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Leo Carroll
University of Rhode Island, lcarroll@uri.edu

M. Liliana Gonzalez
University of Rhode Island, lilianaloy@uri.edu

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Out of Place: Racial Stereotypes and the Ecology of Frisks and Searches Following Traffic Stops

Leo Carroll
Department of Sociology and Anthropology
University of Rhode Island

and

M. Lilliana Gonzalez
Department of Computer Science and Statistics
University of Rhode Island

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Objectives: Test hypotheses drawn from Smith and Alpert's social conditioning theory that explains biased policing as the result of implicit racial stereotypes. Distinguishing between frisks, external pat-downs, and probable cause searches, we hypothesize that (1) black drivers are more likely than white drivers to be frisked and searched; (2) racial disparity is greater in frisks than searches; (3) racial disparity in frisks, but not searches, is conditional upon the racial composition of the community; and (4) that drivers' race is not related to the productivity of searches. *Methods*: Data are all traffic stops made by the Rhode Island State Police in 2006, exclusive of those in which a search was mandatory. Multinomial and binary logistic regression is employed to estimate models of frisks, searches, search productivity and to test the conditional effect of community context. *Results*: Each of the four hypotheses is supported. *Conclusion*: Biased policing is largely the product of implicit stereotypes that are activated in contexts in which black drivers appear out of place and in police actions that require quick decisions providing little time to monitor cognitions. This insight has important implications for police training. Because of limitations in this study, additional research that distinguishes frisks and searches is needed

Whether police disproportionately target persons of color in enforcing traffic laws has been the subject of considerable study over the past 20 years. This paper adds to the development of this line of inquiry by testing hypotheses inferred from a recently proposed theory and employing an important but previously omitted variable, the scope of post-stop discretionary investigations[1], in testing them.

Research on racial disparities in traffic enforcement began in reaction to public outcries over "racial profiling" and was connected to several celebrated lawsuits in the mid-1990s. Attention during this stage was focused on the existence of racial/ ethnic disparity in traffic stops. (e.g., Alpert, Smith, and Dunham 2004; Engel and Calnon 2004; Harris 1999; Rojek, Rosenfeld, and Decker 2004). This early research, however, was bedeviled by questions surrounding the selection of an appropriate benchmark by which to determine if the stops of minorities were disproportionately greater than expected (Fridell 2004). Nonetheless, and despite the use of varying benchmarks, the majority of these studies concluded that minority drivers, most often African-Americans, were being stopped significantly more than Whites (Withrow, 2006: 50-61).

Because of the methodological difficulties, attention shifted from disparity in traffic stops to differential treatment after the stops (i.e. disparities in warnings, citations, searches and arrests). As the pool of eligible drivers has been selected, the determination

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[1] The term "investigations" is used here as opposed to the more usual term "search" so as not to confuse frisks and searches, a distinction that is of central concern in this paper.

of disparate treatment of minorities after the stop does not require an external benchmark; it may be based on a comparison of the percentages who are subjected to various police actions to the percentages of those stopped. Again, most of this research concluded that, net of other factors, minority drivers receive disproportionately severe treatment following a traffic stop (Alpert, Dunham, & Smith, 2007; Close and Mason, 2007; Cordner, Williams, and Velasco 2002; Engel and Johnson 2006; Ingram, 2007; Moon and Corley, 2007; Pickerill, 2009; Ridgeway, 2006; Roh & Robinson, 2009; Rojek. Rosenfeld and Decker, 2012; Rosenfeld, Rojek and Decker, 2012; Tillyer, Klahm Engel, 2012).

Given the historical association of the police with racial oppression, the public debate over racial profiling pitted those who viewed the practice as good policing (e.g. MacDonald 2003) against those who saw it as yet another manifestation of discriminatory enforcement (e.g., Harris 1999) As noted, the earliest research occurred in conjunction with law suits alleging violations of the 14th Amendment's equal protection clause. To prevail in such cases, the courts require proof that the disparities arose out of purposeful discrimination, and some of the most sophisticated early research focused on individual officers and attempted to distinguish disparity that is intentional from that which results from other causes (e.g. Knowles, Persico and Todd 2001). More recently, some researchers have viewed the disparities from the broader perspective of understanding police decision-making and have identified processes other than intentional decision-making that could produce the differential treatment. Thomaskovic-Devey, Mason and Zingraff (2004) note that the disparities could result from race-sensitive deployment of resources, formal and informal profiles of offenders based on characteristics including or closely associated with race, and subtle cognitive biases.

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In what they term "social conditioning theory," Smith and Alpert (2007) have elaborated upon the latter process. They argue that most racial disparities in enforcement are the product of "unconscious racial profiling." Implicit stereotypes associating minorities with crime and violence are developed through both direct and vicarious experience. Perceptions and experience are then filtered through the stereotype reinforcing and elaborating it in a process of "illusory correlation." The results are cognitive schema or scripts – complexes of beliefs, attitudes and behavioral predispositions— that are automatically triggered and guide behavior in certain situations.

Whether racially disparate treatment is the product of unconscious biases is an important question, both theoretically and practically. To our knowledge, there is no research that directly addresses it. That is the purpose of this study. Following a review of relevant social psychological research on stereotypes, we formulate several hypotheses based on "social conditioning" theory and test them by examining the scope of post-stop investigations and their productivity or "hit rates."

Theoretical Perspective

Over 50 years ago Allport (1958: 187-88) defined a stereotype as "an exaggerated belief associated with a category," are based on insufficient evidence and are generalized to all group members. It functions as "a screening or selective device to maintain simplicity in perception and thinking," and to justify conduct in relation to members of the stereotyped group.

