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Racial profiling : using propensity score matching to examine focal concerns theory.

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RACIAL PROFILING: USING PROPENSITY SCORE MATCHING TO EXAMINE

FOCAL CONCERNS THEORY

By

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DEDICATION

This dissertation is dedicated to my parents Dr. Gennaro Vito and Mrs. Mary Vito my

sister Gina Vito, and my fiancée Rasha Aly.

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I would like to thank Dr. George Higgins for his continued help in guidance by agreeing to chair this dissertation. He has been my mentor as I obtained all of my degrees while at the University of Louisville. I want to thank Dr. Grossi for allowing me to use her data for this dissertation. I want to thank Dr. Walsh, Dr. Hughes, and Dr. Frank for agreeing to serve on this committee. I would like to thank my father for always being there and providing insight and guidance when needed. I would like to thank my fiancée Rasha for putting up with me throughout graduate school and her overwhelming support.

ABSTRACT
RACIAL PROFILING: USING PROPENSITY SCORE MATCHING TO EXAMINE
FOCAL CONCERNS THEORY

Anthony G. Vito

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This dissertation examines traffic stops by the Louisville Police Department

between January 1 and December 31, 2002 to see if racial profiling was evident. Focal

concerns theory is tested as a theoretical explanation for racial profiling. The method of

statistical analysis used is propensity score matching. The analysis examines all White

and Black drivers, all White and Black male drivers, and all White and Black female

drivers to see if there was evidence of racial profiling by the Louisville Police

Department.

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CHAPTER 1: INTRODUCTION

Several researchers have shown that the public believes racism and race relation problems are persistent in the United States (Gabbidon & Higgins, 2009; Hurwitz & Peffley, 1997; Sampson & Lauritsen, 1997; Skogan, 1995; Walker, Spohn, & DeLone, 2012; Weitzer, 2002). Many people in the public and in academia believe that race relation's issues are covert rather than overt. For example, imagine an apartment building has a room for rent. When a minority person comes to see or apply for the apartment, he or she is politely told it has been rented when this is not the case. This is covert racism. In police traffic stops, covert actions may increase the danger level because individuals are inclined to hide their racism to avoid being politically incorrect. Compounding the problem is the fact that race relation's issues are not only conscious issues, but also they may be subconscious as well and result from implicit bias that can arise as individuals from other races and ethnicities interact (Dovidio, Kawakami, & Gaertner, 2000). The conscious and subconscious nature of race relations may influence an individual's behavior. Race relations can have their genesis in stereotypes.

The role of stereotypes in race and crime is not new. In fact, using race in crime often allows citizens to view Black individuals as the perpetrators of crimes rather than being the victims. This arrangement allows people to see Black citizens as the "face of

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crime," which is not necessarily the case (Lever, 2007). Two problems arise from this view. First, this view is not always true. In fact, some research has shown that Blacks and Hispanics commit crimes at the same rate as Whites (Beckett, Nyrop, & Pfingst, 2006; Blumstein, 1993; Sampson & Lauritsen, 1997; Steffensmeier, Feldmeyer, Harris, & Ulmer, 2011; Tonry & Melewski, 2008). Second, the view of the "face of crime" can create tension between different racial groups. This tension stems from problems minorities have with the police and is an outgrowth of other societal tensions.

The topic of race and policing in America is important. Incidents in Ferguson, Missouri, New York City, Cleveland, Ohio, and other cities continue to bring public attention to race and policing. Quillian (2006) argued that most individuals, when asked, would say that racism is still present. The topic of race relations is significant because it provides a venue for understanding issues between racial minorities and the police. Thus, understanding the impact of race on the American criminal justice system has consistently been of interest for researchers, legislators, and society (Gabbidon, & Greene, 2005; Walker, Spohn, & DeLone, 2012).

Policing practices have often involved the use of race. Racial profiling has primarily been linked to police interactions with African American citizens (Buerger & Farrell, 2002; Jernigan, 2000; Weitzer & Tuch, 2002). In the 1970s, racial profiling arose from attempts by government agencies to combat drug trafficking. Members of certain racial groups authorities believed to be involved in the drug trade became widespread during the "war on drugs" in the 1980s resulting in the use of racial profiling (Covington, 2001; Harris, 2002; Heumann & Cassak, 2003). This method then spread to police

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agency tactics when dealing with other crimes (Carter & Katz-Bannister, 2004; Harris, 2002; Heumann & Cassak, 2003).

While the practice has been in use for some time, racial profiling is a behavior difficult to define. Batton and Kadleck (2004) argued researchers have not developed a clear definition for racial profiling. Withrow (2006) explained that racial profiling is the practice of combining physical, behavioral, and psychological factors that may improve the probability of identifying and officially handling a suspect. Meehan and Ponder (2002) stated that racial profiling occurs when a police officer stops and cites a disproportionate number of minorities. In addition, some scholars have argued that racial profiling is the act of specifying and targeting minorities by relying solely on race (Ramirez, McDevitt, & Ferrell, 2000). Importantly, these definitions may not take into consideration that the racial profiling may be mandated by the department, although no department appears to operate with an official stance in this area. MacDonald (2001) asserted that race may be the only factor or one of many factors informing department policy. Building upon this logic, racial profiling in this dissertation is defined as the practice of making law enforcement decisions based on race (Higgins, Vito, & Walsh, 2008). These decisions may include citations, searches, and consent searches after a traffic stop. Agencies are using race to make law enforcement decisions, but this practice of racially biased policing should end because it could perpetuate racial stereotypes.

The purpose of racial profiling was to combat crime, yet the practice created further mistrust between minority populations and the police (Engel, 2005; Engel & Calnon, 2004; Reitzel, Rice, & Piquero, 2004; Reitzel & Piquero, 2006; Warren, 2011). Racial profiling could deepen the trust gap between the police and minority communities

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because of the negative stereotypes associated with racial profiling. For communities that do not trust the police, evidence of racial profiling would exacerbate the problem. Furthermore, racial profiling may create a "slippery slope" for police, increasing the use of more aggressive police tactics and resulting in a combative situation between a minority citizen and a police officer that otherwise would not take place (Batton & Kadleck, 2004). Racial profiling was widespread going into the 21st century even though the majority of the research has not found racial profiling to be an effective police tactic (Covington, 2001; Harris, 2002; Ramirez, McDevitt, & Farrell, 2000; Wise, 2003).

Racial Bias from Traffic Stop Data

As the term *racial profiling* implies, studies dealing with this issue are mainly concerned with the race of the driver. Studies on racial profiling concerned with racial bias have examined whether race impacted the likelihood of the police stopping a racial minority. This issue relates to the legitimacy of the police. If departments are guilty of racial profiling, they lose the trust of certain racial groups in society (Engel & Calnon, 2004; Lever, 2007; Warren, 2011), causing concern in any police-citizen interaction (Engel & Calnon, 2004; Lever, 2007; Warren, 2011).

To date, several studies have empirically examined racial profiling involving traffic stops and produced mixed results. Specifically, some studies in criminology and criminal justice have shown that racial minorities are more likely to be stopped by the police than Whites (Alpert, Dunham, & Smith, 2007; Alpert, MacDonald, & Dunham, 2005; Engel & Calnon, 2004; Jacobs, 1979; Lundman & Kaufman, 2003; Meehan & Ponder, 2002; Miller, 2008; Novak, 2004; Novak & Chamlin, 2012; Petrocelli, Piquero, & Smith, 2003; Rojek, Rosenfeld, & Decker, 2004; Smith, Makarios, & Alpert, 2006;

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Stolzenberg, D'Alessio, & Eitle, 2004; Warren, Tomaskovic-Devey, Smith, Zingraff, & Mason, 2006; Withrow, 2004a; Withrow 2004b; Withrow, 2007).

For example, Meehan and Ponder (2002) investigated the topic of examining whether racial profiling took place in traffic stops in a suburban police department. The sample comprised 6,260 traffic stop observations. Overall, results showed that the department engaged in racial profiling that involved traffic stops. African American drivers were more likely to be stopped, but Meehan and Ponder (2002) noted that a few officers accounted for the majority of this problem. The study identified a group of "Higher User" officers who made the majority of stops.

Lundman and Kaufman (2003) analyzed a 1999 national survey of citizens' perceptions of traffic stop outcomes. The sample was comprised of 80,543 citizens. African American drivers were more likely to report being in a traffic stop than Caucasian drivers (Lundman & Kaufman, 2003). In fact, officers stopped African Americans more often than all other racial groups. Concerning race and gender of the driver, African Americans did not feel that the police acted legitimately or treated them properly in the course of their traffic stop.

Alpert et al. (2005) analyzed police suspicion and the discretion used to decide which citizens to stop. Alpert et al. (2005) collected data on proactive encounters with citizens (N= 174) between April and September 2002 from the Savannah, Georgia Police Department. The researchers observed each proactive encounter. The study produced two findings. First, officers were more likely to form non-behavioral suspicions for minority citizens. Second, officers needed a clear reason they stopped a citizen, such as matching a suspect report or a citizen committing a traffic offense.

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Warren et al. (2006) examined traffic stops to determine the presence of racial disparity, specifically among Black drivers. The data came from a telephone survey of 2,920 North Carolina licensed drivers conducted between June 22, 2000 and March 20, 2001. The study used logistic regression to examine stops by local police and state troopers and supported two conclusions. First, the results showed evidence of racial profiling in that local police were more likely to stop African Americans. However, state troopers did not base stops on the race of the driver but on the behavior of the driver.

Alpert et al. (2007) examined racial profiling data by the Miami-Dade Police Department from a combination of traffic observations, ride-alongs, and an examination of official data collected by the police officer for a sample of 66,000 drivers. Alpert et al. (2007) used logistic regression and found that Black drivers were more likely to be stopped for an equipment violation. A search took place when a custody arrest was present, regardless of the race or ethnicity of the driver. Black drivers were less likely to be stopped by White officers.

Withrow (2007) examined police officer behavior that takes place during pretextual stops. The data was 37,454 traffic stops (26,432 vehicular and 1,745 pedestrian stops) made in 2001 by the Wichita Police Department. Results of this study showed evidence of racial profiling. No matter the traffic stop, the study showed a greater likelihood that police would stop Black citizens. In addition, searches were more likely to take place when the stop involved Black or Hispanic citizens.

Miller (2008) examined citizens' perspectives of their traffic stops. The data was self-report data from a telephone survey of licensed drivers in North Carolina. Miller (2008) compared stops by local police with stops made by the North Carolina State

Highway Patrol (NCSHP). The sample comprised 2,620 respondents. The study found that Black drivers were more likely to have received a warning and have been ticketed by local police compared to the NCSHP (Miller, 2008). Race was not a factor in traffic stops by the NCSHP.

Novak and Chamlin (2012) examined how the race of the driver and the location of the traffic stop impacted racial profiling. Data concerning 106,267 traffic stops were collected between January 1 and September 30, 2004, and comes from the Kansas City Police Department and comprises 106,267 traffic stops. Novak and Chamlin (2012) found that social disorganization and population mobility had a positive impact on traffic stop rate, search rate, and citation rate. In areas where police workload was greater, the search rates for Blacks increased. Areas with higher levels of social disorganization increased total search rates for all citizens and the total search rates for White citizens. As the percentage of Black citizens in an area increased, the total search rate also rose. As the total number of traffic stops increased, the search rate for Whites but not Blacks increased.

The results of these studies support the view that racial profiling is taking place. In contrast, other studies have shown that racial minorities are no more likely than Whites to be stopped by the police (Farrell, 2011; Renauer, 2012; Smith & Petrocelli, 2001; Vito & Walsh, 2008). Fallik and Novak (2012) examined the race/ethnicity of the driver to see if it was an important factor in an officer's decision to conduct a search. The data came from the Kansas City Police Department's police-public encounters conducted in 2009, and the total sample size was 45,695. Fallik and Novak (2012) used a 10% random sample and examined 4,596 cases. The study found that a driver's race/ethnicity was not

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a predictor of whether a search took place during a traffic stop. The decision to search was not due to race but due to other differing circumstances under which the citizen encountered the officer.

Renauer (2012) examined neighborhood variation based on the racial makeup of the neighborhood and how that impacted police stops and searches. The data, collected between January 1, 2004 and June 30, 2008, came from the Portland Police Bureau with a total sample size of 206,803 traffic stops from 94 neighborhood boundaries. In neighborhoods that were predominately Black and Hispanic, Black and Hispanic drivers were less likely to be stopped and searched by police. In these neighborhoods, officers were more likely to stop and search White drivers.

In addition to producing mixed results regarding racial profiling, these studies did not examine certain issues. First, none of the studies used theory to explain police officer decision-making. Second, the studies did not examine both the race and gender of the driver to see how they would impact racial profiling for traffic stops. Third, propensity score matching was not used for the statistical analysis. The final issue is that none of these studies examined the traffic stop outcomes of citation, search, and consent search together.

The mixture of results from the research literature has two implications. First, racial minorities may be justified in their belief that racial issues impact their interactions with the police because some evidence has suggested that racial profiling takes place. In public opinion research, racial minorities have consistently reported problems with the police (Engel, 2005; Reitzel et al., 2004; Reitzel & Piquero, 2006; Warren, 2011), but it is unclear whether these problems are the result of racial profiling or proper police work.

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Second, the results suggest that researchers may be overlooking major problems. The following section examines the impact that the gender of the driver could have on traffic stop data.

Gender Bias from Traffic Stop Data

An understudied issue is how the gender of the driver (specifically male) impacts racial profiling. This issue is important because the gender of the driver could explain a police officer's decision-making during a traffic stop. In racial profiling literature, studies concerned with the gender of the driver are focused on how the gender of the driver impacts the likelihood of racial profiling by the police. Researchers have found that police officers were more likely to stop, search, arrest, check records, and use force with male drivers (Barnum & Perfetti, 2010; Farrell, 2011; Higgins et al., 2008; Higgins, Vito, Grossi, & Vito, 2012; Lundman, 1979; Smith et al., 2006; Smith & Petrocelli, 2001). Among male drivers, Blacks, Hispanics, and Asians were more likely to be involved with police in stops, searches, arrests, records checks, and use of force (Cochran & Warren, 2012; Higgins et al., 2008; Higgins, Vito, Grossi, & Vito, 2012; Lundman, 1979; Lundman & Kowalski, 2009; Moon & Corley, 2007; Schafer, Carter, Katz-Bannister, & Wells, 2006; Terrill & Reisig, 2003; Tillyer & Engel, 2013).

Lundman and Kowalski (2009) searched for differences in drivers stopped for speeding based on race. The data, collected in April and May of 2001, included drivers ($N = 26,329$) stopped for speeding in 55 miles per hour (mph) zones and 65 mph zones by the Massachusetts State Police. The study found that White drivers were less likely to be stopped, in addition, male drivers were more likely to be stopped than female drivers,

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no matter what the speed zone or the time of day. Likewise, younger drivers were more likely to be stopped, no matter what speed zone or time of day.

Cochran and Warren (2012) examined the effect of driver race and gender and other variables on stop rates. This study used data from the 2005 Police Public Contact Survey (PPCS, a supplement to the National Crime Victimization Survey, N =10,317). They found that older citizens were more likely to believe a stop was illegitimate, while rural citizens were less likely to believe a stop was illegitimate. In addition, they found that Black males and Black females were more likely to report being stopped for an illegitimate reason. Both Black males and females were more likely to report their stop was illegitimate when the officer was White.

The research has shown that males are most likely to be stopped, searched, arrested, records check, and be exposed to the use of force by police officers. Among male drivers, the racial groups of Black, Hispanic, and Asian are the most likely to be stopped, searched, arrested, records check, and be exposed to the use of force by police. Only five studies have applied theory to gender bias, but none of these studies applied focal concerns theory. None of the studies considered the traffic stop outcomes of citation, search, and consent search. The majority of studies applied multivariate analysis; however, none of the studies used propensity score matching. The current literature did not consider the race of the driver and the gender together. The next section reviews the literature on police behavior examined as racial profiling that took place after a traffic stop.

Racial Profiling Research after the Stop

Researchers have consistently encountered several problems surrounding racial profiling studies. These issues comprise the methods used to perform the traffic stop and the police action taken (i.e., citation, search, or consent search). To address these issues, initial racial profiling research made use of baselines or benchmarks.

In this field, a benchmark is a fraction where the number of recorded traffic stops is in the numerator of the fraction, and the number of eligible drivers of a specific race or a census count of racial minorities is in the denominator (Persico & Todd, 2004). This fraction would indicate racial profiling. To clarify, if the recorded number of traffic stops equaled the number of eligible drivers or census count, then no racial profiling took place. If the number of traffic stops for a race outnumbered the number of eligible drivers or census count, then racial profiling took place. The same interpretation is used if the denominator is larger than the numerator. Some researchers have used this fraction to study racial profiling and found no difference in traffic stops for race. Instead, they found that the police were not stopping citizens due to race but because minority drivers were more likely to be found with contraband (Becker, 2004; Persico & Todd, 2004). The problem with this fraction is the general disagreement about the proper denominator. In addition, this benchmarking may not be generalizable to other locations. Therefore, the results arising from this fraction are tenuous.

