Legitimacy as a Mechanism for Police to Promote Collective Efficacy and Reduce Crime and Disorder

A dissertation submitted in partial fulfillment of the requirements for the degree of Doctor of Philosophy at George Mason University

By

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Dedication

This dissertation is dedicated to my husband Brent, my children Morgan and Brooke, my parents, parents-in-law, and siblings, as well as the many family and friends who believed in me and provided support and encouragement.

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I would like to thank a number of people that had they not provided me with help and guidance, I could not have produced this dissertation and completed my degree. I have had the privilege to study within a department filled with amazingly motivated and accomplished scholars, and I have benefited from the experience tremendously.

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Needless to say, many people have contributed to the production of this dissertation and the completion of my doctoral degree requirements. Without their help and the grace of God, I could not have done it.

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Abstract

LEGITIMACY AS A MECHANISM FOR POLICE TO PROMOTE COLLECTIVE EFFICACY AND REDUCE CRIME AND DISORDER

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Prior research showed that when collective efficacy is strong, it mediates the effects of concentrated disadvantage, and neighborhoods experience less crime. An untested theory about legitimacy suggests that legal institutions may be a catalyst for neighborhoods to improve collective efficacy. Legitimacy theory claims that when societies grant legal institutions legitimacy, people internalize rules and laws upheld by legal institutions, socialize others to those rules and laws, and adhere to the formal authority of legal institutions, which reduces crime. This dissertation is interested in the process by which people socialize others to rules and laws in the form of collective efficacy, examining whether views about police behaviors are related to legal institution legitimacy and collective efficacy. I theorized that police can improve legal institution legitimacy by delivering high quality services and minimizing misconduct, thus strengthening collective efficacy in neighborhoods and reducing crime and disorder. Conducting the research in

Trinidad and Tobago extends the boundaries of prior research on collective efficacy and legitimacy beyond the United States, Britain, and other developed nations, into a developing nation that is wrestling with difficult challenges, including widespread disadvantage, inadequate infrastructure, acute violence, corruption, and cynicism and distrust among its people. Trinidad's circumstances provided the opportunity to examine the linkages between police misbehavior and legal institutions and community outcomes in an environment fraught with challenges for police and neighborhoods to overcome. Additionally, in this context, I studied the linkages between delivering higher quality services and legal institution legitimacy, collective efficacy, and crime and disorder, even when the overall level of services is constrained to be low. I found that police behavior in Trinidad and Tobago has important consequences for legal institution legitimacy and for neighborhood outcomes. The results support that police may contribute to and utilize neighborhood collective efficacy as a lever to reduce crime and disorder problems. The results, however, do not (in general) support that the mechanism through which police accomplish this is legal institution legitimacy. The conclusions uphold the strong relationship between collective efficacy and crime and disorder, but leave in doubt whether legal institution legitimacy provides a pathway for increasing collective efficacy.

Chapter 1
The Issues, the Context, and the Contribution of the Research

Crime is not random. Neighborhoods experiencing higher levels of crime are consistently those experiencing the greatest social and economic disadvantage (Block, 1979; Sampson, 1985; Sampson & Lauritson, 1994; Smith and Jarjoura, 1988; Taylor & Covington, 1988). However, in the last decade or so, researchers in Chicago have found that even neighborhoods struggling with poverty, broken families, high mobility and other challenges are not necessarily doomed to high crime and disorder. Some neighborhoods have developed alternative strategies for exerting a measure of control that reduces crime and disorder. One such strategy is collective efficacy.

Collective efficacy occurs in neighborhoods when residents see themselves as part of a collective, acting to support the greater good. When neighborhood residents establish pro-social norms and increase feelings of ownership and responsibility for the area, they are willing to intercede to address problem behaviors, and they trust their neighbors to assume this responsibility as well (Sampson, Raudenbush & Earls, 1997). Mounting evidence consistently documents the depressive effect of collective efficacy on crime and disorder, even in communities that are structurally disadvantaged. When collective efficacy is strong, it mediates the effects of concentrated disadvantage, and neighborhoods experience less crime (Sampson, 1997; Sampson et al., 1997; Sampson & Raudenbush, 1999; Morenoff, Sampson, & Raudenbush, 2001).

A theory by LaFree (1998) suggests that legal institutions may be a catalyst for neighborhoods to improve collective efficacy. The mechanism that facilitates the process is legal institution legitimacy. Legitimacy refers to a sense of trust, respect, and a dutiful obligation to adhere to the authority of an institution. When people perceive an authority is legitimate, they are driven by a sense of responsibility to act consistent with the authority's expectations, even when the agents of that authority are not present, even when the expected behavior is counter to self-interest, or even when the behavior conflicts with their own moral views of right and wrong (Hoffman, 1977, p.85; Hyde, 1983; Tyler, 1990: 24-25). LaFree theorizes that when societies grant legal institutions legitimacy, people within those societies are inclined to internalize rules and laws promoted by legal institutions, socialize others to those rules and laws, and adhere to the formal authority of legal institutions, which reduces crime. This theory relies on some unspecified level of agreement among members of a society that legal institutions are legitimate, and outlines the anticipated positive consequences of that agreement. This theory remains largely untested, but my research provides a partial empirical test. The theoretical emphasis in my research is whether legal institution legitimacy promotes socializing others to rules and laws at the neighborhood level—operationalized as neighborhood collective efficacy—and if lower levels of crime and disorder prevail.

The study integrates two lines of empirical research that have, for the most part, been developing on parallel tracks. By building on LaFree's legitimacy theory and integrating prior empirical evidence about the relationship between collective efficacy and crime and disorder with research addressing the effect of legitimacy on individuals,

this dissertation outlines and investigates a new pathway for police to attack problems with crime and disorder. I am interested in whether police in Trinidad and Tobago can improve legal institution legitimacy, thus strengthening collective efficacy in neighborhoods as a lever to reduce crime and disorder. I hypothesize that police behaviors influence public perceptions of legitimacy, that by delivering high quality routine police services and minimizing misconduct, police will improve legal institution legitimacy, thus increasing collective efficacy and subsequently reducing crime and disorder problems. Figure 1 provides the conceptual model.

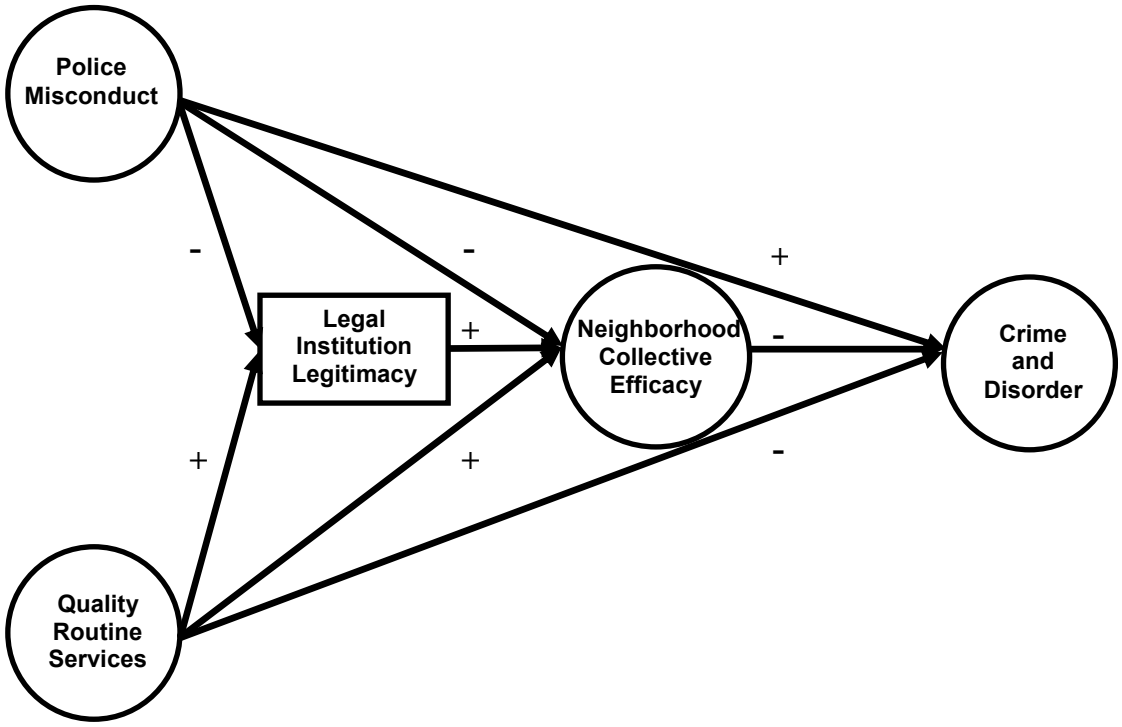

Figure 1. Conceptual Model

To investigate this hypothesis, I relied on responses to an in-person community survey of 2,969 residents in 74 neighborhoods in Trinidad and Tobago conducted in early 2007. I used an extensive process to build a sound measurement model, including exploratory factor analysis, confirmatory factor analysis, spatial analysis, and a covariate analysis. I subsequently estimated two structural equation models using Mplus statistical analysis software, examining the effects on individuals and also how the opinions and relationships cohere at the neighborhood level.

Examining both levels provides a more holistic view of how these constructs operate. The individual-level model examines how prior experiences with police and demographic characteristics shape individuals' opinions and whether judgments about police behavior correlate with individuals' perspectives on legitimacy, collective efficacy, and crime and disorder. This knowledge is helpful to guide police behaviors with individuals. However, the neighborhood-level model examines how individuals' opinions cohere. It shows whether people living in the same neighborhood agree about the quality of police services and misconduct, and how the average neighborhood view about police behaviors may relate to overall attitudes about legal institution legitimacy, collective efficacy and crime and disorder. Collective efficacy is a neighborhood-level phenomenon relying on agreement and shared expectations among neighbors. Crime and disorder is geographically patterned. To understand these phenomena, they have to be examined at the level in which they occur—the neighborhood. It is at the neighborhood level that police make resource allocations and implement programs.

Research Context

The research context, the two-island Caribbean nation of Trinidad and Tobago, makes an important contribution to the research. Trinidad and Tobago is populated by approximately 1.3 million residents and is located just off the coast of Venezuela. See figure 2 for a map of the area. In size, it is slightly smaller than Delaware. The country runs as a parliamentary democracy, headed by a President, but managed by the Prime Minister. Three political parties, the People's National Movement (PNM), The United National Congress (UNC) and the Congress of the People (COP) align heavily along racial and ethnic lines, with PNM support stemming primarily from Afro-Trinidadians and the COP and UNC support coming from the Indo-Trinidadians. The Trinidad and Tobago population contains approximately 40% Indo-Trinidadians, 37.5% Afro-Trinidadians, 20.5% who are a mixture of the two groups, and an additional 2% who are classified as other or unspecified. The primary industry in Trinidad and Tobago is production of oil and natural gas, accounting for 40% of the gross domestic product. However, tourism is also important, particularly on the island of Tobago (Central Intelligence Agency [CIA], 2008).

Figure 2. Map showing the location of Trinidad and Tobago, prepared by Julie Willis for a presentation by Kochel and Willis (2007).

Conducting the research in Trinidad and Tobago extends the boundaries of prior research on collective efficacy and legitimacy beyond the borders of the United States, Britain, and other developed nations, into a developing nation that is wrestling with many difficult challenges, including widespread disadvantage, inadequacies in infrastructure, acute violence, corruption, and cynicism and distrust among its people. These challenging circumstances undoubtedly contribute to how police behave, how they are perceived by the public, and to neighborhood ecology. In this section I describe how studying these

phenomena in Trinidad and Tobago advances knowledge about the relationship between collective efficacy and crime and disorder and affords a unique opportunity to examine how the prevalence of police misbehavior (as well as quality services) relates to legitimacy and neighborhood outcomes.

Conducting the research in Trinidad and Tobago makes a particularly informative contribution to prior research about collective efficacy, which has predominantly been studied in Chicago and other cities in the United States. Because neighborhood disadvantage has a strong influence on the development of collective efficacy (Elliott et. al, 1996; Sampson, Morenoff, & Earls, 1999; Snell, 2001, Steptoe & Feldman, 2001), studying collective efficacy and subsequently its relationship to crime and disorder under more extreme socio-economic circumstances in Trinidad than it has been studied in the United States, extends knowledge about the robustness of this theory.

The most disadvantaged neighborhoods in the Trinidad sample are much more challenged than even the most disadvantaged Chicago neighborhood. Trinidad and Tobago neighborhoods struggle with infrastructural deficiencies that are rarely found in developed nations. For example, within a majority of the study neighborhoods, at least a quarter of households do not have sewer or septic, and in nearly one-third of the neighborhoods, half of the households do not have piped water. Four of the seventy-three neighborhoods have more than half their population that report being squatters, and in as many as ten percent of the study neighborhoods, fewer than half of households have a telephone (based on an analysis of the 2000 Trinidad and Tobago Census data). Among those interviewed for the community survey used in this dissertation, 24% reported that

infrastructural problems were the greatest problems facing their neighborhood. These challenges are important to neighborhood ecology, because when people are struggling with service inadequacies for basic services such as water and waste removal, they may have less time and energy to bond with their neighbors and work to address other neighborhood problems such as youth loitering on the streets or drug sales. Kubrin and Weitzer (2003) reported that "Concentrated disadvantage not only deprives neighborhoods of resources that may be mobilized to control crime, but also increases social isolation among residents, which impedes communication and interferes with their capacity to pursue common values" (p. 380). Warner, Leukefeld, and Kraman (2003) found that living in an impoverished area significantly diminishes residents' perceptions about the prevalence of conventional beliefs among their neighbors and increases their perceptions that neighbors hold "street values."

In Trinidad and Tobago neighborhoods, the pursuit of common values is undoubtedly also challenged by a lack of trust among residents. Across the 43 countries surveyed by the complete World Values Survey during the most recent wave (2005—2008), Trinidad and Tobago had the largest percentage of residents that said that most people cannot be trusted (96.2%). They were also in the bottom 20% of countries on trust in their neighborhoods.[1]

[1] These statistics are generated based on an analysis of the data from the 43 countries that completed the full questionnaire from the World Values Survey wave 4 (2005-2008), retrieved from the World Values Survey Association at http://www.worldvaluessurvey.org on January 30, 2009. The list of countries include Andorra, Argentina, Australia, Brazil, Bulgaria, Burkina Faso, Chile, China, Cyprus, East Germany, Ethiopia, Finland, Ghana, India, Indonesia, Italy, Japan, Jordan, Malaysia, Mali, Mexico, Moldova, Morocco, Peru, Poland, Romania, Rwanda, South Africa, Serbia, South Korea, Slovenia, Spain, Sweden, Switzerland, Taiwan, Thailand, Trinidad and Tobago, Turkey, Ukraine, United States of America,

By examining collective efficacy under these more troubled circumstances where it may be more difficult to build it, I expected collective efficacy to be lower, on average in the Trinidad neighborhoods than in prior studies. Figure 3 demonstrates the differences in collective efficacy and disadvantage that I expected between Chicago and Trinidad neighborhoods. While on the whole I expected Trinidad neighborhoods to have higher levels of disadvantage and lower levels of collective efficacy, I did anticipate some overlap, recognizing that it is likely that not all neighborhoods in Trinidad have higher levels of disadvantage and lower levels of collective efficacy than all Chicago neighborhoods.

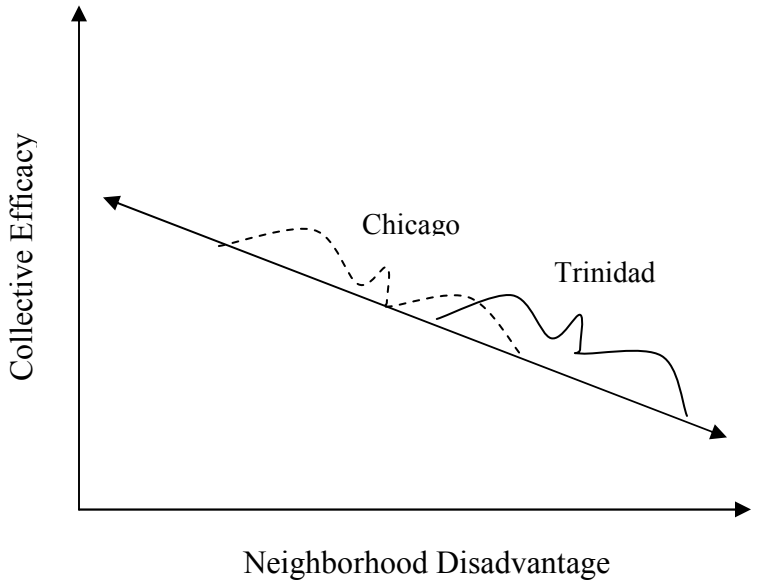

Figure 3. Expected Differences in Collective Efficacy for Chicago Versus Trinidad Neighborhoods.

