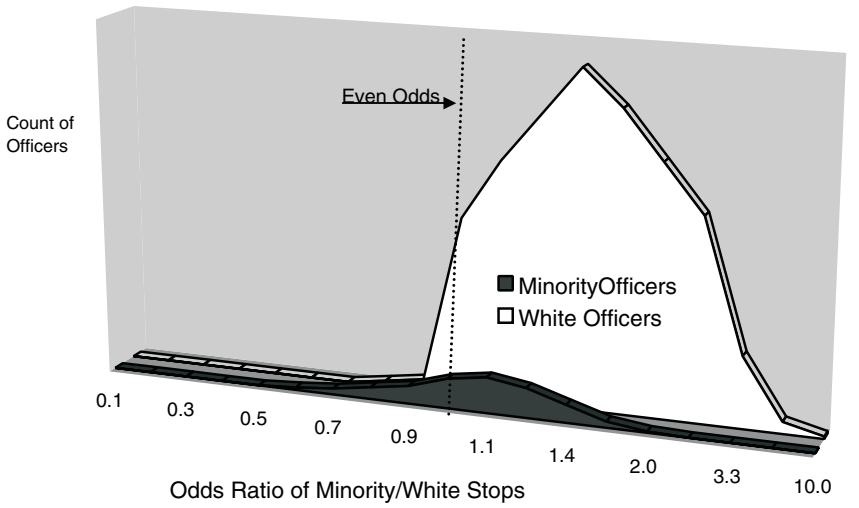

FIGURE 6: Race Distribution of Stops When Bias Mechanisms Are Both Cognitive Bias and a Few Bad Apples

for officer stop decisions and little time pressure in stop decisions, then we would expect less cognitive bias.

CONCLUSION

The goal of this article has been to suggest four quite different mechanisms that might plausibly produce the types of racial disparity in police stops that fall under the general rubric of "driving while Black." In common discourse, only two of these mechanisms are typically discussed. The first is racially prejudiced police officers. We suspect that this mechanism is not widespread for two reasons. First, racial prejudice, as active racial animus, has declined tremendously in the population. It may be the case that police training or experience encourages such animus, but it still seems unlikely that substantial numbers of police officers would meet the criteria necessary to be described as active racial bigots. The second reason is that U.S. police organizations are hierarchical and almost uniformly prohibit this type of behavior. Even if we accept the premise that all police forces contain some bigots, we would predict that this mechanism produces racial disparity in stops only when there is little or no administrative oversight or few avenues for citizen complaints. These are the types of situations in the employment realm where discrimination is typically higher as well (Bielby, 2000;

Reskin, 2000). From a police-management point of view, however, active bigots can be identified as having high levels of African American stops relative to what is expected. They are at the right end of the distribution. Of course, simply identifying officers at this end of the distribution suggests that active racial bias may be taking place, but alternative explanations might still be plausible. For example, if two officers are partnered and one only writes up White stops and the other Black stops, this will also produce high racial disparity for the latter officer. A distribution tells you where to look, and what to look for, but is not proof of racial bias.

The second mechanism that is often referred to under the general rubric of "driving while Black" is some set of organizational rules that directly target race. Because of the political pressure of the last few years, this mechanism should be increasingly rare for drug interdiction. It still may be quite common in producing disparities in neighborhood policing because this has received less political attention. It is important to remember that racial profiling not only requires a set of organizational rules but also is typically limited to specific policing tasks in which a profile seems to make some organizational sense. The 1990s targeting of drug couriers based on a profile is a good example. The vast majority of police stops of vehicles, however, are not directed at drug interdiction. Furthermore, the vast majority of police officers in most agencies do not typically search cars looking for drugs. Instead, these activities are often limited to special tactical groups within the force as a whole. Although established rules and procedures that target individuals based directly on race and ethnicity can be a causally powerful mechanism explaining levels of racial disparity in traffic stops, we expect to encounter such a mechanism in limited policing settings such as drug interdiction or neighborhood "out-of-place" policing.

