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CRIMINOLOGY

DRIVER RACE, ETHNICITY, AND GENDER AND CITIZEN REPORTS OF VEHICLE SEARCHES BY POLICE AND VEHICLE SEARCH HITS: TOWARD A TRIANGULATED SCHOLARLY UNDERSTANDING

RICHARD J. LUNDMAN[*]

INTRODUCTION

The debate over race and ethnically targeted vehicle searches by police is currently dominated by two loosely organized and very different coalitions. The first consists of civil rights and social movement organizations, such as the American Civil Liberties Union (ACLU) and the National Association for the Advancement of Colored People (NAACP), professors of law, and investigative journalists. The members of this first coalition firmly oppose race and ethnically targeted vehicle searches by police, and their opposition is grounded in the argument that such searches are illegal and unproductive.[1] The ACLU's report, *Driving While Black*, is representative of the position of this first coalition:

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[1] *See* AMERICAN CIVIL LIBERTIES UNION (ACLU), DRIVING WHILE BLACK: RACIAL PROFILING ON OUR NATION'S HIGHWAYS (1999), *available at* http://www.aclu.org/profiling/report/index.html; DAVID J. HARRIS, PROFILES IN INJUSTICE: WHY RACIAL PROFILING CANNOT WORK (2002); KENNETH MEEKS, DRIVING WHILE BLACK (2000); NATIONAL ASSOCIATION FOR THE ADVANCEMENT OF COLORED PEOPLE (NAACP), NAACP TO FOCUS ON HOUSING BIAS AND RACIAL PROFILING (2001), *available at* http://www.naacp.org/news/releases/housingbias043001.shtml; Mark Arner, *Data on Traffic Stops Not Surprising to Minorities*,

> Racial profiling is based on the premise that most drug offenses are committed by minorities. The premise is factually untrue, but it has nonetheless become a self-fulfilling prophecy. Because police look for drugs primarily among African Americans and Latinos, they find a disproportionate number of them with contraband. Therefore, more minorities are arrested, prosecuted, convicted, and jailed, thus reinforcing the perception that drug trafficking is primarily a minority activity . . . . [W]hite drivers receive far less police attention, many of the drug dealers and possessors among them go unapprehended, and the perception that whites commit fewer drug offenses than minorities is perpetuated.[2]

The second coalition is composed of police administrators and officers and some of them openly support race and ethnically targeted vehicle searches by police.[3] Their support is firmly grounded in the argument that such searches are more likely to yield hits in the form of illegal evidence, especially drugs. Consider three illustrations: first, prior to being fired for trying to defend racial profiling, the Superintendent of the New Jersey State Police, Carl Williams, stated: "Today, with this drug problem, the drug problem is cocaine or marijuana. It is most likely a minority group that's involved with it." Second, Bernard Parks, Chief of the Los Angeles Police Department from 1997 to 2002, observed: "It's not the fault of police. . . . It's the fault of minority males for committing the crime. In my mind it is not a great revelation that if officers are looking for criminal activity, they're going to look at the kind of people who are listed on crime reports." Third, the words of an experienced Maryland State Police Officer working Route 50 between Washington, DC and the Eastern Shore:

> Ask me how many white people I've arrested for cocaine smuggling. . . . None! Zero! I debrief hundreds of black smugglers, and I ask them, "Why don't you hire white guys to deliver your drugs?" They just laugh at me. "We ain't gonna trust our drugs with white boys." That's what they say. . . . I dream at night about arresting white people for cocaine. I do. I try to think of innovative ways to arrest white males. But the reality is different.[4]

With several important ongoing and hence preliminary exceptions detailed below, social science scholars have not been a visible and central

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SAN DIEGO UNION, Sept. 30, 2000, at B2; Bill Dedman, *Traffic Citations Reveal Disparity in Police Searches*, BOSTON GLOBE, Jan. 7, 2003, at A1.

    [2] ACLU, *supra* note 1.

    [3] *See DEA Congressional Testimony Before the Subcomm. on Western Hemisphere, House Comm. on Int'l Relations*, 106th Cong. (1999) (statement of Donnie Marshall, Deputy Administrator, Drug Enforcement Administration, United States Department of Justice) [hereinafter *Testimony*], *available at* http://www.usdoj.gov/dea/pubs/cngrtest/ct990303.htm; DRUG ENFORCEMENT ADMIN., U.S. DEP'T OF JUSTICE, A TRADITION OF EXCELLENCE [hereinafter DEA], *available at* http://www.usdoj.gov/dea.pubs/history/deahistory_03p.htm.

    [4] Jeffrey Goldberg, *The Color of Suspicion*, N.Y. TIMES, June 20, 1999, (Magazine) at 52; *see also* MEEKS, *supra* note 1, at 50-62.

part of the debate over race and ethnically targeted vehicle searches by police. Only a handful of published scholarly papers currently exist and most of them have been written by professors of law, appeared in law review journals, and been directed nearly exclusively at the constitutionality of race and ethnically targeted vehicle stops and searches.[5] Scholars in social science disciplines that have traditionally undertaken research on police and policing, such as criminal justice, criminology, and sociology, have not as yet published formal scholarly papers on vehicle searches and vehicle search hits.

There are, however, several important ongoing and therefore preliminary exceptions to the general absence of social science examination of vehicle searches and vehicle search hits. Researchers in criminal justice, criminology, sociology, and other scholarly disciplines are currently collaborating with law enforcement organizations collecting police-reported data on traffic stops, vehicle searches, and vehicle search hits. The results of some of these collaborative efforts have already been presented in preliminary report form.[6] Taken together, these preliminary data indicate: first, that vehicles of drivers of color are searched more often than vehicles of white drivers; and second that hit rates for whites are generally higher than hit rates for drivers of color.

Analyses grounded in police-reported data, however, pose distinct problems. Police officers know race, ethnicity, vehicle search, and vehicle search hit information, along with other data, are being collected[7] and they

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[5] *See* R. Richard Banks, *Race-Based Suspect Selection and Colorblind Equal Protection Doctrine and Discourse*, 48 UCLA L. REV. 1075 (2001); David A. Harris, *The Stories, the Statistics, and the Law: Why "Driving While Black" Matters*, 84 MINN. L. REV. 265 (1999); Sean P. Trende, *Why Modest Proposals Offer the Best Solution for Combating Racial Profiling*, 50 DUKE L.J. 331 (2000); *see also* HARRIS, *supra* note 1.

[6] PORTLAND POLICE BUREAU, BLUE RIBBON PANEL ON RACIAL PROFILING (2000), *available at* http://www.portlandonline.com/police/index.cfm?print=1&a=32381&c=cjiha; DEBORAH RAMIREZ ET AL., U.S. DEP'T OF JUSTICE, A RESOURCE GUIDE ON RACIAL PROFILING DATA COLLECTION SYSTEMS (2000); PETER VERNIERO & PAUL H. ZOEBECK, INTERIM REPORT OF THE STATE POLICE REVIEW TEAM REGARDING ALLEGATIONS OF RACIAL PROFILING (1999); MATTHEW T. ZINGRAFF ET AL., EVALUATING NORTH CAROLINA STATE HIGHWAY PATROL DATA: CITATIONS, WARNINGS, AND SEARCHES IN 1998 (2000) (report submitted to North Carolina Department of Crime Control and Public Safety and North Carolina Highway Patrol), *available at* http://www.nccrimecontrol.org/ shp/ncshpreport.htm; Samuel Walker, *Searching for the Denominator: Problems with Police Traffic Stop Data and an Early Warning System Solution*, 2 JUST. RES. & POL'Y 63 (2001); *see also* LORIE FRIDELL ET AL., RACIALLY BIASED POLICING: A PRINCIPLED RESPONSE (2001); Albert J. Meehan & Michael C. Ponder, *Race and Place: The Ecology of Racial Profiling African American Motorists*, 19 JUST. Q. 399 (2002).

[7] FRIDELL ET AL., *supra* note 6.

know why.[8] Police officers therefore have a strong incentive to provide false or incomplete data and sizeable numbers of police officers have been detected doing precisely that.[9] Cordner and colleagues, for instance, estimate that San Diego police reported only fifty-three percent of the traffic stops they made in predominantly African American and Hispanic police precincts during 2001.[10]

The solution is triangulation.[11] Because all data sources including police-reported data present problems, confident and complete understanding of the factors affecting vehicle searches and vehicle search hits necessarily requires patient examination using multiple sources, including police-reported, citizen-reported, and observer-reported data.

The present research therefore examines vehicle searches and vehicle search hits using citizen-reported data. My goals are threefold. The first is to add to the extensive scholarly literature on the effects of legal and extralegal variables on police actions. The second is to complement preliminary analyses of police-reported data with an analysis of citizen-reported data. The third is to move toward a triangulated scholarly understanding of the factors affecting vehicle searches by police and vehicle search hits.

LEGAL AND EXTRALEGAL VARIABLES AND POLICE ACTIONS

Scholars have known for a very long time that both legal and extralegal factors affect police actions. In the late 1940s, for instance, Goldman examined the factors affecting the decisions of police patrol officers during their encounters with juvenile offenders.[12] Goldman reported that the police officers he studied paid close attention to legal factors such as the seriousness of the offense as well as extralegal factors

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[8] Richard J. Lundman & Robert L. Kaufman, *Driving While Black: Effects of Race, Ethnicity, and Gender on Citizen Self-Reports of Traffic Stops and Police Actions*, 41 CRIMINOLOGY 195 (2003).

[9] *See, e.g.*, MEEKS, *supra* note 1, at 6-7; VERNIERO & ZOUBECK, *supra* note 6, at 31-32; Bill Dedman & Francie Latour, *Police Not Pressed on Racial Records: Ticket is Key in Bid to Fight Profiling*, BOSTON GLOBE, Jan. 7, 2003, at A1; Brian Donohue, *10 Troopers Cleared of Charges as Dunbar Sees Profiling* [sic] *Ending*, STAR-LEDGER, Apr. 15, 2000, at 6.

[10] GARY CORDNER ET AL., VEHICLE STOPS IN SAN DIEGO: 2001, at 32 (2002).

[11] NORMAN K. DENZIN, THE RESEARCH ACT: A THEORETICAL INTRODUCTION TO SOCIOLOGICAL METHODS 26-27 (1970); ROYCE A. SINGLETON, JR. & BRUCE C. STRAITS, APPROACHES TO SOCIAL RESEARCH 409-12 (3d ed. 1999); EUGENE WEBB ET AL., UNOBTRUSIVE MEASURES: NONREACTIVE RESEARCH IN THE SOCIAL SCIENCES (1966).

[12] NATHAN GOLDMAN, THE DIFFERENTIAL SELECTION OF JUVENILE OFFENDERS FOR COURT APPEARANCE (1963).

such as the race, nationality, and social class of juvenile offenders when making the decision to handle the juvenile formally or informally.[13] Also in the late 1940s, Westley studied the legal and extralegal factors that precipitated use of unnecessary force by police patrol officers in Gary, Indiana.[14] He reported that police were quicker to use unnecessary force as a means of soliciting information about serious crimes and when citizens did not show respect to officers.