Vietnam, West Germany, and Zambia. Surveys in the United States and in Trinidad and Tobago were conducted in 2006.

Under these assumptions, I expected that placing the study in Trinidad would allow an examination of how particularly low levels of collective efficacy in highly disadvantaged neighborhoods relate to crime and disorder. Finding a negative relationship between collective efficacy and crime under these circumstances would suggest that collective efficacy is a very important and strong influence, even in low doses. Assuming Trinidad neighborhoods do have lower levels of collective efficacy and that the relationship between collective efficacy and crime is consistent even at lower levels of collective efficacy than previously studied, figure 4 shows how the results in Trinidad and Tobago would extend our knowledge about the relationship between collective efficacy and crime—providing answers along the collective efficacy continuum that previously was out of scope.

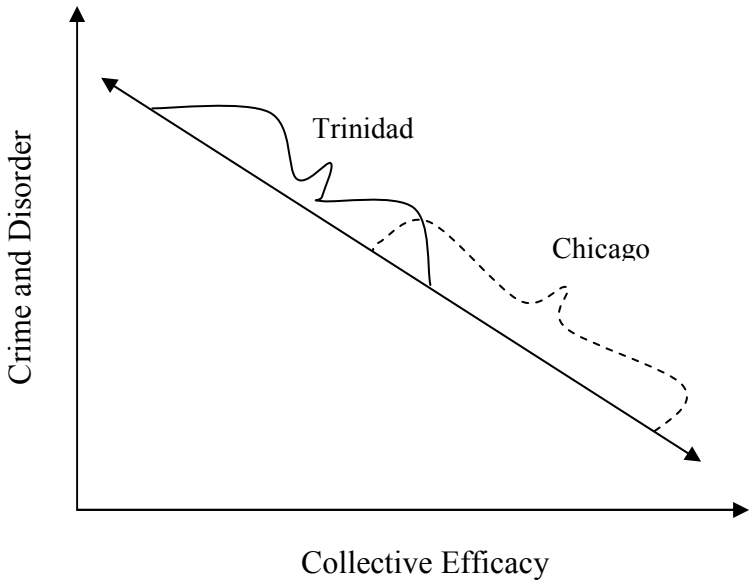

Figure 4. Expected Differences in Studying the Influence of Collective Efficacy in Trinidad versus Chicago Neighborhoods.

These assumptions were not upheld in reality. I did not find that the Trinidad neighborhoods, on average, had lower levels of collective efficacy or even that they had more variation in collective efficacy across neighborhoods than Chicago neighborhoods.[2] Although I did not find the expected "lower doses" of collective efficacy in Trinidad, I did find that despite the extreme challenges faced in Trinidad neighborhoods, residents were still able to generate a sense of community nearly equal to that found in Chicago neighborhoods. Given these results, studying these relationships in Trinidad provides an opportunity to learn how neighborhoods struggling with extreme levels of disadvantage may generate comparable levels of collective efficacy in spite of disadvantage. Understanding the correlates of collective efficacy in these very troubled neighborhoods will have practical application in the U.S. and elsewhere where concentrated disadvantaged has been a strong hindrance to generating a sense of community and an interest among residents in exerting informal social control.

[2] Although the collective efficacy measure that I used in this study is not on the same scale as the measure used in the Chicago studies (I used a second order factor score for all of the analyses in this dissertation), it does rely on very similar indicators of informal social control and social cohesion (described in detail in chapter 3) and so conceptually is comparable. To facilitate a reasonable comparison of the levels of collective efficacy in Chicago versus Trinidad neighborhoods, I created a collective efficacy score using a strategy consistent with Morenoff, Sampson, and Raudenbush (2001) and Sampson, Raudenbush, and Earls (1997). They averaged responses to ten 5-point likert questions to form their measure of collective efficacy. Their neighborhood mean was 3.89 out of 5. I computed a comparable Trinidad collective efficacy score by averaging responses to six 4-point likert questions. The neighborhood average in Trinidad was 2.94 out of 4. Converting these scores to percentages of the range of possible scores for each study, the Chicago neighborhoods scored 97% and the Trinidad neighborhoods scored 98%. I also compared the level of variation across neighborhoods in the two locales using the coefficient of relative variation (CRV) outlined by Dunham and Alpert (1988). The coefficient of relative variation is computed by dividing the standard deviation by the mean. This computation provides the standard deviation standardized by the size of the mean. This allows an assessment of the amount of variation across scales, controlling for differences in the size of the means (Dunham & Alpert, 1988, p. 513). Both studies show low levels of variation across neighborhoods (CRV for Chicago = .06, CRV for Trinidad = .05).

Crime

The crime problems in Trinidad and Tobago are different from those in Chicago and other U.S. cities where collective efficacy research has been conducted. Trinidad and Tobago's crime rate is high and it has been rising unabated for nearly a decade. Between 1999 and 2005, the homicide rate in Trinidad and Tobago more than quadrupled, from 7 to 30 homicides per 100,000 people. During the same six year period, the kidnapping rate also increased dramatically, nearly doubling. (United Nations Office on Drugs and Crime & Latin America and Caribbean Region of the World Bank, 2007). The level of violence is sufficient to generate warnings by the United States Department of State to would-be tourists about the risks of robbery, assault, kidnapping, sexual assault, and murder in Trinidad and Tobago, even identifying a number of locations within the country that tourists should avoid (United States Department of State, 2007). Comparatively, the U.S. homicide rate was 5.6 per 100,000 in 2007, one-fifth the homicide rate in Trinidad and Tobago (Federal Bureau of Investigation, 2008). Although both nations struggle to deal with their crime problems, Trinidad and Tobago struggles against considerably higher levels of extreme violence. Studying collective efficacy's relationship with crime within Trinidad neighborhoods, where problems with violence are higher, allowed me to examine whether higher levels of collective efficacy are associated with lower levels of crime and disorder in neighborhoods that would otherwise be expected to have high crime. Such a finding would provide strong support for the robustness of theories about collective efficacy.

Policing, Legitimacy, and Corruption in a Developing Nation

Since the other key part of the research question asks whether police can contribute to collective efficacy and whether they do so by their influence on legal institution legitimacy, Trinidad's unique challenges with police services, legitimacy of government and other institutions, and corruption also add to the value of Trinidad and Tobago as a context for this study. Residents of Trinidad and Tobago had the fifth lowest scores for confidence in the police out of the 43 countries participating in wave four of the World Values Survey (2005-2008).[3] Of the four countries scoring worse, three of them are also developing countries, according to the International Monetary Fund (CIA, 2009).

Bennett and Wiegand (1994) assert that policing in developing countries differs from policing in developed countries on three dimensions, "(1) the orientation of police services, (2) the organization and deployment of police resources, and (3) the physical impediments to reporting" (p. 137). They report that in developing countries, police response to incidents is influenced in greatest part by the identity or high-status of the victim, rather than the seriousness of the offense or other characteristics of the incident. In other words, distribution of services is not based upon need; rather, desirable services are distributed to those with status. Additionally, they found that police services are quite stationary —provided in specific locations (often in wealthier neighborhoods rather than poorer, crime-ridden neighborhoods), rather than through geographic, mobile, deployment of officers that is often found in developed countries and is common in the

[3] This statistic is based on analysis of the World Values Survey wave four data file that I retrieved from the World Values Survey Association at http://www.worldvaluessurvey.org on January 30, 2009.

United States. As a consequence of this lack of mobility and reduced availability of telephones in many developing countries, victims often must travel to the closest police post or station to report crimes, and they do so with varied levels of ease due to distance and motor vehicle limitations. The obvious consequences of a fairly immobile police force with disproportionately distributed services may be fewer interactions (especially positive interactions) between police and members of the general public, lower levels of police-community partnerships, an increased sense of injustice at the hands of the police—especially among residents of lower status, lower perceptions of the quality of police services, and more opportunities for police misconduct without accountability. These differences in policing styles, described in general terms between developed and developing nations, provide a fairly accurate comparison of policing in Trinidad and Tobago versus policing in the United States.

The style of policing implemented in Trinidad and Tobago has generated distrust, dissatisfaction, and problems with legitimacy for police (Mastrofski & Lum, 2008). Within the Trinidad and Tobago neighborhoods sampled by the 2007 community survey, only 54% of residents reported being somewhat or very satisfied with police services and only 69% reported that they thought that they should accept decisions made by legal authorities.[4] On the contrary, surveys about attitudes toward police in the United States suggest that public opinions about the police are fairly consistent and favorable—with 80-90% of people within U.S. urban jurisdictions generally reporting satisfaction with police (Gallagher, Maguire, Mastrofski & Reisig, 2001). With such relatively low public

[4] Additional information about the community survey data and analysis are provided in chapter 3.

assessments of the police in Trinidad and Tobago, I was skeptical about whether assessments about the quality of police services might vary much across neighborhoods, and if they did, whether any slightly elevated assessments of the quality of police services might produce improvements to legitimacy, collective efficacy, or crime and disorder.

On the other hand, I expected that studying Trinidad and Tobago police might provide a better test of the relationship between police misconduct—or at least the *perception* of misconduct—and legal institution legitimacy and neighborhood outcomes, simply because misconduct appears to occur in higher doses than in the United States. A 2007 Freedom House report suggests that corruption in Trinidad and Tobago police service is endemic. In 2006 and 2007, the country ranked 79th (out of 163 and 180 countries surveyed) on Transparency International's Corruption Perceptions Index. On a scale of 0 to 10, with 0 being highly corrupt and 10 being highly clean, Trinidad and Tobago ranked 3.4 in 2007 (confidence interval 2.7 to 3.9) (Transparency International, 2007a). This score is up from 3.2 in 2006 (confidence interval 2.8 to 3.6) (Transparency International, 2006).[5] Additionally, Trinidad and Tobago newspaper editorials are replete with complaints about police failure to respond to requests for assistance and improper or ineffective police tactics. Hindering police legitimacy are investigations of people killed in police custody or at the hands of police that remain unresolved even a year or more after the event, as well as credible allegations of mistreatment, and arrests of officers for

[5] Transparency International synthesizes international data from 14 surveys or polls of resident and nonresident business people or country analysts to rate and rank countries on perceptions about corruption among public officials and politicians. They define corruption as the "abuse of public office for private gain." Sources for these data include Freedom House 'Nations in Transit,' Merchant International Group Limited in London, United Nations Commission for Africa, World Economic Forum, International Institute for Management Development in Lausanne, World Markets Research Centre in London, and Country Policy and Institutional Assessment by the World Bank (Transparency International, 2007b).

their connections with illegal drugs, firearms possession and other offenses, according to the United States Department of State's Country Report on Human Rights Practices 2006 for Trinidad and Tobago (United States Department of State, Bureau of Democracy, Human Rights, and Labor, 2007).[6] Comparatively, U.S. citizens harbor considerably fewer concerns about corruption, ranking twentieth in 2007 with a score of 7.2 (confidence interval of 6.5-7.6) on Transparency International's (2007a) corruption index. The difference is a 38% score improvement over Trinidad and Tobago. I had anticipated that these perceptions among Trinidad and Tobago citizens that police corruption is prevalent would likely generate low levels of legal institution legitimacy in Trinidad and Tobago, especially relative to the United States.

The question this raises is whether police, in an environment of mistrust and perceptions of misbehavior could alter perceptions of police integrity and service quality to produce a positive influence on collective efficacy, or whether this environment might simply be too negative to build more collective efficacy in neighborhoods. Additionally, although police legitimacy appears low, it is less clear how perceptions about police, under these conditions, influence perceptions of legal institutions overall, especially when the image of the courts is scarcely more positive. LaFree's model assigns law-related institutions the role of reinforcing consensus about legal values. However, if the reputation of police is primarily one of corruption and misconduct, Trinidad and Tobago police may not be able to fulfill this role and contribute positively to legal institution

[6] Similar claims can be made about judicial and court authorities, including an official ruling against and suspension of the chief justice when he was convicted of inappropriately intervening in a trial against the leader of the United National Congress political party (UNC), attempting to influence the outcome (United States Department of State, Bureau of Democracy, Human Rights, and Labor, 2007).

legitimacy. By testing this model in Trinidad and Tobago, I was able to examine a much higher dosage of perceived police misconduct across neighborhoods than I expect to find in U.S. neighborhoods. Since it is difficult to study phenomena that occur infrequently, the prevalence of the problem in Trinidad allows for a better examination of its relationship with legitimacy, collective efficacy, and crime and disorder.

Additionally, I expected, and the data support, that public views of police services are much lower in Trinidad and Tobago than reported in U.S. studies. This extends the range of my study much lower on the scale than I would have been able to examine using data from the United States. It allows me to ask whether delivering higher quality services, even if still lower on the quality scale could improve neighborhood well-being. Conceivably, at the low end of the scale in terms of service quality, small increases may be greeted more positively and have a stronger impact than they would further up the scale. A positive finding would offer strong support to continue ongoing efforts to reform and improve the service quality of the Trinidad and Tobago Police Service.

Mastrofski and Lum (2008) describe a reform strategy (subsequently referred to as the Model Stations initiative) designed to be more responsive to public concerns, increase transparency and accountability, and to improve effectiveness at addressing crime. The reform efforts intend to increase the authority of the police commissioner, provide more government and independent oversight, improve training, and institute upgraded pay and promotion opportunities. At the time of the community survey used in this dissertation, these reforms were just being launched and now they are ongoing. The results of this study addressing the relationship between police services and misconduct

and legitimacy, collective efficacy, and crime and disorder can provide some helpful insights and direction for those reforms.

In addition to this practical contribution, conducting the research in Trinidad and Tobago advances what prior evidence can tell us, by (1) examining the relationship between collective efficacy and crime and disorder in neighborhoods struggling with many disadvantages and when problems with violence are extreme; (2) studying the relationship between residents' perceptions about police and collective efficacy, within an environment characterized by mistrust of police and neighbors; (3) studying the relationship between residents' perceptions of police misbehavior and legal institution legitimacy and community outcomes, with sufficient prevalence of the problem to provide a reliable test; and (4) evaluating the relationships between higher quality police services and legal institution legitimacy, collective efficacy, and crime and disorder, even when the overall level of services is constrained to be low.

Importance of the Research

Prior research on collective efficacy, legitimacy, and the police role in influencing both has been constrained in a number of ways. Prior research on collective efficacy has primarily been limited to studies in Chicago and a few other cities in the United States and Britain. Its relationship to crime and disorder has not been examined within developing countries. Also, investigations of legitimacy have primarily been conducted at the individual level: assessing the effects of individuals' experiences, demographic characteristics, and opinions about police and other justice organizations on legitimacy of the law and legal institutions, and how those views influence behaviors (e.g., compliance

with the law, reporting crimes to the police, cooperation with police). Studies of legitimacy have not yet addressed the neighborhood-level effects: how agreement among neighbors about whether legal institutions are legitimate influences neighborhood level outcomes. Additionally, studies addressing how legitimacy and collective efficacy relate to each other are rare.

This dissertation contributes to the field by filling a number of gaps in knowledge. First, the research examines the relationship between collective efficacy and crime in an environment characterized by extreme violence—improving knowledge about the robustness of this relationship. Second, this research addresses a gap in scientific knowledge by assessing the viability of a previously untested mechanism—legal institution legitimacy—by which police may stimulate collective efficacy and reduce crime and disorder. Third, the research provides a multifaceted understanding of the hypothesized relationships by examining them from two perspectives—the individual level and the neighborhood level. This multi-faceted perspective makes an important contribution for two reasons. First, on a practical level, police services occur at both the individual level during encounters and at the neighborhood level with the delivery of programs and services. Understanding the outcomes at both levels is important to improving services and neighborhood consequences of police behaviors. Second, much of the prior research on legitimacy has been limited to the individual level, by studying the linkages at both the individual and neighborhood level, this research advances scientific understanding of this important phenomenon and may help bridge the gap between individuals' opinions and neighborhood consequences.

Research Questions

The two research questions are:

(1) Do an individual's views about the quality of police services and the prevalence of police misconduct influence his or her inclination to grant legal institutions legitimacy, and do these opinions affect the individual's assessments about collective efficacy and crime and disorder in his or her neighborhood?

(2) Does the average neighborhood opinion about police service quality and levels of misconduct influence the percentage of neighborhood residents who grant legal institutions legitimacy, and to what degree does this affect collective efficacy and crime and disorder in the neighborhood?