Other researchers found problems with the use of benchmarks. According to MacDonald (2003), benchmarks cannot account for variations in the population patterns on the roads, degrees of law breaking, or police deployment patterns. These issues raise concerns about the validity of what benchmarks measure. Walker (2003) said that three

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criteria make up an effective benchmark. First, the benchmark is required to be a scientifically credible and valid measure. Second, a benchmark should provide practical value. Third, the benchmark needs to be viewed as politically credible. No study has addressed the problems presented by Walker (2003). This is because economists come from the viewpoint that every person's decision-making is rational, and this is not always the case.

Withrow, Dailey, and Jackson (2008) developed internal benchmarking that can be used by a department to analyze a large number of stops and searches by police officers. The purpose of internal benchmarking is to see if differences in police officers' stop and search rates of minorities is the product of a few officers. Internal benchmarking allows a police department to see if their police officers are under or over enforcing the law upon minority citizens (Withrow et al., 2008).

Benchmarking is not the only form of statistical tests used in racial profiling research. Economists have contributed to the literature by creating an outcome test. The overall theme of these economic studies was that racial profiling is a rational choice an officer made. The rational officer may stop certain racial groups because they are more likely to have contraband or to be guilty of other suspicious activities. Economic studies have used the statistical techniques hit rate, outcome test, and benchmark testing. Hit rate is a technique based on the probability of being found guilty across groups with different observed characteristics (Knowles, Persico, & Todd, 2001). An example of a hit rate is a situation in which a police department stopping both White and Black drivers at a similar rate notices that Black drivers are more likely to be carrying contraband. The police

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department would then switch all of its focus to stopping Black drivers because it is a better use of the police department's resources to control contraband.

Another statistical technique used is the outcome test, which analyzes whether the outcomes are systematically different on the basis of race (Ayres, 2002). Ayres (2002) provided two reasons supporting the outcome test: (a) in some contexts, evidence of racial disparities in the average outcomes is strong evidence of disparities on the margin and (b) while problems may arise with inframarginality, it is not a problem when interpreting the outcomes analysis merely as a test of unjustified disparate impact (Persico & Todd, 2006). The inframarginality problem is that it is impossible for all traffic stop information present to be known by police. When a police officer makes a stop, the officer may not have all pertinent information on the driver (e.g., Is the driver under the influence of drugs and/or alcohol? Does the driver have outstanding warrants? Does the driver have contraband?). The police officer may observe problems (e.g., expired tags, taillight out, speeding) but not the previous factors.

To address racial profiling, an outcome test calculates the police department's success rate for discovering contraband based on the race of the driver. Engel (2008) raised several concerns with the outcome test. First, the outcome test assumes that every search conducted by the police was discretionary. Consent and probable cause searches should not be included in an outcome test because the officer's discretion is no longer a factor in the search decision. Second, the inframarginality problem would still be an issue (Engel, 2008). The final concern is that the outcome test assumes that all officers act the exact same way when deciding to conduct a search.

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Because the results coming from these benchmark studies are tenuous and the outcome tests are not clear, some researchers have suggested police officers believe racial minorities have a tendency to violate traffic and legal codes at higher rates than Whites. This belief would suggest that racial minorities should be stopped for serious traffic violations (Becker, 2004; Borooah, 2001; Knowles et al., 2001; Persico & Todd, 2004, 2006) as well as for minor traffic violations at a higher rate than Whites (Becker, 2004; Borooah, 2001; Knowles et al., 2001; Persico & Todd, 2004, 2006). The issue with these types of stops is that they are "pretextual stops" (Engel Calnon, & Bernard, 2002). The pretextual stop allows the officers to stop a vehicle for a minor violation intending to find other or additional legal violations (Gizzi, 2011; Novak, 2004; Withrow, 2007). Pretextual stops are a consistent tactic used by the police, and they have been upheld in the court system (Whren et al. v. United States, 1996). Researchers have documented that pretextual stops were at the heart of the "war on drugs." Using pretextual stops presents researchers who are trying to disentangle the causal role of race in traffic stops with a complex and seemingly impossible problem to overcome. It makes it nearly impossible for the researcher to extract and examine racial motives.

With this complex problem, researchers cannot fully reveal the role of race and traffic stops. Yet, researchers may present patterns of disparities that may reveal differences among races in traffic stops. As the literature shows, studying the specific traffic stop is difficult and may not be the best result. Engel and Johnson (2006) argued that the events that take place after the traffic stop might be better indicators of racial disparities in traffic stops. These disparities may show racial profiling.

The result of a traffic stop outcome is important to analyze because it shows the official sanction that a police officer gives a citizen. This dissertation examines three types of traffic stop outcomes: citation, search, and consent search. These outcomes were chosen because they indicate some level of involvement on behalf of the officer and may show varying levels of racial profiling that could take place during a traffic stop. Because these are the outcomes for the dissertation, this section will examine racial profiling literature concerning these three outcomes.

While many studies have examined racial profiling, these studies have not necessarily considered traffic stop outcomes. The majority of the racial profiling literature has considered only whether minority drivers are stopped more often. While the finding that minority drivers are stopped more often can be evidence of racial profiling, this does not tell the whole story. The research on searches has shown that minority drivers (e.g., Black or Hispanic) are more likely to be searched. Yet, two studies showed that White drivers are more likely to be searched. Consent searches involved both White and minority drivers (e.g., Black or Hispanic). The following section will review the literature on contraband and racial profiling.

Contraband Found during a Traffic Stop

Contraband is any illegal item (e.g., drugs, alcohol, or weapons) found in the possession of a person. When found by police during a traffic stop, contraband is a significant issue when analyzing racial profiling. Some people and police officers believe certain racial groups are more likely to be carrying contraband. Due to this belief, they feel that conducting traffic stops of certain racial groups is justified.

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Only two studies have looked at contraband and racial profiling. Vito and Walsh (2008) examined traffic stops to see which factors impacted officer suspicion. The data for this study, collected from January 1, 2001to December 31, 2002, came from the Louisville Police Department in Kentucky. Vito and Walsh (2008) found that drivers known to police officers were more likely to have a warrant check come back as a hit. Officers who knew the driver were more likely to search them. Drivers known to police were more likely to have contraband on them (Vito & Walsh, 2008). The data revealed no difference in the search rate between Black and White drivers.

Roh and Robinson (2009) looked at racial profiling at the micro and macro levels based on geographic region. The study comprised 333,760 traffic stops in 121 beats as drawn from the traffic stop data collected from January through December 2003 by the Houston Police Department, Texas. They found that areas with a high concentration of Black or Hispanic residents were more likely to have higher arrest rates, probable cause searches, consent searches, contraband detections, and felony charges. While little research has examined contraband and racial profiling, the following section reviews the literature on citations and racial profiling.

Citations Given by Police during a Traffic Stop

A citation can be issued during a traffic stop for equipment or moving violations such as speeding. The decision made by a police officer issuing a citation is a potentially important indicator of racial profiling. The purpose of this dissertation is to examine whether an officer is using race as a basis for decision-making with less serious offenses. To date, the research on citations has been mixed. Specifically, the research has shown that minority drivers were no more likely than White drivers to be given citations

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(Novak, 2004). In contrast, other studies have indicated that race, along with additional factors (legal and extra-legal), makes it more likely that minorities are issued citations (Barnum & Perfetti, 2010; Ingram, 2007; Tillyer & Engel, 2013).

Novak (2004) examined whether racial profiling took place in traffic stops made by the Overland Park (KS) Police Department. The data were collected from July 1, 2000 to November 30, 2000 and comprised 10,473 traffic stops. Novak (2004) found that minorities were more likely to be the subject of pretextual stops. Minorities were less likely to be stopped during the day than at night. Drivers of all races stopped for unsafe driving or moving violations were more likely to receive a citation instead of a warning.

Ingram (2007) examined what neighborhood factors may impact traffic citations made by the police. The data came from the 2000 U.S. Census as well as traffic stop data from a police department in a city in the southwestern U.S. were collected from January 1, 1999 to October 10, 1999. Several conclusions can be made from Ingram (2007). Areas with higher levels of disorganization had more traffic citations. Disadvantaged areas had higher traffic citation levels. Additionally, the racial composition of the neighborhood impacted the likelihood of traffic citations issued (i.e., higher minority population areas had a higher number of citations issued).

Barnum and Perfetti (2010) examined what factors impact officer decision-making for stopping drivers based on race, citation, arrest, and search. The data, collected from June 1 to December 31, 2007, came from an unnamed police department and contained 5,417 traffic-related police-citizen contacts. The results showed evidence of racial profiling by police officers for making stops, citations, arrests, and searches. Male minority group drivers were more likely to be stopped. Minority drivers were more

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likely to receive a citation and to be arrested. Officers were more likely to search a car if the driver was a minority group member.

Farrell (2011) examined the differences in traffic stops between men and women. Farrell (2011) collected data from 149,883 traffic stops across 37 municipal jurisdictions in Rhode Island in 2005 and reached several conclusions. Drivers stopped in a disadvantaged area were more likely to be cited for both speeding and non-speeding violations. Women received leniency from officers in both speeding and non-speeding situations. The number of citations decreased as more females were hired by the police department. The pressure placed on an officer by the police department to give citations made it less likely that gender disparity existed. Black drivers were less likely to receive a citation for speeding or non-speeding violation compared to White drivers.

Tillyer and Engel (2013) examined how a driver's race, gender, and age impacted traffic stops. The data came from an unnamed police department and comprised 283,827 traffic stops from January 1, 2006 to December 21, 2006. The authors found that Black drivers were no more likely to receive a warning or citation than White drivers. However, drivers who were young and Black male drivers were more likely to receive a warning and also more likely to receive a citation than white drivers. Hispanic drivers were less likely to receive a warning and more likely to receive a citation than white drivers (Tillyer & Engel, 2013).

The current literature on citations and traffic stops highlights that additional research is necessary in this area. The studies that analyzed citations in racial profiling have lacked a theoretical explanation for police officer decision-making. Only one study examined how the race and gender of the driver impacted citations and racial profiling.

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None of the studies used propensity score matching for statistical analysis. All three issues are important to the assessment of racial profiling and will be analyzed in this dissertation on traffic stop outcomes. The following section analyzes searches and racial profiling.

Search by Police Officer during a Traffic Stop

A search by an officer can take place in six different ways (Worrall, 2007):

1. A police officer can search incident to arrest.

2. A police officer can search a car when it is towed using an inventory search.

3. Police officers can conduct a search when contraband is in plain view.

4. Officers can search a vehicle if a driver provides consent.

5. Police officers can conduct a search when the officer has reasonable suspicion or probable cause that the car contains contraband.

6. Officers can conduct a search to see if there is a hit on a warrant check.

In the racial profiling literature from criminal justice and criminology, eleven studies to date have examined searches and several conclusions can be drawn. Researchers have found that Blacks and Hispanics were the racial groups searched most often (Barnum & Perfetti, 2010; Engel & Calnon, 2004; Higgins et al., 2008; Higgins, Vito, Grossi, & Vito, 2012; Moon & Corley, 2007; Rojek et al., 2004; Schafer et al., 2006; Withrow, 2004b). Regarding the gender of the driver, males were more likely to be searched (Higgins et al., 2008; Higgins, Vito, Grossi, & Vito, 2012; Moon & Corley, 2007; Schafer et al., 2006). Among male drivers, Black and Hispanics were more likely to be searched than drivers of other races (Higgins, Vito, Grossi, & Vito, 2012; Moon & Corley, 2007; Schafer et al., 2006).

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Withrow (2004b) examined racial profiling by the Wichita Police Department. The police department collected the data from January 15, 2001 to July 15, 2001, resulting in a sample of 37,454 traffic stops. Black and Hispanic drivers were more likely to have their cars searched and to be arrested during a stop in comparison to white drivers.

Rojek et al. (2004) analyzed the impact of driver race on being stopped by the police. The study examined 92 Missouri municipalities with a driving-age population of greater than 5,000. Rojek et al. (2004) collected the data over a four-month period. The stop rate for Blacks was higher than expected. Black drivers were more likely to be stopped in comparison with Hispanic drivers. Hispanic drivers overall were less likely to be stopped than both White and Black drivers. However, Black and Hispanic drivers were more likely to be both searched and arrested than White drivers.

Moon and Corley (2007) examined whether racial profiling took place in traffic stops on a college campus from 2001 to 2002. The total sample size for this study was 10,210 traffic stops. Results showed racial profiling was prevalent. Black male drivers were more likely to be searched than White male drivers. Yet, the study found that drivers of any racial group were more likely to receive a legal sanction when stopped by a highly active officer. Certain officers made more stops and sanctioned drivers more often than others.

Higgins et al. (2008) examined traffic stops, collected from January 1 to December 31 2002, by the Louisville (KY) police department that resulted in a search. The study used logistic regression to analyze 36,880 traffic stops. Higgins et al. (2008) offered two conclusions. First, African Americans and males were more likely to be

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searched than Whites and females. Second, no differences existed on a warrant hit and race for stops that resulted in a search.

Higgins, Vito, Grossi, and Vito (2012) examined traffic stops to see if racial profiling was evident in searches. The data came from the Louisville (KY) police department and comprised 36,880 traffic stops that took place between January 1, 2002 and December 31, 2002. Several conclusions can be made from this study. Black drivers were more likely to have their car searched. Results showed that officers searched Black male drivers and White male drivers more often. Among just White drivers, male drivers were more likely to have their car searched (Higgins, Vito, Grossi, & Vito, 2012). Among Black drivers, males were more likely to have their car searched (Higgins, Vito, Grossi, & Vito, 2012).

The literature has shown that minority drivers (e.g., Black and Hispanic) are more likely to be searched. Based on gender, males are more likely to be searched. Yet, even among males, minorities are searched most often. None of the studies examined applied focal concerns theory. Likewise, no study examined all three traffic stop outcomes of citation, search, and consent search. None of these studies used propensity score matching. The next section will examine the traffic stop outcomes resulting from a consent search.

Consent Search by Police during a Traffic Stop

The racial profiling literature has not looked extensively at consent search. A consent search occurs when a citizen allows an officer to search his or her person and/or property (del Carmen & Walker, 1995). Only two racial profiling studies to date have examined consent searches.

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Smith and Petrocelli (2001) examined the results of traffic stops by the Richmond, Virginia Police Department in 2000 ($N = 2,673$). They considered the impact of the race of the driver on consent searches and decision to arrest. As an officer's age increased, drivers were more likely to be stopped. Caucasian drivers were more likely to be the subject of a consent search than minority drivers (Smith & Petrocelli, 2001). Officers arrested minority drivers less often during a traffic stop than Caucasian drivers (Smith & Petrocelli, 2001). The study did not consider citations and searches. The study did not use propensity score matching for its statistical analysis, nor was theory used to explain police officer decision-making.

Schafer et al. (2006) looked at the decision-making of police officers during traffic stops from February 2001 to February 2003. The total number of officer-initiated traffic stops for this study was 61,037. Both Black and Hispanic drivers were more likely to be searched and have their cars searched. The drivers most likely to be searched were young Hispanic and Black males. There was no evidence of any difference in the likelihood that contraband would be found in the car on the basis of the driver's race. This study did not examine citations and searches. Furthermore, no theoretical explanation was given for police officer decision-making, and propensity score matching was not used as the statistical analysis.

Overall, research has shed light on an important issue that has the potential to be divisive in American society—racial profiling. The research review demonstrates that several issues still need to be analyzed: applying theory to racial profiling, using different statistical methods to examine it, and the consideration of officers' decision-making in different areas (i.e., contraband, citation, search, and consent search).

The current state of racial profiling research is limited. One is the use of advanced statistical techniques allow for the development of quasi-experimental designs. Further, research that uses advanced statistical techniques also needs to be driven by theory. This dissertation will make use of an advanced statistical technique (i.e., propensity score matching) and a theoretical premise (i.e., focal concerns) to contribute to the racial profiling literature. This dissertation will be the first to use propensity score matching within the context of focal concerns theory to provide a quasi-experimental examination of racial profiling. Following recent racial profiling research, contraband, citation, search, and consent search are the outcomes that will be used to examine racial profiling.