In recent years, there has developed an impressive body of evidence that stereotypes may be implicit. Beliefs and images associated with certain categories may be activated automatically, even without conscious awareness, when the person holding them encounters stimuli associated with the target. When so triggered, psychological research suggests these implicit stereotypes influence perception, judgment and action (Greenwald & Banaji, 1995; Fazio & Olson, 2003; Quillian, 2006) even among people who are avowedly non-prejudiced.

In one of the earliest studies, Devine (1989) provided evidence from three experiments that together support the existence of implicit stereotypes. Under conditions that precluded conscious monitoring, the cultural stereotype of Blacks was automatically activated for both students who scored high on racial prejudice and those who scored low; both groups reacted similarly. However, when the subjects were given the opportunity to censor their reactions, those who scored low in explicit prejudice inhibited the automatically activated stereotype while those scoring high continued to react in accord with it.

A series of experiments by Correll, Park, Judd and Wittenbrink (2002) provides evidence of the influence of implicit racial stereotypes on behavior more directly related to biased policing. They used a video game to recreate the experience of a police officer who, confronted with a potentially dangerous suspect, must decide whether or not to shoot. The participants were presented with a series of images in which an equal number of African-American and White males were armed with a gun or with a non-threatening object. Participants were instructed to shoot only armed targets. In accord with the researchers' hypotheses, participants reacted faster to images that were consistent with cultural stereotypes (armed African-Americans and unarmed

Whites), and were more likely to err by shooting unarmed African-Americans and not shooting armed Whites. The results were unrelated to either the race or personal prejudice of participants suggesting that the "Shooter Bias" is a function of a cultural stereotype that associates African-Americans with violence and crime.

In a replication, Correll, Park, Judd, Wittenbrink, Sadler and Keesee (2007) compared the responses of a sample of police officers to that of a sample of community members. The results were basically the same as in the prior studies except that officers made fewer mistakes in shooting Black targets than did the community sample. The extensive firearms training received by police, the researchers speculated, enables them to use the delay in reacting to images that run counter to stereotypes to make more accurate, race-neutral decisions about whether to shoot.

Place and Suspicion

Suspicion is a defining characteristic of what Skolnick (1994: 44) termed the police officer's "working personality, and knowledge of what is "normal" and expected within a community is a key ingredient in the formation of police suspicion. Similarly, from his observations of police behavior, Van Maanen (1974: 113) concluded that "territorial learning…coupled with observed behavior provide the symbolic calculus which determines police action." Rubinstein (1973) and Manning (1977) likewise emphasize the importance of place in the formulation of suspicion and the mobilization of police action.

Research reported by Meehan and Ponder (2002) also provides evidence that place is an important determinant of police suspicion. They observed that in a predominantly White suburban area adjacent to a larger city, Black drivers were more likely to be subject of mobile data terminal queries (an indicator for suspicion), and that queries about Blacks increased with distance from the city. The authors conclude that "racial profiling is inextricably tied not only to race, but to officers' conceptions of place of what *should* typically occur in an area and *who belongs* as well as *where they belong*" (Meehan & Ponder, 2002: 402).

Research has also found that Whites who are "out-of-place" are similarly viewed with suspicion. Using police beats as the unit of analysis in a study of stop and citation rates, Novak and Chamlin (2008) found that stop, search and citation rates of White drivers increased with the percentage Black whereas that for Black drivers decreased with percentage Black. Similar results have been reported recently by Renauer (2012) and by Rojek, Rosenfeld and Decker (2012).

That Whites who are stopped may run a greater risk of being searched when the stop occurs in place populated largely by minorities may result from an "ecological attribution bias" (Petrocelli, Piquero and Smith, 2003: 8) with which police operate. Some years ago Werthman and Piliavan (1967) observed that police divide the population and physical territory they patrol into a number of categories and make assumptions about the moral character of those they encounter in different neighborhoods. One result of this process is a kind of ecological contamination by which everybody encountered in places regarded as "bad" is viewed as having little commitment to the moral order and is thus deserving of police suspicion (Smith, 1986: 316).

In short, police, like most people, harbor stereotypes of places as well as of people. While stereotypes of place are undoubtedly explicit and conscious, the generalization of area characteristics to all people in the area corresponds to the process of "illusory correlation" (Smith and Alpert, 2007) and is likely to be implicit. Police may react with suspicion to those whose visible characteristics associate them with such an area especially in places defined as "good." When police encounter in "bad" places people whose visible characteristics are associated with "good" areas, they may likewise view them with heightened suspicion; they are guilty by association.

Frisks and Searches

Whether police action automatically proceeds from implicit cognitive schema as theorized by Smith and Alpert (2007), we believe, may be assessed by the intrusiveness of the action and the reason given for it. This belief rests on an assumption not unlike that assumed in the experiments noted previously: decisions to take less intrusive actions are made more quickly and with less information than are the more intrusive, and thus they are more likely to be automatic responses.

Although frequently conflated, frisks and searches are legally and behaviorally distinct actions. A frisk is a pat-down of a person's outer clothing. An officer may frisk a person if she or he has a reasonable suspicion that the person is armed (*Terry v. Ohio,* 1968). The primary purpose of a frisk is to protect the officer, but any contraband discovered in the course of it may be seized (*Ybarra v. Illinois,* 1979). A search, on the other hand, is a greater intrusion, permitting the officer to look for articles that may be concealed on the person, in their effects or in the vehicle. Searches require probable cause, "…known facts and circumstances [that]

are sufficient to warrant a man of reasonable prudence in the belief that contraband or evidence of a crime will be found" (*Ornelas v. United States*, 1996). Some searches are mandatory such as those that are incident to an arrest and/or when a vehicle must be towed while others are at the discretion of the officer and should be undertaken only when there is consent or probable cause.