Since these early studies and others like them,[15] there has been a steady stream of studies focused on the effects of legal and extralegal variables on police actions.[16] The accumulated data consistently support three observations. First, police are legal actors sensitive to legal factors.[17] The more serious the offense, the more likely police are to take formal action.[18] Second, extralegal variables are especially important in the context of minor and low-visibility police actions such as the decision to write a traffic ticket once a traffic stop has been made.[19] Third, and with the possible exception of demeanor,[20] no single extralegal variable consistently affects police

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[13] *Id.* at 21-22.

[14] WILLIAM A. WESTLEY, VIOLENCE AND THE POLICE: A SOCIOLOGICAL STUDY OF LAW, CUSTOM, AND MORALITY (1970) [hereinafter WESTLEY, VIOLENCE]; William A. Westley, *Violence and the Police*, 59 AM. J. SOC. 34 (1953) [hereinafter Westley, *Violence*]; William A. Westley, The Police: A Sociological Study of Law, Custom and Morality (1951) (unpublished Ph.D. dissertation, University of Chicago) (on file with UMI Dissertation Info. Service) [hereinafter Westley, *The Police*].

[15] *See* Donald J. Black & Albert J. Reiss, Jr., *Police Control of Juveniles*, 35 AM. SOC. REV. 63 (1970); Irving Piliavin & Scott Briar, *Police Encounters with Juveniles*, 70 AM. J. SOC. 206 (1964).

[16] For reviews, see Eric C. Riksheim & Steven M. Chermak, ·*Causes of Police Behavior Revisited*, 21 J. CRIM. JUST. 353 (1993); Lawrence W. Sherman, *Causes of Police Behavior: The Current State of Quantitative Research*, 17 J. RES. CRIME & DELINQ. 69 (1980). *See also* Robin S. Engel et al., *Further Exploration of the Demeanor Hypothesis: The Interaction Effects of Suspects' Characteristics and Demeanor on Police Behavior*, 17 JUST. Q. 235 (2000); David A. Klinger, *Demeanor or Crime? Why "Hostile" Citizens Are More Likely to be Arrested*, 32 CRIMINOLOGY 475 (1994) [hereinafter Klinger, *Demeanor or Crime?*]; David A. Klinger, *More on Demeanor and Arrest in Dade County*, 34 CRIMINOLOGY 61 (1996) [hereinafter Klinger, *More on Demeanor*]; Robert E. Worden & Robin L. Shepard, *Demeanor, Crime, and Police Behavior: A Reexamination of the Police Services Study Data*, 34 CRIMINOLOGY 83 (1996).

[17] *See* Black & Reiss, *supra* note 15.

[18] *See* David A. Klinger, *Negotiating Order in Patrol Work: An Ecological Theory of Police Response to Deviance*, 35 CRIMINOLOGY 277 (1997).

[19] *See* Richard J. Lundman, *Organizational Norms and Police Discretion: An Observational Study of Police Work with Traffic Law Violators*, 17 CRIMINOLOGY 159 (1979); H. Laurence Ross, *Traffic Law Violations: A Folk Crime*, 8 SOC. PROBS. 231 (1960).

[20] *See* Engel et al., *supra* note 16; Klinger, *Demeanor or Crime?*, *supra* note 16; Klinger, *More on Demeanor*, *supra* note 16; Richard J. Lundman, *Demeanor and Arrest: Additional*

actions. In particular, results concerning race and ethnicity have been mixed, with some studies finding them important[21] and others not.[22]

ONE LIMIT OF PREVIOUS RESEARCH

However, race and ethnically targeted vehicle searches by police have not been the focus of social science research on the effects of legal and extralegal variables on police actions. Older data bases that continue to be consulted and used by scholars of police and policing such as the data assembled by Albert J. Reiss, Jr. in the mid 1960s,[23] the Midwest City Study from the early 1970s,[24] and the Police Services Study from the middle 1970s[25] either do not contain data on vehicle searches by police and search hits or those data have yet to be reported. More recent data bases such as those assembled by Klinger from Metro Dade County[26] also either do not contain information of vehicle searches and vehicle search hit rates or those data have not as yet been reported.

PRELIMINARY ANALYSES USING POLICE-REPORTED DATA

Despite the lack of formally published papers on vehicle searches and vehicle search hits, preliminary analyses using police-reported data have recently become available. Zingraff and colleagues, for instance, are collaborating with the North Carolina State Highway Patrol and they have reported the results of their preliminary analysis of police-reported vehicle searches and hits during 1998.[27] Their start points are the 223,241 African American and 683,517 white drivers stopped by Highway Patrol officers

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Evidence from Previously Unpublished Data, 33 J. RES. CRIME & DELINQ. 306 (1996); Worden & Shepard, *supra* note 16.

[21] *See* GOLDMAN, *supra* note 12; Richard J. Lundman, *City Police and Drunk Driving: Baseline Data*, 15 JUST. Q. 527 (1998); Piliavin & Briar, *supra* note 15.

[22] *See* Black & Reiss, *supra* note 15; Worden & Shepard, *supra* note 16.

[23] ALBERT J. REISS, JR., PATTERNS OF BEHAVIOR IN POLICE AND CITIZEN TRANSACTIONS: BOSTON, CHICAGO, AND WASHINGTON DC (2000), *at* http://www.icpsr.umich.edu/index-medium.html [hereinafter REISS, PATTERNS]; *see also* DONALD BLACK, THE MANNERS AND CUSTOMS OF THE POLICE (1980); ALBERT J. REISS, JR., THE POLICE AND THE PUBLIC (1971) [hereinafter REISS, THE POLICE AND THE PUBLIC].

[24] RICHARD E. SYKES & EDWARD E. BRENT, POLICING: A SOCIAL BEHAVIORIST PERSPECTIVE (1983); Richard E. Sykes & John P. Clark, *A Theory of Deference Exchange in Police-Civilian Encounters*, 81 AM. J. SOC. 584 (1975).

[25] ELINOR OSTROM ET AL., POLICE SERVICES STUDY, PHASE II, 1977: ROCHESTER, ST. LOUIS, AND ST. PETERSBURG (2001), *at* http://www.icpsr.umich.edu/index-medium.html; *see also* Engel et al., *supra* note 16; Worden & Shepard, *supra* note 16.

[26] Klinger, *Demeanor or Crime?*, *supra* note 16; Klinger, *More on Demeanor*, *supra* note 16.

[27] *See* ZINGRAFF ET AL., *supra* note 6.

and either given a written warning or a ticket. Zingraff and colleagues[28] report five preliminary findings: first, searches by Highway Patrol officers are very rare events; there were only 826 police-reported searches out of the total of 906,758 drivers issued a written warning or a ticket. Second, seventy percent of the police-reported searches were carried out by Highway Patrol officers assigned to the Criminal Interdiction Team which "has primary responsibility for drug interdiction."[29] Third, vehicles driven by African Americans were searched more often than vehicles driven by whites—for African Americans, thirteen searches per 10,000 written warnings or tickets versus eight per 10,000 written warnings or tickets for whites. Fourth, with Criminal Interdiction Team searches removed, however, police-reported search rates for African Americans were lower than search rates for whites—two per 10,000 African Americans versus three per 10,000 whites. Fifth, hits in the form of "contraband"[30] occurred in 26.3% of Highway Patrol searches of vehicles driven by African Americans and 33.0% of the searches of vehicles driven by whites.

Similarly, Cordner and colleagues[31] are collaborating with the San Diego Police Department in collecting and analyzing police-reported data on traffic stops, vehicle searches, and vehicle search hits. They report that San Diego police searched vehicles driven by Hispanic drivers more often than white drivers (51.6% versus 24.5%). However, searches of vehicles driven by whites yielded hits twice as often as vehicles driven by Hispanics (11.7% versus 5.0%). There were no differences in vehicle search rates or hit rates between vehicles driven by African Americans and whites.

Researchers at the University of Minnesota Law School's Institute on Race and Poverty reached the same general conclusions. Following preliminary analysis of data voluntarily collected and provided by sixty-five Minnesota police departments during 2002, they reported police "searched Blacks, Latinos, and American Indians at greater rates than White drivers, and found contraband as a result of searches of Blacks, Latinos, and American Indians at lower rates than in searches of White drivers."[32]

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[28] *Id.*

[29] *Id.*

[30] *Id.*

[31] CORDNER ET AL., *supra* note 10.

[32] THE INST. ON RACE & POVERTY, UNIV. OF MINNESOTA LAW SCH., MINNESOTA STATEWIDE RACIAL PROFILING REPORT: ALL PARTICIPATING JURISDICTIONS 1 (2003) [hereinafter INST. ON RACE & POVERTY] (report to the Minnesota Legislature released on Sept. 22, 2003).

PROBLEMS WITH POLICE-REPORTED DATA

Police reports of vehicle searches and vehicle search hits are clearly instructive. Just as clearly, police-reported data pose problems. Contemporary police officers know why data are being collected and they have strong incentives to distort or minimize what they report.[33] Accordingly, understandings of vehicle searches and vehicle search hits grounded exclusively in police-reported data must be viewed with caution.

TOWARD A TRIANGULATED SCHOLARLY UNDERSTANDING

Data on the effects of legal and extralegal variables on police actions generally and vehicle searches and hits in particular can come from at least three sources. First, researchers have turned to police for data to study the effects of race and ethnicity on traffic stops, vehicle searches, and vehicle search hits.[34] Second, it is possible for scholars to expand the training of the observers of police who have played such a central role in the collection of data on police and policing in the past[35] to include collection of data on vehicle searches and vehicle search hits. Third, it is possible for researchers to turn to citizens for data on the factors affecting police actions.[36]

However, exclusive reliance upon any one of these three data sources necessarily raises questions about validity. Data assembled from police reports, for instance, are susceptible to deliberate distortion because police know why data are being collected and some police officers have already been detected providing false or incomplete data.[37] Training the next generation of observers to collect data on vehicle searches is a logical and necessary step. However, data collected by observers inevitably raises questions about reactivity because police are always aware that data are

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[33] *See* MEEKS, *supra* note 1, at 6-7; VERNIERO & ZOUBECK, *supra* note 6, at 31-32; Dedman & Latour, *supra* note 9; Donohue, *supra* note 9.

[34] *See* sources cited *supra* note 6.

[35] OSTROM ET AL., *supra* note 25; REISS, PATTERNS, *supra* note 23; REISS, THE POLICE AND THE PUBLIC, *supra* note 23; Black, *supra* note 23; Black & Reiss, *supra* note 15; Engel et al., *supra* note 16; Sykes & Brent, *supra* note 24; Sykes & Clark, *supra* note 23; Christy A. Visher, *Gender, Police Arrest Decisions, and Notions of Chivalry*, 21 CRIMINOLOGY 5 (1983); Worden & Shepard, *supra* note 16; *see also* Stephen D. Mastrofski & Roger B. Parks, *Improving Observational Studies of Police*, 28 CRIMINOLOGY 475 (1990).