A complete list of the specific hypothesized relationships is provided in chapter three.

Organization of the Dissertation

The dissertation is organized into five sections. Chapter one introduces the research question, outlines the contribution of the research context, and promotes the contributions the research makes to the field. Chapter two explains LaFree's model of institutional legitimacy in greater detail and synthesizes the related prior research on legitimacy and collective efficacy in support of the research question. Chapter three describes the community survey data, data collection and analytical methods, and operationalizes the variables used in the research. Chapter four presents the results of the structural equation models and supplemental analyses. Chapter five synthesizes the findings, draws conclusions, and provides implications and recommendations for the

Trinidad and Tobago Police Service and for scholars interested in advancing knowledge on this topic.

Chapter 2
Collective Efficacy and Legitimacy Theories and Research

In the introduction I explained that although higher levels of crime are consistently found in neighborhoods experiencing the greatest social and economic disadvantage (Block, 1979; Sampson, 1985; Smith and Jarjoura, 1988; Taylor & Covington, 1988; Sampson & Lauritson, 1994), Robert Sampson and other scholars have reported that neighborhoods struggling with disadvantage have reduced crime and disorder problems through a mechanism called collective efficacy. Collective efficacy occurs when people see themselves as part of a collective and are willing to act to support the greater good. When neighborhood residents develop a working trust, agree on what behaviors and practices are appropriate in the area, and feel a sense of ownership and responsibility for the area, they are willing to intercede to address problems, and they entrust their neighbors to assume this responsibility as well (Sampson et al., 1997). Braithwaite (1989) describes these communities as places "where people do not mind their own business, where tolerance of deviance has definite limits, where communities prefer to handle their own crime problems rather than hand them over to professionals" (p. 8). The evidence supports that when collective efficacy is strong, it mediates the effects of concentrated disadvantage, and neighborhoods experience less crime and disorder (Sampson, 1997; Sampson et al., 1997; Sampson & Raudenbush, 1999; Morenoff, et al., 2001).

In this chapter I explain how police may be able to stimulate collective efficacy, based on a theory of legitimacy by Gary LaFree (1998). Robert Sampson, in his 2001 Edwin Sutherland Award Presentation at the American Society of Criminology, asserted that police and other social institutions have a critical role to play in building collective efficacy. Sampson suggested that, "…one of the keys to generating social goods, and in my view, collective efficacy, is institutions that are viewed as legitimate and that are supported by strong government" (Sampson, 2002, p. 221). My research empirically scrutinizes this idea, assessing the role police may play in building collective efficacy in Trinidad and Tobago.

In this chapter I integrate two lines of criminological inquiry that have developed fairly independently over the last ten to fifteen years. I highlight the major findings about legal institution legitimacy and neighborhood collective efficacy to build a foundation upon which to examine whether police in Trinidad and Tobago may play a role in improving collective efficacy and reducing crime and disorder through legal institution legitimacy. Because of the extent of the social structural challenges in Trinidad and Tobago, I place particular emphasis on available evidence about how a variety of these challenges influence neighborhood-level social phenomena. Based on a review of the evidence, I assert for the purpose of empirical validation that providing quality routine police services and minimizing police misconduct improve legal institution legitimacy in the eyes of neighborhood residents, which encourages residents to build shared values and norms, exert collective efficacy, and this reduces crime and disorder.

Neighborhood Ecology, Collective Efficacy, and Crime

Shaw and McKay (1942) provided the foundational study that explained variation in delinquency across neighborhoods as a function of structural disadvantage, giving rise to social disorganization theory. Social disorganization theory asserts that the setting itself, with its innate characteristics of concentrated poverty, racial heterogeneity, and residential mobility perpetuates neighborhood disorganization, diminishes informal social controls, and results in delinquent subcultures and high rates of delinquency. Since this classic study, empirical assessments of social structural factors such as concentrated poverty and inequality (Block, 1979; Curry & Spergel, 1988), residential mobility (Block, 1979; Sampson, 1985; Smith and Jarjoura, 1988; Taylor & Covington, 1988), housing and population density (Roncek, 1981; Schuerman & Kobrin, 1986; Sampson & Lauritson, 1994), racial composition or heterogeneity (Block, 1979; Roncek, 1981; Sampson, 1985; Smith & Jarjoura, 1988), and disrupted family structure (Messner & Tardiff, 1986; Sampson, 1985) have proliferated, establishing these neighborhood characteristics as strong predictors of the geographic distribution of crime. The challenge is to identify effective strategies for addressing these structural factors or identify other mechanisms that counteract the effects of structural disadvantage.

One such mechanism with growing empirical support derives from Park's human ecology theory (Vold, Bernard, & Snipes, 2002). Park theorized that people living together can produce symbiotic relationships that not only are mutually beneficial, but are more beneficial than could occur living alone. Coleman (1988) refers to this ecological phenomenon as social capital, built from "networks of relationships among people that

facilitate common actions and make possible the achievement of common goals" (Vold et al., 2002, p. 129). Researchers adopting this ecological paradigm have questioned how neighborhoods—collectives of individuals living in a common geographical area—may generate social capital and apply it to counteract social structural disadvantage, and whether by doing so they can achieve better neighborhood outcomes.

Sampson and colleagues (1997) explain the theoretical mechanism at work. The neighborhood-level mechanism that builds social capital and mitigates neighborhood rates of crime and disorder, even in the midst of the strong influence of concentrated structural disadvantage, is a shared sense of trust, cohesion, and a reciprocal expectation among neighbors to intervene and exert informal social control. They named this neighborhood level phenomenon collective efficacy. Sampson (2002) explains that collective efficacy operates on a "sense of the collective" (p. 220), referred to by Portes and Sensenbrenner (1993) as "bounded solidarity" or an "emergent sentiment of we-ness" (p. 1328)—sharing a common situation with common adversities, that is not dependent on friendships or even neighbors liking each other.[7] Instead, collective efficacy is a product of a neighborhood socialization process that begins when individuals, who might otherwise be socially unconnected, have opportunities for interactions and communication that allow them to gain an awareness of what others are doing and thinking, and share ideas and information. These interactions and connections engender a recognition and acceptance of being part of a collective with common and

[7] Browning, Feinberg, & Deitz (2004) distinguishes social capital that develops as a consequence of group membership versus social ties. Sampson and his colleagues allow for either mechanism, but the most recent studies emphasize that personal social ties are not required.

interdependent interests and expectations, including, among other things, an interest in public safety. As increasing numbers of individual neighborhood members experience a working trust and solidarity with their fellow neighbors, they develop and abide by shared norms for behavior, and accept a shared willingness to intervene for the common good. Actions may be taken by individuals or collectively, but in either case are taken because of a sense of shared duty to do so and not by any potential for reward or punishment. Actions are taken knowing others in the group will reciprocate. The consequence of amassing neighborhood collective efficacy is that neighborhood members increasingly act to monitor youth, question strangers, and minimize physical and social disorder. As a whole, the neighborhood becomes increasingly self-regulating.

Evidence of the powerful influence of neighborhood collective efficacy on crime and disorder problems is abundant and supported in numerous replications in a variety of contexts. As early as 1958, Maccoby, Johnson, and Church reported that differences between a high delinquency and a low delinquency area in Cambridge, Massachusetts, otherwise very similar neighborhoods in terms of education, density, income, and perceptions of the seriousness of juvenile delinquent behavior, were: (1) a more positive feeling toward the neighborhood, (2) a shared interest and point of view with neighbors, (3) a willingness among neighbors to intervene to address delinquent behaviors, (4) actual higher levels of intervention, and (5) a lower proportion of residents that thought people should mind their own business in the low delinquency area. Later research applied more sophisticated analyses, but claimed similar results supporting the role of collective efficacy in reducing delinquency, crime, and disorder.

Perhaps one of the most compelling findings supporting the influence of collective efficacy on crime was reported by Morenoff and colleagues (2001). They reported that in Chicago neighborhoods, an increase in one standard deviation of their collective efficacy measure was associated with a 12% decline in the homicide rate. Similar findings showing an inverse relationship between collective efficacy and homicide (using the same Project on Human Development in Chicago Neighborhoods (PHDCN) dataset) were reported by Sampson and colleagues (1997), Sampson and Raudenbush (1999), Browning (2002), and Browning, Feinberg, and Deitz (2004). Much of the published research on collective efficacy has been conducted using PHDCN data, collected in the early to mid-1990s in Chicago. The PHDCN studies consistently have found that higher levels of informal social control and neighborhood collective efficacy are associated with reduced crime, delinquency, and disorder (Sampson, 1997; Sampson et al., 1997, Sampson & Raudenbush, 1999, Browning et al., 2004).

Outside of the extensive research conducted in Chicago, similar findings in the United States have been reported using data collected in Seattle, Washington; Baltimore, Maryland; and Louisville and Lexington, Kentucky, building evidence of the generalizability of these effects in U.S. cities. Bellair (2000), in Seattle, reported that informal surveillance—residents actively monitoring social activity in their neighborhoods—reduces robbery and stranger assault (although not burglary rates), even when controlling for variations in concentrated disadvantage and residential stability across neighborhoods. In Baltimore, Taylor, Gottfredson, and Brower (1984) found at the block level that the proportion of residents who reported a sense of obligation or

responsibility for what happened in the area surrounding the home was inversely related to rates of violence on the block. Also in Baltimore, Snell (2001, p. 99) found an inverse bivariate relationship between mutual helping and trust and crime rates, suggesting the importance of cohesion and collective efforts on crime. In Louisville and Lexington, Warner and colleagues (2003) reported that high levels of collective efficacy were associated with a lower average number of crimes witnessed by residents and a lower percentage of violently victimized households. Extending the inquiry internationally with their study in London, Steptoe and Feldman (2001) found that both informal social control and social cohesion were related to reduced neighborhood problems—a compilation of issues such as vandalism, litter, disturbances, noise, and problems with dogs.

Given the diversity of outcomes associated with collective efficacy and its components, the consistency of the direction, and significance of the findings, and in general, the plethora of evidence, the relationship between collective efficacy and crime and disorder outcomes appears quite robust. Furthermore, available evidence suggests that collective efficacy is such a potent force that it can even mediate the troubling effects of social structural disadvantage on crime and disorder in neighborhoods. Sampson and colleagues (1997) found that the association between concentrated disadvantage and residential mobility on violent victimization diminished and these characteristics no longer had a significant influence when accounting for the mediating influence of collective efficacy. Collective efficacy also diminished the influence of disadvantage on perceived levels of violence and on homicide rates. Elliott and colleagues (1996) found

that in Denver the strong negative effects of neighborhood disadvantage on youth problem behaviors and on a compilation of positive outcomes such as grades in school, commitment to conventionality, and involvement in conventional activities was in large part mediated by neighborhood informal social control. When members of a neighborhood trust their neighbors, feel a bond with the neighborhood, and act to protect it, crime and disorder problems are lower, even in areas of concentrated structural disadvantage.

Nonetheless, although collective efficacy may be able to mediate some of the harmful effects of structural disadvantage, collective efficacy is particularly difficult to engender within neighborhoods suffering from structural disadvantage. High levels of residential mobility, low homeownership, racial heterogeneity, population density, immigrant concentration, and concentrated poverty work together to disrupt communication and norms consensus building, institutional and family socialization processes, and to diminish social resources. Research has consistently found that structural disadvantage reduces neighborhoods' social cohesion, informal social control, and collective efficacy. For example, Silver and Miller (2004) reported that high levels of residential mobility reduce levels of neighborhood informal social control. Conversely, a study by Wells, Schafer, Varano, and Bynum (2006) found that residential stability increases collective efficacy. Sampson and Raudenbush (1999) offer a plausible explanation that "high levels of homeownership and low transience work together to instill in residents a "stake in conformity" (p. 610). Homeownership, stability, and/or neighborhood attachment may provide the motivation for residents to invest in an area's

long term health and participate in developing norms and maintaining its well-being. Kasarda and Janowitz (1974) found that length of residence is the key factor associated with community attachment. They reported a positive relationship between length of residence and a resident's sense of belonging to a community and interest in what goes on in the community. This is a particularly important finding relative to the Trinidad neighborhoods in the study, because residents report living in the same community year after year, a factor which could perhaps compensate for some of the other aspects of neighborhood structural disadvantage there. In Baltimore, homeownership increased residents' sense of responsibility for areas near their homes, increasing collective efficacy (Taylor et al., 1984). However, when residents do not own their homes and live only temporarily in an area, they may feel less attachment and obligation to help regulate the area.

Opportunities for interactions and relationships are greater if residents within the neighborhood are fairly stable, not moving every few years, necessitating the need to develop new relationships and for new shared expectations to emerge. In Britain, research by Sampson and Groves (1989) supports the positive influence of stability on friendship networks. It is likely that forums such as voluntary associations, kinship and acquaintance networks, and other organizations provide the necessary linkages and interactions through which neighbors communicate and build common values and expectations for neighborhoods. Morenoff and colleagues (2001) found that kinship or friendship ties, as well as participation in organizations and voluntary associations, increases collective efficacy. In impoverished areas, however, Kawachi (1999) warns that residents may be

challenged in their ability to find time to participate in civic organizations or to spend time with friends and neighbors, compounding the challenge of developing shared norms and building collective efficacy in structurally disadvantaged areas. Indeed, Steptoe and Feldman (2001) reported that lower levels of collective efficacy were found in neighborhoods with lower socio-economic status. Research by Warner and colleagues (2004) supports these findings, although in their study, accounting for perceptions that neighbors hold street values and observe street behaviors mediated the influence of poverty on collective efficacy. Contrary to these results though, Villarreal and Silva (2006) found in the developing nation of Brazil, higher levels of social cohesion were found between residents in impoverished neighborhoods. They attribute this unexpected finding to the way in which the neighborhoods studied had developed. As with some of the neighborhoods studied in Trinidad, Villarreal and Silva examined neighborhoods where rural migrants who were unable to afford legitimate housing settled in makeshift homes built on illegally occupied land. Social bonds formed tightly because of the prevalence of relatives and friends in the small area, and because the area survived due to the strong organizational skills of the inhabitants resisting government attempts to remove the squatters. However, their research did not find that these strong social bonds were sufficient to diminish the crime problems in the neighborhoods.

Research identifies several other structural impediments to neighborhood collective efficacy and its components, such as informal social control, norm development, and mutual helping behaviors. In both Chicago and Detroit, Elliott and colleagues (1996) found a strong negative influence of neighborhood disadvantage

(poverty, mobility, ethnic diversity, and family structure) on informal social control. Sampson and colleagues (1999) observed this same effect with concentrated disadvantage, as well as immigrant concentration, population density, and higher levels of perceived violence on child-centered social control. Snell (2001) reported that low socio-economic status and high levels of physical and social disorder result in lower levels of mutual helping and trust. Warner and colleagues (2003) suggest that physical or social disorder, delinquency, or other non-conventional behaviors, if prevalent in a neighborhood, may themselves be interpreted by residents as symbolic of what behaviors are acceptable in the neighborhood and diminish the likelihood that residents will intervene. Furthermore, they also found that living in an impoverished area significantly diminishes residents' perceptions about the prevalence of conventional beliefs among their neighbors and increases their perceptions that neighbors hold "street values." This relationship held even after controlling for the respondents' personal values—whether conventional or street values. Therefore, how to stimulate or increase collective efficacy in neighborhoods, particularly in structurally disadvantaged neighborhoods and those suffering from crime and disorder problems, remains an important question.

This question is fundamental in my research. Although a great deal has been learned about the influence of collective efficacy on crime and disorder in U.S. cities and about the social structural challenges that can impede its development, what cannot be said from existing research is whether collective efficacy can be generated and be an effective tool against crime and disorder in less developed nations and areas with more structural disadvantage and social disorganization than in many of the neighborhoods

studied in the United States—providing more extreme challenges to collective efficacy development.[8] My research will help to fill the void in knowledge and try to address the generalizability of the effects of collective efficacy to neighborhoods in developing nations struggling with many structural disadvantages.