Despite its obvious importance, the distinction between frisks and searches has been ignored in virtually all of the previous research. Indeed, to our knowledge, only one study makes the distinction. Examining all pedestrian and traffic stops by the Los Angeles police in 2003 -2004, Ayres and Brodsky (2008) conclude that stopped Blacks and Hispanics are more likely to be frisked and searched than are stopped Whites and that there is much greater racial disparity in frisks than in searches. That study was commissioned by the Southern California chapter of the ACLU and, being entirely descriptive, provides no insight into the motivation and intent. Unlike that study, we employ the distinction between frisks and searches to test whether disparities in post-stop investigations are consistent with what one would expect if they were the result of cultural stereotypes that are automatically triggered by cues in certain situations.

Hypotheses

From the perspectives summarized above, we have developed several hypotheses. First, we expect that racial disparities in post-stop investigations will be greater with respect to frisks than searches. If implicit stereotypes of race and ethnicity influence officers' assessments of the post-stop situation, they should have a stronger effect on less intrusive actions such as frisks. Just as the participants in the "shooting" experiments had to make quick decisions about whether the image shown was an armed person, so

also does the officer approaching a stopped vehicle. In the first few moments of a traffic stop, the perceived race or ethnicity of the driver may automatically trigger stereotypes and the immediacy of the decision regarding a frisk provides the officer with little time in which to consciously monitor his or her response. As a probable cause search necessitates processing more information than does reasonable suspicion, it should take longer and thereby provide officers more time in which to monitor and control their responses.

Second, we expect that racial disparities in frisks will be greater in communities with predominantly White populations than in those with a racially and ethnically mixed population. Blacks stopped in White communities may be regarded with heightened suspicion both because they are "out-of-place" and because of implicit stereotypes that define them as dangerous. Whites stopped in these places are not so stigmatized and thus less likely to be frisked. However, Blacks and Whites stopped in communities that are racially/ethnically heterogeneous may both be regarded as potentially dangerous and thus have equal or near-equal probabilities of being frisked.

Third, we do not expect searches to be conditioned by the context of the stops. Searches, as have been noted, require a higher threshold of suspicion and thus presumably require more time to process information. If racial disparities in post-stop actions of the troopers are the result of implicit stereotypes rather than explicit prejudice, the greater time required to determine probable cause should provide them the opportunity to monitor and censor their reactions.

The fourth hypothesis concerns the productivity of post-stop investigations or "hit rates," i.e. the percentages that result in finding contraband. This outcome test, as it is termed, has been widely used to measure possible bias (Becker, 1957; Knowles,

Persico and Todd, 2001). If drivers are assessed according to criteria that are relevant for possessing contraband and these criteria are applied equitably across groups, the hit rates should be approximately equal even though one group may be searched more frequently. However, if members of a particular group are subject to bias, then they will be more likely to be frisked or searched but with less success than other groups (Ayres, 2002: 133; Fridell, 2004: 274). Significant differences in "hit rates" among the groups, then, imply the use of different criteria or the inequitable application of the same criteria and that the group(s) with the lower "hit rates" is (are) being disproportionately searched.[2] Thus, if stopped minorities are being unduly investigated, their hit rates should be lower than those of Whites who are investigated.

Data and Methods

The data for this study are from a data set of all traffic stops made by the R. I. State Police (RISP) in calendar year 2006. During that year, troopers made 52,571 traffic stops in which the data were recorded. Except when circumstances prohibited it, the data were recorded electronically immediately after the stop; where there was not possible, it was recorded at the end of the shift. On or about the 10th of each month, the data from the previous month were cleaned by the records management unit at State

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[2] Knowles, Persico & Todd (2001) have argued that the outcome test can be used to distinguish between what they term statistical discrimination and racial prejudice or animus. In its simplest terms, the Knowles, et al. model assumes that racist police will sacrifice some success in making arrests in order to indulge their taste for discrimination. No such assumption is made here. Rather, it is only assumed that disparities suggest an unjustified disparate impact (Ayres, 2002). Recently, Engel (2008) provided a comprehensive critique of the assumptions behind the Knowles et al. model. See also the reply by Persico and Todd (2008) and the rejoinder by Engel and Tillyer (2008).

Police Headquarters, and transmitted electronically to the researchers. Cleaning consisted largely of eliminating duplication of cases that occurred when more than one citation was issued in a single stop resulting in more than one racial profiling report.

Many investigations conducted by police are required by law or departmental policy. These involve little choice on the part of the officer, are best excluded from research concerned with the presence or absence of racial disparities (Fridell, 2004; Engel, 2008). Only those investigations that are discretionary are used in this study. The electronic reports submitted by the troopers contained fields to indicate whether an investigation was conducted and three fields to indicate the reason for it. All investigations in which any of the reasons was incident to arrest, inventory/tow (N=1,645) were excluded leaving 50,926 stops in which there was either no investigation or where it was discretionary. [3]The population was further reduced by 1,714 stops of drivers who were not classified as White or Black. Finally, data were missing on one or more variables in 1,216 stops and 83 cases were excluded because of ambiguity in classifying investigations as frisks or searches. Thus, the data consists of information on 47,913 stops. Of this number, 176 involved frisks and 356 resulted in searches.

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[3] Consent searches are not included as a separate category because RI law prohibits a consent search unless there is reasonable suspicion that crime is afoot (R. I, General Assembly, 2004).