[36] *See* Ronald Weitzer & Steven A. Tuch, *Perceptions of Racial Profiling: Race, Class, and Personal Experience*, 40 CRIMINOLOGY 435 (2002) [hereinafter Weitzer & Tuch, *Perceptions*]; Ronald Weitzer & Steven A. Tuch, *Race, Class, and Perceptions of Discrimination by the Police*, 45 CRIME AND DELINQ. 494 (1999) [hereinafter Weitzer & Tuch, *Race*].

[37] MEEKS, *supra* note 1, at 6-7; VERNIERO & ZOUBECK, *supra* note 6, at 31-32; Dedman, *supra* note 1; Donohue, *supra* note 9.

being collected and sometimes citizens are as well.[38]   Last, exclusive
reliance upon citizen reports raises problems because citizens also distort
their reports of trouble with the law including contacts with police.[39]

Patient assembly and examination of triangulated data[40] is the solution.
Because any single data source on vehicle searches and vehicle search hits
is rich in sources of invalidity including distortions by reporting police,
reactivity to observers by police and citizens, and distortions by reporting
citizens, a combination of data sources each with its own unique problems
is a necessary scholarly approach. Triangulation allows researchers to
establish and explain that which is common and forces researchers to isolate
and explain that which is not.[41]

THE PRESENT RESEARCH

The present research uses *Contacts Between Police and the Public:
Findings from the 1999 National Survey*,[42] which is grounded exclusively in
citizen reports of their encounters with police, to probe the effects of legal
and extralegal factors on vehicle searches by police and vehicle search hits.
In particular, the present research constructs multivariate answers to three
important questions about vehicle searches by police. First, are police
significantly more likely to search vehicles driven by African American and
Hispanic drivers? Second, are searches of the vehicles of African American
and Hispanic drivers significantly more likely to yield hits, as some police
administrators and officers argue? Third, what do police find when they
use their enormous power to search vehicles?

The present research therefore moves in the direction of a triangulated
scholarly understanding of the effects legal and extralegal variables,
especially race and ethnicity, on vehicle searches and vehicle search hits by

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[38] WEBB ET AL., *supra* note 11; Richard Spano, Potential Sources of Observer Bias in
Observational Studies of Police (2002) (unpublished Ph.D. dissertation, State University of
New York at Albany) (on file with the University at Albany Library).

[39] SEYMOUR SUDMAN & NORMAN M. BRADBURN, RESPONSE EFFECTS IN SURVEYS: A
REVIEW AND SYNTHESIS (1974); John P. Clark & Larry L. Tifft, *Polygraph and Interview
Validation of Self-Reported Deviant Behavior*, 31 AM. SOC. REV. 516 (1966); Cynthia
Wright & Donald Tomaskovic-Devey, Speech at Annual Meeting of the American Society
of Criminology (Nov. 8, 2001). For an exception to these findings see David P. Farrington
et al., *Self-Reported Delinquency and a Combined Delinquency Seriousness Scale Based On
Boys, Mothers, and Teachers: Concurrent and Predictive Validity for African-Americans
and Caucasians*, 34 CRIMINOLOGY 493 (1996).

[40] DENZIN, *supra* note 11, at 26-27; SINGLETON & STRAITS, *supra* note 11, at 409-12;
WEBB ET AL., *supra* note 11.

[41] WEBB ET AL., *supra* note 11, at 173-74.

[42] PATRICK A. LANGAN ET AL., U.S. DEP'T OF JUSTICE, CONTACTS BETWEEN POLICE AND
THE PUBLIC: FINDINGS FROM THE 1999 NATIONAL SURVEY (2001).

police. Because ongoing research involving the collaboration of local police departments and social science scholars is relying almost exclusively on police-reported data on vehicle searches and vehicle search hits,[43] the present research advances an analysis of vehicle searches and vehicle search hits using citizen-reported data. As such, the present research complements ongoing research using police-reported data and takes its place in the research literature on the effects of legal and extralegal variables on police actions while scholars await a new generation of observers trained to collect the data that will permit completion of a triangulated approach to the study of vehicle searches and vehicle search hits.

METHODS

CONTACTS BETWEEN POLICE AND THE PUBLIC 1999 DATA AND CASES

Contacts Between Police and the Public: Findings from the 1999 National Survey (hereinafter CBPP 1999) is a nationally representative sample, and it was collected as part of the annual National Crime Victimization Survey.[44] To be included in CBPP 1999, subjects had to be sixteen years old or older (N= 80,543) and they first answered a long series of questions (31% in person and 69% by telephone) about crime victimization and then a much shorter series of questions lasting five to ten minutes about face-to-face contacts they had with police in the previous twelve months. Of those interviewed, 7034, or 8.7%, reported one or more traffic stops where they were the driver.[45] Of those with at least one stop,

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[43] *See* sources cited *supra* note 6.

[44] LANGAN ET AL., *supra* note 42.

[45] To isolate subjects who were drivers in the CBPP 1999 data base, use V30 (Respondent Was Driver). There are four variables in the CBPP 1999 data base that can be used to determine the frequency of traffic stops and three of the four frequency counts agree, while the fourth does not. The three that agree are V11 (Vehicle Stopped By Police), V26 (Vehicle Stopped Once), and V27 (Vehicle Stopped More Than Once) and all three of these variables agree that 5662 drivers were stopped once and 1372 were stopped more than once. V28 (Number Of Vehicle Stops), however, does not provide the same frequency counts. Instead, V28 indicates that 5696 drivers were stopped once and 1338 drivers were stopped more than once. I was unable to resolve this thirty-four-case discrepancy. However, all four variables agree that 7034 drivers were stopped one or more times. It is important to note that when subjects reported more than one traffic stop where they were the driver, they were asked to provide information on the "most recent occasion," thereby providing complete data for all 7034 drivers with at least one traffic stop. LANGAN ET AL., *supra* note 42, at 35. For the thirty-four cases with missing information on total traffic stops, I plugged with the mean (2.83). In their preliminary analysis, Langan et al. replaced these inexact responses with the mode (two stops) of the multi-stop sub-sample. *Id.*; Telephone Interview with Matthew Durose, Statistician, Bureau of Justice Statistics (Apr. 11, 2002). I prefer using the mean

344, or 4.9%, reported that the vehicle they were driving was searched by police, and of those 344 vehicle searches, citizens reported a hit in forty-three, or 12.5%, of the searches. When subjects reported more than one traffic stop, they were asked to provide information on the "most recent occasion,"[46] thereby providing data for all 7034 drivers with at least one stop. These are the data and cases under examination in the present research.[47]

A previously published paper using this same data base[48] examined whether race and ethnicity affect traffic stops by police and citizen perceptions of their traffic stop encounters with police. That paper advanced four conclusions. First, citizens report that police nationally direct traffic stop attention to African American male drivers. Second, African American drivers (both men and women) as well as Hispanic male drivers are significantly less likely than white men to report that police had a legitimate reason for making the traffic stop. Third, African American men and Hispanic men are significantly less likely than white men to report that police acted properly during the traffic stop encounter (as are African American women compared to white women). Fourth, beliefs in the legitimacy and propriety of police actions are framed by a stark polarity between African Americans and whites.[49]

The present research, accordingly, extends the previously reported data by directing sustained attention to whether race and ethnicity affect not just traffic stops and citizen perceptions of police actions, but vehicle searches and vehicle search hits as well. Questions about the effects of race and ethnicity on vehicle searches and vehicle search hits are central to the current controversy over racial profiling by police[50] and the present research uses CBPP 1999 to generate answers to these additional questions.

DEPENDENT MEASURES

The present research models two dependent measures. The first, Vehicle Search, is grounded in responses by citizens with at least one traffic stop to the following question: "Did the police officer(s) search the vehicle?"[51] Vehicle Search is therefore a dichotomous measure where yes

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(2.83). However, I ran the models without these thirty-four cases and found exactly parallel results to those reported.

[46] LANGAN ET AL., *supra* note 42, at 35.

[47] *See* Appendix A and Appendix B.

[48] Lundman & Kaufman, *supra* note 8.

[49] Lundman & Kaufman, *supra* note 8.

[50] *See* HARRIS, *supra* note 1.

[51] LANGAN ET AL., *supra* note 42, at 36.

or vehicle search is coded as 1, no vehicle search and missing as 0. These models run on the total cases with at least one traffic stop ($N = 7034$).[52]

The second dependent measure directs attention to whether a vehicle search yielded a hit in the form of "illegal weapons, illegal drugs, open containers of alcohol, such as beer or liquor, other evidence of a crime."[53] Vehicle Search Hit is therefore also dichotomous with a search yielding one or more of the items asked about coded as 1, none of the items or missing as 0. These models run on the cases where police undertook a vehicle search ($N = 344$).[54]

Three additional observations about these dependent measures are important. First, both dependent measures are grounded exclusively in citizen definitions and perceptions of whether police searched their vehicle and whether police found something in the wake of a search. While there is no way of discerning (other than the precise content of the questions noted above) what citizens define or perceive as searches or hits, this limit is no different from the limit surrounding scholarly reliance upon police definitions and perceptions of searches and hits.[55] Second, it is important to be clear about the reason for modeling the Vehicle Search Hit dependent measure. Opponents of race and ethnically targeted vehicle searches defend their position by asserting that such searches are not more likely to yield evidence of contraband.[56] However, supporters of race and ethnically targeted vehicle searches defend their position by asserting that such searches are more likely to yield evidence of contraband.[57] Vehicle Search Hit permits assessment of these contradictory arguments using citizen definitions and perceptions. Third, while the number of citizens reporting a vehicle search is relatively small (344 or 4.9% of 7034 total cases) and for those whose vehicles were searched, the number with hits is small as well (43 or 12.5% of the 344 vehicle searches), the limited previous research

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[52] *See* Appendix A.

[53] *Id.* The 344 drivers who reported vehicle searches by police also reported that police asked permission to search in 163, or 47.4%, of the searches. Of the 163 instances where police asked the permission of the driver, 156, or 95.7%, reported that they consented to the search. *Id.; see also* HARRIS, *supra* note 1, at 33-37. I initially considered these measures for inclusion in the multivariate models in Table 1 and Table 2. However, additional analysis revealed that both were perfect predictors of a vehicle search and logistic regression does not yield logical parameter estimates and standard errors when there is no variance in the dependent measure for a predictor variable. These measures are therefore not part of the final models shown in Table 1 and Table 2.

[54] *See* Appendix B.

[55] ZINGRAFF ET AL., *supra* note 6.

[56] ACLU, *supra* note 1; HARRIS, *supra* note 1; MEEKS, *supra* note 1; NAACP, *supra* note 1; Arner, *supra* note 1.