The Theoretical Role of Institutions in Building Collective Efficacy

Another gap that my research will address is assessing the role that legal institutions such as the police may play in helping to increase collective efficacy in neighborhoods. LaFree (1998, p. 80) espouses a role that hinges on the legitimacy of legal institutions. Legitimacy refers to trust, respect, and a dutiful obligation to the authority of an institution, the origin of which extends beyond self-interest. Max Weber (1947) originated the discussion of institutional legitimacy and its influence on personal behavior. Using the term "imperative co-ordination," Weber described legitimacy as a motivator to obey commands from an authority voluntarily. When people perceive an authority is legitimate, they are driven by "internalized obligations" or a personal sense of responsibility to act a specific way consistent with the authority's expectations, even in the absence of that authority, even when the expected behavior is counter to self-interest, or even when the behavior conflicts with their moral views of right and wrong (Hoffman,

[8] In addition to the specific case that I made in chapter one about the levels of disadvantage in Trinidad and Tobago, I make this connection between structural deficiencies and a country's status as a developing nation because by definition, a number of the indexes that designate developing nation status or human development status assign that designation based on a range of social, economic, and structural deficiencies. For example, the United Nations' Human Development Index considers per capita income and the nation's ability to provide educational and social structural resources that provide a quality standard of living. (United Nations, 2009) The CIA factbook defines less developed countries, Trinidad and Tobago among them, as "mainly countries and dependent areas with low levels of output, living standards, and technology" (CIA, 2009).

1977, p.85; Hyde, 1983; Tyler, 1990, p. 24-25). In many ways, these characteristics of legitimacy describe the expected behaviors under "bounded solidarity."

Police, as institutions that are responsible for crime and disorder control, represent laws and conventional behavior. LaFree contends that legal institutions participate in a network of social connections that exert pressures to conform to shared standards of behavior consistent with the laws and conventional behaviors represented by their crime control roles. This begins when institutions delineate and socialize people into societal roles (e.g., criminal and non-criminal, delinquent and non-delinquent). This labeling provides guidance about appropriate and inappropriate behavior, which is critical for informal social control (Triplett, Gainey, & Sun, 2003). It is through this process, LaFree explains, that institutions, including the police, create and enforce mutually shared and valued norms, mores, and roles, and outline expectations for behavior. General agreement among members of a society or group about legal institution legitimacy reinforces normative behavior, increases the predictability of everyday behavior, and enhances interpersonal trust that others will conform to the shared expectations for behavior, particularly for a behavior about which there is widespread agreement. The norms become legitimized and new members are assimilated to the practices and values through socialization strategies enacted by social institutions. The consequence of this process is that people are inclined to internalize rules and laws, socialize others to those rules and laws, and adhere to the formal authority of legal institutions. LaFree claims that the product of these mechanisms is a reduction in the crime rate. See figure 5 below for a graphical depiction of his model.

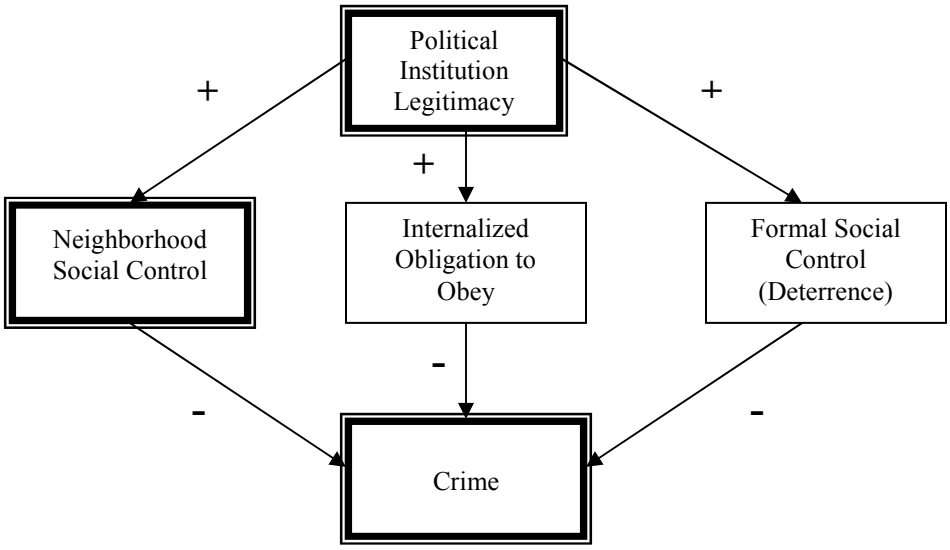

Figure 5. LaFree (1998): The Influence of Social Institutions on Crime.

Political institutions such as the police rely heavily on public perceptions of their legitimacy to instill internalized obligations to comply, to effectively exert formal social control, and to promote informal social control. Of particular relevance to my research is the path on the far left. When significant proportions of residents doubt the legitimacy of legal institutions such as the police, the conventional values that police represent will become less respected, eroding a foundation on which neighborhoods can build consensus about the appropriate behaviors to expect in the neighborhood. Without shared values and norms, neighbors will struggle to develop a working trust (as in Trinidad) and so cannot be confident that other neighbors will act in the best interest of the neighborhood nor can they predict how neighbors might respond should they intervene. This disrupts the socialization process and the consequence is that people no longer respond to violations of conventional norms. The failure to exert informal social control

erodes neighborhood collective efficacy. Neighborhoods with low collective efficacy experience more crime, delinquency, and disorder. It is this indirect, neighborhood-level effect of police legitimacy on crime through neighborhood collective efficacy that has received little attention in past research.

Evidence Addressing the Influence of Institutional Legitimacy

I found only one study that attempted to assess the specific role of institutional legitimacy on neighborhood collective efficacy and indirectly on crime. Sun, Triplett, and Gainey (2004) attempted to study this relationship using the Project on Policing Neighborhoods (POPN) data. However, their measure of collective efficacy was limited by the lack of sufficient information in that dataset about social cohesion and informal social control. As such, they really assessed the relationship between legitimacy and neighborhood collective action (measured by the existence of and participation in problem-based local organizations) and the subsequent relationship with assault and burglary.[9] They found no significant effect of legitimacy on collective action and no effect of collective action on either assault or burglary rates in neighborhoods.

Related research has investigated whether other opinions about police and the law can increase or help build collective efficacy in neighborhoods. Wells and colleagues (2006) reported that residents mobilizing to address the most important problem that they felt was facing the neighborhood, even controlling for social structural factors, was strongly predicted by satisfaction with the police. Silver and Miller (2004) reported that

[9] Compounding the challenges with this study, the interviews of residents in Indianapolis that served to inform these measures were conducted in 1996, but were used to predict crime outcomes from 1995, 1996, and 1997 (Sun et al., 2004).

neighbors were more willing to exert informal social control over youth when they were more satisfied with police. Furthermore, although concentrated disadvantage was negatively associated with informal social control in half of their models, the effects of disadvantage were mediated by higher levels of neighborhood attachment and satisfaction with the police. The explanation offered by Silver and Miller is that when citizens are satisfied with police and they see the police as a reliable neighborhood resource, citizens feel more empowered to intervene, even without the help of police, to promote social order. This proved particularly important in disadvantaged neighborhoods. It is likely that opinions about the legitimacy of police may contribute to satisfaction or that they are closely related. If so, this prior research offers some tentative evidence in support of LaFree's model and Sampson's assertions in his Edwin Sutherland Award Presentation that institutions are an important component in building neighborhood collective efficacy.

However, additional findings in the same study call into question whether opinions about the law (rather than legal institutions) can have the same effect. Silver and Miller reported that legal cynicism was not a significant predictor of informal social control. Their result suggests that having low neighborhood-level commitment to conventional rules did not have an important influence on informal social control. In their study, the primary lever influencing informal social control, described above, was the institution representing and enforcing the law—police, rather than the law itself. It is this form of law in action that people experience within their neighborhoods, and so it is not entirely unforeseen that police behaviors would more strongly and directly relate to how people behave in their neighborhoods.

With so few studies assessing the influence of legal institution legitimacy on neighborhood outcomes—namely collective efficacy, I also reviewed what prior research says about the influence of perceptions of institutional legitimacy at the individual level on compliance with the police and the law, reporting crimes, and assisting police. It is possible that if institutional legitimacy influences these behaviors among individuals in support of formal social control and self-regulation, legitimacy may also encourage neighborhood-regulating behaviors in support of informal social control. LaFree asserts that individual compliance with the law, like neighborhood social control, derives from legal institution legitimacy. That is, the legitimacy of formal institutions, such as the police, serves to bind people in ways that encourage them to act informally to address problems. Rather than competing with loyalty to the neighborhood, it reinforces it.

Recently, this line of research on legal institution legitimacy has been dominated by Tom Tyler and colleagues. Consistent with Lind and Tyler (1988), Tyler (1990) reported that in Chicago, positive perceptions of the legitimacy of legal authorities (operationalized as a general obligation to obey them), as well as support for legal authorities, predicted self-reported compliance with the law for speeding, parking violations, littering, excessive noise, shoplifting, and driving under the influence (although legitimacy explained only 2% of the variance in compliance). A panel study of a subset of the same respondents who subsequently had an encounter with legal authorities showed that at time two, compliance with the law was again predicted by perceived legitimacy of legal authorities. Elsewhere, Sunshine and Tyler (2003) conducted two surveys in New York and found that perceptions of police legitimacy

significantly predicted compliance with the law, reporting crimes, identifying criminals, and engaging in neighborhood problem solving activities with police. Similar findings were reported by Fagan and Tyler (2005) for children and adolescents. They found that among young people, perceptions that police and courts act fairly and equitably were associated with lower levels of self-reported crime. A brief synthesis of research on the effect of legitimacy at the individual level suggests that when people perceive the law and/or authorities as legitimate, they report an increased willingness to obey the law, assist the police, and engage in problem solving activities with the police. They are willing to take action in support of the values and laws promoted by the police.

Generating Legitimacy

Having found a consistent influence of legitimacy on individuals, I turn to what existing research says about how perceptions of legitimacy are generated to learn what role police might play in influencing these opinions. Research consistently finds that positive perceptions of police legitimacy are derived primarily from positive perceptions about procedural justice, and to a much lesser degree, police performance effectiveness in fighting crime, improving neighborhood conditions, and reducing fear of victimization. Favorable outcomes and prior positive interactions with police also have positive relationships with legal institution legitimacy (Tyler, 1990; Tyler & Huo, 2002; Sunshine & Tyler, 2003), but procedural justice shows by far the strongest effect. Procedural justice refers to an impartial process that is not affected by race, gender, age, or other demographic characteristics: one in which people have a voice, one where different people in similar situations are treated consistently, a process where decisions are based

on facts, one in which people are treated with dignity and respect, and a process protected by accountability to higher authorities (Leventhal, 1976). Opinions about how well police meet these criteria may derive from a variety of sources including, but not limited to personal contact with police, vicariously through the contacts of others, friendships with individual officers, word of mouth, newspaper or televised reports, and observations. Regardless of the source driving opinions, the evidence supports that when people *believe* police implement policing according to these criteria, they grant them legal institution legitimacy.

For example, in a study in Los Angeles and Oakland, California, Tyler and Huo (2002) found that willingness to accept decisions by legal authorities (the measure of legal institution legitimacy used in this dissertation) is predicted by perceptions about procedural justice, distributive justice, and outcome favorability, in that order. In Chicago, Tyler (1990) reported the same strong positive relationship between procedural justice and views of legitimacy. These results were replicated with New Yorkers, both preceding and following the 9-11 terrorist attack and were consistent across races (Sunshine & Tyler, 2003). The post-attack analysis allowed a test of whether in a more fearful, safety-conscious environment, the public's sense of police legitimacy would be less responsive to procedural justice concerns relative to outcomes, such as safety. In the latter study, having a recent personal experience with legal authorities also had an important effect on legitimacy.

The influence of encounters with the police on individuals' opinions about legitimacy cannot be overlooked. Tyler (2004) explained that "the quality of

interpersonal treatment is consistently found to be a distinct element of fairness, separate from the quality of the decision-making process" (p.94). Although someone does not need to have an encounter with police to form an opinion about procedural justice, having such an encounter appears to have an important influence on opinions about police and on legitimacy. In his 1990 study, Tyler (p. 94) found that experiential variables explained 10% of the variance in views about legitimacy of the law (perceived obligation to obey and institutional trust). In Tyler and Huo's (2002, p. 133) later study, the comparable figure is 24% of the variance in views about legitimacy, suggesting a much stronger effect of experience with police on legitimacy than the 1990 study. Tyler (2001) reported that as much as 34% of the variance in overall police evaluations is derived from experiences with police. In all three studies, the important factor influencing legitimacy and perceptions of police was procedural justice—how police treated the citizens during the encounter. As such, to raise legitimacy among individuals, the research suggests police must focus on policing fairly—applying procedural justice both in their implementation of routine policies and procedures and during encounters with members of the public.

The Role of the Neighborhood

What is unclear is whether and how the considerable research on legitimacy at the individual level applies to relationships at the neighborhood level. Prior research cannot explain how neighborhood characteristics influence individuals' perceptions of legitimacy. Prior research addressing a variety of individuals' attitudes toward police (e.g., satisfaction with police, support for police, confidence in police) suggests that

neighborhood characteristics such as concentrated disadvantage, community disorder, and the violent crime rate are important factors affecting individuals' opinions (Cao, Frank, & Cullen, 1996; Dunham & Alpert, 1988; Reisig & Parks, 2000; Sampson & Bartusch, 1998). Similar factors may influence opinions about legal institution legitimacy.

Additionally, prior research provides empirical evidence to suggest that police behaviors differ across neighborhoods. Terrill and Reisig (2003) found that police behavior, namely use of force, differs across neighborhoods based on levels of structural disadvantage. Kane (2002) drew similar conclusions. If this link between social ecology and police behavior holds true in Trinidad neighborhoods, perceptions about police behavior and about legal institution legitimacy may also be expected to vary across neighborhoods based on neighborhood characteristics and based on differential police behaviors across neighborhoods. Neighborhood characteristics such as structural disadvantage, levels of disorder, the violent crime rate, and amount of police contact may produce varied opinions about legitimacy by residents from different neighborhoods.

If neighborhood level characteristics do alter individuals' opinions about legitimacy, this raises a question that also remains unanswered from the individual-level research on legitimacy: whether individuals within neighborhoods tend to share similar opinions about the legitimacy of legal institutions, because of mutually shared experiences and perspectives on police behavior? Dunham and Alpert (1988) found high levels of agreement within neighborhoods on opinions about patrol strategies, police demeanor, expectations for police to control crime, and the need for discretion to be

allotted to police. Prior research does not examine whether residents also agree on the legitimacy of legal institutions.

Factors that shape opinions about legitimacy may differ based upon neighborhood characteristics. For example, prior research cannot answer whether in a neighborhood that receives little police contact, a resident's views of legitimacy are strongly driven by perceptions of procedural justice (as they are in individual-level studies), or if distributive justice then becomes more important in forming opinions of legitimacy. When many people in a neighborhood have contacts with police, does legitimacy still draw heavily from the individual's personal experience (positive or negative), or is that experience overshadowed by the way residents see most neighbors being treated? Kane (2002) questioned whether higher levels of contact in some neighborhoods might amplify police-citizen conflict and increase police misbehavior, subsequently diminishing legitimacy. These questions can only be answered by expanding prior research on legitimacy to the neighborhood-level.

The best indication prior research has to offer about the role of neighborhood context in influencing perceptions about legitimacy is a study addressing legal cynicism. Legal cynicism refers to a lack of commitment to conventional values and legal rules. Sampson and Bartusch (1998) applied multi-level modeling techniques to predict individuals' perceptions of legal cynicism, incorporating both individual and neighborhood level predictors. They found that people living in neighborhoods with concentrated disadvantage were significantly more likely to express legal cynicism. These results envisage a potential challenge for developing legal institution legitimacy in

areas of concentrated disadvantage. Therefore, it is reasonable to speculate whether police behaviors can mediate the anticipated effects of concentrated disadvantage on legal institution legitimacy at the neighborhood level, just as collective efficacy has been found to mediate the effects of social structural disadvantage on crime and disorder.

At the neighborhood level, legitimacy would be reflected by a generalized neighborhood support for and sense of duty toward legal authorities. Although individuals' perceptions about police and other legal institutions are important, collectively, consensus about (or failure to generate consensus about) legitimacy may influence outcomes at the larger neighborhood level. It is in the aggregate that LaFree's model applies, but prior research fails to examine what factors coalesce to create consensus about legitimacy.

Raudenbush and Sampson (1999) explain that neighborhoods are "important units in their own right" (p. 4). They assert that certain phenomena occur at the neighborhood level and have to be measured at the neighborhood level, such as population density and neighborhood physical and social disorder. In the case of neighborhood collective efficacy, the aggregate has a distinct existence from and important significance beyond individuals. Aside from individuals' opinions about police, norms, and neighbors, and apart from informal social control efforts that individual neighbors might exert, increasing proportions of neighbors that share common values and are subsequently willing to act for the common good create the neighborhood-level phenomenon collective efficacy. Individual neighbors can voice an opinion about the perceived level of collective efficacy in the neighborhood. However, only when a high proportion of that

individual's neighbors share the same opinion that certain behavioral norms are acceptable and that generally speaking, other neighbors will act to suppress problem behaviors will collective efficacy be high in the neighborhood. A major deficit in prior research is the failure to operationalize both collective efficacy and perceptions of legitimacy at the neighborhood level and assess the relationship between them. One goal of my research is to fill this gap.