Independent and Dependent Variables

This research is concerned primarily with the relationships among four variables: the race of stopped drivers; the racial/ethnic composition of the community in which the stop occurred; whether or not there was a post-stop investigation and, if so, whether it was a frisk or search; and whether or not the investigation was productive.

Race. The race and ethnicity was defined by the trooper making the stop. This is appropriate as the concern is not with the drivers' self-definitions but with whether the troopers' definitions are or are not related to disparate behavior. Black drivers constituted some 12 percent of those stopped.

Providence Area. To test the effect of community population composition on racial disparities in frisks and searches, the state is divided into two areas: Providence and six contiguous cities (the "Providence Area"), and the other 32 cities and towns in the state ("Outside the Providence Area). The Providence Area is a sort of natural area bounded on the north by Massachusetts, on the east by Narragansett Bay and on the south and west by Interstate 295. Nearly half of the state's population lives in these seven cities, and the population is 38.5 percent African-American or Hispanic. The population outside this area, by contrast, is less than 10 percent Black or Hispanic.

Frisk and Search. An officer frisking a detainee for a weapon is, in some sense, "searching," and a frisk that uncovers a weapon (or other contraband) may provide the officer with probable cause for a search. Because of this ambiguity and fluidity, the two are more often than not lumped together in common parlance. The R.I. State troopers apparently share in this confusion. They were instructed to indicate if a frisk had been done and in a separate field to indicate if a search had been conducted. Cross-tabulation of these fields revealed that all frisks were also coded as searches (Frisk=Yes, Search = Yes). However, some 25 percent of the searches were not classified as frisks (Frisk = No, Search = Yes).

The form provided three fields for search reasons with each field listing the following: probable cause (P), plain view contraband (C), odor of drugs or alcohol (O), Terry stop (T), and reasonable suspicion (R). There were also three fields for scope of the search: driver (D), passengers (P), and vehicle (V), and a field to indicate whether contraband was found.   Using these seven fields, several ways to distinguish between frisks and searches were calculated.

Index A coded as a search all cases in which P, C or O was checked in any one of the three fields; all other cases were treated as frisks. This index was then cross-tabulated with scope of the search and with contraband. There were 83 anomalous cases in which a "frisk" extended to the entire vehicle or contraband was uncovered, which presumably would justify a search. Two other indices then were coded in the same way except that in one (Index B) the 83 ambiguous cases were coded as searches while in the other (Index C) the 83 cases were treated as missing.

To determine the best way in which to treat these 83 cases, the three indices were correlated separately with the scope of the action and with contraband. Index C had the strongest correlation with scope of search (phi = .68) and the second strongest (.62) with finding contraband. Treating the ambiguous cases as missing rather than assuming they are frisks or searches seems to be the most logical and conservative alternative; therefore Index C was selected as the measure to differentiate between frisks and searches.

Post-stop investigations defined as frisks, then, are those in which the reasons for the action are either reasonable suspicion or "Terry stop," extended only to the driver and/or passengers, and did not uncover any contraband. Searches are investigations for which the reasons given are probable cause, plain view contraband and/or the odor of drugs or alcohol; they may or may not have extended to the entire vehicle and they may or may not have uncovered contraband.

Productivity. To assess if there is unwarranted racial disparity in searches depends, as noted above, upon the outcomes of those searches. If troopers' judgments about probable cause are influenced by racial stereotypes, searches of stopped Black drivers should be less productive of contraband than searches of stopped White drivers. If the judgments are unbiased, the "hit rates" should be approximately equal.

Control Variables

The analysis adjusts for a number of variables previously found to be related to post-stop investigations. These include the sex and age of the driver (Engel & Calnon, 2004; Farrell & McDevitt, 2006; Lundman 2004; Paoline and Terrill 2005; Schaefer, et al. 2004), the number of passengers (Engel & Calnon, 2004), whether the vehicle is registered in R. I. or elsewhere (Ramirez, McDevitt, & Farrell, 2000), the time of the stop, (Pickerill, Mosher, Pratt 2009; Stroshine, et al., 2008; Withrow 2004), whether it occurred on a city street or highway, and whether the stop was for speeding or another reason (Engel & Calnon, 2004; Schaffer et al. 2004; Smith et al. 2003).

In addition to these variables, the analysis adjusts for the barracks to which the trooper making the stop was assigned. Fixing these effects adjusts for omitted variables such as differences among the five barracks in informal practices regarding frisks and searches.

Analysis

The models were estimated by the multinomial and binary logistic regression procedures of the generalized linear model. The models are corrected for dispersion and the estimated parameters are robust. An attempt to estimate a multilevel model to test for contextual effects was not appropriate; a null model with only random intercepts revealed no difference in intercepts

between stops in the Providence areas and those outside it. Using an identification number assigned to each trooper, we also attempted to correct for correlated errors. This also was not possible because many troopers had only one or a few stops. However, as it seems reasonable to assume that the within officer correlation is positive, the inability to correct for correlated errors makes our results more conservative.

RESULTS

As shown in Table 1, the typical stop made by the R. I. State Police in 2006 was for speeding on a highway at about 10 pm. The stops were nearly evenly divided between those within and those outside the Providence area. Some 70 percent of the drivers stopped were males; the mean age of the drivers was 32, and only 12 percent of the vehicles stopped were operated by Blacks. Post-stop discretionary investigations were rare; only about 1 percent of the stops resulted in a discretionary frisk or search.