[57] *See* Goldberg, *supra* note 4.

currently available indicates that vehicle searches and vehicle search hits are rare events.[58] The relatively small number of searches and hits are therefore not troublesome artifacts of the data. Instead, both follow directly from the simple fact that police simply do not search vehicles all that often and when they do, they are not successful very often.

MODEL ESTIMATION ISSUES AND DATA ANALYSIS

The Vehicle Search and Vehicle Search Hit dependent measures are both dichotomous and either logistic regression or probit analysis are the techniques of choice because they offer better estimation properties than ordinary least squares regression.[59] However, these analyses are subject to a sample selection bias[60] because the Vehicle Search and Vehicle Search Hit dependent measure outcomes are observed only for respondents with at least one traffic stop ($N = 7034$). To correct for sample selection bias, I first attempted to use a bivariate probit regression model.[61] This procedure uses probit to simultaneously estimate the effects of the predictors on the likelihood of being stopped and on respondents' self-reports of vehicle searches and then vehicle search hits, while specifying that the disturbances for the two outcomes are correlated. However, the bivariate probit models failed to converge because the estimated error correlations approached the boundary condition of being perfectly correlated.[62]

The second solution was to follow the logic of the sample selection correction methods which control for a case's likelihood of being selected

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[58] ZINGRAFF ET AL., *supra* note 6; *see also* Dedman & Latour, *supra* note 9, at A8.

[59] J. SCOTT LONG, REGRESSION MODELS FOR CATEGORICAL AND LIMITED DEPENDENT VARIABLES 8-40 (1997).

[60] *See* James J. Heckman, *Sample Selection Bias as a Specification Error*, 47 ECONOMETRICA 153 (1979).

[61] *See* WILLIAM H. GREENE, ECONOMETRIC ANALYSIS 983 (3d ed. 1997).

[62] A variety of different model specifications were tried. Neither simpler models with fewer predictors nor models which specified different sets of predictors for the stop outcome than for the subsequent outcomes were successful in achieving convergence. Convergence problems similarly occurred when estimating these models with the iterative version of Heckman's technique, which analyzes the likelihood of being stopped using a probit model but applies OLS regression to the subsequent report of police behavior (thus ignoring the problems of using OLS for a dichotomous outcome). *See* Heckman, *supra* note 56. The non-iterative version of Heckman's model did provide estimates which are identical in sign and significance to the ones presented and discussed with one marginal exception. Experimentation with unrelated data suggest that the iterative models will not converge when the selection equation predicts a probability of inclusion (exclusion) greater than .5 for *all* cases, as occurs with the present data. If some cases have a predicted probability less than .5 and some greater than .5, then the iterative models will converge.

into the restricted sample.[63] In the present case, I use logistic regression[64] to analyze respondents' reports of vehicle searches and vehicle search hits and introduce a control for the total number of traffic stops reported by the respondent. This is a direct control that efficiently represents how included respondents differ from each other (and from excluded respondents) in their chances of experiencing face-to-face traffic stop encounters with police and thus of reporting a vehicle search and vehicle search hit during their most recent traffic stop encounter.

It is also important to understand that logistic regression comfortably handles the "splits" on the two dependent measures—for the Vehicle Search dependent measure 344, or 4.9% of the 7034 cases, coded as 1 or yes; for Vehicle Search Hit dependent measure 43, or 12.5% of the 344 cases, coded as 1 or yes.[65] Indeed, splits such as these are precisely what make logistic regression the correct data analytic choice.

EXPLANATORY MEASURES

Police actions are determined by a mixture of legal and extralegal factors.[66] In order to distinguish the extralegal effects of driver race and ethnicity, I control for these other factors and present them in the approximate order in which they unfold during a police-citizen traffic stop encounter.[67]

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[63] Richard A. Berk, *An Introduction to Sample Selection Bias in Sociological Data*, 48 AM. SOC. REV. 386 (1983).

[64] *See* Robert L. Kaufman, *Comparing Effects in Dichotomous Logistic Regression: A Variety of Standardized Coefficients*, 77 SOC. SCI. Q. 90 (1996).

[65] *See id.*; *see also* LONG, *supra* note 59, at 8-40.

[66] *See* Riksheim & Chermak, *supra* note 16; Sherman, *supra* note 16; *see also* Engel et al., *supra* note 16 (discussing relationship between police behavior and the characteristics and demeanor of suspects).

[67] See Appendix A and Appendix B for the bivariate effects of each of the explanatory measures on the dependent measures. Also please note that the relationships between the explanatory measures and the race and ethnicity variables are generally what would be expected. With respect to race and as compared to whites, African Americans are more likely to reside in places of one million or more (14.2% versus 3.0%), more likely to report that an African American police officer stopped them (15.6% versus 5.4%), less likely to report speed as the reason for the stop (40.2% versus 51.5%), more likely to report being stopped in a vehicle with three or more occupants (10.8% versus 5.9%), and less likely to report an above average income (22.8% versus 42.4%). There are no important race differences in age or gender. Also examined was a correlation table for all the explanatory measures. There were no correlations signaling multicollinearity.

Total Traffic Stops

Respondents who indicated they had experienced a traffic stop encounter with police where they were the driver were asked how many traffic stops they had experienced in the previous twelve months. I use their responses to construct Total Traffic Stops to control for sample selection[68] and for the likelihood of having more frequent traffic stop encounters with police and thus of being susceptible to vehicle searches and vehicle search hits in unmeasured ways.

Size of Place

I use the CBPP 1999 data to construct explanatory measures representing size of place. CBPP 1999 subjects reported where they lived and this information was coupled with census data by CBPP 1999 researchers to place subjects into one of four categories. I use these categories to construct three size of place dummy variables: (1) 1,000,000 or More (yes = 1, else = 0); (2) 500,000 to 999,999 (yes = 1, else = 0); and (3) 100,000 to 499,999 (yes = 1, else = 0), making places with populations of less than 100,000 the omitted reference category.

Size of place is included as a control variable for two reasons. First, most trips which drivers make take place close to where they live,[69] so most traffic stops, vehicle searches, and vehicle search hits take place where respondents live. Second, police officers serving high-population jurisdictions handle more calls from citizens and consequently have less time for vehicle searches than police officers serving lower-population jurisdictions.[70] Police in lower-population jurisdictions should therefore undertake more vehicle searches.

Officer Race and Ethnicity

Policing has long been dominated by whites and the entrance of African American and other minority police officers is not just relatively recent[71] but has been openly questioned and resisted by white police officers as well.[72] Moreover, it is possible that white and African American

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[68] *See* Berk, *supra* note 63.

[69] U.S. BUREAU OF THE CENSUS, STATISTICAL ABSTRACT OF THE UNITED STATES 683 (2001).

[70] DAVID H. BAYLEY, POLICE FOR THE FUTURE (1994); ALEX WILKINSON, MIDNIGHTS: A YEAR WITH THE WELLFLEET POLICE (1982).

[71] STEPHEN LEINEN, BLACK POLICE, WHITE SOCIETY (1984).

[72] Susan Ehrlich Martin, *"Outsiders Within" the Station House: The Impact of Race and Gender on Black Women Police*, 41 SOC. PROBS. 383 (1994).

police officers bring different styles of policing to their traffic stop encounters with citizens including different vehicle search decision criteria.[73] I therefore probe the effects of officer race and ethnicity on vehicle searches and hits by creating four dummy variables. They are: (1) White (yes = 1, else = 0); (2) Black (yes = 1, else = 0); (3) Other (Asian American, Native American, other) (yes = 1, else = 0); and (4) Mixed (some combination of white, Black, or other police officer) (yes = 1, else = 0). The omitted reference category is composed of traffic stops where the driver reports not knowing the race or ethnicity of the police officer, and cases with missing values.[74]

Legal Reason for Stop

The formal legal reason for a traffic stop is a violation of a traffic or some other kind of law.[75] I therefore examine the effects of the legal reason for the traffic stop using six dummy variables: (1) Speeding Violation (yes = 1, else = 0); (2) Other Moving Violation (left of center, stop sign) (yes = 1, else = 0); (3) Check Driver (driver appears too young, determine whether driver has license) (yes = 1, else = 0); (4) Defective Equipment (yes = 1, else = 0); (5) Suspicion (yes = 1, else = 0);[76] and (6) Other (traffic stop for other offense) (yes = 1, else = 0). The omitted reference category is composed of traffic stops where the driver reports not knowing the reason for the stop, and cases with missing data.

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[73] *Id.*; NICHOLAS ALEX, BLACK IN BLUE: A STUDY OF THE NEGRO POLICEMAN (1969); LEINEN, *supra* note 71.

[74] Police officers also have a gender and an age but CBPP 1999 subjects were not asked to provide information on these two dimensions. Also not collected was information on the type of organization for which the police officer making the stop works—state, county, or local. All should be part of future CBPP surveys.

[75] *See* MEEKS, *supra* note 1, at 39-40; Weitzer & Tuch, *Perceptions, supra* note 36, at 436.

[76] An anonymous reviewer asked whether there were racial differences in stops for suspicion and whether being the driver of the searched vehicle was linked with reporting suspicion as the reason for the stop. Based upon my analysis of the CBPP 1999 data, there are no racial differences in stops for suspicion, with 2.3% of black drivers reporting suspicion as the reason for their stop as compared to 2.0% of white drivers. However, reporting a vehicle search is linked with reporting suspicion as the reason for the stop, with 12.2% of drivers reporting a vehicle search reporting suspicion as the reason for the stop as compared to only 1.6% of drivers not reporting a vehicle search, based upon my analysis of the CBPP 1999 data. It thus is possible that subjects report they were stopped for suspicion because the police officer searched their vehicle, not because suspicion on the part of a police officer leads to a vehicle search. However, police officers commonly tell a driver very early in the traffic stop encounter why they were stopped thereby suggesting that the likely causal order is that suspicion on the part of a police officer leads to a vehicle search.

Number of Vehicle Occupants

Police officers are sensitive to the number of vehicle occupants and are more curious about vehicles with more than one person. Rubinstein explains: "Any car with many people in it, especially teenagers, quickly excites the patrolman's interest. . . . [H]e is particularly alert for cars being driven by young men . . . with a companion or two."[77] I therefore examine the effects of the number of vehicle occupants on vehicle searches and hits using two dummy variables: (1) Three or More (yes = 1, else = 0); and (2) Two (yes = 1, else = 0), making vehicles with only the driver the omitted reference category.

Driver Social Class

The CBPP 1999 data report three levels of income for subjects, and I use those income levels to construct two dummy social class measures: (1) Above Average Income ($50,000 or more = 1, else = 0); and (2) Average Income ($20,000 to $49,999 = 1, else = 0), making Below Average Income (less than $20,000 and missing)[78] the omitted reference category. My goals with these social class measures are twofold. The first is to distinguish the effects of race and ethnicity from those of social class. The second is to determine whether social class affects vehicle searches and vehicle search hits.