Unanswered Questions

Several questions remain unanswered by existing research. Most relevant to my research, prior studies do not explain how individuals' opinions about legal institution legitimacy cohere at the neighborhood level and vary across neighborhoods, how neighborhood characteristics may interact with experiences and opinions about police to influence perceptions in neighborhoods, and what influence varied levels of positive and negative views about legitimacy has on neighborhood outcomes such as collective efficacy and crime. Does legal institution legitimacy in neighborhoods contribute to increased neighborhood collective efficacy as LaFree's model suggests? Does collective efficacy in the developing nation of Trinidad and Tobago have the same inverse relationship with crime as it has in the United States? My research in Trinidad and Tobago neighborhoods assesses the relationship between residents' perceptions of routine police services and of police misconduct with legitimacy and subsequently with neighborhood collective efficacy and crime. I examined these relationships at both the individual and neighborhood levels. This is an important investigation, because the results provide practical feedback and recommendations to the Trinidad and Tobago

police service, but also because the results fill a number of theoretical and empirical voids about the role of legal institution legitimacy in generating collective efficacy and the role of collective efficacy in influencing crime and disorder within developing nations.

Chapter 3
Methodology

Overview and Research Questions

Prior research consistently documents the depressive effect of collective efficacy on crime and disorder problems, even in communities that are structurally disadvantaged. This dissertation is interested in whether police can strengthen collective efficacy in neighborhoods as a lever to reduce crime and disorder. Guided in part by a theory of institutional legitimacy by Gary LaFree (1998), I hypothesize that by delivering high quality routine police services and minimizing misconduct, police will improve legal institution legitimacy, thus increasing collective efficacy and diminishing crime and disorder problems. The specific research hypotheses are:

1) Delivering higher quality of routine police services increases public perceptions of legal institution legitimacy.
2) Public observations of police misconduct cause the public to view legal institutions with less legitimacy.
3) When residents view legal institutions as legitimate, neighborhood collective efficacy will increase.
4) Delivering quality routine police services increases collective efficacy.

5) Delivering quality routine police services improves collective efficacy indirectly by improving legal institution legitimacy, which subsequently increases collective efficacy.

6) Police misconduct decreases collective efficacy.

7) Police misconduct diminishes collective efficacy indirectly by reducing legal institution legitimacy, which subsequently decreases collective efficacy.

8) Delivering quality routine police services reduces crime and disorder.

9) Delivering quality routine police services reduces crime and disorder problems indirectly by improving collective efficacy, which subsequently decreases crime and disorder.

10) Police misconduct contributes to crime and disorder problems.

11) Police misconduct contributes to crime and disorder problems indirectly because it diminishes collective efficacy, subsequently increasing crime and disorder.

12) Higher levels of legal institution legitimacy improve neighborhood collective efficacy and subsequently reduce crime and disorder.

Figure 1 in chapter one provides a graphical depiction of the conceptual model. In this chapter, I describe my data sources, outline a measurement model-building process, explain how each of my variables is operationalized, and outline my approach to the analysis.

Data Sources

The primary data source for this analysis is a neighborhood survey conducted in Trinidad and Tobago in January and February 2007. Neighborhoods were defined by community boundaries designated by the country's Central Statistical Office (CSO). According to the CSO, the larger island of Trinidad (where all of the study sites are located) has more than 500 communities with a combined population on that island of more than 1.2 million people. The average community size is 2,323 people, although communities range in size from 0 to 18,292 people, according to the 2000 Census. The sample of neighborhoods for the survey was drawn primarily from ten police districts that are part of a quasi-experimental evaluation of the *Policing for People Model Stations Project*, designed by George Mason University to improve delivery of police services. Five treatment and five comparison police jurisdictions were chosen because they experienced significant crime and disorder problems and because they are geographically dispersed and have diverse racial profiles. The survey served as its baseline data collection.

A Trinidad research firm was instructed to select one-third of the communities within each of the ten police station districts using sampling proportional to size. To select households within each community, the research firm generated a starting point and a skip factor (every nth house) to select households based on the total number of individuals targeted for interviews in that neighborhood. The adult (18 years or older) with the most recent birthday was asked to participate in the survey. Some of the neighborhoods in the sample experience high levels of violent crime, so procedures were

implemented to ensure interviewer safety and credibility. A major part of those procedures was hiring a Trinidad-based research firm that employed native interviewers who are familiar with the areas and who would implement acceptable social behaviors and avoid offending or concerning local gang leaders.

During implementation of the sampling plan, three neighborhoods outside the police districts of interest to the Model Stations Project were accidentally included in the sample, and a small number of additional neighborhoods within the districts of interest were also included. Including these interviews and areas, interviews were conducted in 74 neighborhoods (14% of all neighborhoods in Trinidad and Tobago) and 13 police station districts. The number of individuals sampled within the 74 neighborhoods ranged from one to 140. On average, communities contain 41 interviews. Response rates for each of the ten police districts targeted by the sampling plan are provided in table 1.

Table 1

Response Rates for Targeted Police Station Districts

Police Station District	Response Rate
Arouca	68%
Arima	71%
West End	65%
Chaguanas	77%
St. James	66%
Belmont	63%
Couva	76%
San Fernando	71%
Morvant	64%
Princes Town	88%

For my analyses, I excluded the community with only 1 interview. I also excluded the one interview with missing community identification information. Therefore, the total number of interviewees available for analysis is 2,967, and the number of communities is 73. Figure 6 displays the locations of the 73 neighborhoods used in the analysis. Sample sizes of the 73 communities are provided in table 2.

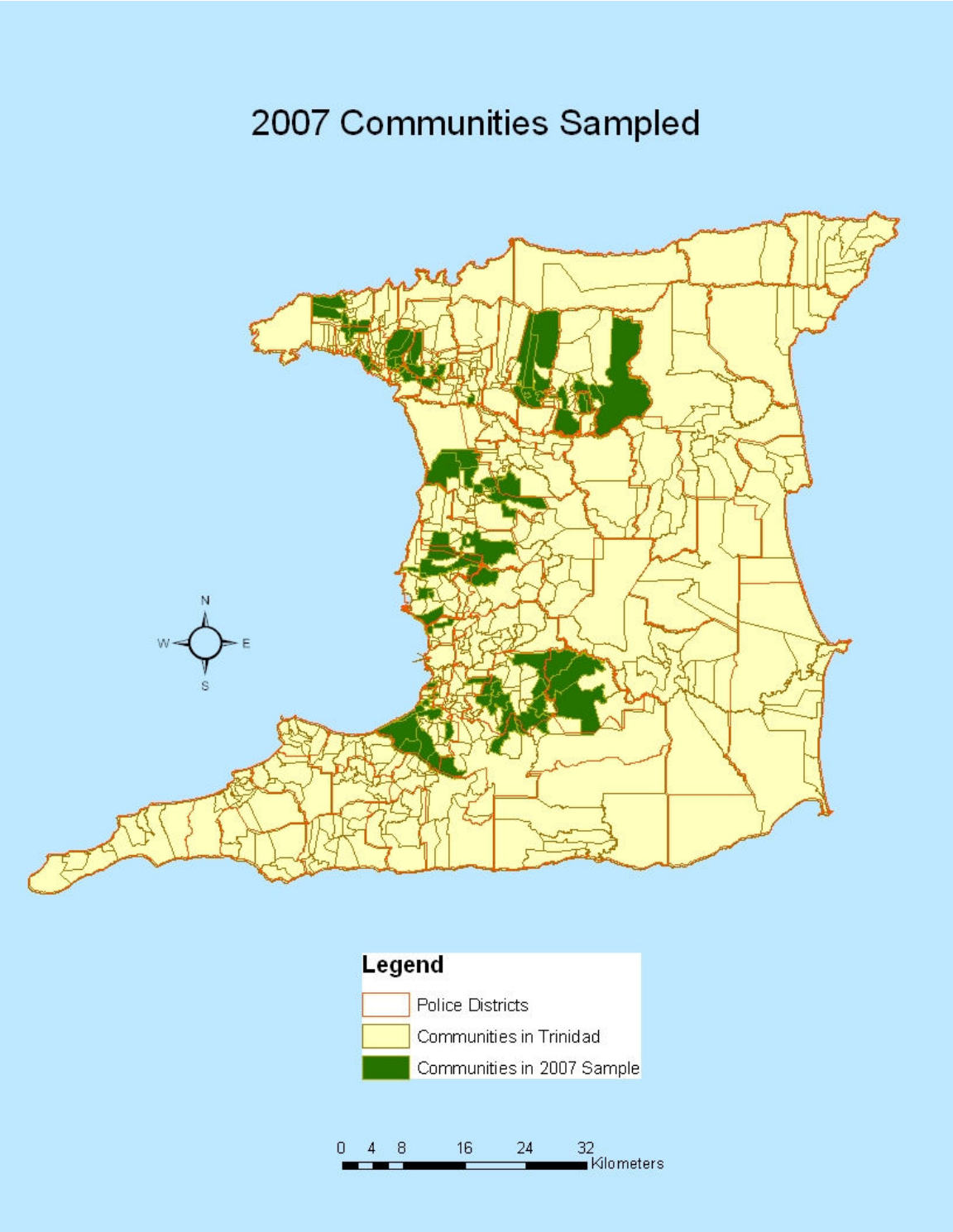

Figure 6. Location of the sample communities in Trinidad.

Table 2

Community Sample Sizes (n = 2,967)

Community	n	Community	n
1	116	38	25
2	40	39	52
3	6	40	25
4	140	41	69
5	93	42	38
6	20	43	33
7	42	44	25
8	8	45	34
9	9	46	35
10	16	47	25
11	87	48	27
12	2	49	15
13	45	50	11
14	17	51	32
15	67	52	19
16	51	53	24
17	37	54	7
18	28	55	26
19	60	56	58
20	87	57	29
21	43	58	20
22	32	59	14
23	32	60	61
24	94	61	40
25	46	62	3
26	28	63	54
27	110	64	22
28	61	65	48
29	28	66	48
30	12	67	35
31	107	68	81
32	21	69	21
33	5	70	43
34	17	71	28
35	47	72	48
36	7	73	41
37	90		

The average population within selected neighborhoods is 5,280 people, more than double the size of the average neighborhood in Trinidad and Tobago. The sample was not selected to be representative of Trinidad and Tobago's general population. The sampling design intentionally targeted neighborhoods with elevated crime and disorder problems. Six of the 13 police jurisdictions in the sample rank among the top seven in the country for homicide, representing 8% of all police jurisdictions but accounting for nearly one-third (31.4%) of the homicides between 2001-2007 (Maguire, Willis, & Snipes, forthcoming). Clearly, the results of the study are not generalizable to the country as a whole, but rather are most informative to the most challenging areas struggling to deal with crime and disorder problems—those neighborhoods that stand to gain the most from additional, effective crime control measures

Sample Characteristics

Residents sampled range in age from 18 to 92 years old. The median age of respondents is 45 years. The sample includes 40% males and 60% females; 38% are Afro-Trinidadian, 34% are Indo-Trinidadian, 27% are mixed, and fewer than twenty respondents reported being from another racial/ethnic category.[10] The majority of Africans in the sample live in racially mixed neighborhoods and about 28% live in predominantly African neighborhoods. More than half of the Indo-Trinidadians live in

[10] Although not directly pertinent to the analyses within the targeted areas, it is helpful to know that the sample of residents from the targeted communities is older and has a higher female to male ratio than the general population in Trinidad and Tobago. However, the sample does capture a similar racial/ethnic distribution relative to the Trinidad and Tobago population. The country contains almost an even mixture of Afro-Trinidadian and Indo-Trinidadian residents (CIA, 2008).

predominantly Indian neighborhoods, and 41% live in mixed neighborhoods.[11] Of the neighborhoods in the sample, 15% are composed of predominantly African residents, 34% are composed of predominantly Indian residents, and the remaining 51% are a mixture of Indian, African, mixed, and other races. Consistent with prior studies, predominantly African neighborhoods in this sample concentrate near the Port of Spain area, while predominantly Indian neighborhoods are found primarily in central and southern Trinidad (Yelvington, 1993). Figure 11 in chapter 4 maps this distribution. When reporting results, I describe some differences occurring between individuals based on the racial composition of their neighborhoods.

Interviewees are modestly educated, have modest incomes, and a fairly high proportion do not work full time as a means of sustaining themselves. One-third of those interviewed have only a primary education (equivalent to about the elementary school level in the United States), but more than half have at least a secondary degree (similar to a high school diploma in the United States), and about 20% of those interviewed have received a post-secondary technical, vocational, or university degree. More than a third of the sample is married, an additional one-third reported being single—never married and not living with anyone, 11.5% cohabitate, 10.5% of interviewees are widowed, and 7.6% are divorced or separated. When asked what their main source of income had been over the prior six months, only 43% reported that their primary income came from a full time

[11] Since the selection of respondents within neighborhoods is random, the racial characterization of the neighborhoods is computed based upon the percentage of the respondents claiming to be African, Indian, Mixed, or Other. A neighborhood is characterized as predominantly African when 60% or more of the respondents from that neighborhood report being Afro-Trinidadian. Likewise, a neighborhood is characterized as predominantly Indian when at least 60% of the respondents in that neighborhood report being Indo-Trinidadian. The remaining neighborhoods are characterized as mixed.

job. Twenty percent lived primarily on a pension or retirement, and an additional 17% relied primarily on other family members for their incomes. The interviewees reported modest incomes, and on average, people earned about $2,321 TT in the month preceding the survey (about $387 U.S. dollars).

Those interviewed are long-term residents in their communities, but have become increasingly concerned about crime and safety in their neighborhoods—some have even talked to police about the problems. On average, people have lived in their present community for 26 years. However, nearly 30% of those interviewed reported that they felt less safe in their neighborhood than they did six months before the interview. The primary problem that residents claimed plagued these communities is crime. The most frequently mentioned crime problems were drugs (mentioned by 26%), burglary (mentioned by 15%), and murder (mentioned by 9% of those interviewed). About 9% of the people who had reported a big problem with crime had talked to the police about the problem. Second to crime, 24% of the sample described infrastructure problems in the neighborhood as the primary problem. The problems pertain to inconsistencies with the water supply, problems with roads and sidewalks, and drainage and flooding problems. The challenges presented within the selected neighborhoods and the diversity across the selected neighborhoods provides an excellent forum in which to assess the role that police may play in influencing legal institution legitimacy and neighborhood outcomes such as collective efficacy and crime and disorder.

Complementing the community survey, I also rely on the country's community-level spatial database, which contains population information from the 2000 national

census and square miles and square kilometers of the neighborhoods in Trinidad. I used these data to calculate the population density of the neighborhoods.

Although demographic data about the neighborhoods are also available from the 2000 census, I used demographic data from the survey sample to avoid "inconsistent aggregation bias—measuring the covariates over a different population than the outcome variables," which can bias the regression coefficients (Wainer, 1989, p. 130). Furthermore, using the survey data to operationalize measures ensures the most recent data available, rather than relying on data collected seven years earlier.

Despite these benefits, relying primarily on one source of data for both the independent and dependent variables generates a potential common method bias problem. Relying on the survey results risks common rater effects and relying on questions with similar scale formats to produce different variables may result in artificial covariation between the variables. Common method bias problems are prevalent in social science research (Podsakoff, MacKenzie, Lee & Podsakoff, 2003). This dissertation applies some recommendations suggested by Podsakoff and colleagues for coping with common method bias, including keeping the questions simple and concise and avoiding "bipolar numerical scale values" (p. 888) and by Andersson and Bateman (1997) who promote a test that applies exploratory factor analysis—referred to as Harman's single-factor test. However, some of the more sophisticated statistical strategies that Podsakoff and colleagues recommend for dealing with the potential problem (multitrait-multimethod and correlated uniqueness model) were not possible due to convergence problems. In

chapter 5, I offer recommendations for addressing this potential problem in future research.

Model Development and Variable Operationalization

To ensure construct and discriminant validity and to maximize the reliability of the measures, I undertook an extensive model development and variable operationalization process. Whenever possible, I measured the constructs using the same or similar procedures and indicators that have been reliable in prior research. Consistent with the foundational studies on collective efficacy by Robert Sampson and on legitimacy by Tom Tyler, I used a series of factor analyses to generate nearly all of the key variables. Combining a number of indicators of the same underlying construct using factor analysis minimizes measurement error and avoids disproportionately representing any one construct in the model. Maruyama (1998) demonstrates that single concepts with many variables in a model may be less likely to appear significant when other variables are reflected by single variables, regardless of the actual relationship to the dependent variable. Therefore, I sought parsimony in the model by statistically combining questions representing the same construct into a single variable using factor analysis.

