Does the "Race of Places" Influence Police Officer Decision Making?

2007-2008 DuBois Fellowship
Award #2007-IJ-CX-0032

Cynthia Lum, Ph.D.
George Mason University
Administration of Justice Department
Center for Evidence-Based Crime Policy

EXECUTIVE SUMMARY
&
FINAL REPORT

December, 2009

This study was sponsored and funded through the 2007-2008 National Institute of Justice W.E.B. DuBois Fellowship (2007-IJ-CX-0032). The author wishes to acknowledge Karen Jensenius, George Fachner, Julie Willis, Cody Telep, Brittany Davenport and Troy Payne for their research assistance, as well as members of NIJ who have offered helpful comments in improving this study.

CONTENTS

ABSTRACT

Research on factors which influence police decision making usually focuses on individual or situational characteristics (e.g., an officer or citizen's age, race or gender, or the seriousness of the incident). In contrast, this study examines whether characteristics of *places* influence the police decisions. Earlier research is expanded in three ways: First, the series of chronological decisions within an incident or the "decision-making pathway", rather than an isolated decision within that pathway, are derived and analyzed. Second, multiple categories of racial and ethnic composition of places and their influence on police decision-making pathways are examined rather than just a dichotomous comparison of Black and White racial composition. Third, decision pathways of all incidents (except for traffic incidents) across an entire jurisdiction are compared at a small geographic level rather than only specific incident. Findings indicate that even when controlling for the level of violence and interaction effects, places with a greater proportion of Black residents *or* wealthy residents significantly influences officers' decisions to downgrade crime classification and actions taken on incidents reported to the police. Similar consistent findings for other racial groups were not discovered, although for individual decision points along the pathway, Asian or Hispanic-dominated places can also have unique effects.

EXECUTIVE SUMMARY

THE IMPACT OF PLACE ON POLICING

Environmental sociologists, place-based criminologists, geographers, and social psychologists have long emphasized the significance that places have on behavior, especially criminality and victimization (Brantingham & Brantingham 1981; Eck & Weisburd 1995; McLafferty 2008; Taylor 1988; Weisburd 2002). Physical, social, and cultural aspects of places can influence or mediate the connection between an individual's cognitions and their actions. Police officers who work in the same places everyday are certainly not immune from these environmental forces. Policing scholars have suggested that "in different neighborhoods police provide different services" (Banton 1964:136; see also Smith 1986; Terrill & Reisig 2003). Place-based cues, especially those most noticeable to an officer such as socioeconomic status, poverty, racial and ethnic makeup, disorder, crime, pedestrian and traffic density, and land use may have great impact on an officer's decision making.

The place-based cues that dominate the existing literature in this area primarily focus on race, ethnicity, and socioeconomic status of an area (see Smith 1986; Smith & Klein 1984; Terrill & Reisig 2003). Of course, this is not coincidental; the focus on police treatment as it relates especially to race is a central challenge to democratic policing and is of constant concern to policing scholars. Yet, while many would agree on the importance of understanding the impact that race and ethnicity have on officer decision making, we are far from reaching a consensus on its answer, especially the role that places play in those decisions. The place-based research tends to compare large areas, examine only certain decision points (arrest or initial stop), and compares places using dichotomous racial divisions such as "Black" and "White" or "White" and "non-White". Each of these approaches leaves much room for further understanding. Additionally, much of the existing research in this area is not place-, but individual-based, analyzing how the race and ethnicity of individuals influence specific outcomes.

The lack of place-based research in the area of race and policing is also surprising for a number of more practical reasons that go beyond social-psychological explanations. Today's policing environment is marked both by a push for officers to be more proactive and place-based in their strategies. New place-based approaches such as using proactive traffic and pedestrian stops, problem-oriented policing, zero-tolerance arrests, hotspot patrol, and anti-gang interventions have often been shown to be promising in reducing crime, but at the same time criticized for resulting in (or at least not being sensitive to) racially incongruent outcomes. Community-policing philosophies have also emphasized a place-based component to conceptualizations of fairness and legitimacy in policing, shifting both practitioner and researcher thinking from considerations about individual due process to community legitimacy and authorization.

RESEARCH QUESTIONS

This project adds to the research on race and discretion by examining how the racial, ethnic, and socioeconomic characteristics of very small places influence officer decision making

at those places. In particular, the life course, or "decision making pathway" of incidents is examined, rather than a single decision point in that life course. Such an understanding could not only help build ecological theories of police behavior, but also serves as an opportunity to rethink community and organizational policies that address differential decision making or racial prejudice in policing. Three research questions are of specific interest to this study of decision making pathways:

1. Would places with greater concentrations of racial and ethnic minorities receive different types of police service for similar incidents when controlling for other factors?
2. Would places with greater concentrations of racial and ethnic sub-groups – specifically, foreign-born or linguistically isolated individuals – receive different types of police service?
3. If racial and ethnic disparities are discovered, can they be easily explained by the level of crime (specifically violence) at those places? Alternatively, is there perhaps an interaction effect between racial composition, concentrated poverty or violence that mediates the response of police?

DATA AND METHODS

This project proceeds given these concerns of research and practice in exploring the relationship between characteristics of small geographic areas and the decision making process of officers. Of interest is how place-based cues which are most obvious to officers – particularly the racial and ethnic make-up of places as well as socioeconomic cues – might affect their behavior. To add to this research area, I expand on previous conceptualizations of officer discretion by creating "decision pathways" that reflect multiple and chronological decision points of a single incident. This differs from existing research that focuses on a single decision point such as an initial stop or an arrest. I developed these pathways for 267,937 crimes and disorders that occurred across 568 small places within a large, diverse, and metropolitan west coast U.S. city – Seattle, Washington – over the course of one year. These pathways can be characterized by "upgrading" or "downgrading" in either crime seriousness or in police action. I then analyzed whether a relationship exists between these upgrading and downgrading tendencies of these pathways and the characteristics of the small places in which they occur. Of special note is the use of multiple racial, ethnic, and immigrant measures at places in this study. I do not limit analysis to a comparison between White and Black composition, as has been traditionally done. Rather, police discretion for multiple racial, ethnic, language, and foreign-born place-based categories is explored.

The decision pathways were then geographically referenced to spatially connect them to Census block groups for analysis with other characteristics of that place. This allowed for analysis of predictors of upgrading and downgrading scores. Since the primary interest in this study was whether the race and ethnicity of places influences behavior as defined by upgrading and downgrading in the decision pathway, the percentage of Black, White, Asian, Hispanic and foreign-born residents as well as the proportion of households that were linguistically isolated were collected for each block group. However, many other demographic, socioeconomic, and crime attributes were also built into the predictive models, including measures of wealth, community needs, social disorganization, levels of violent crime, and population density.

FINDINGS

After multiple models were run, it appears that in Seattle, three place-based cues seem to matter overall: the proportion of residents that are Black, the level of wealth in that area (the most consistent socioeconomic factor that significantly affected the models), and the amount of violence in a block group. As expected, in places with more violence, there is evidence of more formal social control – more reports are written and arrests made. However, police show significant evidence of downgrading calls – handling them less formally (less likely to write reports or make arrests) and reducing the seriousness of crime classifications in places with higher proportion of wealthy residents *or* higher proportion of Black residents (which are more disadvantaged). But, while both wealthy and less socially disorganized block groupings with high proportions of Black residents both evidence downgrading, there seems to be *less* downgrading in communities with high proportions of Black residents compared to communities representing the wealthiest areas of Seattle.

The findings are compelling and add to a place-based theory of policing. This study indicates that it is not sufficient only to examine the individual racial characteristics of officers, suspects, victims, and witnesses in explaining officer decisions. This study indicates that the environment can also be correlated to behavior. Although this study does not examine which effect might be stronger (individual information was not available on these incidents), this and other studies indicate that environmental cues condition individual action and do not simply act as a passive context for those actions. Further, place-based cues do not have to be racial or socioeconomic (although arguably, these are the strongest place-based cues). A place-based theory of policing should also take into account other environmental characteristics that may influence police officer decision making. These might include the physical layout of streets and buildings, the proportion of places that are business establishments, or the presence of certain types of environmental markers that can be magnets for certain crimes and the level of physical or social disorder (e.g., parks, public swimming pools, bars, subway stations, abandoned homes, alleys). This study provides a new dependent variable – the decision pathway – of which to examine the influence of these place markers.

However, despite these steps forward, this study, like so many others examining whether disparities in police service exist, still cannot tell us *why* we see this differential response. This data-based analysis cannot give us insight into the minds of officers, and whether they are racially biased. Proving intent for prejudice is not only difficult short of admission, but also such prejudice is intrinsically part of human behavior, and can be hidden under layers of consciousness, organizational rules, interactions, and worldviews. Additionally, the origin of the disparities that emerge from this analysis may not unilaterally come from the police; they may arise from an interaction between officers' supply of law enforcement and the demand of services by the community. The only way for us to understand the reasons for these differences is through further systematic and qualitative approaches, including social observations, ethnographic analyses, and in-depth interviews or longitudinal psychological examination of officer *and* citizen mentality. What we can say is that the race of a place matters to police decision making, especially if that race is Black.

RECOMMENDATIONS

This acknowledgment of differential interactions at places based on race and socioeconomic status may be difficult but important for both the police and the community. Police easily acknowledge that levels of crime and violence of a place, and even the socioeconomic status of a neighborhood can affect their style of service. But talking about race as a possible factor is almost taboo. This situation also affects the reception of research by the police, who may be willing to accept poorly conducted evaluations of an intervention's effect on crime, but may be extremely suspicious of even the most highly rigorous studies on racial disparities. How then, can this and other research be used? In the Discussions and Recommendations section, three ideas are explored:

1. Police must openly acknowledge that officers treat neighborhoods differently. Prospects and problems in differential treatment should be approached from a community-oriented and legitimacy-development perspective and should be discussed in training.
2. Awareness and acknowledgement must be supported by operational structures that counteract such forces.
3. The effect of places on policing and the mental health of officers should be a serious concern for police leaders. There is especially a need to counter inevitable changes in mental states, some which are affected by the places officers' work, which may lead to further behavioral problems such as racially biased policing or the use of force.

The race of places matters in police behavior and does not just provide a context for police behavior; the race of places can shape police discretion, especially if those places have higher concentrations of Black residents. As scholars have long emphasized, ethnic conflict and prejudice are part of human nature, a nature to which police officers are certainly not immune. The more important question in police policy is how such prejudice affects decision making and what organizational, cultural, and deployment approaches can counteract such forces given the overall (and sometimes conflicting) goals of policing in modern democracies—to reduce crime *and* do so legitimately and fairly. Examining how race influences policing at the place- rather than individual-based level provides not only an additional approach to understanding this relationship, but also speaks directly to the place-based implications of new policing innovations and community-oriented mandates.

Does the "Race of Places" Influence Police Officer Decision Making?[1]

Cynthia Lum, Ph.D.
George Mason University
Administration of Justice Department

I. INTRODUCTION

Environmental sociologists, place-based criminologists, geographers, and social psychologists have long emphasized the significance that places have on behavior, especially criminality and victimization (Brantingham & Brantingham, 1981; Eck & Weisburd, 1995; McLafferty, 2008; Taylor, 1988; Weisburd, 2002). Early on, the Chicago School and scholars of social disorganization (Park et al., 1925; Shaw and McKay, 1942; Shaw et al., 1929), solidified attributes of places as one major anchor in the explanation and study of crime and criminal justice. Since then, researchers have found that physical, social, and cultural aspects of places can influence or mediate the connection between an individual's cognitions and their actions. Police officers, especially those patrolling these places, are certainly not immune from these environmental forces. Place-based cues, especially those most noticeable to an officer (e.g., socioeconomic status, poverty, racial and ethnic makeup, disorder, crime, pedestrian and traffic density, and land use), may significantly affect and interact with an officer's worldview and thereby his or her discretion. Indeed, the effect of characteristics of places on police behavior has led scholars like Michael Banton (1964) to observe: "[I]n different neighborhoods police provide different services" (p.136; see also Smith, 1986; Terrill & Reisig, 2003). The cues that have been of special concern in the study of differences in area-level treatment especially for democratic

[1] This study was sponsored and funded through the 2007-2008 National Institute of Justice W.E.B. DuBois Fellowship (2007-IJ-CX-0032). The author wishes to acknowledge Karen Jensenius, George Fachner, Julie Willis, Cody Telep, Brittany Davenport and Troy Payne for their research assistance, as well as members of NIJ who have offered helpful comments in improving this study.

societies have been race, ethnicity, and status (see Smith, 1986; Smith & Klein, 1984; Terrill & Reisig, 2003).

Despite the potential importance that places may have on officer behavior, much of the existing research on officer discretion is surprisingly not place-based, but instead focused on how characteristics of individuals (e.g., officer, victim, suspect, bystanders) and the specific nature of crime situations and police-civilian exchanges matter. Most notable is the literature on how the race of individuals influences traffic stops or arrests (see e.g., Alpert et al., 2007; Black, 1971; Farrell & McDevitt, 2006; Gaines, 2006; Novak, 2004; Schafer et al., 2006; Smith & Petrocelli, 2001; Smith & Visher, 1981; Smith et al., 1984; Warren et al., 2006). Yet, analyzing the impact that place-based cues have on officer decision making is fruitful for a number of reasons. From a social-psychological perspective, patrol officers, like residents, can be negatively affected by their daily work environments, which may be personally unfamiliar and also abnormally high (or low) in crime and disorder. This affect may lead to systematic biases in their response based on extra legal factors like the racial make-up or socioeconomic status of an area, which in turn could reduce the legitimacy of a democratic police force.

Additionally, today's policing environment is marked both by a push for officers to consider more place-based, proactive strategies, such as hot spot patrol, problem-oriented policing, zero-tolerance enforcement, or anti-gang interventions. Such interventions reinforce the importance of viewing crime from a place-based perspective, as opposed to focusing on reacting to individual calls. More broadly, community-policing philosophies have long emphasized a place-based component to conceptualizations of fairness and legitimacy in policing. This has shifted both practitioner and researcher thinking from considerations about individual due process to community legitimacy and authorization, concepts very much anchored in social

geography. Thus, how environmental characteristics affect officer decision making is important to understand not only from an officer behavioral perspective, but also because contemporary changes in policing lend even further significance to "place" in the officer's daily work.

The current literature is not only marked by its individual emphasis, but also by three other characteristics that warrant more research. First, when studying the impact of race on police behavior, often only two racial groups are compared – Blacks and Whites (and sometimes Hispanics). But police may respond quite differently to different ethnic or religious minority groups and places in which ethnic groups represent a high proportion of the population. Secondly, studies have often examined only one decision point, such as an arrest or decision to initiate a stop. But multiple decisions contribute to the final justice outcome, including, for example, the initial decision to stop a suspect or respond to an emergency call, continue with an investigation, write a report, or make an arrest. Finally, past studies have compared discrete and large jurisdictions such as cities, neighborhoods or even Census tracts. But this ignores the likely heterogeneity in those large areas. Comparison within and across such areas may yield further insight in the role that places play in officer discretion. This study expands the research in each of these three areas to better understand if places matter in police discretion.

II. A PLACE-BASED APPROACH TO UNDERSTANDING POLICE DISCRETION

Although the focus of this study is on how characteristics of *places* affect officer discretion, a brief review of whether and how characteristics of individuals (offenders, victims, or officers) influences police decision making is warranted. After all, places are partly the aggregation of the individuals within them. It seems reasonable to hypothesize that the service provided by the police could be impacted by an officer's global perceptions of an area.

Foundational works examining individual characteristics and officer discretion have discussed how considerable discretion in policing exists and can be influenced by a variety of factors (see, e.g., Black, 1971; Manning, 1977; Mastrofski, 1981, 2004; Mastrofski et al., 1987). These have included, for example, the beliefs, behaviors, and attitudes of the suspect, victim, and/or officer; the race, age, and gender of parties involved; how insistent parties are in making complaints; aspects of the incident itself (such as the seriousness of the crime); and the characteristics of the organization, political environment, and neighborhood context. The empirical work in this area is voluminous, and examples include Alpert et al. (2004), Black & Reiss (1970), Brown & Frank (2005), Mastrofski (1981; 1991), Paoline & Terrill (2005), Sherman (1980), Smith (1986), and Smith & Visher (1981) (for reviews, see Brooks, 2004; National Research Council, 2004).