Driver Age

I represent driver age to disentangle the effects of age from those of race and ethnicity and to determine whether driver age affects vehicle searches and vehicle search hits.[79] CBPP 1999 subjects reported their age in years, and I use this information to construct three dummy variables: (1) Teen (ages 16 to 19 years = 1, else = 0); (2) Young Adult (ages 20 to 29 years = 1, else = 0); and (3) Adult (ages 30 to 64 years = 1, else = 0). Senior (ages 65 years and older) is the reference category.

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[77] JONATHAN RUBINSTEIN, CITY POLICE 255 (1973).

[78] In the 1999 CBPP data file, respondents who did not answer the income question and subjects for whom income data are missing are not distinguished from those who report income in the lowest category. Therefore, it is not possible to disentangle these two types of subjects.

[79] *See* RUBINSTEIN, *supra* note 77, at 255.

Driver Gender

I represent gender to distinguish its effects from those of race and ethnicity and to examine the effects of gender[80] on the two dependent measures. Female is a dichotomous variable with female CBPP 1999 subjects coded as 1, male subjects as 0.

Arrest

CBPP 1999 did not ask citizens to distinguish between inventory searches in the wake of an arrest and discretionary and presumably consensual searches not associated with an arrest.[81] Because the former are mandatory for police officers in many police jurisdictions to protect against accusations of damage or theft once the arrested driver's vehicle has been towed, they are less likely to be grounded in the race or ethnicity of the drivers of searched vehicles.[82] Discretionary or consent searches are, therefore, what is at issue when it comes to the effects of race and ethnicity on vehicle searches and vehicle search hits by police. I therefore control for whether a driver reported they were arrested (yes = 1, no = 0) to partially distinguish inventory searches from discretionary searches.

Driver Race/Ethnicity

The primary focus of this paper is the effects of race and ethnicity on vehicle searches and vehicle search hits. To explore this issue, I use CBPP 1999 subjects' self-designations as Black, Hispanic, a member of some other race or ethnic group, or white to construct three dummy variables: (1) Black (yes = 1, else = 0); (2) Hispanic (yes = 1, else = 0); and (3) Other (American Indian, Aleut, Eskimo, Asian American, Pacific Islander, and other non-Black, non-Hispanic, non-white) (yes = 1, else = 0), making whites the omitted reference category.

Driver Race/Ethnicity and Gender

Limited existing evidence indicates that police especially target Black men and Hispanic men for attention.[83] This suggests that intersections of race/ethnicity and gender may be important in the context of vehicle searches. I therefore use CBPP 1999 subjects' race and ethnicity self-

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[80] *See* Visher, *supra* note 35.

[81] *See* INST. ON RACE & POVERTY, *supra* note 32, at 16-17.

[82] Except as race and ethnicity also affect the odds of arrest.

[83] *See* ACLU, *supra* note 1; HARRIS, *supra* note 1; MEEKS, *supra* note 1; ZINGRAFF ET AL., *supra* note 6, at 20; *see also* NEIL WEBSDALE, POLICING THE POOR: FROM SLAVE PLANTATION TO PUBLIC HOUSING 32 (2001).

designations and interviewer coding of gender to construct six dummy variables. They are: (1) Black Female (yes = 1, else = 0); (2) Black Male (yes = 1, else = 0); (3) Hispanic Female (yes = 1, else = 0); (4) Hispanic Male (yes = 1, else = 0); (5) Other Female (yes = 1, else = 0); (6) Other Male (yes = 1, else = 0); and (7) White Female (yes = 1, else = 0), making white male the omitted reference category. In the models with these explanatory measures, the direct measures of driver gender and driver race/ethnicity are omitted to eliminate redundancies in model specification.

MISSING VALUES

As is true of nearly all data bases,[84] CBPP 1999 has cases with missing values. Although these missing values have been noted in the description of the measures, this section briefly summarizes that information and explains what was done. The following measures have unknown or missing values: (1) for the Vehicle Search dependent measure, there are sixty-nine cases (or slightly less than one percent of the 7034 total cases); (2) for Officer Race/Ethnicity, there are 319 cases (4.5%); and (3) for Legal Reason for Stop, there are 305 cases (4.3%). By contrast, the Hit dependent measure and the Total Traffic Stops,[85] Size of Place, Number of Vehicle Occupants, Driver Social Class,[86] Driver Age, Driver Gender, Driver Race/Ethnicity, and Driver Race/Ethnicity and Gender explanatory measures have no missing values.

For the Vehicle Search dependent measure, I coded the cases with unknown or missing values as 0 and, therefore, no search. For the Officer Race or Ethnicity and Legal Reason for Stop explanatory measures, cases with unknown or missing values were used as the omitted reference category. Accordingly, no cases were dropped because of missing values.

However, I also ran all of the models that follow excluding cases with any missing values. I also created a dummy variable to represent cases with missing values and included it in all of the models. The race, ethnicity, and race/ethnicity and gender findings were precisely the same as those I report. This indicates that cases with missing values do not distort the central findings because alternative models yield exactly the same results.

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[84] *See, e.g.,* JACOB COHEN & PATRICIA COHEN, APPLIED MULTIPLE REGRESSION: CORRELATION ANALYSIS FOR THE BEHAVIORAL SCIENCES (1975).

[85] *See supra* note 39.

[86] *See* Martin, *supra* note 72.

RESULTS

VEHICLE SEARCH

While all of the legal and extralegal explanatory measures are of interest, the primary focus of this paper is on the extralegal effects of race and ethnicity. I therefore begin with a description of the effects of the explanatory variables other than race/ethnicity and then turn to the animating issues in this section and the next. This selective approach is facilitated by the fact that the data weave a consistent empirical tale.

As can be seen in both models in Table 1, Total Traffic Stops has a significant positive effect on vehicle searches. This verifies that this "selectivity" measure does indeed capture how respondents differ in their chances of experiencing traffic stops, and thereby vehicle searches, and efficiently and logically controls for sample selection.[87]

Table 1

Logistic Regression Models of Vehicle Search Dependent Measure, by Explanatory Measures: CBPP 1999 Data (N = 7034)

Explanatory Measures	Model 1		Model 2	
	B	**Odds Ratio**	**B**	**Odds Ratio**
Control for Selectivity				
Total Traffic Stops	.149* (.029)	1.161	.148* (.029)	1.159
Size of Place				
1,000,000 or More	.187 (.262)	1.206	.203 (.262)	1.225
500,000 to 999,999	.144 (.304)	1.155	.134 (.305)	1.144
100,000 to 499,999	.446* (.167)	1.563	.444* (.167)	1.559
Officer Race/Ethnicity				
White	.912* (.421)	2.409	.911* (.421)	2.486
Black	.769 (.499)	2.157	.765 (.500)	2.148
Other	.862 (.564)	2.368	.792 (.566)	2.207

[87] *See* Berk, *supra* note 63.

Table 1
(Continued)

Mixed	1.727* (.483)	5.623	1.747* (.483)	5.738
Legal Reason for Stop				
Speeding	-1.225* (.258)	.294	-1.223* (.259)	.294
Other Moving Violation	-.719* (.259)	.487	-.716* (.259)	.489
Check Driver	-.347 (.287)	.707	-.344 (.287)	.709
Defective Equipment	-.270 (.272)	.763	-.256 (.273)	.774
Suspicion	.947* (.313)	2.578	.955* (.313)	2.598
Other	-.246 (.567)	.782	-.251 (.567)	.778
Number of Vehicle Occupants				
Three or More	.446* (.206)	1.562	.458* (.207)	1.581
Two	-.025 (.162)	.975	-.020 (.162)	.981
Driver Social Class				
Above Average Income	-.775* (.169)	.461	-.785* (.169)	.456
Average Income	-.327* (.147)	.721	-.339* (.147)	.713
Driver Age				
Teen	1.855* (.491)	6.389	1.862* (.491)	6.437
Young Adult	1.513* (.475)	4.540	1.528* (.475)	4.611
Adult	.746 (.473)	2.108	.759 (.473)	2.136
Driver Gender				
Female	-1.139* (.160)	.320		

Table 1
(Continued)

Arrest				
Yes	2.766* (.159)	15.898	2.761* (.159)	15.822
Driver Race/Ethnicity				
Black	.346* (.197)	1.413		
Hispanic	.442* (.186)	1.556		
Other	.280 (.348)	1.323		
Driver Race/Ethnicity and Gender				
Black Female			-1.094* (.397)	.335
Black Male			.424* (.220)	1.529
Hispanic Female			-.600 (.375)	.549
Hispanic Male			.409* (.206)	1.506
Other Female			.034 (.553)	1.035
Other Male			-.060 (.427)	.942
White Female			-1.167* (.199)	.311
Constant	-4.508 (.634)		-4.511 (.636)	
Nagelkerke R-Square	.320		.321	
Model Chi-Square	767.876*		771.716*	
df	26		29	

Note: Standard errors in parentheses.
* $p < .05$ (one tailed).

With respect to the size of place explanatory measures, the literature teaches that police in high-population jurisdictions handle more calls and,

therefore, presumably have less time for vehicle stops and searches.[88] However, the size of place explanatory measures in Table 1 do not support these lessons. In particular, police officers in moderate-sized jurisdictions, with populations of between 100,000 and 499,999, search vehicles at a significantly higher rate than police officers in jurisdictions with a population of less than 100,000. This is possibly a function of a sufficiently low level of calls to police to make searches possible and a sufficiently high level of perceived vehicle drug flow by police to make searches appear productive. However, this interpretation is not grounded in previous research, and, therefore, is speculative until additional research probes and reports the effects of similar size of place measures on vehicle searches.

The remaining explanatory measures all have relatively clear effects, and most of those reflect previous research. White police officers and officers representing some mixture of white, African American, and/or others are significantly more likely to search vehicles than officers whose race/ethnicity are unknown. African American officers, however, are not significantly more likely to search vehicles than officers whose race/ethnicity are unknown. With the exception of suspicion stops, where police are significantly more likely to search a vehicle, the reason for the traffic stop does not positively affect vehicle searches. As Rubinstein explained, police officers attend to the number of vehicle occupants and police are significantly more likely to search when there are three or more occupants.[89] Police officers also are sensitive to social class[90] and are significantly less likely to search vehicles driven by those with above average and average incomes than those with below average incomes. Police also pay close attention to age[91] and are significantly more likely to search vehicles driven by younger people. And, as would logically be expected, arrest increases the odds of a search because inventory searches of vehicles are mandatory in many police jurisdictions following an arrest.

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[88] *See* BAYLEY, *supra* note 70; WILKINSON, *supra* note 70.

[89] RUBINSTEIN, *supra* note 77, at 255.