Reisig, Bratton, and Gertz (2007) reviewed the prior research on factors related to legitimacy and reported that failure by researchers to pay attention to construct and discriminant validity has led to confusion. This omission has generated uncertainty about what procedural justice, distributive justice, and legal institution legitimacy really represent. Their efforts to rectify this deficiency using a 2005 nationwide telephone survey dataset suggest that some of the concepts that had been treated as discrete actually

overlap, when put to empirical test. Their findings had a considerable impact on the early stages of my research, because I had initially intended to study the relationship between fair and effective policing and legal institution legitimacy and subsequently with neighborhood outcomes such as collective efficacy and crime and disorder. However, upon investigating the discriminant validity of these concepts, I learned that in these data, fair and effective policing are empirically intertwined with each other and other aspects of policing. As a consequence, I slightly altered my research questions and strategy.

Preliminary Assessment of Discriminant and Construct Validity

As a preliminary assessment of discriminant validity, I subjected ten questions (initially identified as indicators of satisfaction with police, procedural justice, and performance efficacy) to a principal components factor analysis in SPSS. I found that instead of producing the three concepts I had anticipated, the ten questions represented only two latent constructs (explaining 61.8% of the total variance, Eigenvalues = 4.51 and 1.67). The two preliminary factors suggested that the questions actually were measuring the quality of routine services and police misconduct, rather than procedural justice, performance efficacy, and satisfaction with police. These ideas are highly similar, but the differences are more than semantic. The full results of my preliminary assessment are provided below.

One question asking how well police control violent crime in the neighborhood cross-loaded. Its highest factor loading was comparatively low (.436) and its communality was also low (.221). All of the remaining questions loaded above .7 and loaded high on one factor and considerably lower on the other.

Within the first factor, the following questions had high loadings:

1) The police in my neighborhood respond quickly when people ask them for help (.792).
2) The police in my neighborhood know how to carry out their official duties properly (.826).
3) The police in my neighborhood address citizens in a respectful manner and appropriate tone (.714).
4) The police in my neighborhood are able to maintain order on the streets (.739).
5) The police in my neighborhood try to help citizens solve their problems (.798).
6) Overall, I am satisfied with the service provided by the police in my neighborhood (.855).

This factor is similar to what Maguire and Johnson (forthcoming) label service quality, including aspects of responsiveness, competence, manners, and accessibility. However, unlike Maguire and Johnson, I found that questions that could be described as indicators of fairness or procedural justice load separately from other aspects of service quality.[12]

[12] Several reasons may explain the difference. First, with one exception, different questions were used to represent these concepts. Also, Maguire and Johnson surveyed residents from a suburban community in Virginia. All of their respondents had extended contact with police as victims or because of their involvement in a motor vehicle collision. The sample was primarily white, married, college educated, and female, quite unlike the sample in Trinidad and Tobago. Also, as described in chapter 2, the nature of policing is different in Trinidad and Tobago and concerns about corruption are more pronounced. The percentage of respondents in Maguire and Johnson's study that were satisfied with police services (90%) is considerably higher than the percentage satisfied in the Trinidad and Tobago sample (54%). Trinidad newspapers are replete with editorials complaining about police failures, concerns about corruption and unfairness, and suspicions about the nature of past police shootings. These differences may contribute to

Within the second factor, the following questions had high loadings:

1) How often do you think police officers stop people on the streets of your neighborhood without good reason? (reverse coded) (.824)
2) How often do you think police officers use insulting language when talking to people in your neighborhood? (reverse coded) (.850)
3) How often do you think police officers use excessive force (more force than is necessary under the circumstances) against people in your neighborhood? (reverse coded) (.859)

This set of questions appears to represent primarily the idea of police misconduct—more extreme versions of what has typically been labeled procedural justice by Tyler and colleagues.[13] One additional question had a modest loading and focuses more on effectiveness or ineffectiveness of the police:

4) How effective are the police at controlling violent crime in your neighborhood (.437)?

Subsequently, when I added legitimacy into the principal components factor analysis, it did not load on either factor, with the highest value being .245, suggesting that indicator is measuring something different from the remaining questions and supporting my conceptual argument that legal institution legitimacy is distinct from views about police services and misconduct.

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some expected variation in how the public views police service quality and concerns about procedural justice, and subsequently the difference in the factor pattern.

[13] For example, Tyler (2005) measured procedural justice by asking about the opportunities for input into police decisions, neutrality of decision-making—based on facts and accurate application of the law, and interpersonal treatment with dignity, respect, and consistent with people's rights. Sunshine and Tyler (2003) used a similar, although more detailed measure of procedural justice. See Lind and Tyler (1988, Table A-1) for a list of studies and their measures of procedural justice.

However, having identified an empirical deviation from my original conceptual model, suggesting a problem with construct and discriminant validity for the measures of fair and effective policing, I undertook a more rigorous measurement refinement process similar to the one applied and recommended by Agha, Maguire, Katz, and McIntosh (forthcoming).

Measurement Model Building Process

The modified measurement refinement process that I applied entailed a three step approach:

1) Exploratory factor analysis with a random 25% of the data
2) Confirmatory factor analysis with a second random 25% of the data
3) A covariate analysis using the same second random 25% sample

The process and my results are described in greater detail throughout the rest of the chapter.

Exploratory Factor Analysis. First I used a randomly selected subsample of the data (25%) to conduct an exploratory factor analysis with quartimin rotation,[14] using Mplus Statistical Analysis software. I selected Mplus over SPSS because it is capable of conducting factor analysis with ordinal data, it can perform structural equation modeling, which I needed to answer the substantive question posed by my research, and it can do so within a multi-level framework. For my measurement model testing, I used a subsample,

[14] Quartimin provides an oblique rotation, allowing the factors to intercorrelate. Brown (2006) explains that, "In most cases, oblique rotation is preferred [over orthogonal] because it provides a more realistic representation of how factors are interrelated." (p.32) Brown's fundamental steps for exploratory factor analysis subsequently specify using an oblique rotation method in multifactorial models. Additional information about quartimin rotation is available in Jennrich and Sampson (1966). Sampson et al. (1997) and Sampson and Raudenbush (1999) also used an oblique rotation in the factor analyses for collective efficacy.

rather than the entire sample, to minimize the likelihood of capitalizing on statistical chance when subsequently running the substantive analyses.

As a practical matter, since my interest is in whether police can influence legal institution legitimacy and directly or indirectly improve collective efficacy and reduce crime and disorder, I sought to pinpoint specific characteristics of police behaviors or aspects of the routine process of policing that police could either alter or reinforce should my analyses identify a link between these behaviors or processes and neighborhood outcomes. In other words, I tried to design the study so that the Trinidad and Tobago Police Service could respond to the results by manipulating training, procedures, policies, and practices in order to generate better outcomes for Trinidad neighborhoods. Additionally, I aimed to identify measures that are conceptually meaningful and empirically discrete from the dependent variables: legitimacy, collective efficacy, and crime and disorder. As part of this pursuit, I ran a series of exploratory factor analyses using 25 questions that have been used in prior research to measure these concepts or are clearly related to performance efficacy and the quality of police services, procedural justice or misbehavior, satisfaction with police, legitimacy, collective efficacy, and crime and disorder (See the 1994 Community Survey Questionnaire for the Project on Human Development in Chicago Neighborhoods, cited as Earls, Brooks-Gunn, Raudenbush, & Sampson, 1997; as well as Morenoff et al., 2001; Reisig & Cancino, 2004; Sampson et al., 1997; Sunshine & Tyler, 2003; Tyler, 2001; Tyler & Wakslak, 2004). A full list of the 25 questions is provided below.

1) People in this neighborhood share the same values. (strongly agree to strongly disagree)

2) I do not pay attention to the opinions of others in this neighborhood. (strongly agree to strongly disagree)

3) People in this neighborhood generally do not get along with each other. (strongly agree to strongly disagree)

4) This is a close knit neighborhood. (strongly agree to strongly disagree)

5) If some children were spray-painting graffiti on a local building, how likely is it that your neighbors would do something about it? (very likely to not at all likely)

6) If a group of neighborhood children were skipping school and hanging out on the street corner, how likely is it that your neighbors would do something about it? (very likely to not at all likely)

7) If there was a fight in front of your house and someone was being beaten or threatened, how likely is it that your neighbors would break it up? (very likely to not at all likely)

8) How much of a problem are groups of teenagers or adults hanging out in the neighborhood and causing trouble? (very likely to not at all likely)

9) How much of a problem are people buying & selling drugs on the street? (a big problem, somewhat of a problem, not a problem)

10) How much of a problem are burglaries, people breaking in and stealing things from homes in your neighborhood? (a big problem, somewhat of a problem, not a problem)

11) How much of a problem are homicides in your neighborhood? (a big problem, somewhat of a problem, not a problem)

12) Overall, how safe do you feel walking alone in or around your neighborhood during the day? (very safe to very unsafe)

13) I feel that I should accept the decisions made by legal authorities. (strongly agree to strongly disagree)

14) The police in my neighborhood respond quickly when people ask them for help. (strongly agree to strongly disagree)

15) The police in my neighborhood know how to carry out their official duties properly. (strongly agree to strongly disagree)

16) The police in my neighborhood are often dishonest. (strongly agree to strongly disagree) (reverse coded)

17) The police in my neighborhood address citizens in a respectful manner and appropriate tone. (strongly agree to strongly disagree)

18) The police in my neighborhood are able to maintain order on the streets. (strongly agree to strongly disagree)

19) The police in my neighborhood accept payments or favors from known criminals. (strongly agree to strongly disagree) (reverse coded)

20) The police in my neighborhood try to help citizens solve their problems. (strongly agree to strongly disagree)

21) Overall I am satisfied with the service provided by the police in my neighborhood. (strongly agree to strongly disagree)

22) How effective are the police at controlling violent crime in your neighborhood? (very effective to not at all effective)

23) How often do you think police officers stop people on the streets of your neighborhood without good reason? (very often to never) (reverse coded)

24) How often do you think police officers use insulting language when talking to people in your neighborhood? (very often to never) (reverse coded)

25) How often do you think police officers use excessive force (more force than is necessary under the circumstances) against people in your neighborhood? (very often to never) (reverse coded)

Using a 25% random sample of my data and all 25 questions, I ran a series of exploratory factor analyses evaluating the application of one to seven factors using a weighted least squares estimator (WLSM). This estimator (WLSM) is the Mplus default and recommended estimator for exploratory factor analyses with ordinal dependent variables. It applies a diagonal weight matrix with standard errors and a mean adjusted chi squire statistic, using a full weight matrix (Muthen & Muthen, 2007, p. 483-484). When running these exploratory factor analysis models, I adjusted for the nesting of individuals in neighborhoods and neighborhoods in police jurisdictions by a process built into the Mplus software that estimates parameters by "maximizing a weighted likelihood function" and by using a sandwich estimator to compute standard errors (Muthen & Muthen, 2007, p. 221). During the process, I removed questions one by one that did not hang together with any other questions. To assess model fit, I looked for good results across the chi square test (a low chi square value), CFI (greater than or equal to .95), TLI (greater than or equal to .95), RMSEA (less than .05), and SRMR (less than .08), based upon the recommendations of Yu (2002). Based on fit statistics, minimizing cross-loading, and seeking factors that have conceptual relevance, I found that the optimal number of factors is five. As part of this process, I confirmed what I learned in my preliminary model—that legal institution legitimacy is an empirically independent concept from the five factors representing quality of police services, police misconduct, informal social control, social cohesion, and crime and disorder. Table 3 demonstrates the

fit statistics for the exploratory factor analysis of one to six factors using the final set of observed variables included in the model.[15]

Table 3

Exploratory Factor Analysis with 25% Random Sample (n = 742, 17 observed variables)

Factors	Eigenvalue	Chi Square			CFI	TLI	RMSEA	SRMR	Negative Residual Variance
		X^2	df	p					
1	5.204	4374	(119)	.000	.765	.731	.220	.184	No
2	2.558	2302	(103)	.000	.879	.840	.170	.118	No
3	1.864	1080	(88)	.000	.945	.915	.123	.080	No
4	1.529	547	(74)	.000	.974	.952	.093	.052	No
5	**1.161**	**94**	**(61)**	**.004**	**.998**	**.996**	**.027**	**.019**	**No**
6	.794	61	(49)	.114	.999	.998	.018	.016	No

Having established the ideal number of factors at the individual level, I next attempted to model the factors simultaneously at both the individual and neighborhood levels by performing a two-level exploratory factor analysis in Mplus using the same randomly drawn subsample (25%). After many failed efforts (problems with no convergence, poor fit statistics for the between level, and or negative residual variance—Heywood cases), trying a number of combinations of between and within-level numbers of factors for the two-level exploratory factor analyses, I found that the only good fitting model was one with five factors for the individual level and no restrictions at the neighborhood level (chi square = 79.335, degrees of freedom (df)=61, p = .0574, CFI = .999, TLI = .994, RMSEA = .020, SRMR within = .019, SRMR between = .000, no

[15] Although I attempted to run an exploratory factor analysis through seven factors, the model does not converge with seven factors.

negative residual variance). This means that no factors are built at the neighborhood level. Rather, the means of the individual indicators are permitted to vary across neighborhoods. With this result, I suspected that most of variation for the indicators was occurring at the individual level and relatively little variation occurred across the neighborhoods. Therefore, I investigated the intra-class correlations of each of the indicators. The intra-class correlation provides the proportion of the total variation for that indicator that occurs between the neighborhoods. The results, presented in table 4, suggest that with few exceptions,[16] the indicators vary only modestly across the neighborhoods. Rather, most of the variation occurs across individuals within neighborhoods.

[16] The question asking about officers stopping people without good reason had a reasonably high intra-class correlation of .103 and the perception of street level buying and selling of drugs was also fairly high at .097.

Table 4

Intraclass Correlations

Construct	Indicators	ICC
Quality Police Services	1. The police in my neighborhood know how to carry out their official duties properly.	.021
	2. The police in my neighborhood address citizens in a respectful manner and tone.(also loads on misconduct)	.033
	3. The police in my neighborhood are able to maintain order on the streets.	.031
	4. The police in my neighborhood try to help citizens solve their problems.	.027
	5. Overall, I am satisfied with the service provided by the police in my neighborhood.	.036
Police Misconduct	How often do you think police officers:	
	1. …stop people on the streets of your neighborhood without good reason?	.103
	2. …use insulting language when talking to people in your neighborhood?	.066
	3. …use excessive force (more force than is necessary under the circumstances) against people in your neighborhood?	.067
Legitimacy	1. I feel that I should accept the decisions made by legal authorities.	.023
Informal Social Control	2. If some children were spray-painting graffiti on a local building, how likely is it that your neighbors would do something about it?	.025
	3. If a group of neighborhood children were skipping school and hanging out on the street corner, how likely is it that your neighbors would do something about it?	.015
	4. If there was a fight in front of your house and someone was being beaten or threatened, how likely is it that your neighbors would break it up?	.017
Social Cohesion	1. People in this neighborhood share the same values.	.041
	2. People in this neighborhood generally do not get along with each other.	.061
	3. This is a close knit neighborhood.	.037
Crime and Disorder	How much of a problem are:	
	1. …groups of teenagers or adults hanging out in the neighborhood and causing trouble?	.045
	2. …people buying and selling drugs on the street?	.097
	3. …burglaries, people breaking in and stealing things from homes in your neighborhood?	.056

After being unable to find a good fit for any factors at the neighborhood level when working with the full model, I ran partial multi-level models—working with small segments of the model at a time. Many of these analyses were plagued by negative residual variance at the neighborhood level. However, the two-level exploratory factor analyses that *separately* worked reasonably well were those that represent crime and disorder and the police service quality constructs (including only four of the five indicators for police service quality). Crime and disorder has only three indicators, and so the exploratory factor analysis does not produce fit indices, however the factor determinacies were .889 (only slightly low) at the individual level and .979 at the neighborhood level. Using this model, I did not have negative residual variance. The loadings were reasonable at both levels. Similarly, the police service construct had a reasonable fit (CFI = .996, TLI = .989, RMSEA = .082 (a little high), SRMR within = .017, SRMR between = .104 (a little high)), with factor determinacies of .948 at the individual level and .989 at the neighborhood level, with no negative residual variance. However, when I combined these two best partial-model results into one two-level exploratory factor analysis, indicators at the neighborhood level had negative residual variance and poor factor loadings.