CHAPTER 2: FOCAL CONCERNS THEORY, PROPENSITY SCORE MATCHING,

AND RACIAL PROFILING

Theory has been under-utilized in racial profiling studies. The importance of

theory cannot be overstated. A theory is a set of interconnected statements or

propositions that explain how two or more events or factors are related to one another

(Akers & Sellers, 2009). Theory allows the researcher to explain why a behavior

(including racial profiling) may take place. Without theory, the researcher has no clear

justification for analyzing the problem and determining what variables should be used.

Theories can help explain empirical data and aid understanding of why specific behaviors

occur (Higgins, 2005). When a theory is not present in the research, significant variables

can be viewed only as correlates because there is less information to guide their use.

Implications drawn from correlates provide less information to contextualize the

research.

The review of the racial profiling literature has shown that several theories can

help explain this behavior. Theoretical explanations for racial profiling will improve the

analysis because theory can explain why police officers act a certain way and why they

perform certain actions during a traffic stop. Applying theory can show why the police

officer made the stop. Theory can also explain how the outcome of a traffic stop affects

certain racial groups.

Miller (1958) developed focal concerns as an explanation of the values shared by the lower class. The values expressed by the lower class reflected their views on deviant behavior. Lower-class persons who place an emphasis on prioritizing deviant behavior are a subclass of individuals. Miller was primarily interested in how these values influenced the views of lower-class delinquents. Six focal concerns make up the views of lower-class delinquents.

Trouble is the first focal concern. Trouble is viewed as either an adolescent's obsession with being involved in or avoiding trouble (Miller, 1958). An example of trouble could be involvement in deviant situations such as drug use. Second is toughness, which is viewed as an adolescent's ability to deal with the problems that come up with involvement in deviant activities on the street (Miller, 1958). Toughness could take place with problems that arise when dealing with other street gangs. Smartness is the third focal concern and emphasizes "street smarts" (Miller, 1958). An adolescent who displays smartness is able to handle him- or herself during deviant situations that would arise on the streets. The fourth focal concern is excitement or the joy that an adolescent gains from being involved in delinquent acts (Miller, 1958). The feeling that an adolescent gains from beating up another adolescent would be an example of excitement. Fate is the fifth focal concern and is the idea that what happens to an adolescent on the street is beyond his or her control (Miller, 1958). The final focal concern is autonomy (Miller, 1958). An adolescent needs to be able to stand up to whoever represents an obstacle to them on the streets. To Miller, these focal concerns are related to the decisions that delinquents make on the street.

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Responding to Engel et al.'s (2002) criticism of racial profiling research for its lack of a theoretical foundation, Tillyer and Hartley (2010) explained how focal concerns theory can be applied to racial profiling as it was in the sentencing research. Decisions made by police officers after a traffic stop are similar to those made in judicial sentencing decisions (Tillyer & Hartley, 2010). As a result, focal concerns theory can provide an explanation for police officer decision-making during a traffic stop. It will allow researchers to consider the when, where, and why racial/ethnic disparities exist in the results of traffic stops by following the theoretical models and methodological approaches used in sentencing research (Tillyer & Hartley, 2010). Racial profiling in general has suffered from a singular focus on race. In sentencing research, researchers made a similar error until they examined other correlates of decision-making used by judges.

Steffensmeier, Ulmer, and Kramer (1998) developed focal concerns theory as a theoretical explanation for sentencing decision-making by judges or court actors. They established that focal concerns theory comprises three components used by judges or court actors to help them in making their decision: blameworthiness, protection of the community, and practical constraints and consequences.

Blameworthiness measures the culpability of the individual. The aim is that the punishment should fit the crime. In sentencing research, the prior record of the individual is a measure of culpability. Other factors in sentencing that would increase the blameworthiness of the offender include prior victimization and the offender's role in the offense (Steffensmeier et al., 1998). For police officers, blameworthiness depends on the

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amount of evidence present during a traffic stop. As the evidence increases, the blameworthiness of the offender increases.

In focal concerns theory, protection of the community considers whether the offender is a danger to society and must be incapacitated. Punishment of the offender also serves as an example to deter others. Practical constraints and consequences include the judge's view that the offender can serve the time and the severity of the offense committed (Steffensmeier et al., 1998). In traffic stops, the officer's desire to protect the community might be influenced by whether if a warrant check was conducted and if a weapon was the result of a search for contraband.[1]

Focal concerns theory takes into account the ambiguity that takes place in how judges reach their decisions (Albonetti, 1991). The ambiguity of sentencing decisions is based on the sentencing goals of the judge and the difficulty in trying to predict which offender will recidivate. The judge will decide based on the information available to him or her. However, this information may cause "overload," leading the judge to use a form of "perceptual shorthand" and base his or her sentencing decision on certain attributes (e.g., race, gender, and age) of the offender (see Simon, 1997). Once this shorthand is developed, it is resistant to change and the judge will rely on it to guide sentencing decisions.

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[1] Police officers may develop shorthands of how they deal with offenders that may include the offender's race, gender, and age. Skolnick (1966) said that the work of the police officer requires that the officer is continually occupied with potential violence. To deal with this threat, officers develop perceptual shorthand to identify "symbolic assailants," or persons who represent through their gestures, language, and attire a threat of violence. In traffic stops, the warrant check (through a scanning of the license plate) is a proxy for dangerousness. The records check indicates whether the driver of the vehicle has an outstanding warrant for either a felony or misdemeanor. One measure for focal concerns theory is protection of the community, and a proxy measure for that is performing a warrant check (Skolnick, 1966; Tillyer, Klahm, & Engel, 2012). This dissertation is concerned with the police officer performing a warrant check, not whether there is a hit on the warrant check. Receiving a hit on the warrant check could represent Skolnick's (1966) symbolic assailant.

Sentencing disparities are directly related to the focal concerns theory components. In an ideal world, the focal concerns theory components would be applied equally to all people regardless of race. Unfortunately, in the real world, a person's place in society (e.g., race) is what drives the decision. Steffensmeier (1980) showed that Black and Hispanic offenders were more likely to receive harsher sentences then similarity situated White offenders. This is because Blacks and Hispanics are viewed as being more dangerous while Whites are viewed as less likely to recidivate (Steffensmeier, 1980). Other sentencing studies found similar results (Demuth & Steffensmeier, 2004; Johnson, Ulmer, & Kramer, 2008; Spohn & Beichner, 2000; Steffensmeier & Demuth, 2001, 2006).

Although Steffensmeier et al.'s (1998) focal concerns theory focuses on sentencing disparities by judges or court actors, this theory could be applied to police officers' decision-making during a traffic stop. Research has shown that the most intensified situation for a police officer is a traffic stop (Silberman, 1978; Skolnick, 1966). The decisions made by police officers during a traffic stop are often difficult, recurring, and limited due to time, space, and resources that cause a great amount of ambiguity in reaching an acceptable decision.

In the course of a traffic stop, a police officer will have limited and inconclusive information about the character of the person stopped. The information available to police officers comes from many sources and may lead to an "overload" for the officer. Like judges, officers could create a shorthand to deal with this problem and simplify traffic stop decision-making. Smith and Alpert (2007) found that police officers create profiles of citizens based on their interactions with and the social identities of certain

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individuals. These profiles were typically based on a person's race, yet were also influenced based on the gender and age of the individual (Smith & Alpert, 2007). Smith et al. (2006) found that police officers were more suspicious of male drivers and Black and Hispanic drivers during a traffic stop.

Evidence has shown that police officers are also influenced by media portrayals of criminals, tied to a specific race and creating a racial typification for individuals (Bobo, Kluegel, & Smith, 1997; Chiricos, Welch, & Gertz, 2004; Tillyer & Hartley, 2010; Weitzer & Tuch, 2006). The result of a traffic stop could reinforce such profiles of individuals from certain racial groups. The focal concerns theory components allow an officer to judge a person's character and what kind of behavior he or she expects a person to display. For example, Tillyer and Hartley (2010) stated that an officer's experience helps create an unconscious profile that could influence an officer's decision-making when conducting a search.

Focal concerns theory can aid in explaining police officers' decision-making during traffic stops for citation, search, and consent search. Racial profiling studies have shown that racial disparities exist in officers' decision-making for these outcomes (Higgins et al., 2008; Novak, 2004; Schafer et al., 2006). Focal concerns theory may explain why and how police officers make these decisions. A police officer's decision to do a search raises the intrusiveness and seriousness of the traffic stop for the driver because it changes the situation from traffic violation to a possible criminal offense. However, the power of an officer to conduct a search is subject to legal limits. In order for a search to take place, it must meet the legal requirement of probable cause (i.e., observation of some evidence that the driver or passengers are committing a crime, such

as drugs, alcohol, or firearms in plain view or the burning odor of marijuana) (Brinegar v. United States, 1949).

A voluntary consent search may take place and would eliminate the need for probable cause (Schneckloth v. Bustamonte, 1973). Totman and Steward (2006) argued that a consent search is the definitive example of police search discretion because the officer is not "duty bound" to do a search. Focal concerns theory could provide the theoretical basis needed to explain police officers' decision-making during a traffic stop where the outcome is consent search.

Higgins, Vito, and Grossi (2012) presented the only study that has applied focal concerns theory as a theoretical explanation for racial profiling for police officer decision-making during traffic stops. The study looked at traffic stops made by the Louisville, Kentucky Police Department. The sample comprised 3,717 traffic stops made from January 1, 2002 to December 31, 2002. The study found that Black drivers were more likely to give consent for a search than White drivers. Police officers were more likely to search drivers when contraband was in plain view, which offers evidence of the focal concerns theory component blameworthiness. White drivers were viewed as more of a danger based on blameworthiness than Black drivers. The current dissertation extends the findings of the Higgins, Vito, and Grossi (2012) study by applying focal concerns theory to the traffic stop outcomes of citation, search, and consent search.

Using focal concerns theory is an advance in the literature because it provides a theoretical premise to help explain racial profiling. This dissertation proposes to advance the work of Higgins, Vito, and Grossi (2012) by using propensity score matching as the statistical technique. Detailed below, propensity score matching helps researchers turn

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their cross-sectional data into quasi-experimental design data, thus allowing the researcher to draw causal implications from the results.

Propensity Score Matching in Racial Profiling

This section describes the methodology used in this dissertation. Matching refers to identifying a person in a treatment group who shares similar measurable characteristics with a person in a control group based on a relevant research question (Apel & Sweeten, 2010). Propensity score matching is a data reduction technique to match individuals to treatment and control groups based on a large number of characteristics before further analysis takes place (Apel & Sweeten, 2010). The result is a quasi-experimental design. The process of propensity score matching begins with propensity score estimation and continues by assessing the matching quality, estimating the treatment effects, performing sensitivity analysis, and post-propensity score estimation analysis.

> **Propensity score estimation.**

Rosenbaum and Rubin (1983, 1985) argued that the process of propensity score matching could take place in several different ways. Guo and Fraser (2015) showed that the common process for estimating propensity score matching begins with an understanding of the treatment measure. The treatment measure is the measure used for balancing. In propensity score matching, balancing involves making sure that individuals who are put in the treatment group are statistically equivalent to individuals put in the control group for all background factors relevant to estimating the causal effect (e.g., race of the driver) that interests the researcher (Apel & Sweeten, 2010). If balance is achieved, then the individuals put into the treatment group are then independent of potential outcomes (Apel & Sweeten, 2010). The understanding of the treatment measure refers to

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gathering all of the measures related to the treatment measure. According to Caliendo and Kopeing (2008), gathering and using all of the measures related to the treatment allows for unconfoundedness. The likelihood of gathering all of the measures for this property is unlikely to occur. One method of avoiding this problem is using a theoretical premise.[2] In the present dissertation, race will be the treatment measure and focal concerns theory is the theoretical premise.[3] Obviously, randomly assigning someone to a particular race is not plausible, so this study will attempt to locate similarly situated individuals for the experimental and control groups.

Gou and Fraser (2015) explained that one method of generating the propensity score is logistic regression. The logistic regression creates an odds ratio for each of the independent measures related to the treatment measure. The odds ratio is used to calculate the propensity score.

Four matching algorithms (i.e., nearest neighbor, caliper matching, radius matching, and stratification matching) can estimate the propensity score matching between the treatment and control groups. The first is nearest neighbor matching. This matching is made by closeness of the propensity score with one person being chosen from the treatment group matched with one person from the control group (Caliendo & Kopeing, 2008). Matching can also be done using two replacement methods: (a)

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[2]Rubin and Thomas (1996) stated that variables should be excluded only if the variable is unrelated and not a proper covariate. According to Heckman, Ichimura, Smith, and Todd (1998), Heckman and Smith (1999), and Black and Smith (2004), three strategies can be used when estimating the propensity score. First, the hit or miss method is used to impact the within-sample correct prediction rate (Heckman et al., 1998). Second, inclusion of the variable is based on whether it is statically significant, which increases the prediction rate for the model (Heckman et al., 1998). Third, Black and Smith (2004) started with a model containing two variables. They then added additional variables to see if the variables provide a better goodness-of-fit than if the variable was excluded.

[3]Using a theory helps control the number of measures used in a study. The number of measures used is important because it can cause an over-parameterized model. Bryson, Dorsett, and Purdon (2002) provided two reasons over-parameterized models should not be used: (a) including too many variables could exacerbate support for the model and (2) including too many variables may increase the variance.

matching "with replacement" where a person is taken from each group for comparison and (b) matching "without replacement" where a person is taken from each group for comparison but then can be chosen again at a later time (Caliendo & Kopeing, 2008).

The second algorithm is caliper matching, which describes the situation when a person is matched from the comparison and control group based on lying with a range of the propensity score (Caliendo & Kopeing, 2008). Radius matching is the third matching algorithm and is similar to caliper matching. However, radius matching allows for oversampling of good matches when it is possible (Caliendo & Kopeing, 2008). The final matching approach is stratification matching, where each propensity score is given a certain interval where a given person can be put into the treatment or control group (Caliendo & Kopeing, 2008).

Assess the matching quality.

After the propensity score is generated and the matching takes place, the researcher must assess balance. Assessing the balance is the equivalent of examining the quality of the matching process. To have statistical control, the researcher must match individuals on similar unobserved characteristics into a treatment group and a control group (Rosenbaum & Rubin, 1983, 1985). The data must have balance between the treatment and control groups for all relevant variables (Rosenbaum & Rubin, 1983, 1985). Once matching has taken place based on the propensity score, the researcher must assess the quality of the match. The standardized bias can be used to assess the marginal distributions between the variables that assess balance based on the standardized bias (SB). The standardized bias should be computed first before the matching and then after the matching. The covariate is properly balanced if, after matching, the standardized bias

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falls in the range of -10 to 10 (Rosenbaum & Rubin, 1983, 1985). This test shows if balancing of variables has been achieved.

Estimate the treatment effects.

Once the balance is assessed, the researcher must estimate the treatment effects. Three methods exist when estimating the treatment effect parameters. The first is a regression method that involves controlling for the propensity score in a model that also includes the treatment group as a dummy variable (Apel & Sweeten, 2010). What the researcher is looking for is the average treatment effect (ATE) and to see the impact of the beta (β) coefficient. Second, the stratification method divides the sample into similar subclasses within propensity score range (Apel & Sweeten, 2010). This method allows for closer differences between the treatment and control group but results in cases being poorly matched. The third matching method used by researchers matches treatment and control group based on similar propensity scores (Apel & Sweeten, 2010). Nearest neighbor matching is the simplest form and involves matching treatment and control group based on the how close the propensity scores are. Researchers may also match multiple nearest neighbors referred to as many-to-one matching (e.g., 2-to-1, 3-to-1). Caliper matching is another form and is based on a specified number matching propensity scores in a range for the treatment and control group (Apel & Sweeten, 2010). Kernel matching allows for differential weighting by distance for treatment and control group (Apel & Sweeten, 2010).

Sensitivity analysis.

Sensitivity analysis needs to be considered when using propensity score matching. The issue of "hidden bias" could be a factor in the research if unobserved variables could

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affect assigning individuals into a treatment and control group simultaneously (Caliendo & Kopeinig, 2008). To deal with "hidden bias," Rosenbaum (2002) created the bounding approach that allows the researcher to see what impact an unmeasurable variable must have to influence the selection process that could challenge the matching of the treatment and control groups. If hidden bias were a factor, then two similarly situated individuals would have a different probability of being in the treatment group. The following section reviews the literature on studies done on racial profiling that have applied propensity score matching.