[90] *See* Donald Campbell & H. L. Ross, *The Connecticut Crackdown on Speeding: Time-Series Data in Quasi-Experimental Analysis*, 3 LAW & SOC'Y REV. 33 (1968); William T. Chambliss & John T. Liell, *The Legal Process and the Community Setting: A Study of Local Law Enforcement*, 12 CRIME & DELINQ. 310 (1966); Patrick T. Kinkade & Matthew C. Leone, *The Effects of "Tough" Drunk Driving Laws on Policing: A Case Study*, 38 CRIME & DELINQ. 239 (1992); Lundman, *supra* note 21; Lundman, *supra* note 20; Stephen D. Mastrofski & R. Richard Ritti, *You Can Lead a Horse to Water . . ..: A Case Study of a Police Department's Response to Stricter Drunk Driving Laws*, 9 JUST. Q. 465 (1992).

[91] *See* Black & Reiss, *supra* note 15; Richard J. Lundman et al., *Police Control of Juveniles: A Replication*, 15 J. RES. CRIME & DELINQ. 74 (1978); Piliavin & Briar, *supra* note 15.

Model 1 in Table 1 also provides the first look at citizen reports of the effects of their race/ethnicity on vehicle searches.[92]   Black citizens and Hispanic citizens report vehicle searches significantly more often than white citizens.   Vehicles driven by members of other race and ethnic groups, such as Asian Americans, are not more likely to be searched than whites.

Model 2 in Table 1 probes whether citizens report that intersections of race and ethnicity with gender also are important. They are. Women in all of the race and ethnic groups are never more likely to be searched, and, according to African American and white women, the vehicles they drive are significantly less likely to be searched than vehicles driven by white men.   However, African American men and Hispanic men report vehicle searches significantly more often than white men.

VEHICLE SEARCH HITS

Some police administrators and officers support race and ethnically targeted vehicle searches. Their support is grounded in the argument that such searches are more likely to yield hits in the form of illegal evidence, especially drugs.[93]   They are wrong. Models 1 and 2 in Table 2 show that citizens report that none of the race and ethnicity or race and ethnicity/gender measures predicts a vehicle search hit. Indeed, with some minor exceptions, none of the explanatory measures explain vehicle search hits. Accordingly, while it is true that some police support targeting of African American and Hispanic drivers for searches on the grounds that such searches are more productive, citizens report that these targeted searches are no less or more likely to yield hits than searches of vehicles driven by white drivers.[94]

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[92] As suggested by an anonymous reviewer, I also ran the models in Tables 1 and 2 by first including only the race and ethnicity explanatory measures and then stepping in the other explanatory measures. As would be expected with underspecified, as compared to more fully saturated models, the effects of the race and ethnicity explanatory measures moderate when the other explanatory measures are added, although the direction and significance of the race and ethnicity explanatory measures remain the same. For instance, when modeling the vehicle search dependent measure using only the race and ethnicity explanatory measures, the parameter estimate (and standard error) for a black driver is .624 (.159), and with all the explanatory measures it is .396 (.179), with both parameter estimates significant (p <.05, one-tailed). As noted, this is to be expected because in underspecified models, the race and ethnicity explanatory measures represent other effects that need to be disentangled and clarified with the addition of the other explanatory measures, which is precisely what happens in the more fully saturated models.

[93] See *Testimony, supra* note 3; DEA, *supra* note 3; Goldberg, *supra* note 4, at 50-57.

[94] See ZINGRAFF ET AL., *supra* note 6, at 23.

Table 2

Logistic Regression Models of Vehicle Search Hit Dependent Measure, by Explanatory Measures: CBPP 1999 Data (Model 1 N = 307, Model 2 N = 292)

Explanatory Measures	Model 1		Model 2	
	B	Odds Ratio	B	Odds Ratio
Control for Selectivity				
Total Traffic Stops	-.036	.964	-.054	.947
	(.071)		(.074)	
Size of Place				
1,000,000 or More	.747	2.110	.626	1.869
	(.816)		(.840)	
500,000 to 999,999	-1.078	.340	-.846	.429
	(1.210)		(1.273)	
100,000 to 499,999	-.203	.817	-.139	.871
	(.152)		(.526)	
Officer Race/Ethnicity				
White	2.168*	8.745	2.233*	9.325
	(1.136)		(1.140)	
Black	2.908*	18.322	2.923*	18.602
	(1.388)		(1.339)	
Legal Reason for Stop				
Speeding	1.025	2.787	.982	2.669
	(.930)		(.940)	
Other Moving Violation	1.326	3.767	1.358	3.890
	(.903)		(.912)	
Check Driver	-.146	.864	-.146	.864
	(1.138)		(1.154)	
Defective Equipment	1.295	3.652	1.437	4.207
	(.925)		(.937)	
Suspicion	1.878*	6.543	1.903*	6.704
	(.939)		(.949)	
Number of Vehicle Occupants				
Three or More	.575	1.778	.690	1.994
	(.580)		(.605)	
Two	.897*	2.453	.886*	2.426
	(.483)		(.487)	

Table 2
(Continued)

Driver Social Class				
Above Average Income	1.005* (.512)	2.732	1.052* (.521)	2.862
Average Income	.587 (.464)	1.798	.657 (.485)	1.929
Driver Age				
Teen	1.205* (.422)	3.335	1.304* (.540)	3.686
Young Adult	.216 (.468)	1.241	.252 (.472)	1.287
Driver Gender				
Female	-.079 (.572)	1.082		
Arrest				
Yes	2.213* (.429)	9.146	2.274* (.439)	9.714
Driver Race/Ethnicity				
Black	-.424 (.661)	.654		
Hispanic	.050 (.614)	1.051		
Driver Race/Ethnicity and Gender				
Black Male			-.177 (.688)	.838
Hispanic Male			.574 (.645)	1.776
White Female			.682 (.607)	1.977
Constant	-7.191 (1.615)		-7.491 (1.652)	
Nagelkerke R-Square	.305		.320	
Model Chi-Square	56.964*		58.332*	
df	21		21	

Note: Standard errors in parentheses. N for Model 1 is reduced from 344 to 312 because there were no vehicle search hits involving Other and Unknown police officers, Senior drivers, or Other drivers and logistic regression does not yield logical parameter estimates when there is no variation in a dependent measure (also please see Appendix B and Table 3). N for Model 2 is 292 because in addition to the cases already omitted, Black Female drivers and Hispanic Female drivers had no hits (also please see Appendix B and Table 3). With these deletions, the omitted reference category for police officer race/ethnicity is Mixed and the omitted reference category for driver age is Adult.
* $p < .05$ (one tailed).

What Police Find

Table 3 details what police find when they use their enormous power to search a vehicle. The most common illegal evidence police turn up after a leisurely and time-consuming rummage through a vehicle[95] is an open container of alcohol. Much less common are illegal drugs and illegal weapons. Clearly the fruits of vehicle searches also cannot be used to justify race and ethnic targeting because, according to citizens, police find very little, and what little they do find is not very important.

Table 3
Number of Vehicle Search Hits of Any Type and Number of Vehicle Search Hits by Type of Hit, by Explanatory Measures: CBPP 1999 Data (N = 344)

Explanatory Measures	N	Number With Vehicle Search Hit of				
		Any Type	Open Alcohol	Illegal Drugs	Illegal Weapon	Other
Total Traffic Stops[a]						
GT Average (1.3560)	109	14	6	6	3	0
LE Average	235	29	20	7	4	2
Size of Place						
1,000,000 or More	23	4	1	2	1	0
500,000 to 999,999	16	1	1	0	0	0
100,000 to 499,999	71	7	5	2	0	0
Less than 100,000	234	31	19	9	6	2
Officer Race/Ethnicity						
White	281	39	23	12	7	2
Black	18	3	2	1	0	0
Other	11	0	0	0	0	0
Mixed	27	1	1	0	0	0
Unknown	7	0	0	0	0	0

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[95] *See* HARRIS, *supra* note 1, at 1-3; MEEKS, *supra* note 1, at 21-24.

Table 3
(Continued)

Legal Reason for Stop						
Speeding	75	8	5	2	1	0
Other Moving Violation	82	13	9	4	2	1
Check Driver	42	2	2	0	0	0
Defective Equipment	64	9	5	3	2	0
Suspicion	42	9	3	4	2	1
Other	5	0	0	0	0	0
Unknown	34	2	2	0	0	0
Number of Vehicle Occupants						
Three or More	47	8	5	4	1	1
Two	69	11	5	2	4	1
One	228	24	16	7	2	0
Driver Social Class						
Above Average Income	72	12	10	3	1	1
Average Income	124	16	7	5	3	1
Below Average Income	148	15	9	5	3	0
Driver Age						
Teen	71	16	9	7	4	1
Young Adult	134	13	6	4	2	1
Adult	134	14	11	2	1	0
Senior	5	0	0	0	0	0
Driver Gender						
Female	57	6	4	3	0	0
Male	287	37	22	10	7	2
Arrest						
Yes	107	26	18	10	2	1
No	237	17	8	3	5	1
Driver Race/Ethnicity						
Black	52	5	3	1	1	0
Hispanic	56	6	3	1	2	0
Other	12	0	0	0	0	0
White	224	32	20	11	4	2
Driver Race/Ethnicity and Gender						
Black Female	8	0	0	0	0	0
Black Male	44	5	3	1	1	0

Table 3
(Continued)

Hispanic Female	10	0	0	0	0	0
Hispanic Male	46	6	3	1	2	0
Other Female	4	0	0	0	0	0
Other Male	8	0	0	0	0	0
White Female	35	6	4	3	0	0
White Male	189	26	16	8	4	2
Grand Totals	344	43	26	13	7	2[b]

[a] Continuous variable in multivariate models.
Note: Hit of Any Type and Hit of Specific Type (Open Alcohol, Illegal Drugs, Illegal Weapon, and Other) do not correspond because one vehicle search can yield more than one type of hit. For instance: one search of a vehicle driven by a white female driver yielded an open container and illegal drugs. One of the two "Other" hits was illegal fireworks. The remaining "Other" hit was none of the specific hits and not illegal fireworks. A possible illustration is possession of criminal tools.

DISCUSSION

REVIEW OF APPROACH AND RESULTS

Social movement and civil rights organizations, professors of law, and investigative journalists oppose race and ethnically targeted vehicle searches by police on the grounds that such searches are illegal and unproductive.[96] However, some police administrators and officers openly support these same actions on the grounds that race and ethnically targeted vehicle searches are more likely to yield hits.[97] To this point, social science scholars have not published formal papers on searches and hits, although preliminary reports using police-reported data are currently available.[98]

The present research advanced an alternative to police-reported data. It used citizen reports of their encounters with police to assess the role of legal and extralegal variables on vehicles searches by police and vehicle search hits, with a sustained focus on the extralegal effects of race and ethnicity and intersections of race and ethnicity with gender.

The results are clear. Controlling for legal and other extralegal explanatory measures, citizens report that police are significantly more

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[96] *See* sources cited *supra* note 1.

[97] *See Testimony, supra* note 3; DEA, *supra* note 3; Goldberg, *supra* note 4, at 50-57; *see also* MEEKS, *supra* note 1, at 50-62.