This individual-level research has primarily been concerned with the validity of two perspectives: whether legal factors, such as offense seriousness, are more dominant in the outcomes of police discretion than extralegal factors, such as ethnicity or socioeconomic status. These two perspectives illustrate often-discussed differences between more legalistic models of discretion (see Black, 1976; Weber, 1954), and conflict theories (Blalock, 1967; Chambliss and Seidman, 1971; Liska and Chamlin, 1984; Parker et al. 2005), respectively. Legalistic model, while not discounting these extralegal factors, suggests that crime seriousness, the presence of victims, witnesses, and evidence, or suspect demeanor (which could also be an extralegal factor) are the primary determinants of officer discretion. On the other hand, conflict or racial threat perspectives suggest that an intentional or even subconscious agenda is at play in these decisions. When members of one community (either majority or minority) feel their interests or space are being infringed, they will wield power to exercise control over the "other". This may include (or even be initiated by) demanding more or harsher police activity against the "other". Or, the

police may treat the "other" in a manner that reduces that group's power, influence, or threat. Such a perspective, which informs ethnic conflict literature more generally (see Horowitz, 1985) implies that factors seemingly unrelated to the crime incident, such as a person's ethnicity, age, or political affiliation matters a great deal in officer discretion.

Early research findings with regard to the evidence of these two perspectives have been mixed (Black, 1971, 1976; Sherman, 1980; Smith & Visher, 1981; see more generally the conclusions by the National Research Council, 2004). Black (1976), for example, examined the "social distance" between officers and citizens, suggesting that the greater difference in culture, ethnicity, or worldview between an officer and suspect, the greater the risk that a negative police-citizen encounter would occur (see also Bayley & Mendlesohn, 1969). In a study of thousands of police encounters, Smith and Visher (1981) also focused on the race of individuals, finding Blacks were more likely to be arrested than Whites, after controlling for other factors (see also National Council on Crime and Delinquency, 1978; Powell, 1990; Smith et al., 1984). However, other empirical work has shown that more legal factors such as the suspect's behavior or the seriousness of the crime, could matter more than race in the arrest decisions that police officers make (see e.g., Alpert et al., 2004; Black, 1971; Kleck, 1981; Sherman, 1980).

Recent research has challenged these mixed findings by turning attention away from just examining arrest decisions or responses to violence (which may naturally be influenced by legal factors), to earlier decision points such as the decision to initiate a stop or respond to a call. Examining such decisions allows for an understanding of a wider range of discretionary options even before legal factors come into play. For example, in studies of proactive decision making such as traffic stops, research has consistently found that minorities, specifically Blacks and Hispanics, are stopped, ticketed, and searched at higher rates than Whites (Gaines, 2006; see also

Fagan & Davies, 2000; Lundman & Kaufman, 2003; Reitzel & Piquero, 2006; Walker, 2001; Warren et al., 2006), even when they are at no greater risk for carrying contraband (Engel & Calnon, 2004). In a systematic social observation analysis of arrest decisions during traffic stops in Cincinnati, Brown and Frank (2006) found Blacks were more likely to be arrested than cited in traffic stops, no matter the race of the officer (see also Brown, 2005). Evidence for disparities in traffic stops have created controversy (Lange et al., 2005; Petrocelli, 2006; Smith & Petrocelli, 2001), leading to a number of statewide investigations and further research (see e.g., Farrell & McDevitt, 2006; Gaines, 2006; Ridgeway et al., 2009; Warren et al., 2006).

The debate over whether legal or extralegal characteristics matter in police decision making could be extended to places as well. Places are aggregations of these individuals in physical settings, and attributes of an area may affect and officer's decision-making, just as evidence has indicated individual characteristics matter. A legalistic model might suggest that levels of crime and disorder in an area are what determine police service in that area. On the other hand, there may be extra legal factors, such as the dominance of a place by a particular race, economic, or age group, that leads to a place-based variation in officer response. As with research on individuals, such extra legal place-based factors may raise concern.

For example, officers who work in high crime areas that are also primarily made up of Black residents may come to associate Black individuals with criminality (or the experience may provide further reinforcement for existing prejudices). This in turn may affect the way officers respond to individuals in that community, perhaps treating them with disdain and higher levels of force or lower attentiveness or service (see Klinger, 1997, 2004). Research already points to a place-base stereotyping, especially of Black residents and crime (see Hurwitz & Peffley, 1997;

Quillian & Pager, 2001; Rengert & Pelfrey, 1997), even though such relationships may not be supported empirically (Frey, 1979; Liska et al., 1982; Logan & Stults, 1999).

Of course, the racial and ethnic characteristics of places are not the only possible cause behind variations in officer discretion across places. Traditional police strategies, especially the reactive nature of beat patrol, reinforce and systematize decision-making. Patrol officers can often spend months, if not years, patrolling the same small areas in these reactive (and therefore mostly negative and repetitive) ways. Even within their beats, which can be quite large, police officers are also regularly drawn to the same smaller places, since the distribution of crimes are extremely concentrated (Sherman et al., 1989) and stable over time (Weisburd et al., 2004). Thus, it is likely that officers will get to know places within their beats well and describe and differentiate them by both the characteristics of the people who live, work, recreate, or commit crimes at those places and the types of crime they experience. The reactive nature of the traditional police response in combination with stable place-based characteristics could reinforce systematic biases in responses that lead to place-based variations.

The legalistic versus conflict dichotomy is expanded upon by David Klinger's ecology of patrol approach (Klinger, 1997; see also Klinger, 2004), which is a useful framework for conceptualizing how places may affect officer discretion. He argues that social and ecological aspects of patrol beats could influence a patrol officer's perceptions of how "deserving" those places are of service, and in turn, influence outcomes of response. Klinger's perspective is compelling, especially when considering whether the racial and ethnic composition of a place matters in police decision making. It suggests that places can affect the norms that influence officer decision-making, making attributes of those places inseparable from the aspects of investigatory situations in which police find themselves.

The few empirical studies examining the impact that places have on decision-making have focused on race, status, and crime levels of neighborhoods, and lend support to Klinger's ecology of patrol perspective. For example, Smith (1986) analyzed the impact that racial heterogeneity of neighborhoods had on approximately 5,700 police encounters. He found that police offered more assistance to residents and initiated more contacts with suspicious persons in neighborhoods with greater racial heterogeneity. Smith also found that the socioeconomic status of a neighborhood matters; the chance of being arrested increases in situations that occur in neighborhoods with greater economic disadvantage (see also Fagan & Davies, 2000; Weitzer, 1999). In a previous work, Smith and Klein (1984) found that while situational aspects of a crime influence behavior, these aspects are conditioned by neighborhood racial context. Similarly, Terrill and Reisig (2003) found evidence that the use of force and police abuse varied across neighborhoods in Indianapolis, IN, and St. Petersburg, FL. Independent of suspect behavior, police officers in that study were more likely to use higher levels of force in neighborhoods with more crime and disadvantage (an effect also discovered by Ridgeway et al., 2009 in Cincinnati). Further, the effects of race at the encounter level were found to be mediated by a neighborhood's racial context.[2] Kane (2003) found that the patterns of police abuses at the precinct level could be predicted not only by structural disadvantage and population mobility, but also by increases in the proportion of Latino residents in those precincts.

This scholarship, while not definitive, certainly points to the continued importance of examining whether neighborhood racial composition affects differences in police service across places. But these empirical observations do not tell us *why* differences occur. Conflict theorists might argue that increased police service may indicate that police feel compelled to act in

[2] Mastrofski, Reisig, & McCluskey (2002) and Reisig, McCluskey, Mastrofski, & Terrill (2004) also found that, although not as powerful as individual factors, neighborhood disadvantage was still a significant predictor of police officer behavior toward suspects.

neighborhoods of perceived racial group threat. But place-based variations could also indicate more complex structures of community demands for service from the police, or even the influence of crime rates in those neighborhoods. Whatever the reason, empirical research seems to indicate that *more* policing (whether in formality, frequency, or force) seems to occur in places that are poorer, have greater percentages of minority residents, or more crime-prone.

The lack of place-based research in this area and the strong possibility of the effects of places on police officers warrant more research on how the racial, ethnic, and other characteristics of small places in which officers patrol affect officer actions. Such an understanding could not only help build ecological theories of police behavior, but also could serve as an opportunity to rethink place-based interventions that may foster incongruent outcomes across different places that may be race-based (Rosenbaum et al., 2005; Tyler & Huo, 2002). In particular, more fleshing out of the decision making process at diverse places is needed. Police do not simply treat a situation, call, or incident with a single decision such as an arrest or stop. Rather, officers may choose to dismiss calls, carry them further, upgrade or downgrade their seriousness, write reports (or not), or make arrests. Incidents experience an investigative path in which multiple decisions are made to resolve that situation, decisions which in isolation *and* in totality might be influenced by the situation or environment. It is to this analysis of these decision paths at places that I now turn.

III. THE CURRENT STUDY

STUDY LOCATION

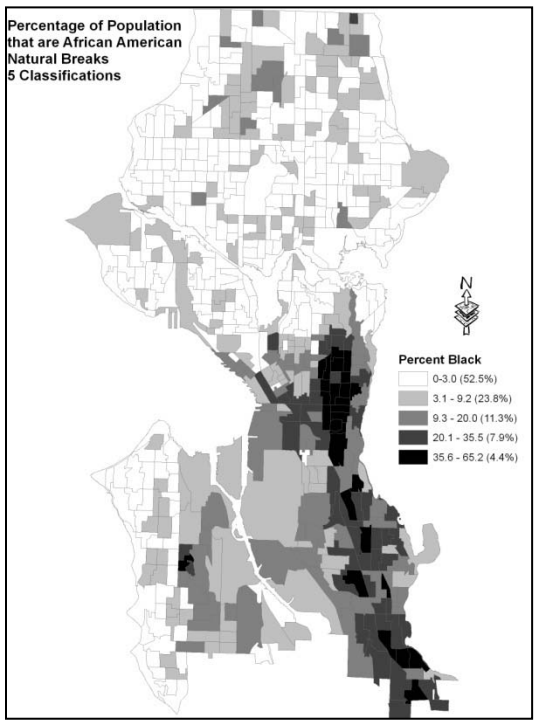
This study examines how characteristics of places relate to police officers' discretionary decisions for incidents to which officers responded in a West coast, metropolitan U.S. city –

Seattle, Washington. The site is ideal, as it is a large and urban city of approximately 80 square miles of over 500,000 residents with a crime rate slightly higher than cities of comparable populations. Further, Seattle has a highly diverse population of significant proportions of multiple ethnicities and immigrant communities that are spatially concentrated, providing an excellent opportunity to observe potential racial and ethnic composition effects on police decision making across places. At the time of the 2000 U.S. Census, Seattle's recorded racial and ethnic mix was Caucasian (70%), African (8%), Asian (13%), Hispanic (5%) and Native (1%) American. Approximately 17% of the population is foreign-born, and over 20% speak languages other than English at home and are "linguistically isolated".[3] The spatial concentrations of Black, Asian, and Hispanic populations are shown in Figure 1a, b, and c, respectively. The diversity in this study is especially noteworthy given that most studies analyzing the relationship between race and police discretion have only compared police service delivery between two categorizations—Black and White, or White and non-White.

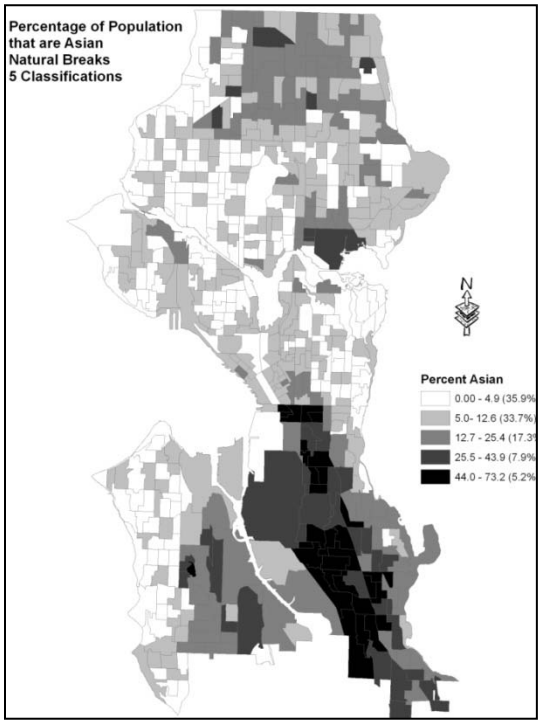
[3] The Census defines linguistic isolation as a situation in which every adult in a household speaks a language other than English, and no adult speaks English "very well" (Seigel et al. 2001).

Figure 1. Spatial patterns of Black (a), Asian (b), and Hispanic (c) populations in Seattle

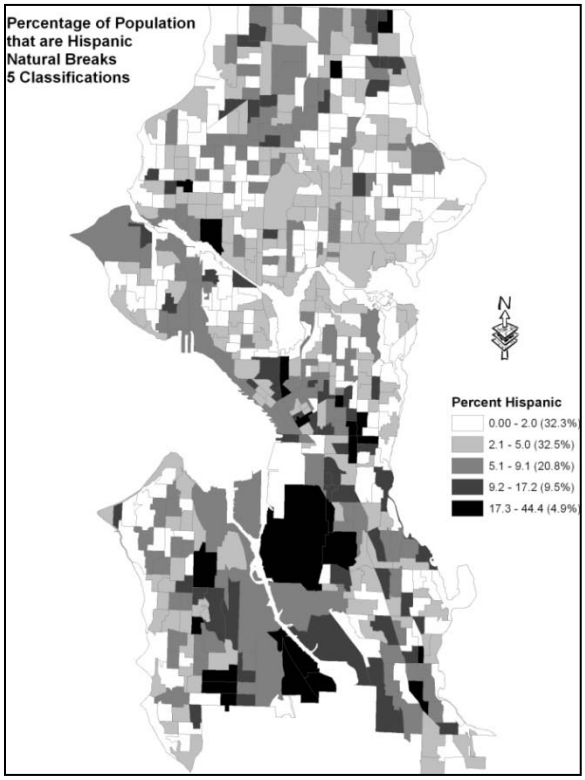
(a)



(b)



(c)



DATA USED

Data was collected from Seattle Police Department for the year 2001. This year was chosen because the most recent U.S. Census, which gathered characteristics of places used for this analysis, took place in the year 2000. Additionally, the author was interested in the effects of the terrorist attacks of September 11th on police decision-making related to race. The data used in this study expand the examination of the relationship between characteristics of places and police decision in a number of ways. Studies examining the impact of race and ethnicity on police decision making have often focused on specific crimes or situations such as acts of violence, arrest, or traffic stops. However, police exercise discretion in many other incidents (i.e. disorders, property crime, and vandalism) and at many decision points (decision to stop, investigate, write a report, arrest) (Weitzer & Tuch, 2002). Thus, rather than examine only certain types of crimes or specific decision points, this study examines police response to a wide variety incidents that officers responded to or initiated in this city in 2001 across multiple points in the life course of those incidents.

To achieve this, four data sources were collected and connected: the police calls for service database in which a dispatcher records the initial request for service (either by a citizen or a police officer); another database that records the modification of that call upon initial officer arrival; a data base of computerized records of written reports; and an arrest database. The calls for service database is the origin of all of the other databases, such that the modified calls for service, incident reports, and arrest data could be linked, in chronological order, to the initial request for service.

Initially, 421,269 recorded calls for service incidents were available for this analysis. All records that could be discerned[4] were retained, even if they were dismissed upon officer initial response, as the dismissal themselves is a measurable action that may systematically differ across place. Of these initial records, 153,332 incidents were excluded for the following reasons: I excluded events which were traffic-related (75% of the 153,332) because I could not discern differences among them in terms of incident classification.[5] Additionally, routine administrative duties are also recorded in the calls for service data such as follow ups, patrol vehicle maintenance service, assistance to other departments (14%); responding to individuals who were sick, dead, or injured, that were not crime related or suicides (4%); calls for service on missing individuals and runaways (3%); and reports of other hazards that required another service provider (4%). Finally, I removed 590 events that involved the delivery of special court orders. This left 267,937 incidents which were retained for this study, categorized in Table 1 according to how they were first described in the calls for service data.