Literature on Propensity Score Matching and Racial Profiling

The racial profiling literature has rarely used propensity score matching. In fact, only two studies to date have used propensity score matching to analyze racial profiling. Ridgeway (2006) examined traffic stops made for dangerous and non-dangerous moving violations and mechanical/registration violations. The study comprised 7,607 vehicle stops by the Oakland Police Department between June 15, 2003 and December 30, 2003. Three comparison groups were constructed. First was a comparison of Black drivers to similarly situated non-Black drivers. Consent searches and pat searches were similar for both Black and non-Black drivers. Black drivers were twice as likely to have a probable cause search as non-Black drivers. The second comparison performed was Black drivers to similarly situated White drivers. The researcher found that consent searches were similar for Black and White drivers. Pat-down searches were six times more likely for Black drivers than White drivers. Black drivers were more likely to have a probable cause search than White drivers. The third comparison examined White drivers to all

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non-White drivers. Non-White drivers were more likely to be pat searched than similarly situated White drivers (Ridgeway, 2006).

Higgins, Jennings, Jordan, and Gabbidon (2011) used the PPCS (2005), a national survey that examined citizens' interactions with the police. The sample (*N*= 3,568) comprised individuals who said they were the driver during a traffic stop with the police in the past year. Before using propensity score matching, the authors found that Black respondents were more likely to be searched than Whites. After using propensity score matching, they found no significant differences between Black and White respondents. Before using propensity score matching, they likewise found that Hispanics were searched more often than Whites. After using propensity score matching, no differences existed (Higgins et al., 2011). Higgins et al. (2011) concluded that police behavior could still be influenced by negative or criminal stereotypes when stopping Black motorists. Despite these research findings, minority motorists could still have negative perceptions of the police that may influence their view of a traffic stop.

Current Study

The literature review showed that theoretical explanations of racial profiling have not been used extensively to explain police officer decision-making in studying racial profiling. This dissertation applies focal concerns theory to explain police officer decision-making in traffic stop outcomes through the use of propensity score matching. This dissertation examines how focal concerns theory could explain racial profiling. Propensity score matching allows for three types of analysis. First, it facilitates the matching of similarly situated White and Black drivers. Second, it performs the same function for similarly situated male White and Black drivers. Third, it examines similarly

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situated female White and Black drivers. This method of analysis extends Higgins, Vito and Grossi (2012) study by adding propensity score matching to consider the effects of focal concerns theory upon traffic stop outcomes (i.e., citation, search, and consent search) among comparable racial groups and comparable male and female racial groups.

This dissertation seeks to answer three research questions:

- Research Question 1: What is the relationship between focal concerns theory concepts and traffic stop outcomes?

Research question 1 applies focal concerns theory as theoretical explanation for police officer decision-making during a traffic stop.

- Research Question 2: What is the relationship between race and traffic stop outcomes?

Propensity score matching makes it possible to examine racial differences in traffic stop outcomes between similarly situated White and Black drivers.

- Research Question 3: What is the relationship between gender and race and traffic stop outcomes?

The gender of the driver will also be considered in conjunction with race to see if differences exist by race and gender.

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CHAPTER 3: METHODOLOGY

This chapter describes the methodology used in this dissertation and the
background information for why the data was collected. An explanation of the data
collection process is provided. The coding of the independent and dependent variables is
explained.

Background

The Louisville Division of Police created a policy prohibiting the use of profiling
in December 2000. The policy included a definition of profiling, procedures for
collecting data during traffic stops, supervisor responsibilities, training reporting, and
disciplinary procedures. This policy defined profiling as the "targeting of people based
solely on their race, ethnicity, gender, sexual orientation, religion, socioeconomic status,
or disability; or a process that motivates the initiation of a traffic stop, detention, and/or
other law enforcement activity based solely on an individual's actual or perceived race,
ethnicity, gender, sexual orientation, religion, socioeconomic status, or disability, or other
characteristics attributed to an individual as a member of such group; or making
discretionary decisions during the course of an enforcement activity based upon race,
ethnicity, gender, sexual orientation, religion, socio-economic status, or other
characteristics attributed to an individual as a member of such group (Chapter 3, Section
III, Article 98, LPD Policy & Procedure Manual)." The department collected traffic stop
data to see if officers were following the policy.

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Data

This study examines traffic stop data collected by the Louisville Police Department between January 1 and December 31, 2002. The data were coded onto a two-sided Scantron form. Individual officers who made stops completed the forms, and their supervisors then reviewed these forms. After the district supervisors completed their reviews, the forms went to staff services to examine the completeness and accuracy of each form. Any form containing errors or incomplete information was returned to the district to be corrected. The Scantron forms were then scanned directly into a database. The database was converted to the Statistical Package for Social Science (SPSS) 11.0. Incomplete forms were removed from the dataset.

The data form follows Fridell's (2004) recommendations to police departments for collecting data on traffic stop searches. The form records: (a) whether a search was conducted, (b) whether contraband in plain view was a factor in the search, (c) whether a canine was used to detect drugs,[4] (d) whether the driver consented to the search, (e) what items were found as a result of the search (e.g., money, weapons, drugs, stolen property, etc.), and (f) what was searched (e.g., vehicle, property, and/or passengers). Information that was also collected included the legal authority for the search (i.e., probable cause, consent, or warrant) (Engel, Klahm, & Tillyer, 2010; Fridell, 2004).

Measures

This dissertation has three dependent variables based on traffic stop outcomes (i.e., citation, search, and consent search). The independent measures for this study are primarily based on the theoretical concepts of focal concerns theory (i.e.,

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[4] The drug dog indicates if drugs are present. However, this variable is not used in this dissertation. The dissertation is focused only on drugs in plain view and the smell or odor of drugs or alcohol.

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blameworthiness, protection of the community, and practical constraints and

consequences) and control measures.

Dependent Measures

The first dependent measure for this study was whether a citation was given.

Whether the individual was given a citation was coded as 0 for no and 1 for yes. The

purpose for examining citations is that issuing a citation is an action that a police officer

can take against a citizen. The second dependent measure for this study based on

probable cause was whether a search took place. This variable was coded as 0 for no and

1 for yes depending on whether a search took place. Analyzing searches is important

because a search is an invasive police action, and it can explain why a police officer

would conduct a search. The final dependent measure for this study was whether a

consent search took place. A consent search was coded as 0 for no and 1 for yes. The

consent search should be examined because it is the citizen who decides if a consent

search takes place, which takes away the decision-making ability of the officer.

Independent Measures

According to Steffensmeier et al. (1998), blameworthiness is the culpability of the

individual and that the punishment should fit the crime. Culpability is not always a clear

issue in the racial profiling literature. A police officer's job is not to determine the guilt

of a citizen, and guilt is the root of culpability. The closest an officer comes to

determining guilt is establishing probable cause. When an officer is establishing

probable cause, a sliding scale may be used based on the amount of evidence that is

present. An individual is considered blameworthy once an officer has enough probable

cause present. In this dissertation, blameworthiness is operationalized using two items.

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During the traffic stop, each officer reported two different pieces of information: (a) whether contraband was in plain view and (b) whether the officer was able to smell the odor of drugs. Each item response was coded as 0 for no and 1 for yes. The minimum for this measure is 0, and the maximum is 2 (Higgins, Vito, & Grossi, 2012). On the scale, higher scores show a greater level of blameworthiness.

Protection of the community is based on the goals of incapacitation and general deterrence. Protection of the community is an assessment of an offender's future behavior, such as if the person is a danger to society (Steffensmeier et al., 1998). To measure the dangerousness of an individual, the study examines whether a warrant check was performed. If a warrant check took place, this measure was coded as 0 for no and 1 for yes. An officer is protecting the community when performing a warrant check (Higgins, Vito, & Grossi, 2012). Performance of the warrant check is a proxy that the officer is concerned with the protection of the community. At the time of data collection, the chief had directed the police in Louisville to conduct a check to see if any warrants (felony or misdemeanor) were outstanding for the driver of the vehicle. The warrant check consists of running the license plate; if the warrant check was positive, the officer would stop the vehicle (Grossi, Vito, & West, 2003). This action does not affect the probability that the citizen would be cited, searched, or be asked to conduct a consent search.

In sentencing research, practical constraints and consequences are the organizational costs incurred by the criminal justice system, such as the disruption of ties between children and family members, and the potential impact that offender recidivism has on public distress (Steffensmeier et al., 1998). In this dissertation, two items are used

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to measure this concept. First, did the officer have preexisting knowledge of the individual? Second, was there a call for service? The practical constraints and consequences for an officer is the duty to answer the call for service and/or investigate the known individual who has been stopped. The two items are combined to create a scale that goes from 0 to 2 with higher scores showing the police officer is more likely to pursue an investigation (Higgins, Vito, & Grossi, 2012).

According to Tillyer and Hartley (2010), demographic measures help make important distinctions and identify potential interactions. This dissertation has five proxy measures. First, gender is coded as 0 for female and 1 for male. Second, the race of the driver is coded as 0 for White and 1 for Black. Third, residency is coded as 0 for non-city resident and 1 for city resident. Fourth, the race of the officer is coded as 0 for White and 1 for Black. The final control measure (age) is left as an open-ended measure.

Analysis Plan

Propensity score matching is the statistical approach used in this dissertation to analyze the racial profiling data of the Louisville Police Department. Propensity score matching takes place in five steps. The first step is to calculate the descriptive statistics for all measures. These will show the distribution of the data. The descriptive statistics will provide the minimum, maximum, mean, standard deviation, variance, skewness, and kurtosis of the data. When examining the descriptive statistics, the researcher interprets the mean value for each measure. Skewness and kurtosis are examined to see if the measures are normally distributed. If skewness is measured at >3 or <10 and the kurtosis is <3 or <-10, the measures are normally distributed (Field, 2013).

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The second step is to calculate a logistic regression model. It produces odds ratios that determine the propensity for experiencing a treatment. The treatment used in this dissertation is race. Propensity score matching balances the independent measures based on racial group. The balancing on race is based on White and Black drivers.

The third step is for matching individuals, and this study uses the nearest neighbor technique. It allows for 1-to-1 matching of individuals. A caliper (i.e., standard deviation) of 0.20 is used in this dissertation. The caliper matches similarly situated White and Black drivers based on the traffic stop outcomes of citation, probable cause search, and consent search. The fourth step is to assess the quality of the matching. This dissertation will use Rosenbaum and Rubin's (1985) approach to standardized biases. The standardized bias must fall between 10 and -10 in order for the propensity score matching to be acceptable.

In the fifth step, the researcher conducts a logistic regression on the weighted matches of the propensity score. The logistic regression analysis allows for an interpretation of the odds ratio based on the propensity score. The odds ratio accounts for the matching because the independent variable in the regression is the treatment assignment.

This five-step analysis is conducted on three different groups of drivers. First, all similarly situated[5] White and Black drivers are examined to answer research questions one and two. Research question 1 is addressed because this analysis investigates whether focal concerns theory can explain differences in traffic stop outcomes. Research question 2 is addressed because this comparison examines how the race of the driver along with

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[5] The term *similarly situated* means that all drivers will be matched based on all variables. Similarly situated drivers will be in the caliper range of 0.20. This means that the individuals will be similar on each one of the measures used in the study.

focal concerns theory impacts traffic stop outcomes. Second, all similarly situated White and Black male drivers are considered. The examination of this second group helps answer research questions two and three to understand the relationships between race, gender, and traffic stop outcomes. Third, all similarly situated White and Black female drivers are studied to research questions two and three. Research question 2 is addressed because this analysis examines the relationships between race and traffic stop outcomes. Research question 3 is answered because it examines gender and traffic stop outcomes. The following section is the analysis results for this dissertation

CHAPTER 4: PROPENSITY SCORE MATCHING RESULTS

Table 1 presents the descriptive statistics for this study. Citations resulted in a traffic stop for 67% of drivers. Officers conducted searches for 16% of drivers and consent searches for 7% of drivers. The mean for blameworthiness is 0.05. The mean for practical constraints and consequences is 0.04. Officers conducted protection of the community for 78% of drivers. Of the drivers examined, 34% were Black, and 70% were male. The mean driver age was 33.38 years. Regarding residency, 63% of drivers were city residents. Only 22% of the officers were Black.

Table 1: Descriptive Statistics Results

Measure	Min	Max	Mean/Percentage	SD	Skewness	Kurtosis
Citation	0 (16241)	(32345)	0.67	0.47	-0.70	-1.56
Search	0 (39767)	1 (7846)	0.16	0.37	1.81	1.27
Consent Search	0 (45404)	1 (3182)	0.07	0.25	3.51	10.34
Blameworthiness	0	2	0.05	0.23	5.68	34.88
Practical Constraints and Consequences	0	2	0.04	0.19	5.21	26.93
Protection of the Community	0 (10664)	1 (37394)	0.78	0.42	-1.34	-0.21
Race of Driver	0 (30481)	1 (15792)	0.34	0.47	0.67	-1.55
Gender	0 (14517)	1 (33675)	0.70	0.46	-0.87	-1.25
Driver Age	16	101	33.38	12.72	1.03	1.05
City Resident	0 (17351)	1 (30088)	0.63	0.48	-0.56	-1.69
Officer Race	0 (34169)	1 (9916)	0.22	0.42	1.32	-0.26

Table 2 shows that the percent bias was between -10 and 10 after matching, suggesting that bias has not occurred and that the measures are properly balanced. White and Black drivers were similarly situated in terms of the traffic stop outcome citation.

Citation and Race

Table 2: Assessment of Balance on Items Matched on Race for Citation

Measure		Mean		% Bias	
		Treated	Comparison	Before Matching	After Matching
Blameworthiness	Unmatched	0.06	0.04	8.60	0.60
	Matched	0.05	0.05		
Practical Constraints and Consequences	Unmatched	0.05	0.03	12.00	-1.00
	Matched	0.04	0.04		
Protection of the Community	Unmatched	0.84	0.76	19.40	-0.50
	Matched	0.84	0.84		
Gender	Unmatched	0.72	0.68	8.10	0.30
	Matched	0.71	0.71		
Driver Age	Unmatched	32.64	33.84	-9.50	2.10
	Matched	32.79	32.52		
City Resident	Unmatched	0.81	0.55	58.10	-0.20
	Matched	0.80	0.81		
Officer Race	Unmatched	0.22	0.23	-1.80	1.80
	Matched	0.22	0.21		

Examining the traffic stop outcome of citation[6] with race addresses research questions 1 and 2. Table 3 provides the results of the weighted logistic regression for search and race. Black drivers were 42% less likely to be cited. As the level of blameworthiness increases by one unit, the likelihood of a citation for the driver decreases by 54%. As the level of practical constraints and consequences increases by

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[6] The researcher examined the arrests on effecting the likelihood for the traffic stop outcome citation. Individuals who were arrested did not have a substantive n. What resulted is a false significance given the sample size for this dissertation.

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one unit, the likelihood of a driver being cited decreases by 82%. Protection of the community shows that drivers are 19% less likely to be cited when a warrant check is conducted. Male drivers are 24% less likely to be cited than female drivers. The driver's age was not statistically significant. City resident drivers are 45% percent less likely to be cited than non-residents. Black officers are 2.34 times more likely to cite drivers in comparison to White officers.

Table 3: Weighted Logistic Regression: Citation and Race

Measure	b	SE	Exp (b)
Race of Driver	-0.54**	0.02	0.58
Blameworthiness	-0.79**	0.02	0.46
Practical Constraints and Consequences	-1.72**	0.01	0.18
Protection of the Community	-0.21**	0.03	0.81
Gender	-0.28**	0.02	0.76
Driver Age	-0.0001	0.001	1.00
City Resident	-0.59**	0.02	0.55
Officer Race	0.85**	0.08	2.34
-2 log likelihood = -16499.65			
Chi-Square = 2593.34**			
Pseudo R^2 = 0.07			

*p<0.05 **p<0.01

The traffic stop outcome of search is being examined with race to address research questions 1 and 2. Table 4 shows the percent bias is between -10 and 10 after matching. Similarly situated White and Black drivers have achieved balance for the traffic stop outcome search.

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Search and Race

Table 4: Assessment of Balance on Items Matched on Race for Search

Measure		Mean		% Bias	
		Treated	Comparison	Before Matching	After Matching
Blameworthiness	Unmatched	0.06	0.04	8.60	0.20
	Matched	0.05	0.05		
Practical Constraints and Consequences	Unmatched	0.05	0.03	12.00	-1.80
	Matched	0.04	0.04		
Protection of the Community	Unmatched	0.84	0.77	19.30	-0.60
	Matched	0.84	0.84		
Gender	Unmatched	0.72	0.68	8.00	0.80
	Matched	0.71	0.71		
Driver Age	Unmatched	32.64	33.82	-9.30	2.50
	Matched	32.79	32.48		
City Resident	Unmatched	0.80	0.55	58.10	-0.10
	Matched	0.80	0.80		
Officer Race	Unmatched	0.22	0.23	-1.90	1.60
	Matched	0.22	0.21		

Table 5 provides the results of the weighted logistic regression for search and race. Black drivers are 1.54 times more likely to be searched than White drivers. As the level of blameworthiness increases by one unit, the likelihood of a search increases by 778.26 units. As the level of practical constraints and consequences increases one unit, the likelihood of a search increases by 6.43 units. Protection of the community makes it 9.19 times more likely that a search occurs. Male drivers are 3.14 times more likely to be

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searched than their female counterparts. A one-unit increase in driver's age makes it 2 percent less likely that a search will take place. City residents are 1.59 times more likely to be searched than non-residents. Black officers are 40% less likely to conduct a search than White officers.