Table 2 presents results from a multinomial logit model estimating the odds of stopped drivers being frisked or searched using those not subject to a post-stop investigation as the reference group. Black drivers ran a higher risk of being frisked or searched following a stop

Table 1 About Here

than did White drivers, net of other factors. Moreover, as hypothesized, the odds of being frisked were greater than the odds of being searched. The odds of a stopped Black driver being frisked were about 140 percent greater than those of a similar White driver while the odds of a Black being searched were about 53 percent greater. Stops inside the Providence area were about 10 percent less likely to result in a frisk and 12 percent less likely to result in a search, but neither effect is statistically significant.

The significance of the difference in the relationship of race of the driver to being searched or frisked was tested by a binary logistic regression using only the 532 cases in which there was a post-stop investigation. These results are presented in Table 3. Compared to White drivers who were stopped, Black drivers were about 55 percent more likely to be frisked than searched, a difference that is statistically significant at the .05 level.

An interaction term was added to the model shown in Table 2 to determine whether the relationship of drivers' race to the odds of being frisked or searched is conditioned by whether the stop was inside or outside the Providence area. These results are presented in Table 4.

Table 2 about here

Comparing the AIC for this model with that for the main effects model displayed in Table 2 shows that the addition of the interaction terms improves the fit of the model to the data. That improvement, however, is solely with respect to the odds of being frisked. The multiplicative term has a strong negative association with the possibility of being frisked but has neither a statistically significant nor substantively important effect on the odds of being searched.

The data presented in Figure 1 illustrate the interaction effects.[4] As can be clearly seen, the chances of a Black driver stopped outside the Providence area are close to 4 in 100 but fall to nearly 1 in 100 for similar stops within that area. Conversely, the chances of White drivers being frisked are about the same in both areas, approximately 1 in 100. Thus although stopped Blacks are more likely than Whites to be frisked in both areas, as a result of these opposed processes, the disparity is by far the greatest in those stops that occur outside the Providence area in cities and towns that predominantly White.

Table 3 about here

The data presented in Tables 2 and 4 indicate that Black drivers who were stopped were also more likely than Whites to be searched. From the perspective of social conditioning theory, and given our assumptions about time needed to process information to establish probable cause as opposed to reasonable suspicion, this disparity could be an indication of explicit bias. However, it may also be that relevant criteria to establish probable cause were applied equitably but that more Blacks than Whites met those criteria. As noted above, if the latter is the case then the "hit rates" for Blacks and Whites should be approximately equal but if the former is

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[4] In calculating the graph, the categorical control variables were set to 1 and the continuous control variables were set at their means. The Wickford Barracks, which is used as the reference category for the barracks, was included and its value set to 0.

true, we would expect the "hit rates" for Blacks to be less than those for Whites, indicating stopped Blacks were searched more often than was justified.

Figure 1 about here

Contraband was uncovered in 58 percent of the 356 searches. To determine if there is a relationship between race of driver and the productivity of these 356 searches, two models were estimated; a full model with race of the driver and all other predictors and a reduced model with only race of driver and those predictors not eliminated by a backward elimination step-wise procedure. Both models are presented in Table 5. In the full model, the odds of finding contraband were about 10 percent greater in searches of Black drivers than in those of White drivers, a difference that is not statistically different. The reduced model has a better fit to the data but only two variables are found to have a statistically significant association with finding contraband: age of the driver is negatively related to finding contraband and searches conducted by troopers from the Portsmouth Barracks are more likely to be

productive than are searches by troopers from the other barracks. However, the odds of finding contraband in searches of Black and White drivers remain unchanged. Thus search outcomes provide no evidence that the disproportion in the relative numbers of Blacks and Whites who were searched is unwarranted.

Table 5 about here

Conclusion and Discussion

The purpose of this research was to test several hypotheses derived from social conditioning theory as applied to policing by Smith and Alpert (2007). This theory holds that most racial bias in policing is the result of implicit stereotypes that are automatically triggered in certain situations. On the assumption that decisions to frisk a stopped driver are made more quickly than are decisions to search, we theorized that the influence of implicit stereotypes should be greater in frisks than in searches, and that, if so, racial disparities will be greater in frisks than searches, especially in places where the stopped driver is viewed as out-of-place.

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The results confirm our expectations. Following a stop, we find that Black drivers are more likely to be frisked and searched than are White drivers, and the disparity is greater with respect to frisks. Further, the disparity in frisks is conditioned by where the stops occurred. In the predominantly White towns and cities outside the Providence area the odds of a Black driver being frisked are 4 times greater than those of a White driver, but they are virtually the same in Providence and the cities contiguous with it. This is the result of two processes: frisks of Blacks are much more likely outside the Providence area than in it while frisks of Whites are slightly more likely in the Providence area than outside it. Given that our definition of frisks excluded actions that uncovered contraband, the "reasonable suspicion" on which the frisks were based would appear to have been unwarranted.

Black drivers who were stopped were also disproportionately subjected to searches. Given the assumption that the greater amount of information to be processed to establish probable cause, provides troopers with the time to monitor their mental processes, this disparity may result from race-neutral assessments in which more Blacks than Whites met the criteria for probable cause. Alternatively, it could also be result from racial discrimination brought about by explicit or conscious prejudice. To determine which of these conclusions was supported by the evidence we examined the outcomes of the searches. Nearly 60 percent of the searches were productive of contraband, but the hit rate was unrelated to race. Thus, while Black drivers may have been searched more than White drivers, the similarities in outcome suggest that the criteria employed in deciding who to search were applied equally.

These results, as noted, are generally consistent with social conditioning theory. In situations in which the safety of an officer may be at risk and she or he must make a quick decision regarding whether to frisk a driver they have stopped, implicit stereotypes associating Blacks with danger appear to influence that decision. On the other hand, the need to process more information to determine if there is probable cause for a search apparently provides officers with time to monitor their cognitions and respond in a racially unbiased manner.