Table 1. Types of incidents examined in the current study

Description	N	%
Person, violence, and weapons crimes: Homicide, rape, sex offenses, robberies, kidnappings, assaults, weapons, explosives, gunshots, domestic violence, child violence. Excluded from this analysis were suicides, unspecified injured persons or individuals who fell ill, and "dead-on-arrivals" that were not homicides.	15,933	6.0%
Property offenses: Auto theft, burglary, arson, fraud, theft, shoplifting.	68,467	25.6%

[4] In many cases, the record in the database simply indicated "duplicate" or "unknown", where no information, including address or nature of the call was provided, nor did an officer respond. These were removed.

[5] In this database, I was unable to discern whether initial calls for service labeled as "TRAFFIC" were traffic stops, parking tickets, or reports of accidents in which police did not respond. Because of the generic label in the calls for service database, this posed problems with the development of the decision pathways (as discussed shortly), which required a general determination of the seriousness of the offense. Thus, "TRAFFIC" could include a fender-bender for which no police action was initiated or a driving-while-intoxicated hit-and-run incident in which someone had been seriously injured. Because of this, traffic-denoted incidents will be analyzed in a separate study if more information can be obtained about them.

Crimes of drugs and vice: Possession, distribution, sale, manufacturing, conspiracy, or other drug abuse and sale offenses, prostitution, gambling, other vices.[6]	9,479	3.5%
Disorder incidents: Complaints of noise, the misuse of phones (pranks, threats), nuisance calls, dogs barking, general disturbances or harassments, abandoned cars, damage to property, unspecified miscellaneous misdemeanors, calls regarding mentally ill individuals, civil disorders/riots, civil disputes, liquor violations, public urination, littering, public indecencies, unspecified fighting in the street, fireworks, loitering, and non-violent family disturbances.	99,581	37.2%
Suspicious incidents: These incidents were more vague and involved citizens describing situations in which they believed something suspicious was happening. This category includes incidents related to alarms, prowlers, and any type of call coded as suspicious activity.	74,477	27.8%
Total incidents:	267,937	100.0%

BUILDING THE DECISION PATHWAY

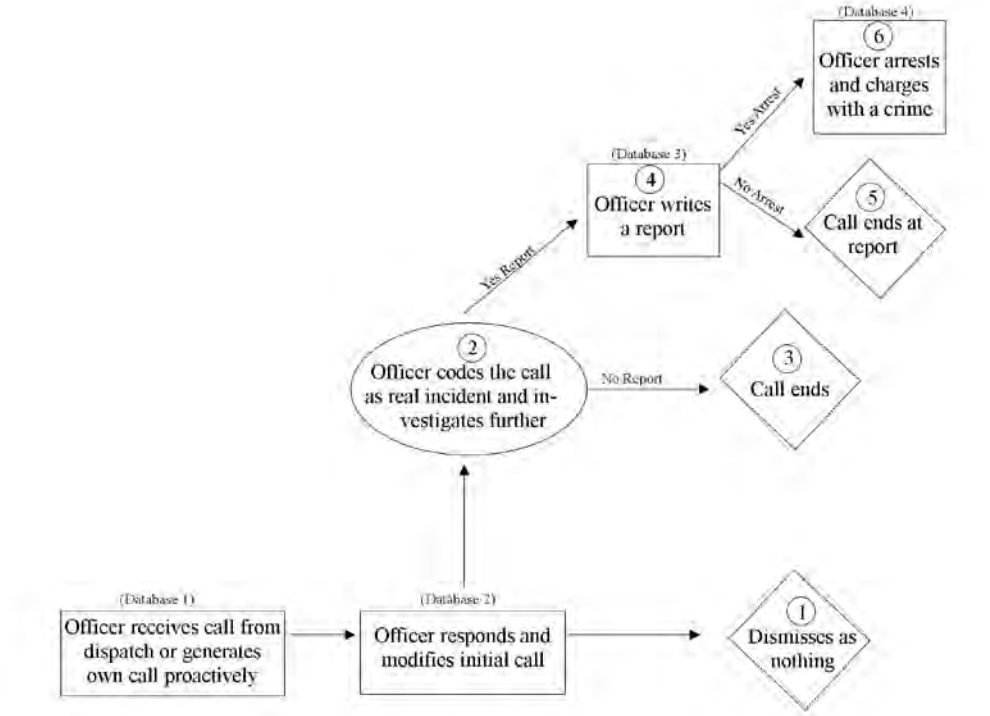
By linking the four databases, I operationalized a more comprehensive measure of discretion—the decision pathway. The decision pathway is a series of decision points that may occur for every incident in which an officer responds. Such pathways can include decisions about whether to initiate and/or respond to calls for service, stop an individual, dismiss a call, investigate further, write a report, make an arrest, or increase or decrease the severity of a report or arrest charge. The decision pathway gives a more complete picture of what happens across the life of an incident, not just at the initiation of a stop or an arrest. Studying the life of an investigation is useful in racial disparity studies, given that single decision points may bias the impact that race has (or doesn't have) on the outcome of that incident. Arrest for violent crimes, for example, likely will be greatly influenced by legal factors related to that event. However, the

[6] The total number of incidents that fell in this category was initially small due to a number of possible reasons. Drug and vice incidents are often generated from proactive activities by police officers. Further, this initial labeling is from calls for service data, where drug and vice crimes may also be initially recorded as "disorder" or "suspicion".

decision to stop someone for general questioning in a high crime neighborhood that may lead to that arrest may be more heavily influenced by extralegal factors.

To illustrate the decision pathway, consider the example illustrated in Figure 1. This figure displays the possible decisions, outcomes, and complications that can occur in the course of an investigation when an officer responds to a call for service for a fight that occurred on the street. At each turn, discretion is applied, and an outcome occurs, which subsequently influences later decisions and outcomes. In the case of the example shown in Figure 1: Upon arrival, there is no evidence of a fight, and no one has seen anything suspicious. The officer may dismiss the call entirely (1). Or, upon arriving at the scene, the officer finds witnesses to a fight but no victim or suspect. She may tell the dispatcher that there was a fight (2), but because no victim, suspect, or other visible damage is present, nothing more can be done. Even if a victim is discovered but did not incur an injury, the officer may end the response at that point (3). However, if the officer locates a victim, she may decide to write a report for an assault (4) but may never continue the investigation (5). If a suspect is located, the officer may (6) or may not (5) arrest the individual.

Figure 2. An example of a decision pathway



One can think of many legitimate (and illegitimate), legal (and illegal), organizational (and personal), and rational (or irrational) reasons, unrelated to racial or ethnic characteristics of places that may influence these decisions. For example, miscommunication between the dispatcher and citizen or officer can occur, leading to an early misclassification of a crime, which requires modification once an officer arrives. Officers may choose not to arrest an individual if the infraction is minor and a place has high levels of violence that prioritize the officer's time. Other incidents may not warrant a report or arrest, just informal assistance by the officer (for example, kids making noise in the street). In some cases, officers may themselves initiate a call for service, which in the case of this data is not distinguishable from civilian-initiated calls. As

one reviewer of this paper correctly pointed out, discretionary tendencies about how to proceed with investigating an incident may be different for officer-initiated versus civilian-initiated calls. Further complications result because there may be changes by dispatchers to calls that are also not recorded. But, all else being equal, if race, ethnicity, or socioeconomic status were not factors in these decisions, no matter the legitimacy of those reasons, we might expect variations in these choices to be randomly dispersed across the geographic patterns of these incidents.

Following the example of Figure 1, the four data sources can be linked by unique incident identification number that begins with the call for service (or officer initiated call-in) so that decision pathways for each of the 267,937 incidents can be rebuilt. Once these databases are combined, changes across each linked data source for each incident represent a "decision" which then can be characterized and scored, creating the decision pathway. To characterize each of these changes and then an overall tendency of these changes over the course of an incident's investigation, I use the terms "upgrading" and "downgrading". Upgrading and downgrading can take place in two forms: choice of action or a change in an incident's crime classification. With regard to action upgrading or downgrading, officers can choose whether to take, dismiss, or initiate a call, write a report, or make an arrest. When an officer decides to arrest, for instance, that is an upgrade in action. Similarly, if an officer chooses to dismiss a call, that would be considered a downgrade. With regard to a crime classification upgrade or downgrade, officers can choose to change the labeling of an incident to one that is more (or less) serious. In combination, these upgrades and downgrades (or no changes) quantify the decision pathway for further multivariate analysis.

This type of classification is not without limitations which cannot be easily reconciled. Such quantification is obfuscated by both database issues and normative concerns. With regard

to the former, the data source on which the entire decision pathway is built is the initial calls for service database, as this is the first entry point into an incident by the police department. Although this data is the most inclusive in terms of incidents, it is also the most general in classification, as dispatchers quickly interpret situations from callers or an officer's curt radio transmission and then record them broadly. Because of the tendency for each of the databases to become more specific across the decision pathway, the database with the most general crime classifications provides the best benchmark for standardization, especially in terms of upgrading or downgrading. For instance, if someone was arrested for "aggravated assault with a handgun," the incident in the calls for service database might be labeled "assault." There would be no way to know if the final classification in the arrest database was an "upgrade," since it is impossible to know if the intent of the label in the calls for service database was also such a high-grade assault. Although using the database with the more general label reduces the specificity of the meaning of the terms "upgrading" and "downgrading" for crimes with varying degrees of seriousness, it also reduces unwarranted assumptions.

The difficulty of quantifying crime classification decisions is also increased by a normative concern of how to rank crime types that are qualitatively different and potentially incomparable. For this study, I created a simple standardization scheme guided by general conventions reflected in the UCR and the jurisdiction's state Sentencing Commission, and also by consulting directly with the county prosecuting office which is responsible for this city on how they view crime seriousness (especially with regards to drugs and vice). For each of the four databases, all crimes can be categorized into five general crime classifications: Persons and weapons crimes are considered the most serious, followed by property crimes. Drugs and vice are ranked third not only because of the social concerns that surround them generally, but in this

city, as in many other jurisdictions, these crimes are treated more seriously in terms of punishment than disorder or suspicion crimes. Disorder and suspicion are then tied for fourth. Both are low-level incidents and often are not considered crimes. "Other" incidents include 911 calls initially involving sick and non-crime injured people, those who had an accident in vehicle, or calls for service for fallen trees, broken plumbing, patrol vehicle maintenance, breaks, transporting evidence or persons, or children refusing to go to school.

To quantify changes, the initial classification by the dispatcher was not given a starting weight because the specific crime classifications were not the concern here, rather the *change* in the classifications. Such distances between how crimes are recorded are detailed as absolute values in Table 2. In effect, all incidents begin at the score of "0" when received by a dispatcher and remain so until they experience an upgrade or downgrade in classification or action. For crime classification upgrades, a positive value of the point difference in Table 2 is recorded, and for downgrades, a negative value. All scores are whole numbers between 0 and 4. The scoring is conducted at each decision points—the crime classification of the call at initial response, the crime that was written up in the report, and the charge on which the arrest was made.

Table 2. Point system for changes in crime classifications

Change (either direction)	Point Difference (in absolute values)
same ↔ same (e.g., person ↔ person)	0
person ↔ property	1
person ↔ drugs and vice	2
person ↔disorder/suspicion	3
person ↔non-crime "other"	4
property ↔drugs and vice	1
property ↔disorder/suspicion	2
property ↔non-crime "other"	3
disorder/suspicion ↔suspicion/disorder	0
disorder/suspicion ↔drugs and vice	1
disorder/suspicion ↔non-crime "other"	1
drugs and vice ↔non-crime "other"	2

Whole number changes used here are arbitrary and exploratory, as ranking and quantifying changes from one classification or action to another has no precedent in policing scholarship. Options such as using sentencing schemes (for example, months of incarceration that area associated with crimes) are not obvious answers. Sentencing guidelines present not only large ranges, but also overlap and qualifiers between sentencing for incidents. The scoring system here is only a start, and certainly other types of scoring might be assigned.

Additionally, scores are also generated for actions, such as dismissing a call after first response (downgrade) or making an arrest (upgrade). Unlike changes in crime classification, single point differentials would not be useful in adding weight to action upgrades and downgrades. A one-point upgrade or downgrade for an action (±1) would be "washed out" if a substantial change in crime classification also occurred. For example, if reports are given a score of +1, then a decrease in crime classification from a persons to a disorder crime yields a -3, essentially weighting the reclassification more heavily than the decision to write a report. This may not reasonable, as reports and arrests are arguably "stronger" upgrades than changes in crime classification. Reports represent an official recording of the crime, they also promise follow up by the police agency and can result in arrest and trial. Similarly, an arrest should also be weighed heavily, given the consequences of this official action. Thus, to weight actions of report and arrest more heavily, reports and arrests were assigned four points, given that four is the greatest point differential for changes in crime classification.

This combination of changes in crime categorizations and decisions to take actions which occur simultaneously, help to create basic descriptions of change across the pathway. Table 3 provides examples of the direction of upgrading and downgrading that might occur in just property calls for service examples (imagine these tables for all types of calls for service). In

each set of parentheses, upgrading is denoted by "+," downgrading by "-," and no action or change in crime classification by "0." In the first shaded row, an officer gets a call, for example, about a stolen vehicle. Upon responding, she finds that no vehicle was stolen; rather, a teenager had taken the family car to the grocery store without telling her parents. Not knowing this, the parents thought the car was stolen and called the police. The officer dismisses the call upon arrival. The (-) indicates that what began as a property offense was reclassified as a non-crime and immediately dismissed, reflecting a downgrade. Since the officer's initial response to the call for service only reflects one decision (a change in the crime classification or simply dismissed), only a single upgrade or downgrade is noted. Because no report was written, no arrest was made, and no subsequent changes in crime classification occurred, we see zeros across all other decision points. Note – this example represented a legitimate and rational downgrade, but one could imagine illegitimate reasons why this might occur.