Table 5: Weighted Logistic Regression: Search and Race

Measure	b	SE	Exp (b)
Race of Driver	0.44**	0.06	1.54
Blameworthiness	6.66**	297.49	778.26
Practical Constraints and Consequences	1.86**	0.47	6.43
Protection of the Community	2.22**	1.00	9.19
Gender	1.15**	0.16	3.14
Driver Age	-0.02**	0.002	0.98
City Resident	0.46**	0.09	1.59
Officer Race	-0.52**	0.03	0.60
-2 log likelihood = -10021.65			
Chi-Square = 7182.41**			
Pseudo R^2 = 0.26			

*p<0.05 **p<0.01

Research questions 1 and 2 are answered by examining the traffic stop outcome of consent search and race. Table 6 shows that the percent bias is between -10 and 10 after matching, indicating no bias and that the measures are properly balanced. White and Black drivers similarly situated for the traffic stop outcome consent search.

Consent Search and Race

Table 6: Assessment of Balance on Items Matched on Race for Consent Search

Measure		Mean		% Bias	
		Treated	Comparison	Before Matching	After Matching
Blameworthiness	Unmatched	0.06	0.04	8.60	0.60
	Matched	0.05	0.05		
Practical Constraints and Consequences	Unmatched	0.05	0.03	12.00	-1.10
	Matched	0.04	0.04		
Protection of the Community	Unmatched	0.84	0.76	19.40	-0.50
	Matched	0.84	0.84		
Gender	Unmatched	0.72	0.68	8.10	0.30
	Matched	0.71	0.71		
Driver Age	Unmatched	32.64	33.84	-9.50	2.10
	Matched	32.79	32.52		
City Resident	Unmatched	0.81	0.55	58.10	-0.20
	Matched	0.80	0.81		
Officer Race	Unmatched	0.22	0.23	-1.80	1.80
	Matched	0.22	0.21		

Black drivers are 1.37 times more likely to be the target of a consent search. As the level of blameworthiness increases by one unit, the likelihood of a consent search increases by 4.10 units. As the level of practical constraints and consequences increases by one unit, the likelihood of a consent search increases by 4.07 units. Protection of the community makes it 5.49 times more likely that a consent search will take place. Male drivers are 3.22 times more likely to have a consent search conducted than females. As a driver's age increases by one unit, it makes it 3 percent less likely a consent search will

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take place. City residents are 1.51 times more likely to face a consent search than non-residents. Black officers are 48% less likely to conduct a consent search in comparison to White officers.

Table 7: Weighted Logistic Regression: Consent Search and Race

Measure	b	SE	Exp (b)
Race of Driver	0.32**	0.06	1.37
Blameworthiness	1.41**	0.23	4.10
Practical Constraints and Consequences	1.40**	0.32	4.07
Protection of the Community	1.70**	0.77	5.49
Gender	1.17**	0.24	3.22
Driver Age	-0.03**	0.002	0.97
City Resident	0.41**	0.10	1.51
Officer Race	-0.66**	0.04	0.52
-2 Log-likelihood = -6687.49			
Chi-Square = 2228.01			
Pseudo R^2 = 0.14			

*$p<0.05$ **$p<0.01$

Based on research question 1, focal concerns theory provides a theoretical explanation for police officer decision-making involving all drivers for all three traffic stop outcomes. Blameworthiness is the first focal concerns theory component and is based on the culpability of the individual. However, a police officer's role is not to determine the guilt of the citizen. Instead, what is important to the police officer is the amount of evidence that is present during the course of a traffic stop. The more evidence that is present, the more likely the police officer views the citizen as blameworthy.

In terms of citation for all drivers, it was less likely that a driver would be cited if contraband was in plain view or if the officer could smell drugs. Instead, the citizen may have faced harsher sanctions because the amount of evidence present during the course of the traffic stop raised the seriousness of the incident. In turn, blameworthiness also helped the police officer's decision-making when conducting a search. Specifically, the amount of evidence that was present could increase the likelihood that the officer would want to search the driver and/or his or her property. Blameworthiness, for a consent search, impacted the likelihood that a consent search would take place but did not have the same influence as it did in a search.

Practical constraints and consequences is the second focal concerns theory component. For a police officer, the practical constraints and consequences represent the duty the police officer has to answer the call and/or investigate a known individual he or she has stopped. As the level of practical constraints and consequences increased, there was a greater likelihood an investigation would be pursued. In terms of citations, the practical constraints and consequences made it less likely that the driver would be cited and more likely that the driver would face harsher sanctions. In this study, the traffic stop outcome search felt the greatest impact from the practical constraints and consequences component. This finding shows that the officer may have felt it was his or her duty to conduct a search if either the stop was based on a call for service for a more serious crime or the officer knew the individual that was stopped, or if both factors were involved. In terms of consent search, the practical constraints and consequences component made it more likely that a consent search would take place but did not have the same impact that was found for a search. However, during a consent search, an officer is not "duty" bound

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to conduct a search. Instead, a consent search may take place because there is a rapport with the driver and the driver may feel obligated.

Protection of the community is the final component of focal concerns. In terms of this study, an officer is protecting the community by conducting a warrant check. Results show the traffic stop outcome citation was less likely to take place when a warrant check was conducted. A warrant check made it more likely that a search or consent search would take place. Of the two, the warrant check had the greatest impact on a search.

Based on the results for the traffic stop outcomes of citation, search, and consent search for all drivers, several conclusions can be made. The results show there are racial disparities for the traffic stop outcomes of search and consent search. These findings answer research question 2. These disparities show that Black drivers are more likely to be searched and have a consent search take place. Thus, even if the police officer's decision-making is based on focal concerns theory, Black drivers are more likely to be searched and consent searched.

To address research questions 2 and 3, the traffic stop outcome of citation in conjunction with the race of the driver and the driver being female were examined. Table 8 presents the propensity score matching results on race for female drivers with the outcome citation and shows that bias has not occurred (i.e., the percent bias is between -10 and 10 after matching). All similarly situated female White and Black drivers were properly balanced for the traffic stop outcome citation.

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Citation, Female, and Race

Table 8: Assessment of Balance on Items Matched on Race for Female and Citation

Measure		Mean		% Bias	
		Treated	Comparison	Before Matching	After Matching
Blameworthiness	Unmatched	0.02	0.02	-1.40	3.80
	Matched	0.02	0.01		
Practical Constraints and Consequences	Unmatched	0.03	0.02	5.40	1.30
	Matched	0.03	0.03		
Protection of the Community	Unmatched	0.74	0.68	14.80	-0.30
	Matched	0.74	0.75		
Driver Age	Unmatched	32.75	33.62	-7.00	-0.80
	Matched	32.76	32.85		
City Resident	Unmatched	0.80	0.58	49.20	0.10
	Matched	0.80	0.80		
Officer Race	Unmatched	0.23	0.24	-1.20	1.20
	Matched	0.23	0.23		

The race of the female driver was not a statistically significant variable. As the level of blameworthiness increases by one unit, the likelihood that a female driver receives a citation increases by 1372.94 units. As the level of practical constraints and consequences increases by one unit, the likelihood that a female driver receives a citation increases by 7.84 units. Protection of the community makes it 14.35 times more likely that a female driver receives a citation. As the driver's age increases by one unit, it makes it 1% less likely that a female driver will receive a citation. City resident, female

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drivers are 1.49 times more likely to be cited than non-residents. Black officers are 53%

percent less likely to cite female drivers than White officers.

Table 9: Weighted Logistic Regression: Race on Female and Citation

Measure	b	SE	Exp (b)
Race of Driver	-0.05	0.09	0.95
Blameworthiness	7.22**	1421.04	1372.94
Practical Constraints and Consequences	2.06**	1.30	7.84
Protection of the Community	2.66**	4.14	14.35
Driver Age	-0.02**	0.001	0.99
City Resident	0.40**	0.20	1.49
Officer Race	-0.75**	0.07	0.47
-2 Log-likelihood = -1686.30			
Chi-Square = 953.03**			
Pseudo R^2 = 0.22			

*p<0.05, **p<0.01

Examining the traffic stop outcome search in conjunction with the race of the

driver and the driver being female addresses research questions 2 and 3. Table 10 shows

the results of the propensity score matching on race for female and search. The percent

bias is between -10 and 10 after matching, indicating that the measures are properly

balanced for similarly situated female White and Black drivers for the traffic stop

outcome search.

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Search, Female, and Race

Table 10: Assessment of Balance on Items Matched on Race for Female and Search

Measure		Mean		% Bias	
		Treated	Comparison	Before Matching	After Matching
Blameworthiness	Unmatched	0.02	0.02	-1.60	3.60
	Matched	0.02	0.01		
Practical Constraints and Consequences	Unmatched	0.03	0.02	5.20	1.50
	Matched	0.03	0.03		
Protection of the Community	Unmatched	0.74	0.68	14.80	-0.20
	Matched	0.74	0.75		
Driver Age	Unmatched	32.77	33.59	-6.70	-0.40
	Matched	32.77	32.83		
City Resident	Unmatched	0.80	0.58	48.90	0.10
	Matched	0.80	0.80		
Officer Race	Unmatched	0.23	0.24	-1.40	1.0
	Matched	0.23	0.23		

The race of the driver was not statistically significant. As the level of blameworthiness increases by one unit, female drivers are 1375.74 times more likely to be searched. As the level of practical constraints and consequences increases by one unit, female drivers are 7.61 times more likely to be searched. Protection of the community makes it 14.49 times more likely that a female driver will be searched. As a female driver's age increases by one unit, makes it 1% less likely she will searched. If the female driver is a city resident, she is 1.46 times more likely to be searched than a non-resident. Black officers are 53% less likely to search female drivers than White officers.

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Table 11: Weighted Logistic Regression: Race on Female and Search

Measure	b	SE	Exp (b)
Race of Driver	-0.06	0.09	0.95
Blameworthiness	7.23**	1424.23	1375.74
Practical Constraints and Consequences	2.03**	1.27	7.61
Protection of the Community	2.67**	4.18	14.49
Driver Age	-0.01**	0.004	0.99
City Resident	0.39**	0.20	1.48
Office Race	-0.76**	0.07	0.47
-2 Log-likelihood = -1694.05			
Chi-Square = 948.46**			
Pseudo R^2 = 0.22			

*$p<0.05$, **$p<0.01$

Examining consent search in conjunction with the race of the driver and the driver being female addresses research questions 2 and 3. Table 12 shows that bias has not occurred because the percent bias falls in the range of -10 and 10 after matching. The results show that the traffic stop outcome consent search involves similarly situated White and Black female drivers.

Consent Search, Female, and Race

Table 12: Assessment of Balance on Items Matched on Race for Female and Consent

Search

Measure		Mean		% Bias	
		Treated	Comparison	Before Matching	After Matching
Blameworthiness	Unmatched	0.02	0.02	-1.40	3.80
	Matched	0.02	0.01		
Practical Constraints and Consequences	Unmatched	0.03	0.02	5.40	1.30
	Matched	0.03	0.03		
Protection of the Community	Unmatched	0.74	0.68	14.80	-0.30
	Matched	0.74	0.75		
Driver Age	Unmatched	32.75	33.62	-7.00	-0.80
	Matched	32.76	32.85		
City Resident	Unmatched	0.80	0.58	49.20	0.10
	Matched	0.80	0.80		
Officer Race	Unmatched	0.23	0.24	-1.20	1.20
	Matched	0.23	0.23		

The race of the driver was not statistically significant. As the level of

blameworthiness increases by one unit, it is 13.54 times more likely that a female driver

is the subject of a consent search. As the level of practical constraints and consequences

increases by one unit, female drivers are 5.74 times more likely to have a consent search

take place. Protection of the community makes it 9.45 times more likely that a female

driver will have a consent search take place. As the female driver's age increases by one

unit, it makes it 2% less likely that a consent search occurs. If the female driver is a city

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resident, it is 1.52 times more likely that a consent search occurs in comparison to a non-resident. A Black officer is 55% less likely to conduct a consent search with a female driver than a White officer.

Table 13: Weighted Logistic Regression: Race on Female and Consent Search

Measure	b	SE	Exp (b)
Race of Driver	-0.18	0.12	0.84
Blameworthiness	2.61**	2.94	13.54
Practical Constraints and Consequences	1.75**	1.30	5.74
Protection of the Community	2.25**	3.98	9.45
Driver Age	-0.02*	0.007	0.98
City Resident	0.42*	0.32	1.52
Officer Race	-0.80**	0.10	0.45
-2 Log-likelihood = -818.94			
Chi-Square = 295.50**			
Pseudo R^2 = 0.15			

*$p<0.05$ **$p<0.01$

The analysis for race of the driver in conjunction with the driver being female with all three traffic stop outcomes was conducted to address research question 3. The results show there was no racial disparity for all three traffic stop outcomes when the driver was female. What this finding shows is that race was not an important factor for any of the traffic stop outcomes when the driver was a female.

All three focal concerns theory components were predictors for all three traffic stop outcomes in conjunction with the race and the driver being female. Blameworthiness is the amount of evidence that is present. A police officer was most

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greatly affected in his or her decision-making based on the evidence present in plain view or the odor of drugs during a citation and search. This finding indicates that police officers may feel that female drivers are not as dangerous and may need greater amounts of evidence to convince the officer to cite a female driver or to conduct a search of a female driver.

Practical constraints and consequences is the second component and refers to the officer responding to a call for service and/or having preexisting knowledge of the driver he or she has stopped. Higher scores made it more likely that an officer would pursue an investigation. The findings were similar for all three traffic stop outcomes involving similarly situated Black and White female drivers. When the police officer conducted a warrant check (i.e., protection of the community), the officer was more likely to cite, search, or conduct a consent search of female White and Black drivers. Conducting warrant checks (i.e., protection of the community) had the greatest impact for citation and search for Black and White female drivers.

The results show that racial disparity does not exist for female drivers. However, the results also show that police officers may treat female drivers differently. Gender disparity exists because police officers treat female drivers differently for the traffic stop outcomes citation, search, and consent search.

Examining the traffic stop outcome of citation in conjunction with the race of the driver and the driver being male addresses research questions 2 and 3. Table 14 presents the propensity score matching on race for male and citation. The percent bias is between -10 and 10 after matching, so bias has not occurred. The measures are properly balanced for all similarly situated White and Black drivers for the traffic stop outcome citation.

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Citation, Male, and Race

Table 14: Assessment of Balance on Items Matched on Race for Male and Citation

Measure		Mean		% Bias	
		Treated	Comparison	Before Matching	After Matching
Blameworthiness	Unmatched	0.08	0.05	10.50	1.00
	Matched	0.07	0.07		
Practical Constraints and Consequences	Unmatched	0.06	0.03	13.70	-2.30
	Matched	0.04	0.05		
Protection of the Community	Unmatched	0.88	0.81	20.50	-0.50
	Matched	0.88	0.88		
Driver Age	Unmatched	32.59	33.95	-10.60	1.50
	Matched	32.81	32.61		
City Resident	Unmatched	0.81	0.53	62.20	-0.30
	Matched	0.81	0.81		
Officer Race	Unmatched	0.22	0.22	-1.90	1.30
	Matched	0.22	0.21		

Black male drivers are 1.68 times more likely to receive a citation. As the level of blameworthiness increases by one unit, male drivers are 786.97 times more likely to receive a citation. As the level of practical constraints and consequences increases by one unit, it is 5.76 times more likely that a male driver receives a citation. Protection of the community makes it 7.50 times more likely that a male driver is cited. As the male driver's age increases by one unit, it makes it 2% less likely that the driver will receive a citation. If the male driver is a city resident, he is 1.62 times more likely to be cited. A Black officer is 38% less likely to cite male drivers than a White officer.

Table 15: Weighted Logistic Regression: Race on Male and Citation

Measure	b	SE	Exp (b)
Race of Driver	0.52**	0.07	1.68
Blameworthiness	6.67**	354.23	786.97
Practical Constraints and Consequences	1.75**	0.47	5.76
Protection of the Community	2.01**	0.86	7.50
Driver Age	-0.02**	0.002	0.98
City Resident	0.48**	0.09	1.62
Officer Race	-0.47**	0.03	0.62
-2 log-likelihood = -8331.38			
Chi-Square = 4907.34**			
Pseudo R^2 = 0.23			

*$p<0.05$, **$p<0.01$

Research questions 2 and 3 are addressed by examining the traffic stop outcome search in conjunction with the race of the driver and the driver being male. Table 16 shows the results for the propensity score matching on race for male and search. Because the percent bias is between -10 and 10 after matching, balance has occurred. The measures are properly balanced for all similarly situated male White and Black drivers for the traffic stop outcome search.