That the relationship between race and the risk of being frisked following a stop is conditional upon the population composition of the community is also consistent with an ecological perspective. Both Black and White drivers are more likely to be frisked in communities in which police view them as suspicious because they seem "out-of-place." However, the association is much stronger for Blacks than Whites. One possible explanation is that being out-of-place makes both Blacks and Whites suspicious, but that out-of-place Blacks are also more often seen as "symbolic assailants" who must be approached with caution.[5] Whites who are out-of-place may be viewed with suspicion but perhaps less likely to be perceived as dangerous. It is not just where you are but also who you are.

In sum, our findings lend support to social conditioning theory that explains racial bias in traffic law enforcement by reference to implicit stereotypes that are widely shared, and that may not even be consciously held, rather than by reference to

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[5] The concept of the symbolic assailant was first used by Skolnick (1994:44). In a recent essay, he observes that most of those who were so categorized were African-American (Skolnick 2007:65).

overt, intentional racism. It also has methodological implications. Past research has not distinguished between frisks and searches. Our finding that unwarranted racial disparity occurs mainly in regard to frisks in predominantly White communities raises questions about the validity of past conclusions. Had we conflated frisks and searches, as has been done in previous research, our conclusions would be quite different. We would have reported that Black drivers are significantly more likely to be searched, and substantially (though not to a statistically significant degree) less likely to be found with contraband, and would not have found an interaction effect. In short our findings would have implied that police bias in post-stop investigations is both more extensive and more intrusive that what we have reported here.

This research, if supported by other studies, also has practical implications for the training of police. Cognitions that are, at best, semi-conscious and that influence behavior automatically, but only in situations in which one's personal safety is at issue, would seem to be extremely resistant to change. Attempts to reduce disparities through education and regulatory mechanisms such as internal benchmarking are unlikely to be successful. Most officers will view lectures on cultural awareness and discussions designed to increase cultural sensitivity as perhaps applying to others but not to them. Comparing the activity of officers to those with similar duties may identify those who are actively racist but not those whose behavior in certain situations is influenced by implicit stereotypes. One possibility is to make the presence and influence of these stereotypes manifest by incorporating into police training exercises such as the "Policeman's Dilemma" (Correll, et al., 2002, 2007), adapted to include not only shooting suspects but

also frisking and searching them. Evidence of the existence and influence of implicit stereotypes such as might be produced by such exercises would be difficult to deny, and may make officers more amenable to training.

Maximizing the benefits of such training requires knowledge of what features of a situation warrant a frisk or search and which do not. Such knowledge is only beginning to be developed. Only two of the variables in our model were related to productive searches, and one of these—the barracks of the officer conducting the search-- suggests that it perhaps has to do more with police effort than suspect or situational characteristics. A recent study of searches by a municipal department found that only 5 of the 26 variables in their model had a significant relationship with productivity (Tillyer and Klahm 2011). If police training is to reduce racial and other biases in post-stop actions, further research on the factors that differentiate productive frisks and searches from the unproductive clearly is necessary. Such research would undoubtedly increase the productivity of these actions as well.

This study has several limitations. First, its generalizability is limited by the fact that it concerns one police department. Moreover, the agency is a state police department whose mission is more narrowly defined than that of city and town police, focused more on traffic control and organized more in terms of highways sectors than places and neighborhoods. This difference in organization and function undoubtedly affects the time spent in various activities and the priority accorded to them. Our findings thus may not apply as well to city and town police as to state agencies.

A second limitation is the use of cities and towns to assess contextual effects. With areas as large as cities and towns, it is possible that stops classified as out-of-place may actually not be, e.g. a White driver stopped in the Providence area may have been stopped in a predominantly White neighborhood. Smaller units such as blocks, police districts or census tracts would thus be better measures of the demographic composition of the area in which the stop was made, but such was not available. With that said, however, our findings are consistent with previous research using such smaller units (Novak and Chamlin, 2008; Renauer, 2012; Rojek et al., 2012).

Two sub-samples of the data permit a limited check on whether these two limitations affected our findings. The Rhode Island State Police provide policing services on a contract basis for the town of Exeter, a small, rural and predominantly White community. During 2006 they also partnered with the Providence police in patrolling the downtown area and high crime neighborhoods late at night.   When frisks and searches in these areas (and after 10 PM in Providence) are regressed on race of driver, the results – presented in Table 6--reproduce our overall findings. It appears, then that when the Rhode State Police provide general police services in smaller, more racially homogeneous areas, the results are quite similar to what has been reported above.

A third limitation concerns the fuzziness of the distinctions between frisks and searches. Troopers did not make clear, mutually exclusive distinctions between frisks and searches, and,

Table 6 about here

as explained above, the classification is based on several assumptions. While these assumptions seem reasonable, the resultant categories probably involve some measurement error and probably underestimate the number of frisks because ambiguous cases were treated as missing. Such error should not affect our major findings, however. Excluding frisks that uncovered contraband ensures that all of them were objectively unwarranted, on the one hand, and precludes a reversal of the time-order such as could happen in a case where a trooper observes contraband and then decides to frisk a stopped driver, which would actually be a search.

A recent study by Rojek, et al. (2012) finds that the race of the officer and that of the driver interact in their effect upon the likelihood of a search in a way that generally conforms to expectations derived from Black's (1976, 1980) theory of law which argues that the decision to invoke the law depends, in part, on the relative social status of the parties involved. The one exception was in districts with predominantly Black populations where stops involving White drivers and White officers were the most likely to result in a search.