Table 3. Examples of decision pathways initiated by a property 911 call

Initial 911 call	Officer response		Report		Arrest	
property	dismissed	(-)	none	(0,0)	none	(0,0)
property	property	(0)	none	(0,0)	none	(0,0)
property	persons	(+)	yes, persons	(+,0)	none	(0,0)
property	persons	(+)	yes, property	(+,-)	none	(0,0)
property	persons	(+)	yes, persons	(+,0)	yes, persons	(+,0)
property	persons	(+)	yes, property	(+,-)	yes, property	(+,0)
property	persons	(+)	yes, property	(+,-)	yes, persons	(+,+)
property	persons	(+)	yes, property	(+,-)	yes, disorder	(+,-)

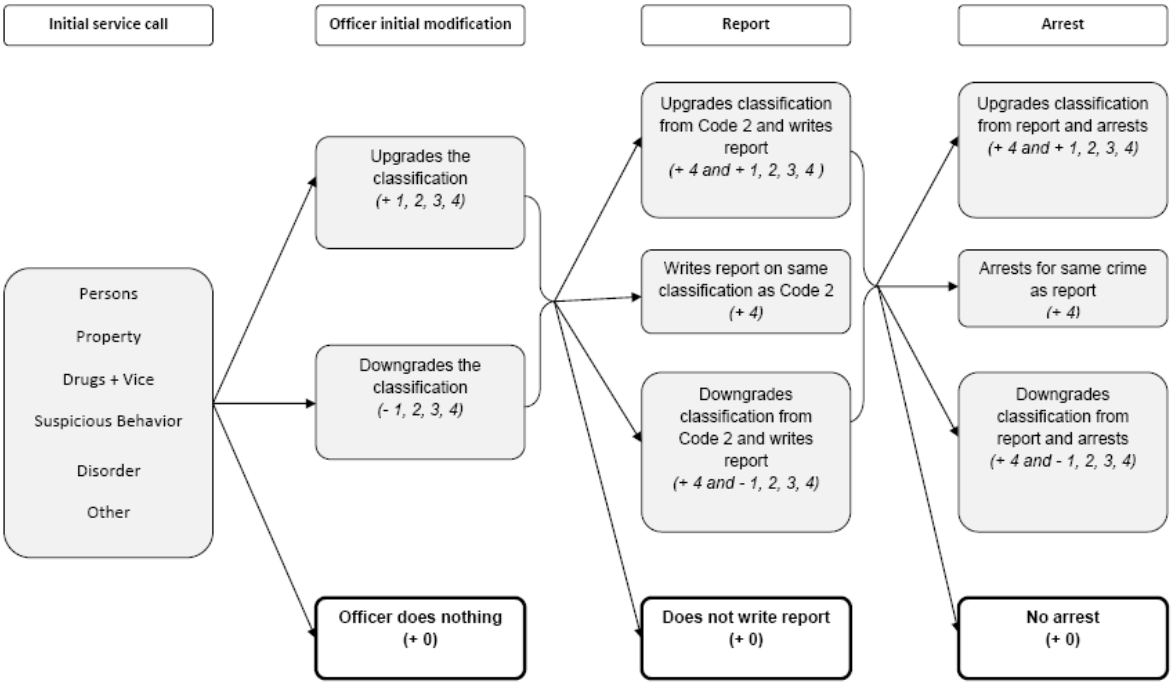
However, consider the next shaded row in Table 3. Here, a 911 call was made for a stolen vehicle. The officer arrives at the scene and the victim tells the officer he was "carjacked" (a persons crime, akin to a robbery). The officer radios back to the dispatcher, changing the incident from a property to a persons crime (a crime classification upgrade, denoted by the "+" in the "Officer Response" column). Then, after further investigation, the officer decides to write a

report (an action upgrade denoted by "yes" and a "+" sign in the first part of the parenthetical under the "Report" column). However, for some reason, the report was *not* written as a persons crime but as a property crime. Hence, the "-" in the second part of the parenthetical, which indicates the crime classification incurred a downgrade. There may have been a legitimate reason for this crime classification downgrade – perhaps the individual was not carjacked, but the woman who took the vehicle actually took it the night before because she was angry with the vehicle's owner for not paying her for an act of prostitution that she performed for him. As she did not own the car, she did steal the vehicle, but she did not steal it using threat or use of force. Rather, she took the vehicle while the man was sleeping and then abandoned it at the downtown mall. Or, there may be an illegitimate reason for converting this into a property crime – perhaps if the officer writes a persons report, further work has to be conducted on the investigation, and because the officer's shift is almost ending, he does not wish to write a felony violent crime report. Given that the individual may even know the assailant, the officer may decide to write the report as a car theft. Moving further down the decision pathway in this example, perhaps the officer locates the woman and arrests her for the property crime. The decision to arrest is an action upgrade, but keeping the crime classification as "property" leads to no change in crime type (hence the "0" in the second parenthetical of the arrest).

One can imagine that hundreds of decision pathways are possible given the five different crime classifications and the different action choices that police can make. To illustrate this, I extend the general pathway shown in Figure 2 into a more detailed decision tree in Figure 3, with the possible points for each of the choices. This scoring scheme allows for each of the 267,937 incidents to receive four scores—three scores between each decision point in the pathway and a

total score across the pathway. These scores become the dependent variables in predictive modeling about the influence of the race and ethnicity of places upon these scores.[7]

Figure 3. Decision Pathway Diagram



An example of a score generation for a particular incident might be the following: A call for loitering occurs, which is then reclassified as a drug call upon an officer's initial response, which increases the score by (+1). But then a report is written (+4), but for a loitering incident (-1), equaling a +3 for this decision point. An arrest is made (+4), but the charge given is a drug possession charge (+1), which leads to an increase in 5 points. The total pathway score is +9. The distribution of the total scores for a few examples are shown in Table 4, and such frequencies (although not shown here), can be generated at each point in the decision pathway.

[7] Space does not permit all of the graphs and maps of each distribution of every score to be included in this article, but the full report of this project will be made available at <<website to be added after peer review>>.

Table 4. Examples of decision pathway scoring

Initial 911 Call	Officer Response	Report	Arrest	Total Score
Noise complaint	Dismissed (-1)	No report (+0)	No arrest (+0)	-1
Stabbing	Stabbing (+0)	Report Stabbing (+4)	No arrest (+0)	+4
Loitering	Drugs (+1)	Report Loitering (+3)	Arrest Drugs (+5)	+9
Theft	Theft (+0)	Report Theft (+4)	Arrest Theft (+4)	+8
Prostitution	Loitering (-1)	Report Prostitution (+5)	Arrest Loitering (+3)	+7
Assault	Disturbance (-3)	No report (+0)	No arrest (+0)	-3

By connecting the four databases and scoring each decision point and the total pathway, four outcome variables were created – upgrading/downgrading scores between the initial call and the officer modification, change scores at the time of report, change scores at the time of arrest, and a total score that gives the overall tendency of upgrading and downgrading across the decision pathway. The distribution of total- and single-point scores of these pathways reflects common patterns of crime incident reporting. Table 5 shows the distribution of the scores for the first decision point in the pathway – whether to change the crime classification upon an officer's initial assessment or dismiss the call altogether. Almost 78% of the time, officers did not change the crime classification of the calls as they were initially dispatched. Interestingly, if a change was made, the distribution of this first decision point indicates a general tendency to downgrade calls (17.4% of calls) as opposed to upgrading the seriousness of the call (4.6% of calls).

Table 5. Distribution of the point distance between the initial dispatched call and the modified call after initial response by an officer

Score	Frequency	Percent (%)
-4	2104	.8
-3	7475	2.8
-2	4774	1.8
-1	33034	12.3
0	208128	77.7
1	4685	1.7
2	3029	1.1
3	4708	1.8
Total	267937	100.0

Most calls for service do not change in crime classification, and no further action is taken upon them.

After the initial response and investigation, the officer or assigned detective might then decide whether a report should be written about the incident (Table 6). Of the 267,937 calls examined, a score of "0" indicates that 70.4% did not result in either a report being written, or if a report was written, a dramatic drop in crime severity, which did not often occur. This finding in itself is fascinating; the vast majority of interactions and issues that the police deal with are taken care of on an informal basis, emphasizing the need for strategic plans that can accommodate this type of work (community policing is one, but others may exist). If a report was written, 92% of those reports were written on the same crime classification as what the officer had coded upon first response (scored as "4"). The other scores represent a report that was written but whose crime classification was changed either once (at the modification of the call or during the report) or twice (at both the modification of the call and during the report). Thus, a score of "1" may indicate that an officer was initially called to a persons crime, changed that crime to a disorder (-3 points), but still wrote a report (+4 points), resulting in a score of +1. Or a call may have begun as a disorder, and the officer may have been called to the scene of a "non crime" but upgraded the call to a property crime (+3), then wrote the report (+4) on a persons crime (+1 from the property designation). This would lead to a score of +8.

Table 6. Distribution of up and downgrading scores if a report was written

Score	Frequency	Percent (%)
0	188583	70.4
1	1272	.5
2	1303	.5
3	1066	.4
4	72752	27.2
5	618	.2
6	734	.3
7	967	.4
8	642	.2
Total	267937	100.0

When reports are written, the crime classification does not usually change.

Further, of all the calls for service, 94.7% never result in an arrest, as illustrated by a score of "0" in Table 7. Of those that did, almost all received a charge that reflect the crime indicated in the report (hence the score of "4" in Table 7). The other scores represent when an arrest was made, but when a different charge was given from the original report.

Table 7. Distribution of upgrading and downgrading scores if an arrest was made

Score	Frequency	Percent (%)
0	253654	94.7
1	327	.1
2	269	.1
3	252	.1
4	12381	4.6
5	292	.1
6	110	.0
7	620	.2
8	32	.0
Total	267937	100.0

Across the entire decision-making pathway, scores were added from each decision point to obtain a final score that would reflect upgrading and downgrading in both incident classification *and* in action taken across the life of that pathway. Table 8 shows the final distribution of the total point scores for the entire sample. The sign of the scores may be misleading. For example, a "1" could represent a downgrading just as a "-4" could. On the other hand, a "+11", could be a call that starts out as report of ambiguous disorder. Upon the officer's arrival, he discovers someone has been shot and changes the crime into a persons crime (+3). Then, a report may be written for a shooting (+4), which leads to the arrest of an individual (+4). The total score for this pathway would be "11." Again, the reason for the large proportion of "0s" is because no report was written, and no change of classification was made upon the officer's initial response and modification. This percentage is smaller than the number of "0s" in Table 5, since some of the "0s" in Table 5 are also represented between scores "-4" and "3".

Similarly, a score of "4" primarily represents unchanged calls from Code 1 to Code 2 that resulted in a report, but other reports could be reflected in scores between 0 and 8.

Table 8. Total scores and their distribution across entire decision pathway

Score	Frequency	Percent
4	1452	.5
-3	5880	2.2
-2	3215	1.2
-1	31103	11.6
0	141925	53.0
1	4741	1.8
2	2665	1.0
3	1863	.7
4	57060	21.3
5	670	.3
6	2182	.8
7	2485	.9
8	8796	3.3
9	1384	.5
10	478	.2
11	2028	.8
12	10	.0
Total	267937	100.0

The vast majority of these are incidents that ended at the call for service and no further action or change in crime classification was taken.

THE PLACES THAT DECISION PATHWAYS OCCUR

To examine the relationship of characteristics of geographic areas and the decision pathways within these areas, one option is to assign each individual pathway the characteristics of the area in which it occurs. However, this presents the problem of assigning information from a large geographic unit (i.e., a Census track) to a smaller location within that unit (i.e., an address), creating a possible ecological fallacy and violations of statistical independence, given that all individual incidents are assigned the same values within an area. Hierarchical models are useful when both individual and place-based covariates exist, where individual incidents are nested inside of larger areas. However, in this study, neither individual co-variates are available, nor can characteristics of places be specified at the level of an incident's address. Yet, using

large areas like neighborhoods, tracts, or even police beats to compare general rates of crime or upgrading and downgrading, may not be useful either, a process which has limited prior studies (e.g., Smith (1986) use discrete neighborhoods, Petrocelli et al. (2003) used Census tracts, and Liska and Chamlin (1984) use cities). There may be high levels of spatial heterogeneity across these larger geographic units in not only attributes of race, ethnicity, or economic characteristics of place, but also officer decision making. This heterogeneity may be masked with aggregation (Weisburd et al., 2009) or lost if only a few of these places are studied (Hipp, 2007; Oberwittler & Wikström, 2009). Oberwittler and Wikström (2009) for instance, argue that individuals tend to assess and be impacted by areas immediately surrounding their residence, and that using smaller areas as geographic units of analysis is more advantageous because more homogenous observations within those areas can be found (Oberwittler & Wikström call this "homogenous heterogeneity," p. 57).

A compromise for this study involved three actions: decreasing the size of the geographic unit within which analysis is done; comparing the entire field of these units within a jurisdiction; and averaging total and specific decision pathway scores at these small places to gain the tendencies of upgrading and downgrading at these places. At a practical level, comparing decision making in much more smaller geographic units of analysis reinforces the reality that police decision making occurs at much more smaller and specific places, even smaller than an officer's police beat. However, there is a tradeoff. As geographic units become smaller, information at those places becomes less available due to privacy concerns. The smallest geographic area in which both socioeconomic and demographic information can be obtained for this study is the Census block-group, of which there are 568 in this jurisdiction averaging 0.15 square miles. The block-group can be conceptualized at the smaller geographic side of

Brantingham and Brantingham's (1981) *meso* level of geography and is on average, about one-sixth the size of patrol beats in this city. Although information about race is available at an even smaller level of Census geography—the block-level—other socioeconomic characteristics of interest are not.

Thus, for this analysis, the block group is used as the geographic unit of analysis, and the decision pathway *tendency* within that block group, as quantified by averages of upgrading and downgrading scores are calculated for each of the 568 block groups. To do this, the location of the start of the decision pathway is geographically referenced in ArcGIS[8] so that each incident can be assigned to the specific Census block group through a process of spatial joining. This allows for scores from decision pathways (specific scores at each decision point and the total scores) to be averaged across each block group, and for those averages to be analyzed with characteristics of that block group.

Table 9 shows descriptive statistics of the average pathway scores for each decision within the pathway for the 568 block groups in Seattle. Each of the 568 block groups contain, on average, approximately 471 decision pathways (standard deviation 823.80). The mean in the row labeled "average score change from initial call to modification" reflects the mean of the averages of the scores of the first decision point in the pathway across block groups. Thus, -0.18 indicates that, on average, block groups had pathways experienced a slight downgrading of .18 points (s.d. = .069 points) when an officer initially responded and modified the call. Similarly, the average upgrade from the modified call for service to the report writing stage indicates that when averaging across block groups, the average scores of the decision to make a report within those pathways was 1.23. This is less than 4, since the vast majority of incidents did not result in a report.

[8] *www.esri.com/software/arcgis*

Table 9. Mean Decision and Pathway Scores Across Block Groups

	N	Min.	Max.	Mean	S.D.
Average score change from initial call to modification	568	-.50	.12	-.184	.069
Average score change modification to report and report type	568	.50	2.29	1.23	.244
Average score change from report to arrest and arrest type	568	.00	.93	.15	.110
Average score of the total decision pathway score for each block group	568	.31	2.5	1.19	.308

The next step in this analysis was to use multivariate regression to determine what might predict these upgrading and downgrading tendencies in block groups. However, including these averages of upgrading and downgrading in multivariate regression may lead to misspecification of the regression model due to spatial dependence in the data. Decision-making tendencies by officers in one block group may be dependent on tendencies in adjacent block groups, leading to the existence of spatial dependence (see Chainey and Ratcliffe, 2005; Ward and Gleditsch, 2008). The possibility of this occurring with police behavior within neighboring places is high; often the same officers are responding to adjacent places, and spatial dependence if often found to exist among many socioeconomic variables, including crime. Using a spatially lagged dependent variable regression model, therefore, is appropriate in order to achieve more accurate model estimates. Indeed, for this study, conducting regression using spatially lagged dependent variables always improved the fit of each regression model. So, to create spatially lagged average decision score for each block group across the decision pathway and for the entire pathway, the

software GeoDa[9] was employed (see Anselin, 2003; Anselin et al., 2006). All of the regression models below use the spatially lagged average pathway scores for each block group.

FACTORS INFLUENCING DECISION PATHWAYS

For the co-variates of the regression models, the literature review suggested that a number of place-based factors that might influence decision making pathways. The level of violent crime as well as calls for service were recorded for each block group from the data itself, as Smith (1986) indicated this may lead to a systematic downgrading of events. These were found to be highly correlated (see Appendix A), and in most models, only the violence measure was used. From the 2000 U.S. Census, the percentage of Black, White, Asian, Hispanic, and foreign-born residents, as well as the proportion of households that were linguistically isolated were collected. Census also provides information on socioeconomic characteristics of block groups, which can also condition officer behavior, as others have discovered (e.g., Terrill & Reisig, 2003). There are many census measures which can be used to describe these characteristics and which also have been used by scholars to indicate social disorganization, community needs, concentrated poverty, or levels of community wealth at places (see Anderson, 1990; Gottfredson et al., 1991; Gottfredson & Taylor, 1986; Park et al., 1925; Shaw et al.1929; Shaw & McKay, 1942; Wooldredge, 2002).

As these socioeconomic indicators are highly correlated, I use principle component analysis (see Table 10) to reduce these variables into three factors: "DISORG," "NEEDS," and "WEALTH". The DISORG component groups several factors associated with social disorganization, including high loads of measures of poverty, renter-occupied homes and population density. The NEEDS measure included percentage of households that headed by

[9] For more information on GeoDa, go to https://www.geoda.uiuc.edu/.

females with children, the percentage of unemployed individuals over the age of 16, and those receiving public assistance. Finally, the WEALTH component includes high loads of median housing values, income, and college education.