Cognitive bias, on the other hand, is a very general mechanism that one can expect to be useful in explaining police-citizen encounters in a wide variety of settings. We can expect that many police-citizen interactions, even the most routine traffic stop, might be a potential site of cognitive bias, both because of the discretionary nature of these encounters and because they often occur under stereotype-enhancing conditions (e.g., threat, time demands, little individuating information). This process is a diffuse and largely unconscious one. It does not require bigoted or mean-spirited officers. Nor does it require officers to even notice that they are stopping minorities at higher and unexplainable rates. The diffuse cognitive nature of the process also means it is likely to be less important when strong individuating information is available. A radar gun that clocks a speeder at 100 miles

an hour is individuating information that is likely to incite a stop and citation regardless of the driver's race.

Because cognitive bias is typically associated with in-group preferences, this mechanism could produce racial bias not because minorities are stopped at higher rates but because Whites are not stopped or let go at higher rates. There may be no bias against minorities but bias for Whites producing racial disparity. Another form of this process could be minorities being stopped for lesser infractions than Whites. That is, Whites seem less dangerous or more familiar and so get a larger benefit of the doubt in the stop or ticketing decision. In addition, indicators here might be lower speeding thresholds for minorities than majorities or higher rates of discretionary stops for unsafe movement or equipment violations.

In addition, some officers may control cognitive bias by adopting personal rules for a stop. Ones that we have heard of include hard and fast speed threshold rules or, in the presence of multiple potential people to stop, always taking the third car. These personal rules for decision making would effectively counter bias by making explicit and race neutral the individual behavior that produces a stop.

In addition, the work of different police agencies or units within a specific agency varies tremendously. Some police forces spend much of their time reacting to calls for service. Such activities are not initiated by the officer. Highway patrols or local traffic units often spend a great deal of their time with speeders, who typically present clear evidence of individual law breaking. More discretionary stops—license checks, broken tail lights, rolling though stop signs—would seem more logical situations in which to observe cognitive-bias-type mechanisms in play.

The final mechanism is the intensive policing of particular locations. The ethnic composition of those locations is then central to the more global status composition of police stops. Often, the intensive policing of "hot spots" makes perfect deployment sense, if the organizational goal is to prevent crime. Intensive policing will almost inevitably spill over into more general citizen-police encounters, including automobile stops and searches. Hot-spot policing may even arise in response to demands from the minority community for better police protection. More intensive policing may provide more protection, but it will also tend to generate more automobile stops.

Interestingly, three of these mechanisms are relatively simple to control. Profiles can be abandoned, officers with extreme race disparity in behavior can be disciplined or fired, and neighborhood policing can be confined to rapid responses to calls for service rather than proactive investigations of

citizens. Cognitive bias is a more difficult organizational problem. There is research that shows cognitive bias can be controlled through both organizational and educational means, but attaining this goal is by no means a simple managerial task.

NOTES

1. In practice, aggregations of officers into work units that share similar geographic patrol responsibilities may be used instead of officer-level information. Aggregating data to the level of a whole police force is much less useful because the actual distribution of stops disappears and one can only create a single odds ratio statistic for the whole police force. The practice of aggregating stops to evaluate a whole police force is fairly common and not likely to produce definitive information on the potential presence or absence of racial bias in police stops.

2. By "at-risk," we mean those drivers who might be stopped by police given legitimate policing behavior. The broadest baseline for at-risk drivers might be all drivers driving on the road. If we conceptualize driving as a privilege, rather than a right, then the police have the authority to stop anyone who drives. More commonly, the pool of at-risk drivers might be thought of as those drivers who provide the police with a legitimate reason to stop them, such as speeding above some threshold, weaving, or driving a car with broken lights or guns sticking out of the window. In a subsequent paper, we will discuss the measurement and sampling properties of alternative baseline estimators.

3. Strictly speaking, these are not odds ratios, which would be counts of those stooped over the population of all drivers minus those stopped. Because it is unlikely that many or any researchers will have access to complete population counts of drivers driving in specific geographies, we use a practical calculation alternative.

4. Kurtosis is a statistic describing how peaked a distribution is.

5. It is, of course, possible that there may be some Bad Apples among minority officers who have high minority/White odds ratios. It could also be the case that reverse discriminators exist as well. None of these possibilities are prominent in the various discussions of the driving while Black phenomena, but they are observable with attention to the same distributional properties.

6. Another example of institutional racism is the well-known difference in sentencing rules for the possession of powdered and crack cocaine.