The race of the officers making stops was not in the data set available for this research. However, the results reported above are generally consistent with those of Rojek et al (2012), and taken together these studies suggest that integrating Black's structural theory of law with research on the association of implicit stereotypes with social statuses, and their influence on behavior in different contexts may be a promising avenue for future research and theoretical development.

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Table 1. Descriptive Statistics

Categorical Variables			Continuous Variables		
Variable	N	%	Variable	Mean	S.D.
Frisk	174	0.4	Driver's Age	32.5	12.5
Search	356	0.7	Number of Occupants	2.1	1.3
Black Driver	5,797	12.0	Time of Stop[a]	15.9	6.3
Male Driver	34,354	71.0	Vehicle Age	6.6	4.9
Stopped for Speeding	38,175	78.9			
On City/Town Street	3,770	7.8			
In Providence Area	21,633	44.7			
RI Registration	31,269	64.7			
By Chepachet Barracks	5,953	12.3			
By Hope Valley Barracks	13,494	27.9			
By Lincoln Barracks	11,000	22.8			
By Portsmouth Barracks	6,560	13.6			
By Wickford Barracks	9,489	19.6			
Total N of Stops	47,913				

[a] 24 hour clock with 6:00AM = 00

Table 2. Multinomial Regression of Frisked and Searched[1] on Independent Variables

	Frisked			Searched		
	b	S.E.	OR	b	S.E.	OR
Black Driver	.863[c]	.178	2.370	.424[b]	.135	1.528
Male Driver	.673[c]	.225	1.960	1.124[c]	.182	3.077
Age of Driver	-.033[c]	.007	.967	-.036[c]	.005	.965
Stopped for Speeding	-.953[c]	.204	.386	-.896[c]	.151	.408
Time of Stop	.076[c]	.015	1.079	.091[c]	.010	1.096
On City Street	.534[B]	.228	1.705	.745[c]	.164	2.106
In Providence Area	-.108	.193	.898	-.132	.133	.876
Number of Occupants	.068[c]	.015	1.070	.065[c]	.018	1.067
Age of Vehicle	.038[c]	.014	1.038	.030[b]	.010	1.030
RI Registration	-.116	.170	.890	-.423[c]	.131	.655
Chepachet Barracks	-1.135[c]	.418	.248	-1.186[c]	.290	.305
Hope Valley Barracks	.250	.198	1.284	.137	.156	1.147
Lincoln Barracks	-.725[b]	.249	.481	-.430[a]	.183	.651
Portsmouth Barracks	.054	.277	1.055	.578[c]	.171	1.783
Intercept	-6.302[c]	.465		-5.997[c]	.356	
AIC	5821.088					
LR Chi-Square	765.358	28df	P=.000			

[1]Reference category for dependent variable is "No Action."

[a]p<.05   [b]p<.01   [c]p<.001

Table 3. Binomial Regression of Being Frisked vs. Being Searched[1] on Race of Drivers

	b	S.E.	OR
Black Driver	.442[a]	.215	1.556
Male Driver	-.434	.287	.648
Age of Driver	..009	.011	1.009
Stopped for Speeding	-.041	.226	.960
Time of Stop	-.019	.017	.981
On City Street	-.029	.254	.971
In Providence Area	.040	.274	1.041
Number of Occupants	.243[b]	.078	1.275
Age of Vehicle	.002	.022	1.002
RI Registration	.356	.225	1.428
Chepachet Barracks	-.201	.537	.818
Hope Valley Barracks	.090	.314	1.094
Lincoln Barracks	-.391	.300	.676
Portsmouth Barracks	-.451	.393	.633
Intercept	-1.141	..715	
LR Chi-Square	24.848	14df	P=.030
AIC	678.409		
N= 532			

[1]Reference category is "Searched"

[a]p<.05   [b]p<.01   [c]p<.001

Table 4. Multinomial Regression of Frisked and Searched[1] on Independent Variables and Interaction Term for Race of Driver and Providence Area

	Frisked			Searched		
	b	S.E.	OR	b	S.E.	OR
Black Driver	1.632[c]	.217	5.113	.507[a]	.210	1.661
Male Driver	.671[c]	.225	1.956	1.124[c]	.182	3.076
Age of Driver	-.034[c]	.007	.966	-.036[c]	.005	.965
Stopped for Speeding	-.999[c]	.203	.368	-.900[c]	.151	.407
Time of Stop	.074[c]	.015	1.077	.091[c]	.010	1.095
On City Street	.649[b]	.227	1.913	.752[c]	.165	2.121
In Providence Area	.285	.211	1.330	-.107	.139	.899
Number of Occupants	.068[c]	.015	1.070	.065[c]	.018	1.067
Age of Vehicle	.034[b]	.013	1.037	.030[c]	.010	1.030
RI Registration	-.075	.171	.928	-.421[c]	.131	.656
Chepachet Barracks[2]	-1.371[c]	.418	.254	-1.184[c]	.290	.306
Hope Valley Barracks	.211	.201	1.235	.134	.156	1.143
Lincoln Barracks	-.701[b]	.248	.496	-.428[a]	.182	.652
Portsmouth Barracks	.090	.278	1.094	.581[c]	.171	1.788
Black*Providence Area	-1.441[c]	.324	.237	-.134	.274	.874
Intercept	-6.439[c]	.468		-6.003[c]	.356	