Table 10. Rotated Component Matrix for Socioeconomic Variables

	DISORG	NEEDS	WEALTH
% renting	.834		
Population density (people per square mile)	.802		
% under poverty level	.682	.524	
% receiving public assistance		.838	
Female-headed house w/children		.791	
% over age 16 and unemployed		.459	
Median housing value for owner-occupied units			.908
Median household income in 1999	-.577		.720
% over 25 with 4-year college degree		-.536	.686

The KMO=.758 indicating an adequate sample size. The total variance explained by the model was 72.6%. Varimax rotated principal component matrix in five iterations.

The descriptive statistics for all of the explanatory variables used, the three factors, and other measures of interest (including statistics on the average number of persons, property, drugs and vice, suspicions, and disorder calls for service across block groups) are included in Table 11. The correlation matrix for these variables is in Appendix A. Multivariate regression models were then ran to examine the relationship between upgrading and downgrading tendencies within block groups and place characteristics.

Table 11. Descriptive statistics for 568 block groups in Seattle

	Mean	S.D.	Min.	Max.
Total calls for service	471.55	823.801	44.00	11,738.00
Calls for service per 100 people[a]	48.88	82.710	5.25	990.44
Proportion of calls indicating violence	.05	.025	.00	.16
Land area in square miles	.15	.172	.02	2.48
% Black	.08	.119	.00	.6519

% White	.72	.241	.00	1.0000
% Asian	.12	.140	.00	.7317
% Hispanic	.05	.055	.00	.4442
% Foreign-born	.16	.123	.00	.62
% Linguistically isolated	.05	.077	.00	.61
DISORG factor[b]	.00	1.000	-1.44	6.98
% renting	.4521	.268	.00	1.00
Population Density	10,104.45	8,486.996	208.48	97,444.95
% Under poverty level	.11	.108	.00	.63
NEEDS factor[b]	.00	1.000	-1.69	6.84
% receiving public assistance	.03	.045	.00	.37
Female-headed household w/children	.05	.053	.00	.42
% over age 16 and unemployed	.0516	.06445	.00	1.00
WEALTH factor[b]	.00	1.000	-2.33	5.80
Median housing value	269,318	135,455	0	1,000,001
Median household income in 1999	52,753	22,173	0	200,001
% over 25 w/ 4-year college degree	.48	.191	.0159	1.00
Violent crimes[c]	23.98	38.624	1	468
Property crimes[c]	114.01	152.680	6	1799
Drugs and vice crimes[c]	25.26	106.845	1	1578
Disorder incidents[c]	132.98	296.416	5	4762
Suspicious incidents[c]	117.40	172.428	10	2072

[a] Excluding traffic incidents.
[b] Factors have a mean of 0 and SD=1 and the variables that loaded most highly for each factor are listed below each factor.
[c] As derived from the initial calls for service database, given that this is the starting point of each decision pathway.

IV. RESULTS

OVERALL DECISION PATHWAY SCORES

The first set of analyses in Table 12 displays the regression of the total pathway score average within block groups upon crime, race and ethnicity, and socioeconomic conditions. The purpose for displaying the three alternate models in Table 12 is to emphasize how greater model specification—especially with racial categories, but also with crime—can lead to different

findings. In all three models, the socioeconomic components representing disorganization, needs and wealth, as derived by the principal component analysis, are included.

Table 12. Multivariate regression models of spatially lagged full decision pathway scores

	Model (1) No specific racial group specified	Model (2) Racial groups specified	Model (3) Racial groups specified and violence included
Constant	1.205*** (.016)	1.216*** (.015)	1.167*** (.021)
Calls for Service per 100 people	-5.32E-005 (.000)	-1.41E-006 (.000)	
DISORG Component	.021** (.008)	.022** (.007)	.020** (.007)
NEEDS Component	.010 (.010)	.026** (.010)	.019^{+} (.010)
WEALTH Component	-.084*** (.008)	-.087*** (.008)	-.079*** (.009)
% Non-white	-.037 (.046)		
% Black		-.466*** (.073)	-.494*** (.073)
% Asian		.207** (.059)	.170 (.004)
% Hispanic		-.234 (.141)	-.231 (.139)
Proportion of calls indicating violence			1.149** (.355)
R squared Standard error of estimate Number of Observations	.196 (.169) 566	.271 (.161) 566	.285 (.160) 560

***p<.001, **p<.01, *p<.05, $^{+}$p=.062. Estimates shown are unstandardized B coefficients, with standard errors of those estimates in parentheses.

In Model (1) of Table 12, the general racial distinction "non-White" is used. Here, describing race in this way does not lead to race being a statistically significant predictor in explaining differences across pathway average scores in block groups. Further, while the call rate does not affect upgrading or downgrading, it does appears that in places that evidence *increased*

wealth and *less* disorganization, there is a tendency for officers to downgrade calls for service (e.g., dismiss calls, not write reports or make arrests, or reduce the seriousness of crimes).

However, "non-White" is an amorphous classification that does not reflect the diversity of the location or interest of this study. This city has substantial Asian, Black, and Hispanic populations, and it may be that police treat various minority communities differently, leading to a nullifying or watering down of effects when groups are analyzed together. Compare Model (1) to Model (2), when race and ethnicity of these places are more specified. Increased socioeconomic advantage remains a significant finding – as places become less disadvantaged, police tend to show downgrading tendencies in these areas. But here, more specific findings with regard to racial composition emerge. The greater the proportion of Black residents in a block group, the more likely police will also downgrade (or at least upgrade less) compared to other places. For places with greater proportion of Asian residents, the effect is the opposite; police tend to show upgrading tendencies in these places, or increasing the initial seriousness of the call, or taking investigations one step further.

Studies have also indicated that the levels of violence in the area, not just the level of crime, may increase police officer use of force (Terrill & Reisig, 2003) or decrease general police service (Smith, 1986), thereby mediating the effects of neighborhood racial characteristics. Model (3) includes a measure of the proportion of crime reported in the block group that indicates violence occurred. The calls for service rate was removed to avoid multicollinearity, as the call rate was highly correlated to the proportion of calls that indicated violence had occurred. Notice, the fit of the model (3) improves slightly over Model (2), and the finding is strong: Greater levels of violence means more evidence of higher total pathway scores. This is not surprising, given that violent crimes usually result in at least a report being written

and sometimes in an arrest. Writing reports and making arrests are heavily weighted actions in the scoring scheme used here, which contributes to this significant finding and its relative impact. However, even when including violent crime rates, the relationship between scores, % Black, and the socioeconomic attributes of places continues to remain significant (although the magnitudes of the effects of the socioeconomic variables decline). This first set of analysis indicates not only that it is important to include other races and ethnicities in places that do show a substantial mix of groups, but also that even with the inclusion of an expectedly powerful variable (violence), the effects of race continues to be salient.

But studies have also indicated interactive and moderating effects between neighborhood racial composition, socioeconomic characteristics, and policing outcomes (Terrill & Reisig, 2003; Weitzer, 1999; Wu et al., 2009). Indeed, there is at least a public perception that violence and racial composition of a place are correlated. Although Lum (under review) has found evidence that racial composition is not significantly related to spatial densities of violence and drug offenses in Seattle, this public perception is undoubtedly strong. To test for this possibility, two interaction terms were added to Model (3) and shown in Model (4) in Table 13 – an interaction between the proportion of the block group population that was Black and the proportion that was living in poverty, as well as between % Black and the violent crime rate. The results in Table 13 indicate not only the non-significance of these interaction terms, but that their inclusion does not affect the significance of the main effects of % Black. The effect of violence becomes weaker, however. There was an effect of the socioeconomic factors in this model, however; only the WEALTH factor emerged as significant.

Table 13. Full model including interaction terms using spatially lagged total mean pathway scores

	Model (4) Complete model with interaction terms
Constant	1.183*** (.023)
DISORG Component	.018^{+} (.009)
NEEDS Component	.015 (.011)
WEALTH Component	-.081*** (.009)
% Black	-.744*** (.184)
% Asian	-.175 (.060)
% Hispanic	-.228 (.139)
Violence proportion	.773^{++} (.733)
% Black x DISORG	.022 (.069)
% Black x Proportion of calls indicating violence	4.300 (2.77)
R squared Standard error of estimate Number of Observations	.289 (.160) 560

***p<.001, **p<.01, *p<.05, $^{+}$p=.052, $^{++}$p=.070. Estimates shown are unstandardized B coefficients, with standard errors of those estimates in parentheses.

It might be the case, as the second research question above suggests, that overall scores are affected by the percentage of foreign-born individuals or linguistically isolated groups. Perceived communication difficulties between these groups and police, as well as either real or stereotypically believed cultural barriers, may lead to systematically different outcomes in places officers perceive as dominated by these special ethnic sub-groups. As the correlation matrix in Appendix A indicates, the percentage of foreign-born and linguistically isolated residents within block groups is highly variable in this jurisdiction (from 0% to 62%) but also highly correlated to

the percentage of Asian and Hispanic. Because of their high correlation, they are analyzed excluding the % Asian and Hispanic variables. The results in Table 14 indicate that places with greater populations of foreign-born individuals (Model 5) or more linguistically isolated households (Model 6) do not differ significantly from their counterparts in terms of the overall decision pathway scores. However, what continues to remain a consistent finding in both of these models is that police downgrade in places with more wealth and less social disorganization and with greater proportion of Black residents.

Table 14. Foreign-born and linguistically isolated communities and spatially lagged pathway scores

	Model (5) Including foreign-born in the model	Model (6) Including linguistically isolated in the model
Constant	1.149*** (.021)	1.160*** (.019)
DISORG Component	.017* (.007)	.015* (.007)
NEEDS Component	.016 (.010)	.017 (.010)
WEALTH Component	-.074*** (.008)	-.077*** (.008)
% Black	-.493*** (.074)	-.495*** (.074)
Proportion of calls indicating violence	1.255*** (.355)	1.280*** (.355)
% Foreign born	.140^{+} (.073)	
Linguistically isolated household		.178 (.121)
R squared	.274	.272
Standard error of estimate	(.161)	(.161)
Number of Observations	560	560

***p<.001, **p<.01, *p<.05, $^{+}$p=.056. Estimates shown are unstandardized B coefficients, with standard errors of those estimates in parentheses.

SPECIFIC SCORES AT DECISION POINTS

The first set of results shown above in Models 1 through 6 examine the overall tendency of the decision pathway using the average of the total pathway scores in a block group. However, the vast majority of incidents that the police handle never result in an arrest. To see the predictive effects of the model for each stage of the decision pathway, Table 15 displays four regressions. Model (7) regresses the spatially lagged averages of the first decision point of the initially dispatched call and the officer modification independent variables on place characteristics. Model (8) regresses the decision to write the report and for what type of incident. Model (10) uses the dependent variable of the score from the report to the arrest stage. Additionally, given that arrest is so rare, Model (9) examines whether factors predict the spatially lagged pathway score up to the report but not including arrest.

Table 15. Multivariate regression models of spatially lagged decision scores within the pathway

	Model (7) From initial call to officer response	Model (8) From officer response to report	Model (9) From initial call to report stage	Model (10) From report to arrest stage
Constant	-.195*** (.004)	1.256*** (.018)	1.061 *** (.019)	.106*** (.006)
DISORG Component	-.003 (.001)	.005 (.006)	.002 (.006)	.018*** (.002)
NEEDS Component	.000 (.002)	.017^{+} (.014)	.017^{++} (.009)	.002 (.003)
WEALTH Component	-.004* (.002)	-.061*** (.007)	-.064*** (.008)	-.014*** (.003)
% Black	-.007 (.015)	-.577*** (.064)	-.583*** (.066)	-.090 (.026)
% Asian	.077*** (.012)	-.024 (.051)	.053 (.054)	.116*** (.018)
% Hispanic	.002 (.028)	-.352** (.120)	-.349** (.125)	.118 (.043)

Proportion of calls indicating violence	.005*** (.073)	.855** (.307)	.860** (.320)	.289** (.109)
R squared	.135	.235	.243	.434
Standard error of the estimate	(.033)	(.139)	(.144)	(.049)
Number of Observations	560	560	560	560

***p<.001, **p<.01, *p<.05, $^{+}$p=.054, $^{++}$p=.058. Estimates shown are unstandardized B coefficients, with standard errors of those estimates in parentheses.

When examining predictors of the initial decision to change the nature of the call upon first arrival, an interesting finding emerges. First, the proportion of crime that is violent continues to be a salient factor in explaining upgrading at all individual decision points. However, for different decision points, there is variation in what influences spatially lagged scores. At the early stage of the decision pathway, where most officer responses to incidents are completed, the magnitude of the effect of violence at places is much weaker. This most likely points to the effect of violence on pathway scores and its disproportionate effect on the decision of police to write reports or arrest suspects. Further, during this initial encounter, the proportion of Black or Hispanic residents do not emerge as significant co-variates as they did when predicting the total pathway score (and the wealth of an area is a weak predictor). The downgrading connected to wealthy places and places with larger Black populations seems to be occurring at the more formal and official stages of report writing.

For Asians and Hispanics, the effects seem to vary across the pathway. During the report writing stage, a downgrading occurs in Hispanic communities, only to see the opposite effect (upgrading) during the arrest stage. In other words, less reports are written and for less serious crimes in Hispanic communities, but when an arrest is made, the arrest may be for a more serious charge. Asian communities see an upgrading effect at the first response of the officer, and also at the arrest stage, but findings are not significant at the report writing stage. In other words, at places that have great percentage of Asian residents, police are getting to the scene and telling

the dispatcher that the incident is more serious than what was initially called in. When making an arrest, the arrest may be for a more serious charge than what was indicated in the report. Again, one should be careful about the interpretation of this finding, as with the findings regarding % Black or higher wealth without qualitative follow-up. We do not know the motivation of the officers at these locations. It could be that among the Asian community there is systematically an initial tendency to report incidents as less serious, or there might be differences in communication styles that leads to the initial misinterpretation. It may also be the case that police feel places with more Asians deserve more upgrading. But these are only guesses, based not on science but on stereotypes; we need further empirical and qualitative analysis to better understand motivations. The only conclusion that can be drawn here is that there is a significant difference in police service, which occurs as block groups have greater proportions of Asian residents.

However, when moving across the table through the decision pathway from the modified call for service to report (Model 8), the impact of the % Asian variable declines and flips signs, suggesting a significant downgrading at this stage of the pathway. The % Black and % Hispanic variables emerge as significant in the negative direction as well. Here, at the report writing stage, places that have an increase in any minority population will also experience a significant downgrading effect (i.e., less report writing with the possibility of also reduction in the seriousness of crime classifications). At this stage, the WEALTH factor is the only socioeconomic variable that remains significant, also indicating downgrading in more wealthy areas.

When examining the cumulative score of the initial response through the reporting stage (Model 9), our initial findings begin to reemerge—with Wealth, % Black, % Hispanic, and

violence significantly predicting tendencies to downgrade, although the effect of the Asian variable disappears. The fact that % Hispanic doesn't seem to predict the entire spatially lagged mean score across the entire pathway is likely explained by the washing out effect of downgrading in the report stage, but upgrading in the arrest stage.

Finally, Model (10) examines the impact of these block group characteristics on only the decision to arrest (and for what charge) once a report has been written, disregarding earlier upgrading and downgrading. At this decision stage, the % Black is no longer relevant in upgrading or downgrading, although wealthier communities enjoy either less arrest or charges that are less severe than what was indicated in the report. In Asian and Hispanic communities, arrest is more likely, or the charges given are higher than what is indicated in the written reports. Thus, the overall downgrading effect for places with more Black residents seems concentrated at the official report writing stage, not at the arrest stage. This downgrading effect at the rport stage is seen to a lesser extent with the Hispanic community and not at all in the Asian communities. And, at the arrest stage, the greater wealth and less disorganization leads also to a significant downgrading effect as well.

DID SEPTEMBER 11th MATTER?

Since the decision pathways analyzed here occur in 2001, I include a special analysis of the effects of September 11th on the distribution of these decision pathways. One might hypothesize that September 11th could affect how society and law enforcement perceive minority communities, especially those who are (or appear) foreign born or linguistically isolated. Table 16 shows some descriptive statistics before and after September 11th in terms of the means and standard deviations of activities within Seattle's 568 block groups. Notice that the average rate of

calls per 100 people dropped significantly after September 11th. However, the proportion of reports and arrests remained the same, at approximately 31% for reports and 4% for arrests. Further, the effects of September 11th did not seem to have, overall, significantly affected the average pathway score in block groups.