7. Even as such a tool, it is very problematic. In practice, police use all aspects of the profile in a deterministic framework to select people to stop. People of the correct race, age, car, and so forth are stopped. But the profile was generated from a series of averages of offenders and so each attribute has an unequal probability in the original profile. The problem is even worse than this, though. The development of profiles is based on offenders who have been caught but gives no attention to the proportion of offenders in the population. So, even if we assume a profile is always correct for offenders, but the proportion of people who fit the profile who are actually offenders is 2% (versus 0% in the population who do not fit the profile), then 98% of profile stops will be unjust. There is really something to be said for probable cause.

8. Some readers have worried that in practice the distinction between Bad Apple and cognitive bias mechanisms is potentially arbitrary. We see the central distinction as whether the officer is self-consciously discriminating on the basis of race or ethnicity versus a more subtle nonconscious information processing. The threshold for conscious and nonconscious bias is no doubt difficult to observe and will vary across individuals. We limit cognitive bias to odds ratios below 2.0 primarily because it seems plausible that individuals might not even recognize a racial disparity at low levels. After officers stop African Americans at twice the rate of Whites, the notion that the behavior (or search) is not conscious becomes increasingly less plausible.

9. There is some evidence that police training may actually reinforce these widespread cognitive predispositions. Recruit training often includes a disproportionate amount of time emphasizing the dangers of policing. Such training may encourage officers to focus their attention on threatening or unconventional behavior, attitudes, and appearances of marginal groups in society (Kappeler, Sluder, & Alpert, 1998). Similarly, Teahan (1975) examined the attitudes of 97 White police officers, starting with the time they entered the police academy. The research found that as training progressed, White officers became more hostile toward African Americans because the training encouraged police to view African Americans as criminal.

10. Scores less than 1 in observed distributions, of course, can also be produced by measurement error in the baseline estimate of drivers at risk to be stopped.

11. Of course, to members of minority communities, intensive policing may appear to be intentional racial bias.

REFERENCES

Adams, J. (2000, October 29). Study: Police stopped Blacks twice as often as Whites. *The Courier-Journal*. Retrieved from http://www.courier-journal.com/localnews/2000/0010/29/001029dwb_prof.html

Allen-Bell, A. A. (1997). The birth of the crime: Driving while Black (DWB). *Southern University Law Review*, *25*, 195-225.

Allport, G. W. (1954). *The nature of prejudice*. Garden City, NY: Doubleday Anchor.

American Civil Liberties Union (ACLU). (1999). *Driving while Black: Racial profiling on our nation's highways*. New York: Author.

Antonelli, K. (1996, December 10). Profiles lose favor in drug interdiction: Legal challenges say checklists target racial groups. *The Baltimore Sun*, p. 1B.

Bargh, J. A., Bargh, C. M., & Burrows, L. (1996). Automaticity of social behavior: Direct effects of trait construct and stereotype activation on action. *Journal of Personality and Social Psychology*, *71*, 230-244.

Becker, G. S. (1971). *The economics of discrimination*. Chicago: University of Chicago Press.

Bell, K. (1992, June 7). Police target I-44 for drug couriers: Profiles used, some lawyers say. *St. Louis Post-Dispatch*, p. 1A.

Bielby, W. T. (2000). How to minimize workplace gender and racial bias. *Contemporary Sociology*, *29*, 190-209.

Bodenhausen, G. V., & Wyer, R. S., Jr. (1990). Second-guessing the jury: Stereotypic and hindsight biases in perceptions of court cases. *Journal of Applied Social Psychology*, *20*, 1112-1121.

Bower, G. H., & Karlin, M. B. (1974). Depth of processing pictures of faces and recognition memory. *Journal of Experimental Psychology*, *4*, 751-757.

Brewer, M. B. (1979). In-group bias in the minimal intergroup situation: A cognitive motivational analysis. *Psychological Bulletin*, *86*, 307-324.

Brewer, M. B. (1988). A dual process model of impression formation. In R. Wyer & T. Srull (Eds.), *Advances in social cognition* (pp. 1-36). Hillsdale, NJ: Lawrence Erlbaum.

Brewer, M. B., & Brown, R. (1998). *Intergroup relations*. In D. T. Gilbert, S. T. Fiske, & G. Lindzey (Eds.), *The handbook of social psychology* (pp. 554-594). New York: McGraw-Hill.

Browning, S. L., Cullen, F. T., Cao, L., Kopache, R., & Stevenson, T. J. (1994). Race and getting hassled by the police: A research note. *Police Studies*, *17*, 1-11.

Cole, D. (1999). *No equal justice: Race and class in the American criminal justice system*. New York: The New Press.