[98] CORDNER ET AL., *supra* note 10; INST. ON RACE & POVERTY, *supra* note 32; ZINGRAFF ET AL., *supra* note 6.

likely to search vehicles driven by African American and Hispanic drivers. At the same time, citizens report that these targeted vehicle searches are not more likely to uncover illegal evidence than searches of vehicles driven by whites. Moreover, most of what police find when they use their enormous power to search vehicles involves open containers of alcohol, according to citizens.

The results are not just clear, the implications are profoundly important. Not only are police making race-based traffic stops,[99] citizens report that police are making race and ethnically targeted vehicle searches as well. Police, though, gain absolutely nothing positive by using race, ethnicity, and gender as bases for searches because, according to citizens, targeted searches are no more likely to yield evidence of contraband than vehicle searches of whites.[100]

However, it is not just that police fail to realize anything positive by engaging in race and ethnically targeted vehicle searches. They also lose a great deal. Survey and other research routinely indicates that African American and Hispanic citizens have much less confidence and trust in police than do whites.[101] What the present research indicates is that lower levels of confidence and trust in police among citizens of color are well founded because they reflect differential police treatment of African Americans and Hispanics, as compared to whites.[102]

ARE CITIZEN REPORTS OF POLICE ACTIONS VALID?

Nevertheless, the CBPP 1999 consists of nothing more, or less, than citizen answers to survey questions. In contrast, most of the classic research on police has been grounded in data collected by specially trained observers[103] and, more recently, in the context of preliminary analyses of vehicle searches and vehicle search hits using police-reported data.[104]

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[99] HARRIS, *supra* note 1; Lundman & Kaufman, *supra* note 8; Weitzer & Tuch, *Perceptions, supra* note 36.

[100] *See* ZINGRAFF ET AL., *supra* note 6.

[101] *See, e.g.*, ELIJAH ANDERSON, CODE OF THE STREET: DECENCY, VIOLENCE, AND THE MORAL LIFE OF THE INNER CITY (1999); Weitzer & Tuch, *Perceptions, supra* note 36; Weitzer & Tuch, *Race, supra* note 36.

[102] *See* WEBSDALE, *supra* note 83.

[103] BLACK, *supra* note 23; OSTROM ET AL., *supra* note 25; REISS, PATTERNS, *supra* note 23; REISS, THE POLICE AND THE PUBLIC, *supra* note 23; SYKES & BRENT, *supra* note 24; Black & Reiss, *supra* note 15; Engel et al., *supra* note 16; Sykes & Clark, *supra* note 24; Visher, *supra* note 35; Worden & Shepard, *supra* note 16; *see also* Mastrofski & Parks, *supra* note 35; Riksheim & Chermak, *supra* note 16; Sherman, *supra* note 16.

[104] *See* sources cited *supra* note 6.

Accordingly, the major issue surrounding the present research, future research using CBPP 1999 and subsequent CBPP surveys, and other research on police using citizen-reported data[105] revolves around a very simple question. Are citizen reports of police actions valid? The remainder of this section is therefore devoted to extended discussion of the validity of citizen descriptions of police actions, including the clear advantages of an agenda for future research that moves scholars in the direction of a triangulated understanding of vehicle searches and vehicle search hits.

There is Nothing Unusual about Scholars Using Data from Citizens

It is useful to begin discussion of the validity of citizen reports of police actions by noting that there is nothing unusual about scholars using data from citizens in their analyses of crime, criminals, and criminal justice. *Uniform Crime Reports* data, for instance, rests fundamentally in the hands of citizens because it is their calls to police that alert police to the fact that an index crime has been committed, and, by their calls, citizens make index crimes visible and both index and non-index arrests possible.[106] In the case of victimization surveys, citizens tell interviewers whether they experienced a criminal victimization, indicate whether they reported that victimization to police, and, in the case of crimes against persons, describe the people who committed the crimes they experienced.[107] Similarly, self-report subjects report their own involvement in particular crimes including traffic law violations and whether they were arrested or ticketed by police.[108] When viewed though these lenses, then, use of citizen reports of their encounters with police is simply an extension of a long standing scholarly practice of using data from citizens in research on crime, criminals, and criminal justice.

In addition, citizens provide consistent data when describing crime, criminals, and criminal justice. No matter whether the data are drawn from *Uniform Crime Reports*, victimization surveys, or self-report studies,[109] the images citizens advance of crime, criminals, and criminal justice converge

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[105] Weitzer & Tuch, *Perceptions, supra* note 36; Weitzer & Tuch, *Race, supra* note 36; Wright & Tomaskovic-Devey, *supra* note 39.

[106] FEDERAL BUREAU OF INVESTIGATION, U.S. DEP'T OF JUSTICE, CRIME IN THE UNITED STATES: UNIFORM CRIME REPORTS, 2000, at iv (2001).

[107] BUREAU OF JUSTICE STATISTICS, U.S. DEP'T OF JUSTICE, CRIMINAL VICTIMIZATION IN THE UNITED STATES, 2000 (2001), *available at* http://www.ojp.usdoj.gov/bjs/abstract/cvusst.htm.

[108] JERALD G. BACHMAN ET AL., MONITORING THE FUTURE: QUESTIONNAIRE RESPONSES FROM THE NATION'S HIGH SCHOOL SENIORS, 1998 (2001).

[109] *Compare* FEDERAL BUREAU OF INVESTIGATION, *supra* note 106, *with* BUREAU OF JUSTICE STATISTICS, *supra* note 107 *and* BACHMAN, *supra* note 108.

on common substance. With respect to crime, for instance, citizens consistently report that most crime is nonindex crime and most index crime is property crime, especially larceny theft.

Last, the citizens who answered the CBPP 1999 had few clear incentives for distorting the data they provided. Because the CBPP 1999 was a supplement to the National Crime Victimization Survey,[110] subjects first answered a long series of questions about their experiences as victims of crime and then a much shorter series of questions lasting five to ten minutes about their contacts with police. For the CBPP 1999 subjects, the order, focus, frequency, and length of the questions necessarily seemed directed almost exclusively at crime victimization and crime reporting and only incidentally at contacts with police. Further, CBPP 1999 subjects had little or no knowledge why data were being collected and little or no knowledge that researchers would use their answers to examine the effects of race, ethnicity, and other factors on vehicle searches and vehicle search hits by police.

Citizen Descriptions Mesh with Scholarly Descriptions of Police Actions

The policing citizens self-report meshes with the manners and customs of police that scholars have observed and described[111] on four important dimensions. First, scholars have long known that traffic stops are the single most frequent type of police-citizen encounter.[112] Accordingly, citizens who answered CBPP 1999 questions should report that traffic stops are the single most frequent type of police-citizen encounter. They do.[113]

Second, police are legal actors sensitive to legal factors.[114] Because traffic law violations are more common among young drivers and male drivers,[115] citizen descriptions of traffic stops should show more stops involving young people and more stops involving men. As reported by citizens who answered CBPP 1999 questions, young drivers are stopped more often and male drivers are stopped more often.[116]

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[110] LANGAN, *supra* note 42, at 34.

[111] *See* BLACK, *supra* note 23.

[112] JEROME H. SKOLNICK, JUSTICE WITHOUT TRIAL: LAW ENFORCEMENT IN A DEMOCRATIC SOCIETY (1966); Ross, *supra* note 19.

[113] LANGAN, *supra* note 42, at 1.

[114] JOAN C. BARKER, DANGER, DUTY, AND DISILLUSION: THE WORLDVIEW OF LOS ANGELES POLICE OFFICERS 95 (1999); BLACK, *supra* note 23; Black & Reiss, *supra* note 15; Klinger, *supra* note 18.

[115] NAT'L HIGHWAY TRAFFIC SAFETY ADMIN., U.S. DEP'T OF TRANSP., TRAFFIC SAFETY FACTS 1999: A COMPILATION OF MOTOR VEHICLE CRASH DATA FROM THE FATALITY ANALYSIS REPORTING SYSTEM AND THE GENERAL ESTIMATES SYSTEMS (2001).

[116] LANGAN, *supra* note 42, at 14.

Third, police have long been more careful with economically advantaged citizens,[117] making certain they have clearer grounds for intervention and being more careful in their actions with people who have platform and voice.[118] As reported by citizens who answered CBPP 1999 questions, police are significantly less likely to search vehicles driven by people with above average and average incomes as compared to vehicles driven by people with below average incomes.[119]

Last, scholars have long reported that extralegal variables such as race and gender influence police actions.[120] Citizens should therefore also report that extralegal variables influence police actions, including vehicle searches, and that is precisely what the citizens who answered CBPP 1999 questions reported.[121]

Underreporting by African American Citizens

Although the discussion to this point suggests that the CBPP 1999 citizen self-report data are largely valid, there is no mistaking the fact that African Americans, as compared to whites, underreport official trouble with the law,[122] including traffic stop encounters with police.[123] If these findings apply to the CBPP 1999 vehicle search and hit data examined in the present research, the effects are mixed. On the one hand, the significantly higher rates of vehicle searches reported by African Americans are even more robust than they appear. At the same time, though, the higher hit rates for whites might be a function of underreporting by African Americans, although preliminary analyses of police-reported data also yield evidence of modestly higher hit rates for whites.[124]

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[117] Chambliss & Liell, *supra* note 90.

[118] Campbell & Ross, *supra* note 90; Kinkade & Leon, *supra* note 90; Lundman, *supra* note 21; Lundman, *supra* note 20; Mastrofski & Ritti, *supra* note 90; *see also* Weitzer & Tuch, *Perceptions, supra* note 37; Weitzer & Tuch, *Race, supra* note 36.

[119] *See* Table 1 and Appendix A.

[120] GOLDMAN, *supra* note 12; WESTLEY, VIOLENCE, *supra* note 14; Riksheim & Chermak, *supra* note 16; Sherman, *supra* note 16; Westley, *The Police, supra* note 14; Westley, *Violence, supra* note 14.

[121] *See* Table 1 and Appendix A.

[122] SUDMAN & BRADBURN, *supra* note 39. *See also* Farrington, *supra* note 39.

[123] Clark & Tifft, *supra* note 39; Wright & Tomaskovic-Devey, *supra* note 39.

[124] CORDNER ET AL., *supra* note 10; INST. ON RACE & POVERTY, *supra* note 32; ZINGRAFF ET AL., *supra* note 6.