Table 16. Descriptive statistics for block groups before and after September 11th (N=568)

	Before 9/11	After 9/11
Total calls in BG	**329** *(584.3)*	**142** *(240.8)*
Rate of calls per 100 people	**34** *(58.4)*	**15** *(24.4)*
Proportion of reports written	**.31** *(.06)*	**.32** *(.08)*
Proportion of arrests made	**.04** *(.03)*	**.04** *(.03)*
Mean of total pathway score	**1.18** *(.328)*	**1.21** *(.410)*

Standard deviations in parentheses.

However, the question of interest is whether September 11th had a negative effect on places with higher proportions of racial and ethnic minorities. Unfortunately, we do not have information on the proportion of block groups of Arab descent, which would be the most relevant ethnicity to examine in terms of differential effects from September 11th, given the identity of the hijackers. However, we can look at the different racial and ethnic categories that we have as well as at the foreign-born variable. Interestingly, as Table 17 shows, when comparing models before and after September 11th the only racial group that continues to predict significantly different pathway scores is Black. Also of note is the influence that Asian and foreign born communities had on decision making before and after September 11th. While being in an Asian or foreign born community would increase the likelihood of an officer upgrading a call for service (either to a more serious crime, or exerting more formal social control through reporting writing or arrest), this effect does not remain salient after September 11th.

Table 17. Before-After September 11th Analysis of Spatially Lagged Total Pathway Scores

	Before September 11th		After September 11th	
	Model (11) Before 9-11 and all races	Model (12) Before 9-11 and foreign-born	Model (13) After 9-11and all races	Model (14) After 9-11 and foreign-born
Constant	1.154*** (.021)	1.134*** (.021)	1.197*** (.027)	1.185*** (.028)
DISORG Component	.023** (.007)	.019** (.007)	.015 (.009)	.012 (.009)
NEEDS Component	.015 (.010)	.013 (.010)	.028* (.013)	.027* (.013)
WEALTH Component	-.084*** (.009)	-.079*** (.009)	-.071*** (.011)	-.066** (.011)
% Black	-.484*** (.075)	-.485*** (.075)	-.529*** (.097)	-.526*** (.179)
% Asian	.213*** (.060)		.065 (.078)	
% Hispanic	-.197 (.141)		-.299 (.183)	
Proportion of calls indicating violence (for each time period)	1.049** (.361)	1.168** (.361)	1.336** (.463)	1.413*** (.466)
% Foreign Born		.192* (.074)		.006 (.096)
R squared	.306	.296	.153	.147
Standard error of the estimate	(.163)	(.164)	(.211)	(.212)
Number of Observations	560	560	560	560

***p<.001, **p<.01, *p<.05. Estimates shown are unstandardized B coefficients, with standard errors of those estimates in parentheses.

V. DISCUSSION: WHAT MIGHT EXPLAIN THESE FINDINGS?

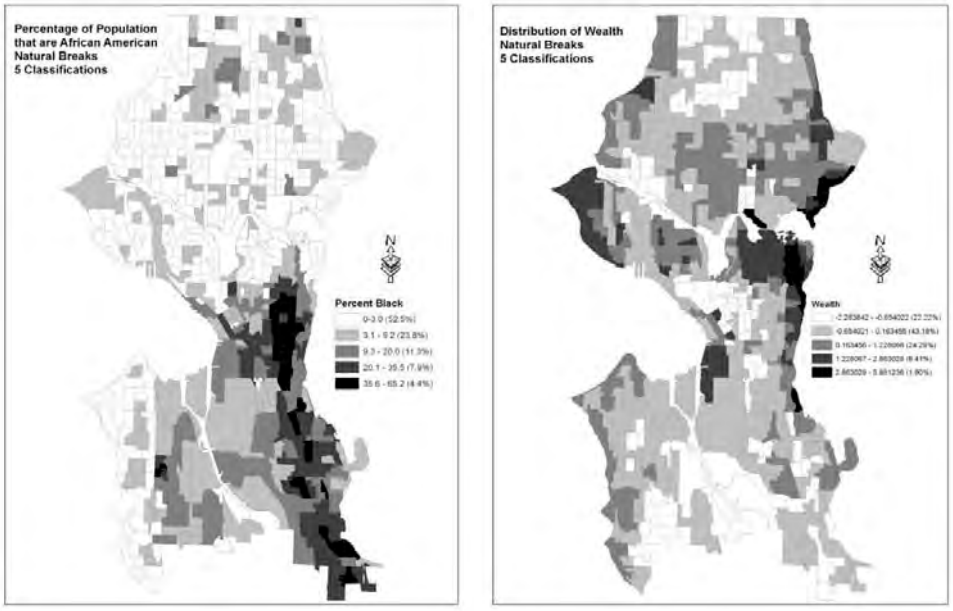
The assertions of Banton (1964), Smith (1986), Terrill & Reisig (2004) and others are generally strengthened with these findings. Police do respond differently in different neighborhoods, which is even more evident when examining decisions made by officers at different stages of an investigation. This finding is also robust for different crimes and across different places. In this study, I examined all crime and disorder (excluding traffic incidents), all

places, multiple racial and ethnic groups and subgroups, and three decision making points across the investigation of an incident. I also ran models to anticipate interactive effects between block group racial composition, socioeconomic characteristics, violence, and policing outcomes. These interactions were not statistically significant. Foreign-born or linguistically isolated groups included in the models also did not result in consistently significant differences in officer response at places. Even when examining these trends before and after the events of September 11th (thinking that perhaps officers may have changed their responses to foreign born and immigrant communities), the findings were the same. Wealthier communities or neighborhoods with greater proportion of Black residents continue to experience an overall downgrading effect in how crime and disorder incidents are handled by the police. Similar effects are not consistently seen for places with larger proportions of Asian, Hispanic, foreign-born or linguistically isolated households, although there are significant upgrading and downgrading activities at particular points in an investigation. The comprehensiveness of this study is purposeful; often, the debates that arise around research regarding racial disparities usually result from that research only focusing on certain types of crimes or decisions, only comparing Blacks with Whites, or only examining particular neighborhoods.

Although many interesting questions arise from the above analysis, one consistently arises: Why do officers exhibit this tendency to downgrade, in both Black and wealthy communities? The motivations behind the decision pathways cannot be deciphered here, and extreme caution should be taken in guessing why this is occurring. Such conjectures are dangerous and can be misinterpreted and misused. However, the correlation in the downgrading of calls in places with greater wealth or in places with more Black residents for total pathway scores provokes curiosity. This is especially interesting, given that wealth (and % White) and

proportion of Black residents is inversely related in block groups (see Appendix A). In other words, places of greater wealth are *not* the same places that Black residents live, which rules out the possibility that both communities experience downgrading because they are the same places. Other factors may be at play, and I only present ideas as proposals and hypotheses for further testing and qualitative research, rather than definitive statements about motivations, which cannot be discerned.

Figure 4. Comparison of spatial distribution of Black population and wealth



One approach to probe this phenomenon with this data is to examine just those places that would provide an officer with the strongest cues about the racial and economic characteristics of those places and compare what the decision making trends are within those places. Such a "most different" comparative approach (see Przeworski and Teune, 1970) might juxtapose the phenomena in a way that lends to revealing interesting nuances. To determine such places, consider those block groups that fall within the top tenth percentile of the greatest

percentage of its category. So, for race, this means those places with roughly 25% or more Black residents. For wealthy areas – the top tenth percentile of the wealthiest of block groups are those whose median household incomes are greater than $80,000. Going back to our original 267,937 incidents, there were 33,637 incidents that took place in the block groups with 25% or more Black residents, and 11,107 incidents that took place in block groups with greater than $80,000 median household income. The distribution of the mean of the transitions for each decision point is shown in Table 18. Notice, the differences in scores begin to become more apparent later in the pathway, and there is a .27 point differential for the total pathway score between places that have high proportions of Black and wealthy residents, suggesting greater extent of downgrading in wealthier compared to Black-dominated communities.

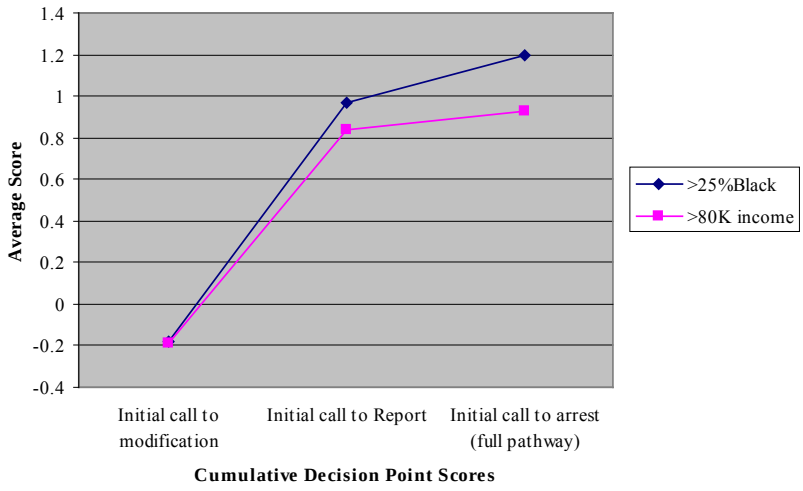
Table 18. Mean decision pathway scores for block groups with greater than 25% Black residents and block groups with greater than $80,000 median household income

	% Black >25% N= 33,637	Median income > $80K N=11,107
Initial call to modification	-0.18 (0.952)	-0.19 (0.705)
Modification to report	1.15 (1.843)	1.03 (1.766)
Report to arrest	0.23 (0.978)	0.09 (0.623)
Total decision pathway score	**1.20 (2.713)**	**0.93 (2.246)**

Standard deviations in parentheses.

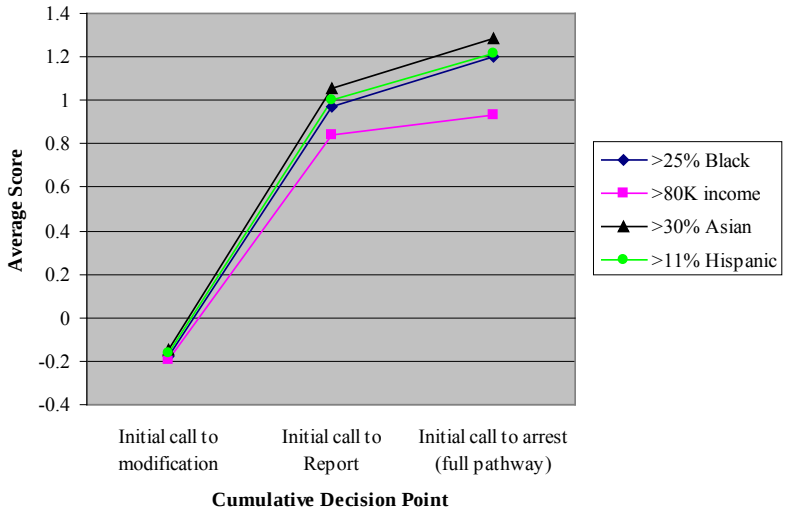
Figure 5 maps the accumulation of scores from Table 18 across the decision pathway. Although downgrading may occur in both wealthy areas and areas with a high proportion of Black residents, there is a greater tendency to handle incidents less formally (without report or arrest) in the top tenth percentile of block groups with higher incomes than in the top tenth percentile of block groups with higher proportion of Black residents, especially at the reporting and arrest stage.

Figure 5. Cumulative decision point scores of block groups with greater than 25% Black or more than $80K median income



Interestingly, when recreating the cumulative "elbow" graph for the top tenth percentile of all racial groups (Figure 6), a very similar pattern emerges. For Asian residents, the top tenth percentile of block groups has 30% or more Asian residents, while for Hispanic residents, the top tenth percentile has greater than 11% Hispanics. Places at the top tenth percentile of the greatest proportion of each minority group in a block group all indicate police downgrade *less* in those areas than in wealthier areas with higher White populations. Although communities with high proportions of Black residents see this effect the most, the overall downward trend can be seen in all high-minority populated block groups. Although this analysis still does not speak to motivations behind these differences, it is clear that the nature of the downgrading in wealthier White communities is more pronounced from the downgrading that is occurring in poorer Black communities.

Figure 6. Cumulative decision point scores of block groups at the top tenth percentile of racial composition for Blacks, Asians, and Hispanics, compared with block groups at the top tenth percentile of wealth.



What clues does this juxtaposition between the wealthiest places and the places with the greatest proportion of Black residents tell us? Again, proceeding with caution, I offer a few suggestions. It is very possible that the discrepancy arises from the communities themselves. Places with great wealth and places with minority homogeneity may both exert their own informal social control for various reasons, and thus, before, or even after an officer's arrival at the scene, disputes are settled through these informal mechanisms. Wealthy neighbors can afford to pay other neighbors for their children's vandalism, for example, or more homogenous minority communities may have internal systems of regulation they use if trust in the police is low (a common issue in minority areas). On the other hand, discrepancies may result entirely on the officer's side, due to lack of care, concern, bias, or interest in either of these areas. At the initial response stage for all block groups, for example, we see significant downgrading in wealthy areas, but not areas with great proportions of Black residents.

However, the greater intensity of downgrading in wealthier (and usually White) communities than Black (and usually poorer) communities provides a hint that a more complex interaction is at play. Much more likely is a combination of police and citizen perceptions, and symbolic and real interactions that take place between officers and civilians that results in these findings. For example, greater downgrading in wealthier communities might suggest police trust people in these to "handle things" more than they do in Black communities, or that those in wealthier communities may more successfully exert pressure on the police to not continue with an investigation. Officers from a predominantly white police force (which this agency is), may be more comfortable in allowing for more informal social control in communities which most closely resemble their own and take on a more paternalistic than legalistic role. This explanation suggests that both community forces and how the police interact with those forces are responsible for the resulting patterns of downgrading. There could be real and perceived power differentials, expectations, and varied feelings between different communities and the police that might cause this effect. Perhaps these findings offer preliminary support for further testing of a community perspective of Black's theory of discretion and power differentials at more macro levels.

Or, the fact Black communities are being downgraded, but at the same time, much less so than their wealthier counterparts may reflect complex dual and seemingly contradictory forces: Police may exercise less social control overall in Black communities, but when they do exercise it, are more likely to exert it more intensively. In other words, Donald Black's idea of a lack of worthiness afforded by officers to certain individuals perceived to be of lower status may be salient enough to explain downgrading, but at the same time, these feelings are accompanied by a heavier hand in Black-dominated communities, which explains less downgrading than in

wealthier places. This type of conflicting mentality might also explain why others have found greater use of force in Black communities, accompanied by much lower levels of legitimacy afforded to police by minorities. This relatively greater use of force (as indicated by relatively less downgrading) may reflect feelings of anger towards these communities, rather than more paternalistic feelings (which could lead to greater downgrading in wealthier communities).

One suggestion given by a reviewer was that downgrading in Black neighborhoods could reflect the use of violence to enforce "no snitching" rules. These informal understandings in communities, especially in ethnic minority communities, inhibit individuals from serving as witnesses to crimes against themselves or others, leaving the police powerless to exercise formal social control. But the findings here actually do not support such a hypothesis. According to these findings, if no snitching was salient, then wealthier White communities seem to exercise this better than minority-dominant communities in which the no-snitching phenomenon seems to be most publicized. Further, if a don't snitch situation was real, then downgrading would sharply occur in the Black community at the report and arrest stage; the opposite, however is true.