Devine, P. G. (1989). Stereotypes and prejudice: Their automatic and controlled components. *Journal of Personality and Social Psychology*, *56*, 5-18.

Engel, R. S., Calnon, J. M., & Bernard, T. J. (2002). Theory and racial profiling: Shortcomings and future directions in research. *Justice Quarterly*, *19*, 249-273.

Gaertner, S. L., & Dovidio, J. F. (1986). The aversive form of racism. In J. F. Dovidio & S. L. Gaertner (Eds.), *Prejudice, discrimination and racism* (pp. 61-89). Orlando, FL: Academic Press.

Gaines, L. K. (2002). *An analysis of traffic stop data in the city of Riverside*. Riverside, CA: City of Riverside.

Gates, H. L. (1995, October 23). Thirteen ways of looking at a Black man. *The New Yorker*, p. 59.

Goldberg, J. (1999, June 20). The color of suspicion. *The New York Times Magazine*, p. 50.

Groves, W. (1968). Police in the ghetto. *Supplemental studies for the National Advisory Commission on Civil Disorders*. Washington, DC: Government Printing Office.

Hamilton, D. L., & Trolier, T. K. (1986). Stereotypes and stereotyping: An overview of the cognitive approach. In J. F. Dovidio & S. L. Gaertner (Eds.), *Prejudice and discrimination* (pp. 127-163). Orlando, FL: Academic Press.

Hewstone, M., Bond, M. H., & Wan, K. (1983). Social facts and social attributions: The explanation of intergroup differences in Hong Kong. *Social Cognition*, *2*, 142-157.

Hinton, P. R. (2000). *Stereotypes, cognition, and culture*. New York: Routledge.

Jackson, R. (1995, November 10). Eagle County must pay for stopping motorists. *Denver Rocky Mountain News*, p. 4A.

Kappeler, V. E., Sluder, R. D., & Alpert, G. P. (1998). *Forces of deviance: Understanding the dark side of policing*. Prospect Heights, IL: Waveland Press.

Kawakami, K., Dion, K. L., & Dovidio, J. F. (1998). Racial prejudice and stereotype activation. *Personality and Social Psychology Bulletin*, *24*, 407-416.

Kirschenman, J., & Neckerman, K. M. (1991). "We'd love to hire them, but": The meaning of race for employers. In C. Jencks & P. E. Patterson (Eds.), *The urban underclass* (pp. 203-232). Washington, DC: Brookings Institution.

Krivo, L., & Peterson, R. (1996). Extremely disadvantaged neighborhoods and urban crime. *Social Forces*, *75*(2), 619-648.

Lamberth, J. (1996). *A report to the ACLU*. New York: ACLU.

McArthur, L. Z., & Baron, R. (1983). Toward an ecological theory of social perception. *Psychological Review*, *90*, 215-238.

McFadden, R. D. (1996, March 10). Police singled out Black drivers in drug crackdown, judge says. *The New York Times*, p. 33.

Meehan, A., & Ponder, M. (2002). Race and place: The ecology of racial profiling African American motorists. *Justice Quarterly*, *19*, 399-430.

Newport, F. (1999). *Racial profiling seen as widespread, particularly among young Black men*. Retrieved from http://www/gallup.com/poll/releases/pr991209.asp

Norris, C., Fielding, N., Kemp, C., & Fielding, J. (1992). Black and blue: An analysis of the influence of race on being stopped by the police. *British Journal of Sociology*, *43*, 207-224.

Pettigrew, T. F. (1979). The ultimate attribution error: Extending Allport's cognitive analysis of prejudice. *Personality and Social Psychology Bulletin*, *5*, 461-476.

Pratto, F., & Bargh, J. (1991). Stereotyping based on apparently individualizing information: Trait and global components of sex stereotypes under attention overload. *Journal of Experimental Social Psychology*, *27*, 26-47.

Rabbie, J. M. (1982). The effects of intergroup competition and cooperation on intragroup and intergroup relations. In V. Derlega & J. Grzelak (Eds.), *Cooperation and helping behavior: Theories and research* (pp. 112-142). New York: Academic Press.

Ramirez, D., McDevitt, J., & Farrell, A. (2000). *A resource guide on racial profiling data collection systems*. Washington, DC: U.S. Department of Justice.