FUTURE RESEARCH: TOWARD A TRIANGULATED SCHOLARLY
　　　UNDERSTANDING

　　　Asserting that citizen-reported data appear valid does not make them
so. This is especially the case because the study of race and ethnically
targeted vehicle searches and vehicle search hits is at about the same point
as the scholarly study of the effects of legal and extralegal variables on
police actions in the wake of Goldman's and Westley's pioneering analyses
more than fifty years ago.[125] In particular, publicly available research
results are ongoing and therefore preliminary[126] and the present research
appears to be the first to use both citizen-reported data and multivariate data
analysis techniques to disentangle the extralegal effects of race and
ethnicity from legal factors such as the reason for the traffic stop and other
extralegal factors such as social class. With an extremely limited number of
analyses, researchers understandably have no clear sense of the consistent
patterns in the mosaic of scholarly understandings of the legal and
extralegal factors affecting vehicle searches and vehicle search hits and
therefore no firm basis for confidently assessing validity.[127]

　　　The most pressing need, accordingly, is additional research on the
factors affecting vehicle searches by police and vehicle search hits. Social
science scholars are currently collaborating with law enforcement
organizations collecting police-reported data on traffic stops, vehicle
searches, and vehicle search hits and preliminary reports of the results of
this collaboration are currently available.[128] With time, these preliminary
results will be formalized and published in recognized journals thereby
further demonstrating the usefulness of police-reported data in the study of
vehicle searches and hits.[129] It therefore is important for scholars to
continue to collaborate with police organizations in the collection of police-
reported data.

　　　However, police-reported data raise problems of validity. Because
police know data are being collected and because it currently is very easy
for officers to distort the data they report, some police officers have already
been detected submitting false or incomplete data.[130] It would therefore be
a mistake for scholars to base their understandings of vehicle searches by

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[125] GOLDMAN, *supra* note 12; WESTLEY, VIOLENCE, *supra* note 14; Westley, *The Police*, *supra* note 14; Westley, *Violence, supra* note 14.

[126] *See, e.g.*, ZINGRAFF ET AL., *supra* note 6.

[127] Howard S. Becker, *Introduction* to CLIFFORD S. SHAW, THE JACK-ROLLER: A DELINQUENT BOY'S OWN STORY , at viii (1966).

[128] *See, e.g.*, CORDNER ET AL., *supra* note 10.

[129] ZINGRAFF ET AL., *supra* note 6.

[130] MEEKS, *supra* note 1, at 6-7; Dedman, *supra* note 1; Donohue, *supra* note 9.

police and vehicle search hits exclusively or even primarily on police-reported data.

Citizen-reported data such as those used in the present research pose validity problems as well. Both whites and African Americans underreport official trouble with the law but African American subjects do so more often than whites.[131] These patterns in underreporting apply to traffic stop encounters with police[132] and by implication to vehicle searches and vehicle search hits. It therefore would also be a mistake for scholars to base their understandings of vehicle searches by police and vehicle search hits exclusively or even primarily on citizen-reported data.

Observational data are therefore important as well. Observers played a pivotal role in collecting data on police and policing in the past[133] and the data they collected continue to be used by contemporary scholars.[134] It therefore makes good social science sense to train a new generation of observers to collect data on vehicle searches and vehicle search hits.[135]

However, observational data by themselves are not the panacea. Training observers to spend data collection time in the company of cops always means that police know data are being collected and necessarily introduces distortions traceable to reactivity.[136] In addition, the citizens being observed also on occasion react to the presence of an observer by altering their words and deeds. As is true of police-reported and citizen-reported data, observer-reported data also pose validity problems.

The solution is triangulation[137]

Because no single data source is free of sources of invalidity, only triangulated data encourage researchers to establish and explain findings that are common to police-reported, citizen-reported, and observer-reported data and, more importantly, isolate and explain findings that are not common. Almost four decades ago, Webb and colleagues put the matter this way:

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[131] SUDMAN & BRADBURN, *supra* note 39. *See also* Farrington et al., *supra* note 39.

[132] Clark & Tifft, *supra* note 39; Wright & Tomaskovic-Devey, *supra* note 39.

[133] BLACK, *supra* note 23; OSTROM ET AL., *supra* note 25; REISS, PATTERNS, *supra* note 23; REISS, THE POLICE AND THE PUBLIC, *supra* note 23; SYKES & BRENT, *supra* note 24; Sykes & Clark, *supra* note 24. For reviews see Riksheim & Chermak, *supra* note 16; Sherman, *supra* note 16.

[134] *See, e.g.*, Engel et al., *supra* note 16; Worden & Shepard, *supra* note 16.

[135] *See also* Mastrofski & Parks, *supra* note 35.

[136] BARKER, *supra* note 114; REISS, THE POLICE AND THE PUBLIC, *supra* note 23; SKOLNICK, *supra* note 112; WESTLEY, VIOLENCE, *supra* note 14; Spano, *supra* note 38.

[137] DENZIN, *supra* note 11, at 26-27; SINGLETON & STRAITS, *supra* note 11, at 409-12.

It is too much to ask of any single class [of data] that it eliminate all the rival hypotheses . . . . As long as the research strategy is a based on a single measurement class, some flanks will be exposed . . . . No single measurement class is perfect, neither is any scientifically useless . . . . [T]he most fertile search for validity comes from a combined series of different measures, each with its won idiosyncratic weaknesses . . . . [138]

An agenda for future research is therefore clear. Scholars should continue to work with law enforcement organizations collecting police-reported data on traffic stops, vehicle searches, and vehicle search hits.[139] Scholars should complement these data with analyses of citizen-reported data on traffic stops, vehicle searches, and vehicle search hits, as was the case with the present research.[140] Scholars should extend the training of observers of police to include the coding of vehicle searches and vehicle search hits.[141] And, with these triangulated data in hand, scholars must establish the similarities and isolate and explain the differences in the images of vehicle searches and vehicle search hits using police-reported, citizen-reported, and observer-reported data.

Make no mistake, though. While analyses of police-reported data are still preliminary, while the present research was limited to citizen-reported data, and while observer-reported data are badly in need of collection, results to this point converge on three important points. First, vehicle searches by police are rare events. Second, race and ethnicity alone and in combination with gender predict vehicle searches. Third, contrary to the assertions of some police administrators and officers, hit rates are modestly higher for vehicles driven by whites. To this point, therefore, police-reported data and citizen-reported data agree that police gain nothing and risk losing much by using race and ethnicity as foundations for vehicle searches.

CONCLUSIONS

Based upon citizen reports of their traffic stop encounters with police, the present research supports five conclusions. According to citizens, vehicle searches by police are another arena in which legal as well as extralegal factors affect police actions. Controlling for legal as well as other extralegal factors, citizens report race, ethnicity, and gender contour vehicle searches by police. Contrary to the assertions of some police

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[138] WEBB ET AL., *supra* note 11, at 173-74.

[139] *See* sources cited *supra* note 6.

[140] *See also* Weitzer & Tuch, *Perception, supra* note 37; Weitzer & Tuch, *Race, supra* note 37; Wright & Tomaskovic-Devey, *supra* note 39.

[141] *See also* Mastrofski & Parks, *supra* note 35.

administrators and officers, citizens report that race and ethnicity do not predict vehicle search hits. Most of what police find when they use their enormous power to search vehicles involves, according to citizens, open containers of alcohol. There is a pressing need and ample scholarly room for additional research on vehicle searches and vehicle search hits using triangulated police-reported, citizen-reported, and observer-reported data.

APPENDIX A

Percent of Citizens Reporting Vehicle Search:
CBPP 1999 Data (N = 7034)

Explanatory Measures	N	Percent Reporting Vehicle Search
Total Traffic Stops[a]		
GT Average (1.3560)	1372	8.0
LE Average	5662	4.2
Size of Place		
1,000,000 or More	360	6.4
500,000 to 999,999	244	6.6
100,000 to 499,999	955	7.4
Less than 100,000	5475	4.3
Officer Race/Ethnicity		
White	5862	4.8
Black	452	4.0
Other	183	6.0
Mixed	218	12.4
Unknown	319	2.2
Legal Reason for Stop		
Speed	3447	2.2
Other Moving Violation	1585	5.2
Check Driver	749	5.6
Defective Equipment	734	8.7
Suspicion	148	28.4
Other	66	7.6
Unknown	305	11.1
Number of Vehicle Occupants		
Three or More	476	9.9
Two	1303	5.3
One	5255	4.3
Driver Social Class		
Above Average Income	2731	2.6
Average Income	2418	5.1
Below Average Income	1885	7.9

APPENDIX A
(Continued)

Driver Age		
Teen	583	12.2
Young Adult	1846	7.3
Adult	4270	3.1
Senior	335	1.2
Driver Gender		
Female	2941	1.9
Male	4093	7.0
Arrest		
Yes	279	42.7
No	6755	3.3
Driver Race/Ethnicity		
Black	706	7.4
Hispanic	618	9.1
Other	229	5.2
White	5481	4.1
Driver Race/Ethnicity and Gender		
Black Female	330	2.4
Black Male	376	11.7
Hispanic Female	215	4.7
Hispanic Male	403	11.4
Other Female	89	4.5
Other Male	140	5.7
White Female	2307	1.5
White Male	3174	6.0
Grand Total and Grand Mean	7034	4.9

[a]Continuous variable in multivariate models.

Note: Last variable in each dummy explanatory measure group represents the omitted reference category in the multivariate models.

APPENDIX B

Percent of Citizens Reporting Vehicle Search Hit: CBPP 1999 Data
(N = 344)

Explanatory Measures	N	Percent Reporting Vehicle Search Hit
Total Traffic Stops[a]		
GT Average (>1.3560)	109	12.8
LE Average	235	12.3
Size of Place		
1,000,000 or More	23	17.4
500,000 to 999,999	16	6.3
100,000 to 499,999	71	9.9
Less than 100,000	234	13.3
Officer Race/Ethnicity		
White	281	13.9
Black	18	16.7
Other	11	0.0
Mixed[b]	27	3.7
Unknown[c]	7	0.0
Legal Reason for Stop		
Speeding	75	10.7
Other Moving Violation	82	15.9
Check Driver	42	4.8
Defective Equipment	64	14.1
Suspicion	42	21.4
Other	5	0.0
Unknown	34	5.9
Number of Vehicle Occupants		
Three or More	47	17.0
Two	69	15.9
One	228	10.5
Driver Social Class		
Above Average Income	72	16.7
Average Income	124	12.9
Below Average Income	148	10.1

APPENDIX B
(Continued)

Driver Age		
Teen	71	22.5
Young Adult	134	9.7
Adult	134	10.5
Senior	5	0.0
Driver Gender		
Female	57	10.5
Male	287	12.9
Arrest		
Yes	107	24.3
No	237	7.2
Driver Race/Ethnicity		
Black	52	9.6
Hispanic	56	10.7
Other[c]	12	0.0
White	224	14.2
Driver Race/Ethnicity and Gender		
Black Female	8	0.0
Black Male	44	11.4
Hispanic Female[c]	10	0.0
Hispanic Male	46	13.0
Other Female[c]	4	0.0
Other Male[c]	8	0.0
White Female	35	17.1
White Male	189	13.8
Grand Total and Grand Mean	344	12.5

[a]Continuous variable in multivariate models.
[b]Omitted reference category in Table 2.
[c]Omitted from models in Table 2 because perfect predictor of hit dependent measure (all yield no hits).
Note: Unless otherwise indicated, last variable in each dummy explanatory measure group represents the omitted reference category in Table 2.