Clearly, more digging is needed. However, the findings emphasize that it is not sufficient only to examine the individual racial characteristics of officers, suspects, victims, and witnesses in explaining officer decisions. It indicates that environment can also be correlated to behavior in important ways. Although this study does not examine which effect might be stronger (individual-level information was not available on these incidents), and motivations of upgrading and downgrading can only be offered as hypotheses, this and other studies indicate that environmental cues condition individual action and do not simply act as a passive context for those actions. In this study, these environmental cues consist of racial and ethnic makeup, levels of violence, and socioeconomic status of the very small places where officers patrol. Such cues

provide officers and others with a quick understanding of the types of people within a location, which in turn may condition their responses to incidents at those places. Place-based cues do not have to be racial or socioeconomic (although arguably, these are the strongest place-based cues). A place-based theory of policing should also take into account other environmental characteristics that may influence police officer decision making. These might include the physical layout of streets and buildings, the proportion of places that are business establishments, or the presence of certain types of environmental markers that can be magnets for certain crimes and the level of physical or social disorder (e.g., parks, public swimming pools, bars, subway stations, abandoned homes, alleys). This study provides a new dependent variable—the decision pathway—with which to examine the influence of these place markers.

Despite these steps forward, this study, like so many others examining whether disparities in police service exist, still cannot tell us *why* we see this differential response. This data-based analysis cannot give us insight into the minds of officers who were involved in each of these decision pathways and whether racial bias influenced their decisions. Proving intent for prejudice is not only difficult short of admission, but such prejudice is intricately part of human behavior and can be hidden under layers of consciousness, organizational rules, symbolic interactions, and worldviews (Horowitz, 1985). Additionally, the origination of the disparities that emerge from this analysis may not unilaterally come from the police; they may arise from an interaction between officers' supply of law enforcement and the demand of services by the community. Expectations of this interaction, of course, are shaped by both historical forces and prejudices, but also by current interactions.

The only way for us to understand the reasons for these differences is through further systematic and qualitative approaches, including social observations, ethnographic analyses, and

in-depth interviews or longitudinal psychological examination of officer *and* citizen mentality. For example, it might be interesting to test new recruits and existing personnel using instruments such as the *Implicit Associations Test* (Greenwald, McGhee & Schwartz, 1998)[10] before and after they are assigned to certain areas. Such tests may help participants answer questions in which they might be too embarrassed or ashamed to answer truthfully. In theory, a randomized controlled experiment could be conducted, assigning officers to locations and measuring scores at different points in their careers, given that recruits usually have no choice as to where they are assigned. Longitudinal ethnographies and studies of officers, like those undertaken by Rosenbaum and Scrivner (2009) are also essential in understanding how officers' world views and behaviors change over time. Such studies are essential in improving training and support that might counteract what may be possible negative effects of the job which may reduce the quality of future service.

But no matter the individual motivations behind such disparities, place-based disparities can contribute to the deterioration of police legitimacy. As the National Research Council (2004) emphasized, even with mixed research findings about whether race influences officer decisions, what is equally important is that *perceptions* of differential treatment still exist (see also Durose, Schmitt, & Langan, 2005; Engel, 2005, 2008; Langan, Greenfield, Smith, Durose, & Levin, 2001; Sampson & Bartusch, 1998; Weitzer, 1999; Weitzer & Tuch, 2002; Wu, Sun, & Triplett, 2009). Such perceptions, even in the absence of overt prejudice, can lead to significant reductions in police legitimacy—an important resource that the police require in order to fight crime.

[10] See https://implicit.harvard.edu/implicit/demo/background/index.jsp . A anonymous peer reviewer suggested the use of this test, of which the author agrees could be useful.

VI. RECOMMENDATIONS TO POLICING

Thus, the dilemma of research regarding the effects of race on decision making remains. Researchers cannot overstate their findings or draw conclusions without evidence. At the same time, people have real perceptions of disparity that can undermine police legitimacy and police-citizen relations. Police mentality is scientifically difficult to discern, even though police researchers and practitioners know that racial prejudice and anger does exist and can profoundly affect decision-making. And, the nature of bias itself is complex, involving forces that may be immeasurable or unable to be addressed. How then, can findings about differences in police practices across places be used? I close with three general recommendations related to these place-based findings.

1. Police must openly acknowledge that officers treat neighborhoods differently. Prospects and problems in differential treatment should be approached from a community-oriented and legitimacy-development perspective and should be discussed in training.

Outsiders might believe, perhaps incorrectly, that police officers are trained to treat everyone in every place they encounter lawfully and similarly. But this type of knowledge acquisition is rare in police academies and in policing more generally, which focus more on procedural and operational expectations and awareness when responding to individual calls for service. For example, what is commonly taught are expectations about what officers might encounter in responding to incidents (such as danger cues), awareness of the importance of rank and hierarchy, or how the profession might affect family life. This is in contrast to training officers how the cultural, environmental, and organizational aspects of the job might affect their world views, prejudices, or personal health (for example, substance abuse, post traumatic stress disorder, or physical well-being). With regard to how places and people may affect officer mentality (and therefore their decision-making), officers are rarely explicitly told that policing

particular certain places, or the policing profession itself, may make them more cynical, racially prejudiced, angry, or judgmental.

Furthermore, they are not given cognitive or operational tools or outlets to counteract such effects. Information suggesting that police treat different races and ethnicities differently, and that usually the poorest treatment occurs towards poor, Black communities. Indeed, they might even be discouraged to discuss race entirely. Rather, police are sometimes informally mentored by academy instructors or field training officers that it is natural to police certain areas differently depending on the socioeconomic and ethnic makeup of an area. Interestingly, officers may be specially (and openly) trained in how to respond to calls for service in non-Black, minority communities, such as those which are Hispanic, Asian, or religiously dominant. Such specialized training is often built into formal curricula under the guise of "racial sensitivity" or "diversity" training, and sometimes in officer safety modules. However, this specialized training often ignores the treatment of Black communities. This is a serious flaw that can further reinforce stereotypes for all minority groups, not just Asians or Hispanics.

"Diversity Training," could be vastly improved in this regard. Such modules are dutifully attended by officers, but are often viewed with disdain. While part of this negative attitude may reflect prejudice, such training may also viewed with disdain because officers perceive them as having little substantive value (and rather a political necessity). Being told that diversity leads to a better working environment, or that officers need to be sensitive to religious or linguistically-isolated communities does little to link the issues of race or religion directly with police outcomes. An alternative would be to provide officers with concrete evidence, information, and facts regarding racial disparities and policing, perhaps even specific to their agency as generated through crime analysis. This in turn provides a basis by which discussion can be fostered in an

open environment. In other words, academies and in-service training should approach education as not an opportunity to dole out directives, procedures, and train operational awareness, but as a place where open discussion, critical thinking, and analytic thought can be explored.

2. Awareness and acknowledgement must be supported by operational structures that counteract such forces.

Unfortunately, change does not simply occur through awareness of facts during training; structural changes are required that allow for, and even force, alternatives to the way decision making occurs at both the street and command levels. There are two operational areas that may help counteract place-based biases in police – changes in the nature of supervision and in the way patrol officers are deployed. In terms of supervision, I focus on first-line supervisors, who have the most interaction, influence, and control over the daily decisions officers make in the places that they are made. Not only must first-line supervision increase, but the role of that supervisor (and hence the interactions between that supervisor and the officer) needs to change in order for discretion to be reshaped. Both of these recommendations can arise from a single reform: First-line supervisors must be armed with different, more, and systematically collected information and evidence about operations and effects of policing on officers. This is in sharp contrast to the current situation in American policing. First-line supervisors have become specialists in understanding and applying the rules and regulations of the agency as delineated in the agency's standard operating procedures manual which in turn has resulted in a style of supervision that is passive and reactive. They tend to focus on applying the agency's general orders after an infraction has occurred. Thus, the role of the first-line supervisor is drastically reduced to the personification of that order, rather than as a operational leader in crime prevention and quality of service.

This in turn results in officers exercising wide-ranging, unstructured, and non-evidence-based discretion in the complete absence of supervisor guidance or information related to crime prevention. This unsupervised and wide-discretion not only indicates low levels of leadership within the first line supervisory rank, but also can result in systematically biased response by officers as they respond through their own worldviews and squad sub-cultures. While increasing watchfulness might reduce such disparities, it may not structure discretion in ways that can reduce bias and crime and increase legitimacy. Structured discretion does not simply come from more supervision; first line supervisors have to be armed with information and evidence that changes the way they direct their squads to address crime and quality of life concerns. This is why police leaders should not just pay "lip service" to alternative deployment strategies such as problem-oriented approaches to community problems. Problem-oriented strategies are by definition proactive, and specific to a targeted, small-scale, geographic area. Not only can such a scheme increase the quality of response by a patrol squad to a particular area, but by doing so especially in areas where downgrading is known to occur (particularly Black communities), more specific, structured service is applied.

Further, awareness of racial bias, especially in places at high risk for this type of bias, must constantly be reinforced on the street in the same way that awareness of danger or crime prevention should be reinforced. Sergeants must be aware, and make their squads constantly aware, that racial stereotyping and bias can become a subconscious and regular part of policing if left unchecked. By reminding their squads of this problem, and by changing the nature of the police response, officers can become more conscious of *why* they make certain decisions, and also structure those decisions through clear directives based in crime prevention. First line supervisors are also the connection between the community and their officers; they should take

charge of facilitating communication between minority community members and officers who work in their neighborhoods, as well as sifting through and prioritizing community requests during daily police activities.

This type of leadership also cannot be done half-heartedly or without conviction. Leadership at this level often is weakened by the "parent-friend" effect; many first-line supervisors in policing walk a fine line between being respected by their officers so that tasks get done and wanting to be accepted as a "friend" by their squads. In sensitive discussions of race, especially, supervisors have to assume the difficult but necessary role of talking to their officers openly about race and racial prejudice, providing their officers with opportunities to interact positively with members of groups who are different from that officer's race or background, and work with individual officers who have negative views that debilitate their function. This is a tall order for American policing. Changing the role of the first line supervisor to be more proactive, more knowledge and evidence-based, and more active in counteracting officer problems proactively is a complete paradigm shift of patrol supervision. The reader might see such suggestions as a too much to ask for supervisors. But such is the nature of leadership and supervision; it is not meant to be easy, and should be elevated (and financially) rewarded by the organization if accomplished.

In addition to changing the approach of supervision at places, changing the fundamental approach to deployment may also counteract place-based effects on officer mentality. For example, more rational justification can be found in building crime prevention tactics based on information about where crime is located, as well as in evidence of what works once such hot spots are identified. This is more effective than academy training that teaches the need for special response by some groups, or that leaves the individual officer to determine how to prioritize

work load. For example, if police knew that the consequences of a zero-tolerance or crackdown approach might result in mild crime prevention gains, but only at the expense of reduced legitimacy, greater ethnically based disparity, more technical violations for probations, and court-clogging, then such information would be useful in prioritizing deployment.

3. The effect of places on policing and the mental health of officers should be a serious concern for police leaders. There is especially a need to counter inevitable changes in mental states, some that are affected by the places officers work, which may lead to further behavioral problems such as racially biased policing or the use of force.

Third, there should be a real and systematic effort to counteract the often negative mentalities that result from street patrol, which are no doubt influenced by the nature of the places officers patrol. The term "negative mentality" encompasses a number of problems, including racial and socioeconomic prejudice, cynicism, and hatred of anything deviating from the "norm" of the officer's own personal characteristics. Studies on officer mentality and the shaping of officer mentality are not new, but in some ways have been less prioritized than work on police crime control effectiveness. Place-based attributes, when combined with high levels of crime, can lead to a mentality and worldview that then results in negative behaviors and perhaps even post traumatic stress disorders. Indeed, this might be helped by improving officer and citizen relationships in these communities. Often the problem is not created from bad relationships between the officer and individuals who do not commit crime, but rather from negativity that stems from officers responding to crime in these neighborhoods and then generalizing criminal behavior to everyone in the area.

***

The race of places matters in police behavior and does not just provide a context for police behavior; the race of places can shape police discretion, especially if those places have higher concentrations of Black residents. As Horowitz (1985) emphasizes, ethnic conflict and

prejudice are part of human nature, a nature to which police officers are certainly not immune. The more important question in police policy is how such prejudice affects decision making and what organizational, cultural, and deployment approaches can counteract such forces given the overall (and sometimes conflicting) goals of policing in modern democracies—to reduce crime *and* do so legitimately and fairly. Examining how race influences policing at the place- rather than individual-based level provides not only an additional approach to understanding this relationship, but also speaks directly to the place-based implications of new policing innovations and community-oriented mandates.

VII. REFERENCES

Alpert, G., Dunham, R., Stroshine, M., Bennett, K., & MacDonald, J. (2004). *Police Officers' Decision Making and Discretion: Forming Suspicion and Making a Stop*. Washington, DC: National Institute of Justice.

Alpert, G., Dunham, R., & Smith, M. (2007). Investigating Racial Profiling By the Miami-Dade Police Department. *Criminology & Public Policy, 6*(1), 25-55.

Anderson, E. (1990). *Streetwise: Race, Class and Change in an Urban Community*. Chicago, IL: University of Chicago Press.

Banton, M. (1964). The *Police in the Community*. New York: Basic Books.

Bayley, D., & Mendelsohn, H. (1969). *Minorities and the Police: Confrontation in America*. New York: Free Press.

Black, D. (1971). The Social Organization of Arrest. *Stanford Law Review, 23,* 63-77.

Black, D. (1976). *The Behavior of Law.* New York: Academic Press.

Black, D., & Reiss, A. (1970). Police Control of Juveniles. *American Sociological Review, 35,* 63-77.

Blalock, H. (1967). *Toward a Theory of Minority Group Relations.* New York: John Wiley and Sons.

Brantingham, P., & Brantingham, P. (1981). Notes on the geometry of crime. In P. Brantingham, & P. Brantingham (Eds.), *Environmental Criminology* (pp. 27-55). Beverly Hills, CA: Sage.

Brooks, L. (2004). Police discretionary Behavior: A Study of Style. In R. Dunham, & G. Alpert (Eds.), *Critical Issues in Policing: Contemporary Readings* (5th ed.). Long Grove, IL: Waveland Press.

Brown, R. (2005). Black, White, and Unequal: Examining Situational Determinants of Arrest Decisions From Police-Suspect Encounters. *Criminal Justice Studies: A Critical Journal of Crime, Law and Society, 18*(1), 51-68.

Brown, R., & Frank, J. (2005). Police-Citizen Encounters and Field Citations: Do Encounter Characteristics Influence Ticketing? *Policing: An International Journal of Police Strategies and Management, 28*(3), 435-454.

Brown, R., & Frank, J. (2006). Race and Officer Decision Making: Examining Differences in Arrest Outcomes Between Black and White Officers. *Justice Quarterly, 23*(1), 96-126.

Chambliss, W., & Seidman, R. (1971). *Law, Order, and Power*. Reading, MA: Addison-Wesley.

Durose, M., Schmitt, E., & Langan, P. (2005). *Contacts between Police and the Public: Findings from the 2002 National Survey.* Washington, DC: Bureau of Justice Statistics.

Eck, J., & Weisburd, D. (1995). *Crime and Place*. Monsey, NY: Criminal Justice Press.

Engel, R. S. (2005). Citizens' perceptions of procedural and distributive injustice during traffic stops with police. *Journal of Research in Crime and Delinquency, 42*, 445-481.

Engel, R. (2008). A Critique of the "Outcome Test" in Racial Profiling Research. *Justice Quarterly, 25*(1), 1-36.

Engel, R., & Calnon, J. (2004). Examining the Influence of Drivers' Characteristics During Traffic Stops with Police: Results from a National Survey. *Justice Quarterly, 21*(1), 49-90.

Fagan, J. & Davies, G. (2000). Street Stops and Broken Windows: *Terry*, Race and Disorder in New York City. *Fordham Urban Law Journal, 28*, 457-504.

Farrell, A., & McDevitt, J. (2006). *Rhode Island Traffic Stop Statistics Data Collection: Final Report.* Boston, MA: Northeastern University Institute on Race and Justice.

Frey, W. (1979). Central City White Flight: Racial and Nonracial Causes. *American Sociological Review,* 44, 425-448.

Gaines, L. (2006). An Analysis of Traffic Stop Data in Riverside, California. *Police Quarterly, 9*(2), 210-233.

Gottfredson, D., McNeil III, R., & Gottfredson, G. (1991). Social Area Influences on Delinquency: A Multilevel Analysis. *Journal of Research in Crime and Delinquency, 28*(2), 197-226.