To be thorough I also ran separate two-level confirmatory factor analyses with the partial models for crime and disorder and police service quality. For crime and disorder alone, at the neighborhood level, the indicator for burglary was not significant. For police service quality alone, the four indicators that were successful for the two-level exploratory factor analysis (excluding whether the police are respectful to citizens) were

statistically significant predictors at both levels. Subsequently, I ran several confirmatory factor analyses with combinations of the crime and disorder indicators and police indicators; however, I could not successfully simultaneously create the factors at the individual and neighborhood levels. Consequently, I made a choice to assess separately the linkages at the individual and neighborhood levels.

Confirmatory Factor Analysis. The consequence of this decision is that I used confirmatory factor analysis and structural equation modeling to estimate the individual level relationships.[17] However, to generate the neighborhood level variables, I had to rely on the individual-level measurement results and subsequently aggregate the relevant variables to the neighborhood level. Therefore, the remaining measurement model building occurred at the individual level, although analyses at both levels accounted for nesting. The confirmatory factor analysis with a second 25% of the sample suggested that the individual level model was a good fit to the data (chi square = 51.904, df = 24, $p = .0008$ relative to the baseline model of chi squared = 2614.603, df = 19, $p < .0005$; CFI = .989, TLI = .991, RMSEA = .040, WRMR = .858). All of the observed variables were significant and no variables were reported within the modification indices, suggesting that the model does not contain localized areas of ill fit.

The result of the measurement model to this point then was to distinguish two perspectives on the issues. I subsequently modified my research questions to ask:

[17] An advantage of using "CFA and SEM is the ability to estimate the relationships among variables adjusting for measurement error." (Brown, 2006, p. 50). The difference between this strategy and using ordinary least squares (OLS) is that under OLS, the researcher must assume that the variables are measured without error and are perfectly reliable, which is not likely to be the case in reality.

1) How does an individual resident's perceptions about police services and police misconduct in the neighborhood relate to his inclination to grant legal institutions legitimacy, and subsequently his view of collective efficacy and crime and disorder in the neighborhood?
2) How does the average opinion about police services and police misconduct in the neighborhood relate to the percentage of people within the neighborhood who grant legal institutions legitimacy, and subsequently collective efficacy and crime and disorder in the neighborhood?

By looking at both the individual-level relationships and the neighborhood-level relationships, I can gain a more in-depth view of individuals' opinions about police and how they come together to create a neighborhood-level outcome.

Results of the Covariate Analysis. Stage three of my measurement model analysis entailed a covariate analysis using the same 25% random subsample of interviews that I used for the confirmatory factor analysis. The purpose of the covariate analysis was to assess the influence of a variety of demographic variables on my variables of interest within the Trinidad sample. Although my research question does not directly address nuances relative to age, race, or other demographic characteristics, I wanted to be certain to include in my model the characteristics that might play a role in forming people's opinions about police services, misconduct, legitimacy, collective efficacy, or crime and disorder so that I gain a more accurate perspective of the role that the variables of central

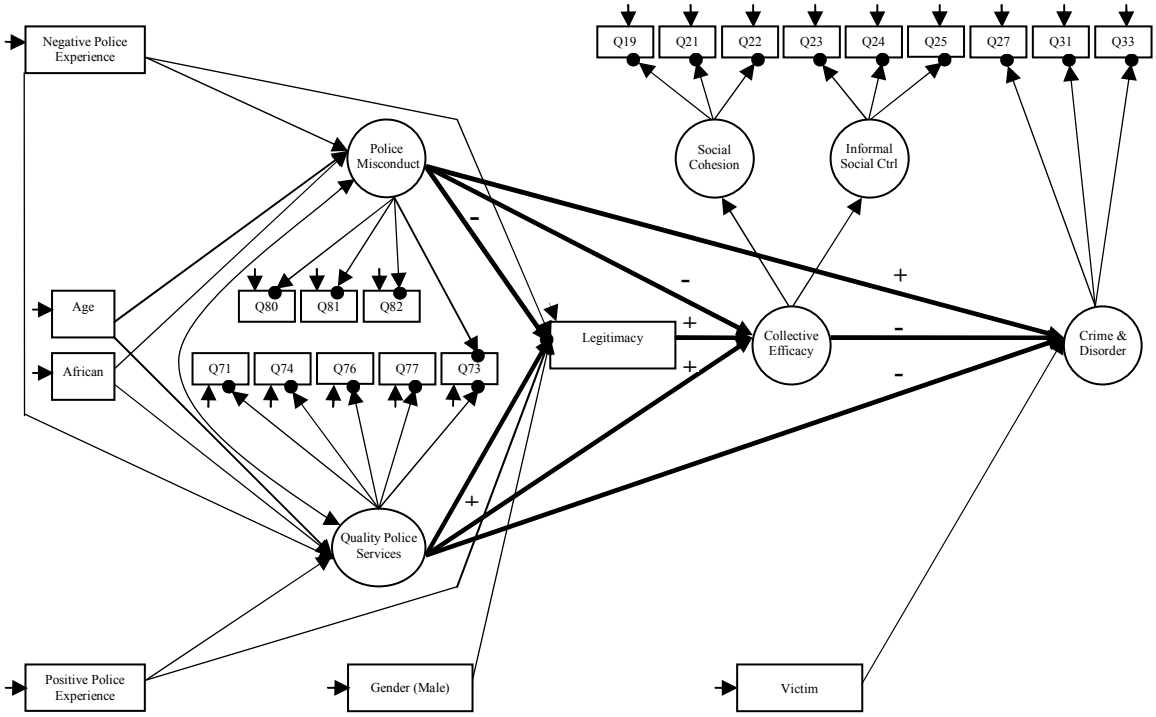
interest play, separate and apart from demographic influences.[18] I assessed the effects of race, age, gender, the interaction of age and gender, income, education, having a recent positive experience with police and having a recent negative experience with police.[19] These variables have appeared in prior research addressing opinions about police. Although not derived from prior research, I also included being a recent victim of crime as a potential predictor of the perceptions about crime and disorder in the neighborhood under the presumption that people who were recently victimized may have heightened perceptions about crime in the area. This presumption was affirmed in my covariate analysis and I subsequently included victimization in my full model. I included in the full model those variables that are significant predictors and those that although not significant in my model have been sufficiently important in prior research to justify their inclusion despite not appearing to play a significant role in my sample.

Not unlike prior research addressing the determinants of opinions about police (Gallagher et al., 2001; Reisig & Parks, 2000; Schafer, Huebner, & Bynum, 2003; Skogan, 2006), I found that at the individual level, respondent age and having a prior negative encounter with police were strong predictors of opinions about police service quality and misconduct. Also, having a prior positive experience with police significantly

[18] One covariate that remains missing from the models is a measure of participation in community organizations—a potential competing explanation for individuals' assessments of collective efficacy and for neighborhood collective efficacy scores. Future studies using this data to study the relationship between perceptions of police and collective efficacy will incorporate a measure of community organization participation.

[19] Personal experiences with police contribute to opinions about police, however, a personal experience with police is not required to formulate an opinion about police. I isolate these personal interaction variables from the generalized opinions about police services and misconduct, because a host of research supports that personal experience with police is distinct from generalized opinions about police (Tyler, 2004). Being able to isolate the influence of personal experience from generalized opinions is helpful when considering the implications of the research and providing recommendations to the Trinidad and Tobago Police Service.

improved perceptions of service quality, while being Afro-Trinidadian significantly increased perceptions about police misconduct. However, income, education, and gender were not significant predictors of misconduct or service quality. Additionally, none of the covariates significantly predicted perceptions of legitimacy. I dropped education from the model. However, initially, I chose to leave gender and income (log) as predictors of legitimacy given their significance in Sampson and Bartusch's (1998) study of legal cynicism. Their study found that when accounting for neighborhood disadvantage, immigrant concentration and residential stability, individual perceptions of legal cynicism were influenced by age, gender, and socio-economic status. However, I subsequently dropped income from my model because of the large number of cases with missing data on this variable (n = 785, 26.4% of cases). Dropping income from the model did not change the model fit statistics and did not alter any of the relationships between other variables (with income and without income CFI = .973, TLI = .975, RMSEA = .041). Although not significant in my covariate analyses, I chose to include having a recent positive experience and having a recent negative experience with police in the model as direct predictors of legitimacy, as well as direct predictors of quality of police services and perceptions of police misconduct. I did this because Tyler found that having encounters with police significantly and directly influences perceptions of police legitimacy. The resulting individual level structural equation model is presented in figure 7, with the hypothesized relationships depicted by positive and negative signs. The operationalization of the variables is described in the following section.



Key
Q19 = community members share values
Q21r = people generally get along
Q22 = close knit community
Q23 = neighbors address children spray painting graffiti on a local building
Q24 = neighbors address children skipping school and hanging on street corner
Q25 = neighbors address a fight in front of their house, someone being beaten/threatened
Q27 = level of problem teenagers or adults hanging out, causing trouble
Q31 = level of problem people buying/selling drugs on the street
Q33 = level of problem burglaries
Q71 = police know ho to carry out official duties properly
Q73 = police address citizens in a respectful manner and tone
Q74 = police are able to maintain order on the streets
Q76 = police try to help citizens solve problems
Q77 = satisfaction with the service provided by police
Q80 = frequency officers stop people without good reason
Q81 = frequency police use insulting language
Q82 = frequency police use excessive force

Figure 7. Individual-level structural equation model.

Having completed the covariate analysis at the individual level, I subsequently included in the neighborhood model the aggregate of the variables that had at least one significant relationship at the individual-level, as well as included neighborhood-level covariates that have been important in prior research (affluence, poverty, population density, and residential stability). Additionally, I tested for the importance of spatial proximity to collective efficacy.

The importance of spatial autocorrelation has only recently been acknowledged in research on collective efficacy. Sampson and colleagues (1999, p. 647) and Morenoff and colleagues (2001, p. 537) provide strong support that areas near communities with high levels of collective efficacy experience a diffusion of benefits. I assessed spatial autocorrelation using the weight matrix for the first order contiguity (based on distance from the centroid) with the neighborhood collective efficacy score as the weight. However, the test statistic suggests that the Trinidad and Tobago data do not experience spatial autocorrelation. The Local Moran's I statistic with 99 permutations was very low at 0.0073. Rerun with 999 permutations, once again, the value was not significant ($p = .4270$) and the Local Moran's I statistic remained under .01. It is likely that the potential effects of proximity to collective efficacy are controlled for by the fact that not all Trinidad communities are included in the sample and as such, some communities do not have other communities adjacent to them in the sample—instead, they are fairly dispersed. See figure 6 to view the locations of the sample communities. Therefore, although this construct may be important for some studies addressing similar relationships, it was not necessary to include in the current analysis. The resulting

neighborhood-level structure equation model is presented in figure 8. Positive and negative signs depict the expected nature of the hypothesized relationships.

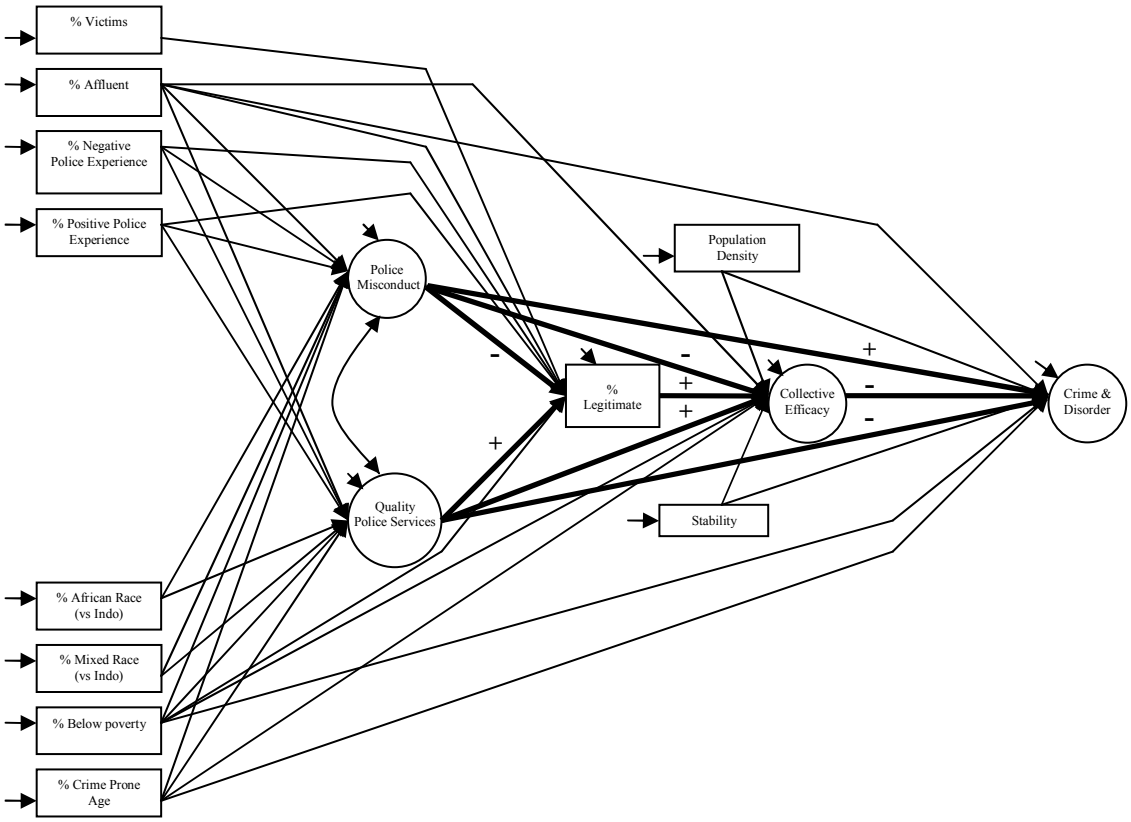


Figure 8. Neighborhood-level structural equation model.

Below, I describe each of the endogenous and exogenous variables at the individual and neighborhood levels. Because my key variables are so common in prior prominent research efforts, I have been especially cautious in the development of these variables. I provide extensive details of my approaches to creating these variables and the reasons for my operationalization decisions.

Dependent / Endogenous Variables

Crime and Disorder. Prior research on collective efficacy has demonstrated its robust positive relationship with a range of serious and less serious neighborhood outcomes, including homicide, robbery, assault, and burglary, as well as social and physical disorder outcomes such as disturbances, vandalism, and littering. Sampson (2002) explains that the constructs of crime and disorder may best be portrayed as variable degrees of the same phenomenon, because "disorder and most predatory crimes share similar theoretical features and are consequently explained by the same constructs at the neighborhood level…" (p. 225). In an earlier work, Sampson and Raudenbush (1999) suggested that rather than portray disorder as an antecedent of crime, it should be understood as a less serious manifestation of crime. As such, I have included both crime and disorder problems in the measure.

When deciding how to operationalize crime and disorder problems in Trinidad and Tobago, I considered the range of potential sources of data including officially recorded calls for service, police crime reports, victimization information from the community survey, and also from the community survey—using residents as informants about the prevalence of a range of problem behaviors in their neighborhoods. After investigating all of the options, the best option is to rely on residents as informants about problem behaviors in their neighborhoods. Below, I demonstrate how I came to this conclusion, by describing all of the available options and the challenges associated with each choice. Subsequently, I articulate exactly how crime and disorder is measured for the study.

Initially, I had hoped to use a measure of crime and disorder based on officially recorded calls for service or official crime reports, since these sources are frequently used and typically accepted sources for research conducted in the United States. Although officially recorded data in the United States, as elsewhere, undoubtedly suffer from underreporting, typically, these sources are collected and recorded relatively systematically and are considered a reasonable estimate for the levels of crime (although perhaps not disorder).[20] However, I soon realized that both of these options were not viable for Trinidad and Tobago.

First, I learned that in these Trinidad and Tobago neighborhoods, a high proportion of incidents are unreported. Preliminary analyses of the community survey data revealed that approximately 40% of victims in the community survey sample failed to report recent crimes against them (robbery, assault, or burglary) to the police. However, although this figure seems daunting, it is quite similar if not a slight improvement of crime reporting in the United States. Hart and Rennison (2003) found that in 2000, only 60% of robberies, 58% of aggravated assaults, 44% of simple assaults, and 53% of household burglaries occurring in the United States are reported to the police. As such, under-reporting alone does not invalidate the use of officially reported offenses in Trinidad and Tobago.