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Search, Male, and Race

Table 16: Assessment of Balance on Items Matched on Race for Male and Search

Measure		Mean		% Bias	
		Treated	Comparison	Before Matching	After Matching
Blameworthiness	Unmatched	0.08	0.05	10.50	0.80
	Matched	0.07	0.07		
Practical Constraints and Consequences	Unmatched	0.06	0.04	13.70	-2.50
	Matched	0.04	0.05		
Protection of the Community	Unmatched	0.88	0.81	20.30	-0.70
	Matched	0.88	0.88		
Driver Age	Unmatched	32.59	33.92	-10.40	1.70
	Matched	32.81	32.59		
City Resident	Unmatched	0.81	0.53	62.30	-0.20
	Matched	0.81	0.81		
Officer Race	Unmatched	0.21	0.22	-1.90	1.10
	Matched	0.21	0.21		

Black drivers are 1.69 times more likely to be searched. As the level of blameworthiness increases by one unit, male drivers are 565.94 times more likely to be searched. As the level of practical constraints and consequences increases by one unit, a search of a male driver is 5.72 times more likely. Protection of the community makes it 7.71 times more likely that male driver will have a search take place. As the male driver's age increases one unit, it makes it 2% less likely that a search will take place. If the male driver is a city resident, he is 1.61 times more likely to be searched. A Black officer is 37% less likely to search a male driver in comparison to a White officer.

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Table 17: Weighted Logistic Regression: Race on Male and Search

Measure	b	SE	Exp (b)
Race of Driver	0.52**	0.06	1.69
Blameworthiness	6.34**	215.94	565.94
Practical Constraints and Consequences	1.75**	0.46	5.72
Protection of the Community	2.04**	0.89	7.71
Driver Age	-0.02**	0.002	0.98
City Resident	0.48**	0.09	1.61
Office Race	-0.47**	0.03	0.63
-2 Log-likelihood = -8333.81			
Chi-Square = 4892.42**			
Pseudo R^2 = 0.23			

$*p<0.05$ $**p<0.01$

Examining the traffic stop outcome consent search in conjunction with the race of the driver and the driver being male can address research questions 2 and 3. Table 18 shows the results of the propensity score matching on race for male and consent search. Bias has not occurred because the standardized bias is in the range of -10 and 10 after matching. The results show that all similarly situated male White and Black drivers for the traffic stop outcome consent search.

Consent Search, Male, and Race

Table 18: Assessment of Balance on Items Matched on Race for Male and Consent
Search

Measure		Mean		% Bias	
		Treated	Comparison	Before Matching	After Matching
Blameworthiness	Unmatched	0.08	0.05	10.50	1.00
	Matched	0.07	0.07		
Practical Constraints and Consequences	Unmatched	0.06	0.03	13.70	-2.30
	Matched	0.04	0.05		
Protection of the Community	Unmatched	0.88	0.81	20.50	-0.50
	Matched	0.88	0.88		
Driver Age	Unmatched	32.59	33.95	-10.60	1.50
	Matched	32.81	32.61		
City Resident	Unmatched	0.81	0.53	62.20	-0.30
	Matched	0.81	0.81		
Officer Race	Unmatched	0.22	0.22	-1.90	1.30
	Matched	0.22	0.21		

Black male drivers are 1.50 times more likely that a consent search take place. As
the level of blameworthiness increases by one unit, male drivers are 3.84 times more
likely to have a consent search take place. As the level of practical constraints and
consequences increases by one unit, male drivers are 3.82 times more likely to have a
consent search occur. Protection of the community makes it 4.04 times more likely that a
male driver will have a consent search take place. As the male driver's age increases one
unit, it makes it 3% less likely that a consent search occurs. If the male driver is a city
resident, he is 1.62 times more likely to be the target of a consent search than a non-

resident. A Black officer is 46% less likely to conduct a consent search of a male driver than a White officer.

Table 19: Weighted Logistic Regression: Race on Male and Consent Search

Measure	b	SE	Exp (b)
Race of Driver	0.40**	0.08	1.50
Blameworthiness	1.35**	0.22	3.84
Practical Constraints and Consequences	1.34**	0.32	3.82
Protection of the Community	1.40**	0.56	4.04
Driver Age	-0.03**	0.002	0.97
City Resident	0.48**	0.12	1.62
Officer Race	-0.63**	0.04	0.54
-2 Log-likelihood = -5773.70			
Chi-Square = 1394.62**			
Pseudo R^2 = 0.11			

*p<0.05, **p<0.01

Analyzing male drivers for all three traffic stop outcomes was conducted to address research question 3. This study found that racial disparity existed among male drivers. The results show that Black male drivers were more likely to be cited, searched, and consent searched compared to White male drivers. This finding reveals that, even amongst male drivers, race is an issue. Despite including focal concerns theory as a theoretical explanation for police officer decision-making, race is still a factor.

All three focal concerns theory components are significant and provide theoretical explanations for police officer decision-making. Blameworthiness for the police officer is how much evidence is present during the traffic stop. Blameworthiness had the

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greatest impact on both citations and searches for male drivers. This finding reveals that blameworthiness played a role in police officer decision-making for male drivers.

Practical constraints and consequences refers to situations in which the officer conducts a stop based on a call for service and/or has preexisting knowledge of the driver stopped. These factors played a role in a police officer's decision-making for male drivers but did not have the same impact as blameworthiness. In terms of this study, protection of the community means conducting a warrant check. Protection of the community was the component which impacted consent searches the most. This finding may reflect situations in which the officer knew a warrant existed for the driver but gave the driver the opportunity to consent to a search. If the driver did not give his consent, then the officer would conduct a search.

CHAPTER 5: DISCUSSION

The purpose of this dissertation was to determine the impact of focal concerns theory upon traffic stops as a theoretical explanation for police officer decision-making. It also featured the use of propensity score matching as a statistical analysis method to examine similarly situated White and Black drivers. This dissertation examined the following research questions:

1. What is the relationship between focal concerns theory concepts and traffic stop outcomes?

2. What is the relationship between race and traffic stop outcomes?

3. What is the relationship between gender and race and traffic stop outcomes?

The findings led to several conclusions. First, focal concerns theory can offer a theoretical explanation for police officer decision-making during traffic stops to expand upon racial profiling studies. All three focal concerns theory components had a greater impact on all three traffic stop outcomes than race alone. Factors aside from race or gender of the driver, including what actually takes place during a traffic stop, impact traffic stop outcomes.

However, the driver's race is still an important factor in traffic stop outcomes. This study revealed evidence of racial profiling by the Louisville Police Department. Even after including the focal concerns theory, race still played a role. Black drivers were more likely to be the target of all three traffic stop outcomes.

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Third, gender along with race is a significant predictor. Male drivers were more likely to be involved in all three traffic stop outcomes. Among male drivers, Black drivers were most likely to be involved in all three traffic stop outcomes. This interaction was a significant indicator of bias. Unlike the findings in previous traffic stop studies, this study found that race was not a significant predictor of outcomes for female drivers.

The results of this study found that race of the driver did impact police officer decision-making for the traffic stop outcomes citation, search, and consent search. This finding is contradictory to Riksheim and Chermak's (1993) study that review the quantitative literature on police decision-making. Riksheim and Chermak (1993) found that race of the citizen had no effect on police officer's decision to arrest. Police officer use of force and deadly force was found to be unresolved based on the race of the citizen. While the findings of this dissertation are different this could be based on it being a different outcome of decision-making for police officers then what was analyzed by Riksheim and Chermak (1993).

Several other factors were also significant in the current study. Older drivers were less likely to be involved in all three traffic stop outcomes. Drivers who were city residents were more likely to be involved in all three traffic stop outcomes. Among these results, the most significant finding was that Black officers were less likely to be involved in all three traffic stop outcomes. Black officers may hold different perspectives than White officers that influence their traffic stop decision-making. This result underscores the need for a more diverse workforce in policing.

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All Similarly Situated White and Black Drivers

Examining all three traffic stop outcomes for all drivers using propensity score matching addresses research question 1. Blameworthiness (the amount of evidence present during a traffic stop) made it less likely that an officer would cite all Black and White drivers. This finding could show that an increase in evidence present results in a greater likelihood that a citizen faces a harsher sanction than a citation. Blameworthiness was the most important factor influencing the conducting of a search. The probability of a search was related to the amount evidence an officer could see in plain sight or smell the odor of drugs; the more that was available, the greater the likelihood of a search. However, when a consent search took place, blameworthiness did not have the same level of impact. In this situation, the officer was not "duty" bound to conduct a search, and the citizen was able to decide if the search took place.

The amount of evidence present during a traffic stop could cause information "overload." This factor may have caused police officers to create a shorthand for how they would handle the situation. According to Smith and Alpert (2007), police officers create profiles based on interactions with a citizen along with the social identity of certain citizens. This study used focal concerns theory to show that some factors are more important predictors of police officer decision-making than race alone.

Practical constraints and consequences is the second component of focal concerns theory. With this component, the relevant factors are issues like answering a call for service (because it is the officer's duty) and/or investigating a driver because the officer has preexisting knowledge about him or her. The presence of these factors made it less likely that the driver would be cited. One explanation could be that the officer was

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answering a call where a more serious crime was committed or the officer had knowledge that the driver had been involved in more serious crimes in the past and wanted to investigate the driver further. Similar findings regarding practical constraints and consequences were shown for both search and consent search. A previous study by Vito and Walsh (2008) also found that officers were more likely to search a driver who was known to them. These factors also could create a shorthand for the officer to use to deal with the amount of information present and influence the officer's decision-making during a traffic stop.

The third focal concerns theory component is protection of the community. In this study, the officer protected the community by conducting a warrant check. A citation was less likely to take place after conducting a warrant check because the driver may have committed a more serious offense. Protection of the community had a greater impact for searches compared to consent searches. However, in both outcomes, conducting a warrant check made it more likely that a search or a consent search would take place.

Even though focal concerns theory explains police officer decision-making in all three traffic stop outcomes, race is still a factor. The results show that Black drivers were more likely to be cited, searched, and have a consent search take place. Racial disparity exists, and the race of the driver impacted the traffic stop decision-making of officers examined in this dissertation. These results are similar to previous studies which found that racial minorities were more likely to be stopped by police compared to Whites (Alpert et al., 2005; Alpert et al., 2007; Engel & Calnon, 2004; Jacobs, 1979; Lundman & Kaufman, 2003; Miller, 2008; Meehan & Ponder, 2002; Novak, 2004; Novak & Chamlin,

2012; Petrocelli et al., 2003; Rojek et al., 2004; Smith et al., 2006; Stolzenberg et al., 2004; Warren et al., 2006; Withrow, 2004a, 2004b, 2007). The finding that Black drivers were more likely to be cited is also similar to previous studies (Barnum & Perfetti, 2010; Ingram, 2007; Tillyer & Engel, 2013). Likewise, the finding that Black drivers were more likely to be searched is consistent with previous findings on race and search (Barnum & Perfetti, 2010; Engel & Calnon, 2004; Higgins et al., 2008; Higgins, Vito, Grossi, & Vito, 2012; Moon & Corley, 2007; Rojek et al., 2004; Schafer et al., 2006; Withrow, 2004b). The finding that Black drivers were more likely to experience a consent search is a similar and related result (Schafer et al., 2006). What helps set this dissertation apart from the previous literature is the methodology of matching similarly situated White and Black drivers to better examine the impact of race. Even amongst drivers in similar situations, racial disparity exists.

All Similarly Situated Female White and Black Drivers

Research questions 2 and 3 are addressed from the analysis for all female White and Black drivers. Again, the focal concerns theory components explained police officer decision-making. Blameworthiness (the amount of evidence in plain view) was a significant predictor for all three traffic stop outcomes and had the greatest impact for citations and searches. Lower involvement in crime may be the reason officers drew upon blameworthiness to give a citation. Based on this view, officers may require more evidence to cite a female driver. The stereotype that women are less likely to commit crimes may also be a factor in the officer's decision to search a female driver.

Practical constraints and consequences (e.g., a call for service and/or the officer's preexisting knowledge of the driver) influenced the police officers' decisions to cite and

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search female drivers. Officers may require a more serious offense to cite or search a female driver. The study indicated that officers need preexisting knowledge of a female driver before they would issue a citation or conduct a search.

Protection of the community is the final focal concerns component and is represented by the officer's conducting a warrant check. For female drivers, the warrant check increased the likelihood of a citation or a search at a similar rate. Protection of the community was significant and impacted consent searches but not at the same level found for citations and searches.

The results for all three traffic stop outcomes on the basis of race for female drivers show that race was not a significant factor. Traffic stop outcomes where the driver was female were unaffected by racial disparity. Findings from previous literature examining race and gender bias during traffic stops support this result (Barnum & Perfetti, 2010; Farrell, 2011; Higgins et al., 2008; Higgins, Vito, Grossi, & Vito, 2012; Lundman, 1979; Smith & Petrocelli, 2001; Smith et al., 2006). Again, this study supports Smith and Alpert's (2007) conclusion that officers create profiles based on citizen interaction and their social identity. With female drivers, the use of a shorthand could be that officers believe that female drivers are less likely to be involved in criminal behavior.

All Similarly Situated Male White and Black Drivers

All male Black and White drivers were examined to address research question 3. All three focal concerns theory components were significant predictors for all three traffic stop outcomes for these groups. Blameworthiness had the greatest impact among the three focal concerns theory components for both citation and search. When the traffic

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stop outcome is a citation, an increase in the amount of evidence in plain view raised the likelihood that a male driver would receive a citation. Likewise, an increase in evidence raised the likelihood that a male driver would have his car searched. For male drivers, blameworthiness was an important factor in police officer decision-making.

Practical constraints and consequences is the second focal concerns component. The impact of practical constraints and consequences was similar for citations and searches. However, regarding consent searches, practical constraints and consequences was the greatest factor among all three focal concerns theory components. Answering a call for service or having preexisting knowledge about a male driver increased the likelihood of a citation. Similar results for the search outcome show that police officers may have suspected that male drivers were involved in criminal activity and felt the need to conduct a search.

Conducting a warrant check was an indicator of the focal concerns theory component protection of the community. The warrant check decision was a significant factor for all three traffic stop outcomes, yet it was the most important component for consent searches. This finding may indicate that situations arise in which an officer knows there is a warrant for the driver but wants to see if the driver will consent to a search before deciding to search the driver and/or car.

Again, the amount of evidence available to police officers may cause "overload." The officer could thus create a shorthand for his or her decision-making involving male drivers. Police officers could assume that, since the driver is male, he is more likely to be involved in criminal behavior. This shorthand could also be based upon race. The

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increased rates of traffic stop outcomes for Black males indicates that police officers may suspect Black drivers more than White drivers (see Smith & Alpert, 2007).

Even though focal concerns theory explains police officer decision-making, race is still an important factor in officer traffic stop decisions. Black male drivers were more likely to be cited, searched, and have a consent search take place compared to White male drivers. This evidence of racial disparity supports previous literature that minority male drivers are more likely to be stopped, searched, arrested, have a records check performed, and be the targets of use of force by the police (Cochran & Warren, 2012; Higgins et al., 2008; Higgins, Vito, Grossi, & Vito, 2012; Lundman, 1979; Lundman & Kowalski, 2009; Moon & Corley, 2007; Schafer et al., 2006; Tillyer & Engel, 2010; Terrill & Reisig, 2003).

Overall Findings for Focal Concerns Theory

This dissertation shows that focal concerns theory can be used as a theoretical explanation for police officer decision-making during a traffic stop. The focal concerns theory components explain police officer decisions during a traffic stop that go beyond the race of the driver. All three focal concerns theory components were able to help explain police officer decision-making for all three analysis groups.

Overall, the most important focal concerns theory component across all three analysis groups and all three traffic stop outcomes was blameworthiness. For the police officer, the blameworthiness was indicated by the amount of evidence present during the traffic stop. Regardless of the gender of the driver, the presence of contraband influenced police officer decision-making. This finding mirrors that of the Higgins, Vito, and Grossi

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(2012) study which showed that blameworthiness was the most important focal concerns component in traffic stops.

The importance of blameworthiness does not indicate that the other two focal concerns were not significant predictors. Conducting a warrant check (i.e., protection of the community) increased the likelihood that all traffic stop outcomes (except for citations) occurred among White and Black drivers. Practical constraints and consequences (e.g., an officer responding to a call for service and/or having preexisting knowledge of the driver) also increased the likelihood for all outcomes (except for citations) involving White and Black drivers. The focal concerns components provide an explanation for why a citation, search, or consent search took place. The findings allow the community to understand the traffic stop decision-making of officers that could go beyond the race of the driver.