Gottfredson, S., & Taylor, R. (1986). Person-Environment Interactions in the Prediction of Recidivism. In J. Byrne, & R. Sampson (Eds.), *The Social Ecology of Crime.* New York: Springer-Verlag.

Greenwald, A. G., McGhee, D. E., & Schwartz, J. L. K. (1998). Measuring individual differences in implicit cognition: The implicit association test. Journal of Personality and Social Psychology. v. 74, 1464-1480.

Hipp, J. (2007). Block, tract, and levels of aggregation: Neighborhood structure and crime and disorder as a case in point. *American Sociological Review, 72*, 659-680.

Horowitz, D. (1985). *Ethnic Groups in Conflict*. Berkeley, CA: University of California Press.

Hurwitz, J., & Peffley, M. (1997). Public Perceptions of Race and Crime: The Role of Racial Stereotypes. *American Journal of Political Science, 41*(2), 375-401.

Kane, R. (2003). Social Control in the Metropolis: A Community-Level Examination of the Minority Group-Threat Hypothesis. *Justice Quarterly, 20*(2), 265-295.

Kleck, Gary. (1981). Racial discrimination in criminal sentencing: A critical evaluation of the evidence with additional evidence on the death penalty. *American Sociological Review* 46:783-805.

Klinger, D. (1997). Negotiating Order in Patrol Work: An Ecological Theory of Police Response to Deviance. *Criminology, 35*(2), 277-306.

Klinger, D. (2004). Environment and Organization: Reviving a Perspective on the Police. *Annals of the American Academy of Political and Social Science, 593,* 119-136.

Langan, P., Greenfeld, L., Smith, S., Durose, M., & Levin, D. (2001). *Contacts between Police and the Public: Findings from the 1999 National Survey.* Washington, DC: Bureau of Justice Statistics.

Lange, J., Johnson M., & Voas, R. (2005). Testing the Racial Profiling Hypothesis for Seemingly Disparate Traffic Stops. *Justice Quarterly, 22*(2), 193-223.

Liska, A., & Chamlin, M. (1984). Social Structure and Crime Control Among Macrosocial Units. *The American Journal of Sociology, 90*(2), 383-395.

Liska, A., Lawrence, J., & Sanchirico, A. (1982). Fear of Crime as a Social Fact. *Social Forces,* 60, 760-770.

Logan, J., & Stults, B. (1999). Racial Differences in Exposure to Crime: The City and Suburbs of Cleveland in 1990. *Criminology, 37*(2), 251-276.

Lum, C. (under review). Neighborhood Level Characteristics of Violent Drug Markets.

Lundman, R., & Kaufman, R. (2003). Driving While Black: Effects of race, ethnicity, and gender on citizen self-reports of traffic stops and police actions. *Criminology, 41*(1), 195-220.

Manning, P. (1977). *Police Work: The Social Organization of Policing*. Cambridge, MA: MIT Press.

Mastrofski, S. (1981). Policing the Beat: The Impact of Organizational Scale on Patrol Officer Behavior in Urban Residential neighborhoods. *Journal of Criminal Justice, 9*(5), 343-358.

Mastrofski, S. (1991). Organizational Determinants of Police Discretion. In C. Klockars, & S. Mastrofski (Eds.), *Thinking About Police: Contemporary Readings* (2nd ed.). New York, NY: McGraw-Hill.

Mastrofski, S. (2004). Controlling Street-Level Police Discretion. *Annals of the American Academy of Political and Social Science, 593*(1), 100-118.

Mastrofski, S., Reisig, M., & McCluskey, J. (2002). Police disrespect toward the public: An encounter-based analysis. *Criminology, 40*(3), 519-551.

Mastrofski, S., Ritti, R., & Hoffmaster, D. (1987). Organizational Determinants of Police Discretion: The Case of Drinking Driving. *Journal of Criminal Justice,* 15(5), 387-402

McLafferty, S. 2008. Placing substance abuse: Geographic perspectives on substance use and addiction. In Y. Thomas, D. Richardson, & I. Cheung (Eds.), *Geography and Drug Addiction* (p. 1-16). New York, NY: Springer.

National Council on Crime and Delinquency. (1978). Race and the Decision to Arrest – An Analysis of Warrants Issued. *Journal of Research in Crime and Delinquency, 15*(1), 54-73.

National Research Council (NRC). (2004). Fairness and Effectiveness in Policing: The Evidence, W. Skogan, & K. Frydl (Eds.). Washington, DC: The National Academies Press.

Novak, K. (2004). Disparity and Racial Profiling in Traffic Enforcement. *Police Quarterly, 7*(1), 65-96.

Oberwittler, D., & Wikström, P. (2009). Why Small is Better: Advancing the Study of the Role of Behavioral Contexts in Crime Causation. In D. Weisburd, W. Bernasco, & G. Bruinsma (Eds.), *Putting Crime in its Place: Units of Analysis in Geographic Criminology.* New York, NY: Springer.

Paoline, E., & Terrill, W. (2005). Impact of Police Culture on Traffic Stop Searches: An Analysis of Attitudes and Behavior. *Policing: An International Journal of Police Strategies and Management, 28*(3), 455-472.

Park, R., Burgess, E., & McKenzie, R. (1925). *The City.* Chicago: University of Chicago Press.

Parker, K., Stults, B., & Rice, S. (2005). Racial Threat, Concentrated Disadvantage, and Social Control: Considering the Macro-Level Sources of Variation in Arrests. *Criminology, 43(4),* 1111-1134.

Petrocelli, J. (2006). Racial Profiling. *Law and Order, 54*(10), 25-26.

Petrocelli, M., Piquero, A., & Smith, M. (2003). Conflict Theory and Racial Profiling: An Empirical Analysis of Police Traffic Stop Data. *Journal of Criminal Justice, 31*(1), 1-11.

Powell, D. (1990). A Study of Police Discretion in Six Southern Cities. *Journal of Police Science and Administration, 17*(1), 1-7.

Przeworski, A. & Teune, H. (1970). *The Logic of Comparative Social Inquiry.* New York, NY: Wiley.

Quillian, L., & Pager, D. (2001). Black Neighbors, Higher Crime? The Role of Racial Stereotypes in Evaluations of Neighborhood Crime. *American Journal of Sociology,* 107(3), 717-767.

Reisig, M., McCluskey, J., Mastrofski, S., & Terrill, W. (2004). Suspect disrespect toward the police. *Justice Quarterly, 21*(2), 241-268.

Reitzel, J., & Piquero, A. (2006). Does It Exist? Studying Citizens' Attitudes of Racial Profiling. *Police Quarterly, 9*(2), 161–183.

Rengert, G., & Pelfrey, W. (1997). Cognitive Mapping of the City Center: Comparative Perceptions of Dangerous Places. In D. Weisburd, & T. McEwen (Eds.), *Crime Mapping and Crime Prevention.* Monsey, NY: Criminal Justice Press/Willow Tree Press.

Ridgeway, G., Schell, T.L., Gifford, B., Saunders, J., Turner, S., and Riley, K.J. (2009). *Police-Community Relations in Cincinnati.* Santa Monica, CA: RAND Corporation.

Rosenbaum, D., Hawkins, D., Costello, S., Skogan, W., Rivera, L., Vera, C., Rokita, R., Ring, M., Larson, T., & Manansangu, M. (2005). *Race and Police: A Matter of Public Trust.* Report to the National Institute of Justice, Office of Justice Programs. Washington, DC: U.S. Department of Justice.

Rosenbaum, Dennis and Ellen Scrivner. (2009). Studying the "Life Course" of New Officers. Presentation at the American Society of Criminology Conference, Philadelphia, PA.

Sampson, R., & Bartusch, D. (1998). Legal Cynicism and (Subcultural?) Tolerance of Deviance: The Neighborhood Context of Racial Differences. *Law and Society Review, 32*(4), 777-804.

Schafer, J., Carter, D., Katz-Bannister, A., & Wells, W. (2006). Decision Making in Traffic Stop Encounters: A Multivariate Analysis of Police Behavior. *Police Quarterly, 9*(2), 184-209.

Seigel, P., Martin, E., & Bruno, R. (2001). Language Use and Linguistic Isolation: Historical Data and Methodological Issues. Washington, DC: U.S. Census Bureau.

Shaw, C., & McKay, H. (1942). *Juvenile Delinquency and Urban Areas: A Study of Rates of Delinquents in Relation to Differential Characteristics of Local Communities in American Cities*. Chicago, IL: University of Chicago Press.

Shaw, C., Zorbaugh, F., McKay, H., & Cottrell, L. (1929). *Delinquency Areas.* Chicago, IL: University of Chicago Press.

Sherman, L. (1980). Causes of Police Behavior: The Current State of Quantitative Research. *Journal of Research in Crime and Delinquency, 17*(1), 69-100.

Sherman, L., Gartin, P. & Buerger, M. (1989). Hot Spots of Predatory Crime: Routine Activities and the Criminology of Place. *Criminology, 27,* 27-56.

Smith, D. (1986). The Neighborhood Context of Police Behavior. In A. Reiss, & M. Tonry (Eds.), *Communities and Crime. Crime and Justice: A Review of Research.* Chicago, IL: University of Chicago Press.

Smith, D., & Klein, J. (1984). Police Control of Interpersonal Disputes. *Social Problems, 31*(4), 468-481.

Smith, D., & Visher, C. (1981). Street-Level Justice: Situational Determinants of Police Arrest Decisions. *Social Problems, 29*(2), 167-177.

Smith, D., Visher, C., & Davidson, L. (1984). Equity and Discretionary Justice – The Influence of Race on Police Arrest Decisions. *Journal of Criminal Law and Criminology, 75*(1), 234-249.

Smith, M., & Petrocelli, M. (2001). Racial Profiling?: A Multivariate Analysis of Police Traffic Stop Data. *Police Quarterly, 4*(1), 4-27.

Taylor, R. (1988). *Human Territorial Functioning: An Empirical Evolutionary Perspective on Individual and Small Group Territorial Cognitions, Behaviors, and Consequences*. New York: Cambridge University Press.

Terrill, W., & Reisig, M. (2003). Neighborhood Context and Police Use of Force. *Journal of Research in Crime and Delinquency, 40*(3), 291-321.

Tyler, T., & Huo, Y. (2002). *Trust in the law: Encouraging public cooperation with the police and courts.* New York, NY: Russell Sage.

Walker, S. (2001). Searching for the Denominator: Problems with Police Traffic Stop Data and Early Warning System Solution. *Justice Research and Policy*, *3*(1), 63-95.

Ward, M. & Gleditsch, K. (2008). *Spatial Regression Modeling.* Sage Series on Quantitative Applications in the Social Sciences. Thousand Oaks, CA: Sage.

Warren, P., Tomaskovic-Devey, D., Smith, W., Zingraff, M., & Mason, M. (2006). Driving While Black: Bias Processes and Racial Disparity in Police Stops. *Criminology, 44*(3), 709-738.

Weber, Max. (1954). *On Law in Economy and Society.* Cambridge, MA: Harvard University Press.

Weisburd, D. (2002). From Criminals to Criminal Contexts: Reorienting Criminal Justice Research and Policy. *Advances in Criminological Theory, 10,* 197-216.

Weisburd, D., Bernasco, W., & Bruinsma, G. (2009). *Putting Crime In Its Place. Units of Analysis in Geographic Criminology.* New York, NY: Springer.

Weisburd, D., & Braga, A. (2006). *Police Innovation: Contrasting Perspectives*. New York, NY: Cambridge University Press.

Weisburd, D., Bushway, S., Lum, C. & Yang, S. (2004). Crime Trajectories at Places: A Longitudinal Study of Street Segments in the City of Seattle. *Criminology, 42*(2), 283-322.

Weisburd, D., Lum, C., & Yang, Sue-Ming. (2004). *Criminal Careers of Places: A Longitudinal Study*. National Institute of Justice, Grant Number 2001-IJ-CX-0022. Available at http://www.ncjrs.gov/pdffiles1/nij/grants/207824.pdf

Weitzer, R. (1999). Citizens' perceptions of police misconduct: Race and neighborhood context. *Justice Quarterly, 16*(4), 819-846.

Weitzer, R., & Tuch, S. A. (2002). Perceptions of Racial Profiling: Race, Class, and Personal Experience. *Criminology, 40*(2), 435-456.

Wooldredge, J. (2002). Examining the (IR)Relevance of Aggregating Bias for Multilevel Studies of Neighborhood and Crime with an Example Comparing Census Tracts to Official Neighborhoods in Cincinnati. *Criminology, 40*(3), 681-709.

Wu, Y., Sun, I., & Triplett, R. (2009). Race, Class or Neighborhood Context: Which Matters More in Measuring Satisfaction with Police? *Justice Quarterly, 26*(1), 125-156.

VIII. APPENDIX
A: Correlation Matrix of Key Variables

	Total calls	Total calls	Violence	Property	Disorders	Suspicions	Drugs and Vice	Pathway score	People per mi^2	% Black	% White	% Asian	% Hispanic	% Foreign-born	% Linguistically isolated	% violent calls	DISORG	NEEDS	WEALTH
Total calls	1.000																		
Call rate	.818(***)	1.000																	
Violence	.939(***)	.773(***)	1.000																
Property	.907(***)	.833(***)	.848(***)	1.000															
Disorders	.970(***)	.733(***)	.923(***)	.813(***)	1.000														
Suspicions	.963(***)	.834(***)	.890(***)	.905(***)	.888(***)	1.000													
Drugs and Vice	.856(***)	.627(***)	.756(***)	.640(***)	.853(***)	.788(***)	1.000												
Pathway Score	.053	.069	.134(**)	.221(***)	.022	-.006	-.029	1.000											
People per mi^2	.144(**)	.003	.176(***)	.112(**)	.182(***)	.088(*)	.148(**)	.087(*)	1.000										
% Black	.151(***)	.139(**)	.281(***)	.123(**)	.141(**)	.167(***)	.059	-.019	.038	1.000									
% White	-.165(***)	-.155(***)	-.315(***)	-.165(***)	-.139(**)	-.197(***)	-.056	-.122(**)	-.015	-.730(***)	1.000								
% Asian	.075	.032	.178(***)	.096(*)	.047	.107(*)	.005	.156(***)	-.005	.293(***)	-.804(***)	1.000							
% Hispanic	.183(***)	.210(***)	.255(***)	.185(***)	.168(***)	.204(***)	.071	.078	.038	.198(***)	-.367(***)	.178(***)	1.000						
% Foreign born	.137(**)	.102(*)	.257(***)	.154(***)	.113(**)	.165(***)	.042	.181(***)	.040	.340(***)	-.797(***)	.884(***)	.369(***)	1.000					
% Ling. Isol.	.206(***)	.180(***)	.337(***)	.213(***)	.183(***)	.228(***)	.110(*)	.180(***)	.149(***)	.363(***)	-.724(***)	.750(***)	.370(***)	.832(***)	1.000				
% violent calls	.068	.041	.317(***)	.053	.080	.037	-.018	.369(***)	.071	.407(***)	-.543(***)	.419(***)	.244(***)	.433(***)	.406(**)	1.000			
DISORG	.371(***)	.302(***)	.398(***)	.380(***)	.379(***)	.325(***)	.273(***)	.125(**)	.802(***)	.044	-.077	.013	.124(**)	.116(**)	.277(***)	.079	1.000		
NEEDS	.182(***)	.188(***)	.331(***)	.147(***)	.178(***)	.184(***)	.084	.068	-.115(**)	.590(***)	-.670(***)	.446(***)	.269(***)	.484(***)	.547(***)	.425(***)	.000	1.000	
WEALTH	-.079	-.075	-.134(**)	-.112(**)	-.060	-.085(*)	.003	-.282(**)	.028	-.196(**)	.375(**)	-.334(**)	-.373(**)	-.409(**)	-.294(**)	-.396(**)	.000	.000	1.000

***. Correlation is significant at the .001 level (2-tailed).

**. Correlation is significant at the .01 level (2-tailed).

*. Correlation is significant at the .05 level (2-tailed).