AIC	5806.348		
LR Chi-Square	784.098	30df	P<.000

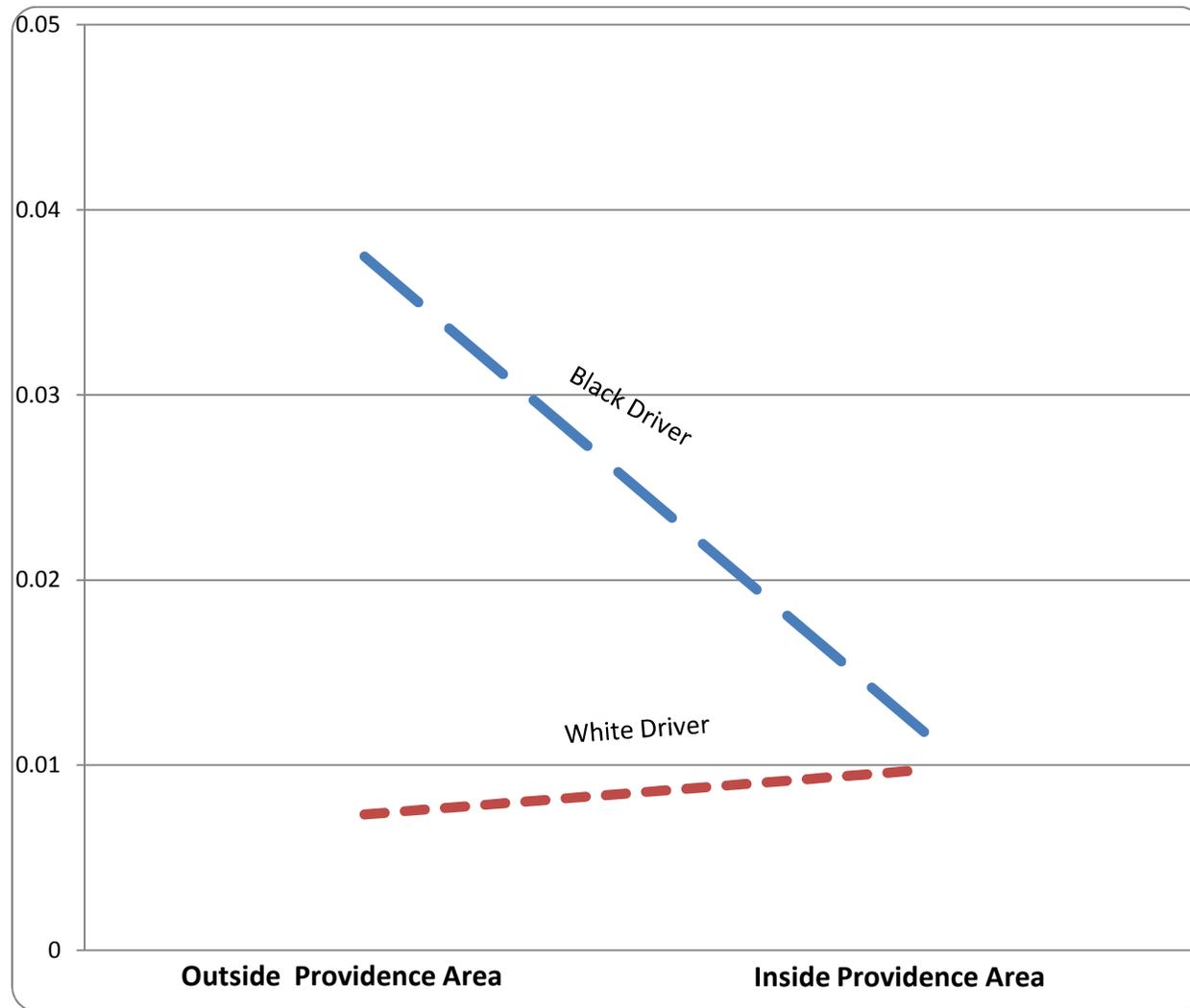[1]Reference category for the dependent variable is "No Action."   [2]Reference category for Barracks is the Wickford Barracks.

[a]p<.05   [b]p<.01   [c]p<.001

Figure 1. Probability of Being Frisked Inside and Outside the Providence Area by Race of Driver

Table 5. Binomial Regression of Contraband Uncovered[1] in Searches

	Full Model			Reduced Model		
	b	S.E.	OR	b	S.E.	OR
Black Driver	.096	.269	1.101	.099	.255	1.104
Male Driver	.306	.364	1.358			
Age of Driver	-.032[b]	.012	.969	-.028[a]	.012	.972
Stopped for Speeding	.158	.275	1.171			
Time of Stop	-.017	.021	.983			
On City Street	-.234	.300	.792			
In Providence Area	-.069	.323	.933			
Number of Occupants	-.054	.100	.947			
Age of Vehicle	.033	.025	1.033			
RI Registration	-.043	.249	.958			
Chepachet Barracks[2]	-.622	.643	.537			
Hope Valley Barracks	-.067	.377	.377			
Lincoln Barracks	.223	.348	1.250			
Portsmouth Barracks	.733	.454	2.082	.671[a]	.293	1.956
Intercept	1.037	.848		.965	.362	
N = 356						
AIC	496.721			481.806		
LR Chi-Square	16.540	14df	p=.282	10.127	3df	p=.018

[1] Reference category for dependent variable is "None Found."   [2] Reference category for Barracks is the Wickford Barracks.

[a]p<.05   [b]p<.01   [c]p<.001

Table 6. Racial Disparity[1] in the Odds of Being Frisked or Searched in Exeter and in Providence

	Exeter	Providence
Odds of Being Frisked	11.473[c]	1.306
Odds of Being Searched	1.721	.851
N of Stops	4049	1623
N of Frisks	16	19
N of Searches	20	46

[1]White is the reference category; Binary logistic regression with no control variables.