This study shows that the race of the officer had an impact on police officer decision-making. Black officers were less likely to cite, search, or consent search drivers in all instances except for citations based solely on the race of the driver. The results show that Black officers may view the drivers they stop from a different perspective than do White officers. This finding indicates the need for a more diversified police force because different perspectives are essential for the police department to be better able to understand their community.

White officers could have a different perspective than Black officers for several reasons. It could be that White officers' decisions are not conscious but subconscious (Dovidio et al., 2000). If a White officer's decision-making is subconscious, it could be based on the view of stereotypes. The decision-making of a White police officer could

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also be based on the view that the "face of crime" is a Black citizen (Lever, 2007). Previous research has shown that a police officer's view of who is a criminal can be influenced by media portrayals (Bobo et al., 1997; Chiricos et al., 2004; Tillyer & Hartley, 2010; Weitzer & Tuch, 2006). It may be that the act of stopping minority citizens by White officer reinforces what has been portrayed in the media, thus creating stereotypes for certain racial groups. The findings of this dissertation demonstrate a need for a more diversified police force that could help with racial profiling.

Propensity Score Matching

Using propensity score matching allows for better statistical analysis than standard ordinary least squares or multiple regression analysis. Previous literature analyzing racial profiling has used statistical analysis such as benchmarks/baselines, the outcome test, and hit rate. What the results of the current dissertation show is that using propensity score matching is a better statistical technique than the others mentioned. This approach offers a better way to analyze race because it matches drivers based on all measures so that those in similar situations are examined to see if any racial disparities in traffic stop outcomes truly exist.

The literature on propensity score matching and racial profiling found no difference in searches, consent searches, and pat searches for similarity situated White and Black drivers (Higgins et al., 2011; Ridgeway, 2006). However, the results of this dissertation are contrary to those from previous traffic stop studies. Even among similarly situated White and Black drivers, race was still a factor. Black drivers were still more likely to be cited, searched, and consent searched. Among male drivers, Black drivers were still more likely to be cited, searched, and consent searched. The race of a

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driver was an important factor among similarly situated White and Black drivers. This dissertation shows that more research needs to be done using propensity score matching to examine racial profiling.

Limitations

The data used for this dissertation came from traffic stop data collected by the Louisville Police Department between January 1 and December 31, 2002. The data used was self-report data, which presents an issue. In self-report studies, participants experience a reluctance to admit illegal behavior (Maxfield & Babbie, 2009). The officer could under-report information pertinent to the stop. Police officers also could have changed the race of the driver when completing their forms so it would not show if the officer was involved in racial profiling.

Another problem involves the results from a consent search. Data used in this dissertation cannot show if the police officer tricked or placed pressure on the citizen in order for a consent search to take place. The data does not allow for the researcher to determine if evidence was collected by the police officer in a lawful manner.

The data for this dissertation were collected in 2002, and the age of the data may be another limitation. Additional limitations could arise from the fact that the data used in this dissertation came from only one point in time at a police department that no longer exists. The data used were also cross-sectional in nature and cannot show if this is a problem that has taken place over time. The data can only show if racial profiling was an issue at the time of the study.

Future Directions

      Future research should consider the use of focal concerns theory as a theoretical explanation for police officer decision-making in other cities to determine whether it extends to other contexts. A future racial profiling study could benefit from collecting data over a multi-year period (i.e., 3 to 5 years) to truly understand the extent of the problem. Any data that would be collected could be examined by using focal concerns theory as a possible explanation for police officer decision-making. The involvement of graduate students in the data collection process could help in two ways. First, it could help address the self-report issue that a police officer could under-report information. Second, a graduate student could help in the data collection process by doing ride alongs to examine whether the driver was coerced into a consent search.

Policy Implications

      One of the major goals of a police department is that officer decision-making should be free of racial bias. Every effort should be made by police leaders to prevent racial profiling from taking place. Every citizen deserves the right to equal protection and equal service under the law (International Association of Chiefs of Police, 2006). Police departments should try to build or enhance the trust of the police in the communities they serve. The problem with racial profiling is that it reinforces the "us versus them" mentality and leads to further mistrust of the police (International Association of Chiefs of Police, 2006). Addressing racial profiling can reduce the notion that the police are not working for the minorities they serve. Increasing the level of trust in minority communities can also make jobs in law enforcement more appealing to minority group members. Police departments that deal with racial profiling effectively

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may reduce the likelihood of civil lawsuits. The following sections provide suggestions to deal with these issues.

Implicit bias.

Implicit bias could affect the decision-making of well-meaning officers. Implicit bias is the view that people who hold politically correct beliefs on race may have unconscious beliefs that implicit the association of race and crime (Fridell, 2008). Individuals who are shown to be non-prejudiced still implicit provide the view of the Black-crime bias. Implicit bias could impact the decision-making of police officers by conducting more searches of Black citizens, interpreting ambiguous behavior as threatening, and responding to ambiguous behavior in an aggressive fashion (Peruche & Plant, 2006). Officers who have positive experiences with Black citizens in their personal lives are more likely to hold positive attitudes about Black citizens and are less likely to hold the implicit bias on Blacks and crime (Peruche & Plant, 2006. In order for a police department to deal with implicit bias two beliefs must be held between Police leaders and their subordinates. First, is that even the best police officers may engage in racial profiling. Second, even the best agencies will have biased decisions because their police officers are human. The remaining policy implications can be applied to both dealing racial profiling and the issue of implicit bias.

Early warning (EW) systems.

One potential method to reduce and control racial profiling is to implement an early warning (EW) system. EW systems are data-driven programs designed to identify officers whose behavior appears to be problematic. An EW system is considered "early" because it identifies officers based on their performance before the problematic behavior

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becomes a major issue. It "warns" by placing an officer on a list showing that the officer is in need of special attention by his or her supervisor, or that some other intervention is warranted. Identified officers are sent to some kind of intervention, usually counseling or training designed to correct the problematic behavior (Alpert, 2007; Alpert & Walker, 2000; U.S. Department of Justice, 2001; Walker, 2001; Walker, Alpert, & Kenney, 2000). Identifying problem officers will help police departments provide better service and maintain a positive image and relationship with the community.

The EW system is developed as an accountability measure to identify officers who have repeated problematic performance. EW systems could apply to racial profiling because such profiling is similar to other types of police misconduct and could be evident among a small group of officers within a department. EW could analyze the traffic stop activity of particular officers relative to their peer officers. An EW system is designed to be non-punitive. Interventions may include peer-review, counseling, training, and non-formal discipline. The long-term goal for an EW system is the creation of an organizational culture that holds individuals accountable for their actions (U.S. Department of Justice, 2001).

EW systems are not a new idea. They first came about in the 1970s. Some of the first police departments to use EWs system were Oakland, New York City, and Kansas City. The Miami-Dade Police Department was the first to permanently establish an EW system.

Typically, a police department's internal affairs unit manages EW systems. They focus on use-of-force reports, citizen complaints, high-speed pursuit reports, preventable damage to agency vehicles, involvement in civil litigation, and citizen complaints (Alpert

& Walker, 2000). Separate goals exist for an EW system that impact individual officers, supervisors, and departments.

Two goals are aimed at individual officers. The first goal is to deter officers from displaying problematic behavior in the first place because they are being monitored (Walker et al., 2000. Second, officers may receive training or counseling to help them avoid the problem behavior (Walker et al., 2000). The EW system can also serve as a formal way to hold supervisors accountable. For the department, an EW system can reveal its values and that problem behavior(s) are not tolerated.

Implementing EWs requires attention in three areas. The first area of concern is establishing a selection criterion, that is, the formal information that identifies problem officers (Alpert & Walker, 2000; Walker et al., 2000). The best way to identify a problem officer is through the use of multiple indicators, including: use-of-force and citizen complaints, information on shootings, searches, and seizures, citizen complaints, citizen commendations, criminal charges against officers, civil suits alleging officer misconduct, other misconduct allegations, disciplinary actions, non-disciplinary remedial actions, training history, and civilian arrests (U.S. Department of Justice, 2001). The data that comes from the system should include statistical information along with descriptive information. Any information that comes from the EW should go to supervisors and managers in the department.

The second component is an intervention that involves informal counseling or formal training sessions (Walker et al., 2000). An informal system involves the immediate supervisor, making him or her aware of the information. The informal system gives the supervisor more flexibility and allows the officer more discretion. A formal

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system heightens the awareness of others in the organization of an existing problem while ensuring that the attention given to the officer by a supervisor is serious and appropriate for dealing with the situation. A formal system will involve counseling that is continually reviewed to determine whether an officer should continue to be monitored.

The third component is post-intervention monitoring. The police department must hold supervisors accountable and provide a flexible design to meet the changing needs of the organization (Alpert & Walker, 2000; Walker et al., 2000). The post-intervention follow-up could involve lengthy supervision and formal monitoring to complete reports with a performance evaluation.

In order for an EW system to be successful, it needs to involve three targets—individual officers, supervisors, and departments. Individual officers are monitored to see what kind of problem they have and to determine if they can be rehabilitated. Supervisors must know their ability to evaluate front line officers' performance and how they monitor officer behavior. At the departmental level, an EW system should invoke change in policies, procedures, and training.

The most important benefit of an EW system is that it provides a basis for identifying and determining how to deal with problem officers involved in racial profiling. If a department can correct a problem officer's behavior, the department's performance and community perception will improve. When an officer is identified by the EW system, a message is sent to all other officers concerning departmental priorities regarding race and officer accountability.

Several indirect benefits can result from the EW system. First, it can expose officers who have a higher number of traffic stops and determine if the number of stops

indicates a problem (Walker, 2001). Second, the department may realize variations in enforcement practices between various shifts (Walker, 2001). The final benefit is that it may show that some male officers have a high number of stops involving female drivers (Walker, 2001).

Police managers in charge of developing the EW system need to be prepared to deal with questions from the community and the media. Such questions may include data collection methods, sampling techniques, use of video equipment in the police car, citizen complaint system, and supervisor oversight (U.S. Department of Justice, 2001).

EW systems suffer from limitations, not least because the effectiveness of EW systems is limited to one study (Walker et al., 2000). EW will not work in departments where everyone is engaged in racial profiling. In addition, EW systems do not address whether profiling is appropriate policing, fair policing, or efficient policing (Alpert, 2007). The use of focal concerns theory could deal with these issues. If police managers were aware of focal concerns theory, they could better understand officer decision-making. For example, the three components of focal concerns theory could explain why a police officer has a high number of stops but still be free of racial bias. An EW system can only offer relative data; it cannot show whether the whole department is engaged in either entirely appropriate policing or that racial profiling is systematic.

A Third Way Approach.

Cohen, Lennon, and Wasserman (2000) have developed a strategy to combat racial profiling referred to as "A Third Way Approach." This strategy comprises four elements. First, technology is used to enhance police and citizen interaction (Cohen et al., 2000). If law enforcement's information system has all forms of communication

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connected, officers can identify the crime trends they should focus on. The second element is to concentrate on "hot spots" (Cohen et al., 2000). Law enforcement leaders need to concentrate their resources on those areas where crime is most likely to take place. Third, police departments should focus on high-risk offenders (Cohen et al., 2000). Police agencies are most often aware that a few citizens commit the most crime and that high-risk offenders should be targeted by police, which could help lead to a crime reduction.

The final element is to strengthen police training and accountability (Cohen et al., 2000). Police officers must know that treating citizens with respect is one of the highest priorities for law enforcement. Education also has an impact. Officers with a higher education (an Associate or Bachelor's degree) are better equipped to handle difficult situations and have a better ability to deal with the public through their communication skills (Cohen et al., 2000). Police officers need to articulate the cornerstone principles of the United States Constitution, such as probable cause, in order for citizens to understand police officer decision-making. Law enforcement executives need to make it a priority to hire minority candidates and bring in minority leaders to create policies and programs to help reduce racial tension. Police executives need to accept responsibility for issues such as racial profiling and show the community they are aware and plan to change policies to address it.

Racial Profiling Policy.

A police department needs to have a clear policy on racial profiling (International Association of Chiefs of Police, 2006). The policy needs to clearly define what racial profiling is and state that the department will not tolerate such profiling. A police

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department's policy should establish behavior and evidentiary standards that guide stops and searches.

Fridell et al. (2001) developed a racial profiling policy that police departments could use to develop their own policy. When a police officer is making a traffic stop, the stop must be based on a standard of reasonable suspicion or probable cause under the Fourth Amendment of the U.S. Constitution. The policy should state that the race/ethnicity of the driver should not be used in the officer's decision to stop a citizen and establish reasonable suspicion or probable cause. The race/ethnicity of the citizen may be used only when it pertains to a specific suspect where the race/ethnicity of the suspect applies to the person's description.

Once an officer has decided to conduct a traffic stop, he or she can display certain behaviors/actions to the citizen to help make the stop less combative. First, the officer should always be courteous and professional, and this involves introducing him- or herself to the citizen and giving the reason for the stop (Fridell et al., 2001). Second, the officer should explain to the citizen why a reasonable delay will take place and ensure that the citizen understands the reason (Fridell et al., 2001). Third, the officer should give the citizen contact information including his or her name, badge number, and if possible a business card (Fridell et al., 2001). Fourth, if the officer determines that the stop is not based on reasonable suspicion, he or she should apologize to the citizen (Fridell et al., 2001).

The department needs to have a policy that states what disciplinary action will take place if it is determined that the officer does not comply with the police

department's policy on racial profiling. It is the supervisor's responsibility to make sure that all of his or her officers know and will comply with the policy.

Research involving their own Police Department.

Research on racial profiling can help explain to the police what they do not know about race and the impact that race can have on policing. To see improvement, leadership must come from the institutional level. Institutional leadership will determine whether they are committed to dealing with racial profiling. If there is no commitment from the institutional leadership, then people at a lower organization level will not feel that racial bias is an important issue or that change is necessary.

For a police department to admit that the department has an issue with racial bias, they need to see what the department will gain from admitting this weakness. First, racial profiling research can show how some "traditional law enforcement practices" can hurt the police department (Harris, 2007). Some departments have banned "consent searches" unless there is a reasonable fact-based suspicion of a crime. Second, making police officers aware of racial bias can have positive effects on police officer behavior or actions (Harris, 2007). It can cause police departments to create anti-profiling strategies. Police departments may create a civilian task force that involves both police officers and community leaders to meet diverse needs and let the community have a say in what takes place and what issues should be addressed by the department.

Recruiting and Hiring Minorities.

The results showed how the race of an officer could affect a specific traffic stop outcome. To reach citizens of a different race/ethnicity to become police officers, methods of recruitment and hiring are crucial. Racial bias in policing can be reduced

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through the recruiting and hiring practices of the police department. First, the department should hire individuals who will police in an unbiased manner (Fridell et al., 2001). Second, they should increase minority hires to reflect the racial demographics of the community (Fridell et al., 2001).

Recruiting minorities for jobs in the police department is important. Hiring minorities helps to gain trust in those communities (U.S. Department of Justice, 2008). It allows for the department to gain a new foothold in communities where the view of police has been problematic, and it could help change the culture of a police department.

Recruitment advertisements and messages are important in hiring minorities. The recruitment messages should go beyond describing the jobs of a police officer or the wages and benefits it provides. Instead, they should place an emphasis on appealing to individuals' need for officers to enforce a spirit of fairness, justice, and racial equality (Fridell et al., 2001). Recruiting advertisements should explain to people how becoming a police officer could help make progress on justice and racial harmony for their community.

Hiring minorities can reduce the belief in racial profiling in several ways. First, it expresses to minority citizens that racial equity is important (Fridell et al., 2001). Second, by hiring minority citizens, the police department will be better able to understand the perspectives of its community and convey information in a way that allows the community to understand what the police are doing to deal with the issues that minorities feel are important (Fridell et al., 2001). Third, police officers will be better able to understand the perspectives that minorities hold, which helps improve how the police interact with these communities (Fridell et al., 2001).

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When recruiting minority candidates, it is important that the police recruiter represents the community from which the department is trying to recruit. Recruiters need to communicate the reasons for wanting a more diverse workforce and explain how this can benefit the police department and community. To reach minority candidates, methods include recruiting at historically Black colleges and universities, recruiting from current minority officers, recruiting through other fields, recruiting from military channels, and recruiting from religious communities (Fridell et al., 2001).

Training and Education.