Reskin, B. F. (2000). The proximate causes of employment discrimination. *Contemporary Sociology*, *29*, 319-328.

Sagar, H. A., & Schofield, J. W. (1980). Racial and behavioral cues in Black and White children's perceptions of ambiguously aggressive acts. *Journal of Personality and Social Psychology*, *39*, 590-598.

Schuman, H., Steeh, C., Bobo, L., & Krysan, M. (1997). *Racial attitudes in America: Trends and interpretations*. Cambridge, MA: Harvard University Press.

Sherman, L., Gartin, P., & Buerger, M. (1989). Hot spots of predatory crime: Routine activities and the criminology of place. *Criminology*, *27*, 27-55.

Smith, D. A. (1986). The neighborhood context of police behavior. In D. F. Hawkins (Ed.), *Ethnicity, race, and crime: Perspectives across time and place* (pp. 313-341). Albany: State University of New York Press.

Smith, D. A., & Visher, C. A. (1981). Street-level justice: Situational determinants of police arrest decisions. *Social Problems*, *29*, 167-177.

Smith, D. A., Visher, C. A., & Davidson, L. (1984). Equity and discretionary justice: The influence of race on police arrest decisions. *Journal of Criminal Law and Criminology*, *75*, 234-249.

Smith, M. R., & Petrocelli, M. (2001). Racial profiling: A multivariate analysis of police traffic stop data. *Police Quarterly*, *4*, 4-27.

Stangor, C., Lynch, L., Duan, C., & Glass, B. (1992). Categorization of individuals on the basis of multiple social features. *Journal of Personality and Social Psychology*, *62*, 207-218.

Tajfel, H. (1969). Cognitive aspects of prejudice. *Journal of Social Issues*, *25*, 79-97.

Tajfel, H. (1978). Social categorization, social identity, and social comparison. In H. Tajfel (Ed.), *Differentiation between social groups: Studies in the social psychology of intergroup relations* (pp. 61-76). New York: Academic Press.

Tajfel, H., Flament, C., Billig, M. G., & Bundy, R. F. (1971). Social categorization and intergroup behaviour. *European Journal of Social Psychology*, *1*, 149-177.

Tajfel, H., & Turner, J. C. (1979). An integrative theory of intergroup conflict. In W. G. Austin & S. Worchel (Eds.), *The social psychology of intergroup relations* (pp. 33-48). Monterey, CA: Brooks/Cole.

Taylor, S. E., Fiske, S., Etcoff, N., & Ruderman, A. (1978). Categorical bases of person memory and stereotyping. *Journal of Personality and Social Psychology*, *36*, 778-793.

Teahan, J. E. (1975). A longitudinal study of attitude shifts among Black and White police officers. *Journal of Social Issues*, *31*, 47-56.

Tomaskovic-Devey, D. (1993). *Gender and racial inequality at work: The sources and consequences of job segregation*. Ithaca, NY: ILR Press.

Tomaskovic-Devey, D., & Skaggs, S. (1999). An establishment-level test of the statistical discrimination hypothesis. *Work and Occupations*, *26*, 422-445.

Turner, J. C. (1987). *Rediscovering the social group: A self-categorization theory.* New York: Blackwell.

Verniero, P., & Zoubek, P. H. (1999). *Interim report of the state police review team regarding allegations of racial profiling*. Newark: New Jersey Office of the Attorney General.

Wang, G., & McKillip, J. (1978). Ethnic identification and judgments of an accident. *Personality and Social Psychology Bulletin*, *4*, 292-299.

Wilson, W. J. (1978). *The declining significance of race*. Chicago: University of Chicago Press.

Wilson, W. J. (1987). *The truly disadvantaged: The inner city, the underclass, and public policy.* Chicago: University of Chicago Press.

Donald Tomaskovic-Devey is a professor of sociology at North Carolina State University. His research focuses on the mechanisms that create inequality. Current research focuses on racial profiling, models of categorical inequality, and employment desegregation since the Civil Rights Act.

Marcinda Mason is an assistant professor of statistics at the University of the Virgin Islands. She received her Ph.D. in sociology from North Carolina State University. Her areas of interest are criminology, social psychology, methodology, and race and ethnic relations.

Matthew Zingraff is associate dean for research and a professor of sociology in the College of Humanities and Social Sciences at North Carolina State University. His research interests include discretion and disparity in the justice system and the effects of child maltreatment on the risk for delinquency and adult crime.