Police departments need to provide training that deals with and prevents racial profiling (International Association of Chiefs of Police, 2006). Police managers need to make sure the training covered in the academy is not undermined by field training officers (FTO) or front-line supervisors. The most effective form has proven to be active, scenario-based training, instead of the standard lecture format (International Association of Chiefs of Police, 2006). Training should also be presented to police officers in a non-accusatory manner. Officers need to understand that preventing racial profiling is important based on ethical standards and from a legal perspective. Cultural diversity training should be provided so that officers are better able to communicate with the diverse communities in which they work. Police departments need to emphasize that their police officers should be courteous and professional in all stops because doing so can serve as a way to deal with a citizen's perception that he or she is being racially profiled.

Education and continuing training of police officers is important to dealing with racial profiling. The department should make sure they do not come across as accusing

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their police officers and instead present information in a way that can be discussed. The program must be specifically developed to fit their community because every department will have different needs. Police should be reminded that one of the key missions of the police is to protect human and civil rights and that it should not be treated as an obstacle to effective policing (Fridell et al., 2001). The focus of education and training should be to deal with the specific behavior or action that is evidence of racial profiling (e.g., traffic stops). Information from their own police department should be provided in order for police officers and the police department to truly understand the problem.

Officers who may need additional training based on the findings of an EW system may come in a variety of forms. Training that takes place in the academy and may need to be covered again in in-service training may include: cultural diversity, communication skills, integrity, and ethics (U.S. Department of Justice, 2001). Special attention should be given to what a department should do if an EW system determines an officer is having problems that take place during a traffic stop. Police officers need to be reminded that race, ethnicity, national origin, religion, gender, disability, or sexual orientation should not be considered when deciding to conduct a traffic stop except when such attributes are pertinent to apprehending a person who meets a specific description.

Training should emphasize that officers need to avoid the use of race or gender as the sole basis for a traffic stop. Changing the training in the police academy allows a department to create and instill new organizational values and reinforce them through department in-service training (U.S. Department of Justice, 2008). Training sessions could allow the community to share experiences with law enforcement and discuss how those experiences impacted their view of the police department.

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Community Involvement.

Police departments need to maintain and interact with the community they serve regularly (International Association of Chiefs of Police, 2006). Police officers should explain to citizens the reason(s) for the stop and state that they have a right to complain if they feel they were victims of racial profiling. The police department needs to make the community aware of its policies on racial profiling. Police department managers should willingly meet with community leaders, hear their concerns, and develop mutual solutions to deal with the problem of racial profiling. Police departments need to have a system able to adjust to meet the standards of the community and address any issues that may arise (International Association of Chiefs of Police, 2006).

The community needs to know the results of any racial profiling study. The results of such a study could lead to improvement of trust and cooperation between the police and the community. In addition, the community may be able to help in developing a plan to deal with racial profiling (Fridell, 2005).

A task force should help deal with racial profiling. The task force should include people from the community concerned about racial profiling along with police personnel representing all departments. Ideally the group would meet and work together before a study is conducted. At a minimum, the group needs to meet and work together before the results of the study are made public. The task force needs to meet regularly. A trained neutral facilitator is important to deal with initial hostility and develop community trust. Developing trust makes it possible for task force members to move on to discuss racial profiling, how to review the data, and other sources of information as well as to consider possible reforms (Fridell, 2005).

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Including resident stakeholders is necessary in order for those stakeholders to voice their frustration or concerns. Police should not provide defensive responses as an explanation for what took place in incidents that concern stakeholders. It is more important that the stakeholders simply be heard and taken seriously (Fridell, 2005). The task force should do a qualitative review of the quantitative data from the study. The purpose of a qualitative review is to determine geographic areas, procedures, and decisions that should be the highest priority for police when dealing with community concerns (Fridell, 2005).

The task force then needs to provide possible reforms to deal with racial profiling. The police need to make the community aware of the issues to make the community aware of the issues that citizens have raised and involve engaged citizens in ways to move the police department and the community forward (Fridell, 2005). One issue that should be addressed is that of consent searches and the problems that may arise. One possible solution is to require all citizens to sign a consent form before being searched; doing so makes the citizen aware of his or her right to refuse the search (Fridell, 2005). Another solution is to raise the minimum "level of proof" for consent searches (Fridell, 2005).

Community involvement is crucial to the success of racial profiling programs. The majority of police-public contact takes place during traffic stops (U.S. Department of Justice, 2008). Important community members should be allowed to help with the program so that the community feels they are influencing the policies and procedures that deal with racial profiling. Community involvement should take place at every stage of

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development (U.S. Department of Justice, 2008). Such involvement also allows the police department to learn the values that are held by the community they serve.

Police departments need to reach out to minority communities and engage them to potentially help deal with racial profiling. Engaging communities includes allowing citizens to voice their opinions and offer input on department decision-making and policies dealing with racial profiling (U.S. Department of Justice, 2008). Allowing communities to be engaged can help deal with the negative views of the police held by minorities. Community engagement could also change minority communities' perceptions that racial profiling is a widespread police practice.

Conclusions

This dissertation examined focal concerns theory as a theoretical explanation for police officer decision-making in the traffic stop outcomes of citation, search, and consent search via propensity score matching. The study found evidence of racial profiling by the Louisville Police Department. Evidence also indicated gender bias in that male drivers were more likely to be stopped than female drivers. Through the interaction of race and gender, Black male drivers had the greatest likelihood of being stopped for all three traffic stop outcomes. Focal concerns theory can explain police officer decision-making during traffic stops. The dissertation found that all three focal concerns theory components are the most important predictors that could explain police officer decision-making. The use of propensity score matching was done to see what differences exist based on race for similarly situated White and Black drivers. Even after focal concerns theory was shown to be a theoretical explanation for police officer

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decision-making, the race of the driver was still a significant predictor for the traffic stop

outcomes of citation, search, and consent search.

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Appendix A

Louisville Police Department Profiling Policy

POLICY & PROCEDURE MANUAL

Chapter:	3: Polices and Procedures
Section:	III: Operations/Investigations
Article:	98: Profiling
Effective Date:	12/5/00

A. Policy

The practice of profiling limits law enforcement's investigative effectiveness by ignoring persons whom are involved in crime. Profiling also alienates a significant percentage of our citizens, and fosters distrust of law enforcement by our community. The practice of profiling may undermine law enforcement officers' integrity, and therefore, may subject officers to civil or criminal liability. Finally, and most importantly, profiling is morally wrong. Therefore, the practice of profiling is strictly prohibited.

B. Definition

1. Profiling is defined as:

   a. The targeting of people based solely on their race, ethnicity, gender, sexual-orientation, religion, socio-economic status, or disability; or

   b. A process that motivates the initiation of a traffic stop, detention, and/or other law enforcement activity based solely on an individual's actual or perceived race, ethnicity, gender, sexual orientation, religion, socio-economic status, or disability, or other characteristics attributed to an individual as a member of such group; or

   c. Making discretionary decisions during the course of an enforcement activity based upon race, ethnicity, gender, sexual orientation, religion, socio-economic status, or disability, or other characteristics attributed to an individual as a member of such group.

C. Proper Procedure

1. Sworn personnel are prohibited from using race, ethnicity, gender, sexual orientation, religion, socio-economic status, or disability of a person as the sole reason for stopping a vehicle, issuing a citation, making an arrest, conducting a field interview, investigative detention, or conducting a search. All investigatory detentions, traffic stops, arrests, searches and seizures shall be based upon the standard of reasonable suspicion or probable cause as required by the Fourth Amendment to the U.S. Constitution and state statutes.

2. It is not improper to target suspected criminals based on their conduct. Nor is it improper to focus on a person of a particular race, ethnicity, gender, sexual orientation, religion, socio-economic status, or disability if the officer has suspect information (i.e., a pick-up or broadcast for a wanted person).

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POLICY & PROCEDURE MANUAL

Chapter:	3: Polices and Procedures
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3. Awareness is the key to success in criminal interdiction. An officer must use all senses to establish reasonable suspicion for the stop or enforcement activity.

4. Nothing in this policy shall preclude an officer from relying on an individual's actual or perceived race, ethnicity, gender, sexual orientation, religion, socio-economic status, or disability, or other characteristics as a tool in the investigation of a crime, or a violation of law.

5. Providing citizens with an explanation for why they were stopped fosters better relations with the community and reduces the perception of bias on the part of the police. Therefore, an officer shall make every effort to provide an explanation for why the citizen was stopped unless disclosure of such information would undermine an investigation or jeopardize the officer's safety.

D. Supervisory Responsibility

   1. Supervisors shall:

      a. Ensure that their personnel are familiar with this policy and support its provisions.

      b. Observe the practices of officers to ensure profiling tactics are not utilized.

   2. Supervisors must report in writing to the Chief of Police any incident of profiling. The report required herein shall be made without delay following the incident or conduct in question.

E. Training

   1. The Training Unit shall conduct training with all sworn personnel on subjects that include, but are not limited to, profiling, cultural diversity, interaction with citizens, policy, ethics and related topics. This training will be done at the direction of the Chief of Police.

G. Reporting Required

   1. Employees are required to report in writing to competent authority any incident of profiling. The report herein shall be made without delay following the incident or conduct in question.
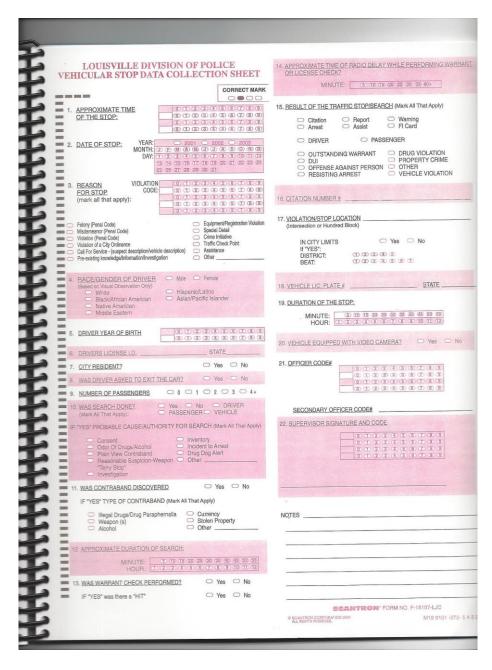
POLICY & PROCEDURE MANUAL

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H. Discipline

1. The Louisville Division of Police does not condone nor shall it tolerate profiling. Any officer found to be engaging in such conduct shall be subject to disciplinary action.

Appendix B

Racial Profiling Scantron Form

CURRICULUM VITA

NAME: Anthony Gennaro Vito

ADDRESS: Justice Administration
           University of Louisville
           2301 S. 3rd Street Brigman Hall Louisville, KY 40292

EDUCATION:

Ph.D., Justice Administration, May 2015
University of Louisville, KY
Dissertation: *Racial Profiling: Using Propensity Score Matching to Address Focal Concern's Theory*

Master of Science, Justice Administration, May 2012
University of Louisville, KY
Master's Thesis: *Adolescent Steroid Use: A Logistic Regression Analysis*

Graduate Studies, Criminal Justice, September 1, 2010 – April 1, 2011
University of Cincinnati, OH

Bachelor of Science, Justice Administration, August 2010
University of Louisville, KY

PROFESSIONAL DEVELOPMENT:

Inter-university Consortium for Political and Social Research Summer Training Program in Quantitative Methods of Social Research: Hierarchical Linear Models I: Introduction
June 15, 2012

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ACADEMIC EMPLOYMENT:

Graduate Assistant, University of Louisville, KY August 2013-Present
- Managing Editor Journal of Criminal Justice Education

Graduate Assistant, University of Louisville, KY, January 1, 2012-July 31, 2012; June 1, 2013-July 31, 2013
- Capital Sentencing Project

Graduate Assistant, University of Louisville, KY, August 2012-May 2013
- Teaching Assistant for JA 326 Quantitative Analysis and JA 596 Crime Analysis
- Taught JA 202 Corrections in America

Academic Athletic Tutor, University of Louisville, KY, August-2011-December2011
- Business Statistics
- Criminal Procedure
- Criminalistics

Graduate Assistant, University of Cincinnati, OH, September 2010-March 2011
- Data Entry
- Transcribing Interviews for the EPICs Project (program for probationers and parolees).

PUBLICATIONS:

Peer Reviewed Articles

Schaefer, B.P., Vito, A.G., Marcum, C.M., Higgins, G.E., & Ricketts, M.L. (Forthcoming). Examining adolescent cocaine use with social learning and self-control theories. Deviant Behavior.

Vito, A. G., Schaefer, B. P., Higgins, G. E., Marcum, C. D., & Ricketts, M. L. (2015). Juvenile Hallucinogen Use: What do Multiple Theories Say about it? *American Journal of Criminal Justice , 40* (1), 116-128.

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Vito, G. F., Higgins, G. E., & **Vito, A. G.** (2014). Capital Sentencing In Kentucky, 2000-2010. *American Journal of Criminal Justice , 39* (4), 753-770.

Vito, A. G., & Higgins, G. E. (2013). A Research Note on Adolescent Steroid Use: An Examination of Social Learning Theory and Self-Control Theory. *Deviant Behavior , 34* (12), 951-960.

Vito, A. G., & Vito, G. F. (2013). Lessons for Policing from Moneyball: The Views of Police Managers - A Research Note. *American Journal of Criminal Justice , 38* (2), 236-244.

Vito, G. F., Higgins, G. E., & **Vito, A. G.** (2013). Tracking Capital Homicide Cases in Jefferson County, KY 2000-2010. *American Journal of Criminal Justice , 39* (2), 331-340.

Higgins, G. E., Vito, G. F., Grossi, E. L., & **Vito, A. G.** (2012). Searches and Traffic Stops: Racial Profiling and Capriciousness. *Journal of Ethnicity in Criminal Justice , 10* (3), 163-179.

Vito, A. G., Higgins, G. E., Walsh, W. F., & Vito, G. F. (2012). The threat of methamphetamine use and production: evaluation results from a Kentucky law enforcement programme. *International Journal of Police Science & Management , 14* (3), 201-212.

Encyclopedia Articles

Vito, A.G. and Vito, G.F. (2013). "Capital Punishment." <u>The Encyclopedia of Crime and Justice</u>

Vito, A.G. and Vito, G.F. (2012). "Capital Punishment." <u>The Encyclopedia of Theoretical Criminology</u>

PROFESSIONAL MEETING PRESENTATIONS:

Panel Presentation: "Applying Social Learning Theory to Weapon Incidents in School Using Structural Equation Modeling." Annual Conference of the Academy of Criminal Justice Sciences, March 2015.

Panel Presentation: "Missing Data: Understanding the Role of Self-Control." The American Society of Criminology, November 2014.

Panel Presentation: "Exploring the Link between Trajectories of Bullying and Parenting." The American Society of Criminology, November 2014.

Panel Presentation: "Self-control, social learning theory, and binge drinking: Results from a national sample." Southern Criminal Justice Association, September 2014.

Panel Presentation: "Nonfatal Gunshot Wounds: In the Context of School Violence Using General Strain Theory." Annual Conference of the Academy of Criminal Justice Sciences, February 2014.

Panel Presentation: "Acres of Opportunity: Examining Crime at Shopping Centers." The American Society of Criminology, November 2013.

Panel Presentation: "Capital Sentencing in Kentucky, 2000-2010." Southern Criminal Justice Association, September 2013.

Panel Presentation: "Adolescent Steroid Use: A Use of Logistic Regression." Annual Conference of the Academy of Criminal Justice Sciences, March 2013.

Panel Presentation: "Tracking Capital Homicide Cases in Jefferson County, KY 2000-2010." Annual Conference of the Academy of Criminal Justice Sciences, March 2013.

Poster Session Presentation: "Lincoln on Leadership: Views of Police Managers." Annual Conference of the Academy of Criminal Justice Sciences, February 2014.

Poster Session Presentation: "The Re-Entry Performance of Drug Offenders Released from Kentucky Prisons, July 2002 through December 2004." Southern Criminal Justice Association, September 2012.

Poster Session Presentation: "Lessons for Policing from *Moneyball* the Views of Police Managers." Annual Conference of the Academy of Criminal Justice Sciences, March 2012. This poster was also presented at The 4th Annual Graduate Research Symposium at the University of Louisville, March 2012.

Poster Session Presentation: "Meth Lab Locations and Arrest Patterns in Louisville, KY." Annual Conference of the Academy of Criminal Justice Sciences, March 2010.

Roundtable: Tips for First-Time Teachers in Criminology/Criminal Justice. Southern Criminal Justice Association, September 2013.

SERVICE:

Graduate Student Representative (2012-2013) for Justice Administration in the Graduate Student Council at the University of Louisville

PROFESSIONAL ORGANIZATIONS:

- Southern Criminal Justice Association 2012-Present
- The American Society of Criminology 2012-Present
- Academy of Criminal Justice Sciences 2010-Present