[20] In their comparison of Uniform Crime Report (UCR) and National Crime Victimization Survey data in the United States, Gove, Hughes, and Geerken (1985) reported similar results in both data sources for some offenses such as motor vehicle theft, robbery, and burglary. They also reported that the UCR accurately reflects homicides, as compared to vital statistics data sources. However, they found that officially reported crimes are least accurate for less serious offenses. This is consistent with the earlier findings by Hindelang, Hirschi, and Weis (1979). People may be less inclined to report more trivial offenses because they fail to notice the problem, do not view the incident as a crime, or view the effort of reporting the incident as greater than the problem associated with the event. Also, if reported, police may subsequently fail to record the incident when they perceive the offense is less serious. This explains why official statistics may not provide a reasonable estimate of disorder levels.

The larger problem with official statistics in the Trinidad neighborhoods are associated with recording practices. Those who do report their victimization can choose from among a variety of strategies to report the offense to police. Trinidad and Tobago Police Service uses a number of mechanisms to receive requests for assistance from victims and others. Residents may call a centralized emergency number (E-999), contact their local police station by telephone, report the incident in person at the police station, or flag down an officer on the street.[21] In Trinidad and Tobago, each of these input mechanisms results in application of a different recording procedure capturing different information, and there is no mechanism in place to allow data from each system to be linked together or to link the call for service to corresponding police reports.

Furthermore, across all of the systems, the lack of a standardized address system in the country hampers efforts to identify systematically the locations of incidents or requests for police assistance. Addresses provided by those requesting police assistance may be a street name, reference to a footpath, a numbered light post located nearby, or proximity to a landmark such as the name of a business. When callers are able to provide a street name, the challenge is that some streets span several miles and some streets are not even recorded on Trinidad and Tobago maps. The result is that frequently the locations of the calls for service cannot be pinpointed to a particular community or even whether they occurred within the subset of communities sampled for the study.

Given these challenges, the reporting mechanism with the most promise as an official measure of crime and disorder was the E-999 centralized reporting system.

[21] Although conceptually all of these mechanisms could be used as input mechanisms in the United States, the predominant mechanism is by telephone call to 9-1-1.

Within the E-999 system, it uses the same strategy for recording calls for service across all of the police districts. Also, it records the latitude and longitude of the incident or call location in some instances. The E-999 system, implemented in 2002, operates similarly to the 9-1-1 system in the United States. Calls for fire, rescue, and police services are received at a centralized location and routed to the appropriate responder. Information about the call is recorded electronically. E-999 records generally include information such as the date and time of the call, caller name, address of the caller, phone number of the caller, an address or location of the event, a latitude and longitude coordinate of the location where officers responded, a code identifying the nature of the problem, a code identifying how the call was closed, a narrative description field, and a field for a crossing street if applicable. However, not all of the calls include all of this information. A major limitation of the E-999 dataset is missing geographic reference information. Using a seven month sample of E-999 records taken after the conclusion of the community survey (in anticipation of trying to ensure the appropriate temporal order in the substantive model), only 43% of the records contained latitude and longitude coordinates. The coordinates are collected when a police vehicle with a vehicle-mounted global positioning system (GPS) responds to the scene. However, if police do not respond to the scene or if the vehicle responding does not have an active GPS system, coordinates are unavailable. As previously mentioned, the problem with records lacking GPS coordinates is that the calls to E-999 cannot be mapped to the neighborhoods in the sample. When cases are missing coordinates, I can only be assured to identify the correct police jurisdiction, and not the incident's location at the community level.

Furthermore, the E-999 system records calls for police services placed to the centralized number only. It does not record calls placed directly to local police stations or requests made in person. Consistent with Bennett and Wiegand's (1994) description of policing in developing nations, reporting practices in Trinidad and Tobago are dramatically different than in the United States. Only one-third of people in the community survey sample who reported their victimization to the police used the telephone to do so. We did not ask whether the report was made to E-999 or to the local police station, however, it is reasonable to assume that calls made to E-999 reflect less than one-third of all reported incidents in these neighborhoods. Therefore, using E-999 data as a proxy for crime and disorder would entail the use of a small and likely non-random subpopulation of all crimes and problems with disorder.

The available alternative source of officially recorded crime statistics—crime reports—was at least as problematic. Crime recording procedures vary across the different police jurisdictions in the sample. Five of the police jurisdictions are participants in George Mason University's Model Stations Initiative. The Model Stations Initiative attempted to create model police stations that use modern technology, professional policies, effective strategies, and increase "policing for people," which includes both service quality and fairness (Mastrofski, 1999). As part of that effort, five police districts in the sample used a computerized process to record calls for service and reports of crime. However, the remaining eight districts used the prior system of recording events in diaries—oversized, bound volumes, with designated books for different offenses or problems. Information about incidents is written in long hand on the

diary, along with any available information about time, date, location, and parties that are involved. Crime counts are generated by asking someone at each station to page through the diaries and try to count by hand the relevant number of reports. Using this method increases the risk of human error, and is affected by sloppiness and mistakes in generating the total figures. Additionally, the data are not immediately available, due to the nature of the classification system, which integrates supervisor review of the codification of offenses. Finally, the problems with missing and imprecise incident location information also plague these data.

Thus, I explored an alternative to officially recorded offenses as a proxy for crime and disorder. The survey offered two possible options to measure crime and disorder in the study neighborhoods. First, the survey asked residents to report their perceptions about the degree to which their neighborhood suffers from a range of problems, including offenses with varied levels of seriousness: loitering, street-level drug sales, burglary, and homicide. Also, residents were subsequently asked whether they had been victims of robbery, assault, or burglary during the preceding six months, and whether the incident had occurred in the neighborhood.

To avoid exacerbating problems with temporal order in the model, I preferred not to use victimization measures as the outcome, since the preceding variables in the model are measured at the point in time of the interview, while the victimization timeframe is the preceding six months. Instead, I relied on survey respondents to serve as informants about the level of crime and disorder problems occurring in the community. Although these opinions formulate over time and may also be affected by victimization and other

events in the past, they are reflective of the assessment of these problems at the point in time of the survey. On the community survey, respondents were asked four questions about their perception of crime and disorder in their neighborhoods, addressing the nature of the burglary, homicide, loitering, and street level drug sales problems. Interviewers asked residents the following about their specific neighborhoods:

1) How much of a problem are groups of teenagers or adults hanging out in the neighborhood and causing trouble?
2) How much of a problem are people buying and selling drugs on the street?
3) How much of a problem are burglaries, people breaking in and stealing things from homes in your neighborhood?
4) How much of a problem are homicides in your neighborhood?

The three response options were:

a. A big problem
b. Somewhat of a problem
c. Not a problem.

Interviewers recorded responses as "don't know" and "refused" as appropriate. These responses are considered missing.

Exploratory factor analysis revealed that the question about homicide is not measuring the same latent construct as the questions about loitering, drug sales, and burglaries because it did not load as highly on the factor containing those questions and it also weakly cross-loaded at a lower level on the police misconduct factor (.332 loading for crime and disorder and -.248 on police misconduct). Additionally, removing the

homicide indicator and re-running the exploratory factor analysis improved the overall model fit statistics. As such, I applied a measure of crime and disorder that was a factor score composed of the questions about burglary, loitering, and street level buying and selling drugs.

Using residents as informants about the highly visible and typically unreported and under-recorded offenses of loitering and street level drug sales seemed a reasonable strategy to approximate the actual level of these offenses. For burglary, however, this assumption that perception approximates reality may not be as reasonable, since burglary occurs within a dwelling and may not be visible to neighbors. Therefore, widespread knowledge of the incident would depend on discussion about the incident among neighbors or media attention. So, for the case of burglary, I attempted to validate that residents' perceptions are a good proxy for the level of the burglary problem by comparing the percentage of neighborhood residents who reported being burglarized during the preceding six months to the average perception about the burglary problem at the neighborhood level. The result was a modest, positive correlation of .472. Therefore, I relied on the factor score of these three questions for my dependent variable at the individual level and the average of this score at the neighborhood level. The factor determinacy for this measure is .903.

Neighborhood Collective Efficacy. To operationalize neighborhood collective efficacy, I relied on Sampson and his colleagues' (1997) model as a guide. They integrated measures of social cohesion and shared expectations for social control. In their research, attempts to combine indicators of social cohesion and social control by factor

analysis were unsuccessful, producing two separate, but highly correlated factors. Their solution, given the high correlation (.80) between the factors, was to sum the scales. In the Trinidad and Tobago community survey, I identified seven questions about social cohesion and shared expectations for social control. Six questions are imitations of questions in the PHDCN. Sampson and colleagues (1997) used five of the questions in their analysis. Reisig and Cancino (2004) and Morenoff et al. (2001) applied similar measures. I subjected all seven questions to the exploratory factor analyses. They are listed below:

1) People in this neighborhood share the same values.
2) I do not pay attention to the opinions of others in this neighborhood (reverse coded).
3) People in this neighborhood generally do not get along with each other (reverse coded).
4) This is a close knit neighborhood.

The response options for these four questions are a 4-item ordinal scale from strongly disagree to strongly agree. The remaining three questions use a 4-item ordinal scale from not at all likely to very likely, and are listed below.

5) If some children were spray-painting on a local building, how likely is it that your neighbors would do something about it?
6) If a group of neighborhood children were skipping school and hanging out on the street corner, how likely is it that your neighbors would do something about it?

7) If there was a fight in front of your house and someone was being beaten and threatened, how likely is it that your neighbors would break it up?

In preliminary analyses, I found that excluding the second question about not paying attention to others' opinions improved my measures. Exploratory factor analyses with a 25% random sample of my data and subsequent confirmatory factor analyses at the individual level with the remaining six questions using a second 25% random subsample suggested the presence of two factors representing social cohesion and informal social control (factor determinacy for social cohesion = .913, factor determinacy for informal social control = .942). However, the second factor had an eigenvalue of only 1.06, suggesting that one factor may be sufficient. As I mentioned, in the past, Sampson and others have forced these two concepts together, typically using an additive scale, because they were highly correlated. Together, they have been called collective efficacy. However, in an attempt to improve prior measurement strategies, I built a second order factor analysis into my model. This allowed me to assess whether the two factors of social cohesion and informal social control would combine in a confirmatory factor analysis to one factor representing collective efficacy. This strategy was successful; both factors contributed significantly to the collective efficacy factor. As such, the measure of collective efficacy in the individual-level model is reflected by the second order factor score. Neighborhood-level collective efficacy is measured by the neighborhood average of the individual second order factor score.

Legal Institution Legitimacy. Based on a review of literature about legal institution legitimacy, Tyler (2004) reported that studies have applied three possible

approaches to measuring institutional legitimacy. The one most similar to the one used in this study is to ask people about their sense of obligation to obey the law.[22] My approach is similar, but more consistent with Weber's (1947) emphasis on "the probability that certain commands (or all commands) from a given source will be obeyed by a given group of persons" (p.324) as well as requiring the presence of internalized obligations emphasized by Hoffman (1977). Given the limitations in the dataset, I operationalized legal institution legitimacy using only one questionnaire item. It asks respondents how strongly they agree or disagree that, "I feel that I should accept the decisions made by legal authorities." Response options form a 4-item ordinal scale from strongly disagree to strongly agree. This question reflects an internalized sense of duty to respect and obey legal authorities. Although relying on only one indicator of this construct is certainly less than ideal, the other questions that we asked on the community survey that were similar did not focus on legal authorities themselves, but rather on the more amorphous "law." Interviewers had asked residents how much they agreed or disagreed that they should obey the law even if they will not be caught for breaking it, as well as whether it is okay to do anything you want as long as you do not hurt anyone, and whether people in power use the law to try to control people like us. Not only did preliminary factor analyses suggest that these indicators do not load onto one common factor, but conceptually the only question that asks specifically about legal authorities and closely aligns with the form of legitimacy that LaFree (1998) discusses in his book on *Losing Legitimacy*, is the one question asking whether the resident feels he or she should accept the decisions made

[22] Alternative approaches have included measures of institutional trust and confidence, as well as "feelings about the police" (Tyler, 2004, p. 88).

by legal authorities. So despite the shortcomings of relying on one question to indicate legitimacy, at the individual level, the respondents' answers to that question comprise the measure that best fits and therefore is the one selected for the analyses. I collapsed responses for "mostly" and "strongly agree" to represent agreement and the responses for "mostly" and "strongly disagree" to represent disagreement, creating a binary variable. This aggregation improves interpretation and increases consistency across the individual and neighborhood levels. At the neighborhood level, the legitimacy measure is the percentage of respondents who reported agreeing or strongly agreeing with the statement.

Key Independent Variables

Police Misconduct. Recent research on the predictors of legitimacy has focused a fair amount of interest on procedural justice, a concept not very different from my measure of police misconduct. Tyler's (1990) work has focused on "neutrality, lack of bias, honesty, efforts to be fair, politeness, and respect for citizens' rights" (p. 6). I have incorporated a few of these concepts into my measure of police misconduct, but I also integrate more extreme forms of police misbehavior that distinguish it in principle from lower level deviations from police protocol and professionalism. Police misconduct is an especially important issue in Trinidad and Tobago. Newspapers are replete with editorials and articles questioning the appropriateness of police behavior. Based on public surveys, Transparency International gauged corruption in government as high, with a rating of 3.2 out of 10 in 2006 and 3.4 out of 10 in 2007, with 0 being highly corrupt and 10 representing highly clean (Transparency International, 2006, 2007a). Additionally, Freedom House (2007) reported that "corruption in the police force, which is often drug-

related, is endemic" and that many Indo-Trinidadians blame the increased violence and problems with kidnapping on "government corruption and police collusion" (p. 4). This distinction necessitated a different nomenclature than Tyler and his colleagues. In the exploratory factor analyses, the factor determinacy for the factor reflecting police misconduct was .958. Police misconduct at the individual level is the confirmatory factor score representing four questions:

1) How often do you think police officers stop people on the streets of your neighborhood without good reason?
2) How often do you think police officers use excessive force (more force than is necessary under the circumstances) against people in your neighborhood?
3) How often do you think police officers use insulting language when talking to people in your neighborhood?
4) The police in my neighborhood address citizens in a respectful manner and appropriate tone.

Response options for the first three questions form a 4-item ordinal scale from "very often" to "never." Response options for the fourth question form a 4-item ordinal scale from strongly disagree to strongly agree. The fourth question cross loads and is a stronger predictor for police service quality. For the neighborhood level, police misconduct is represented by the average individual level factor score.

Police Service Quality. A variety of measures have been used in prior research to reflect police performance and quality service delivery. Mastrofski (1999) defines six

aspects of service quality: attentiveness, reliability, responsiveness, competence, manners, and fairness. This definition serves as the basis for Maguire and Johnson's (forthcoming) measure of police service quality. Their study found that for a Virginia police agency, Mastrofski's six dimensions of service quality are not empirically distinct, but rather that they contribute to a one dimensional concept of service quality. My preliminary measurement model building efforts with the Trinidad and Tobago community survey data confirmed that in that setting as well, various aspects of service delivery are highly correlated and represent one latent concept of service quality. My measure of service quality includes aspects of police competence, manners, responsiveness, and a general sense of satisfaction with police services. For the factor representing these concepts in the exploratory factor analysis model, the factor determinacy is .946. The questions loading heavily on this factor and subsequently used in the confirmatory factor analysis to create the measure are provided below. The response options form a 4-item ordinal scale from strongly agree to strongly disagree.

1) The police in my neighborhood know how to carry out their official duties properly.
2) The police in my neighborhood are able to maintain order on the streets.
3) The police in my neighborhood try to help citizens solve their problems.
4) The police in my neighborhood address citizens in a respectful manner and appropriate tone.
5) Overall I am satisfied with the service provided by the police in my neighborhood.

At the individual level, the measure for police service quality is the factor score for these questions. The neighborhood-level measure is the average factor score for the neighborhood.

Exogenous Control Variables

Age. Sunshine and Tyler (2003) reported that age negatively predicts perceptions of legitimacy at the individual level—being older predicted lower levels of legitimacy. However, generally speaking, attitudes toward police are lower among younger people (Gallagher et al., 2001), and satisfaction with police increases with age (Reisig & Parks, 2000). However, Schafer and colleagues (2003) suggested that differences of opinion by age may be more indicative of the frequency of contact with police. For this study, at the individual level, age is reflected by the self-reported response to "What is your age?" and is therefore a continuous variable. In prior research conducted at the neighborhood level, age composition has been operationalized by using the percentage of the population that are youth (Kane, 2005) or the ratio of adults to children (Sampson et al., 1999). For the neighborhood model, I measure age as the percentage of the neighborhood survey sample that is aged 18-24, the crime prone ages. This allows me to capture the potential influence of youth while also focusing on the age range that may have the most frequent involuntary contact with police.

Race/Ethnicity. Prior research has found that people of different races/ethnicities differ in their opinions toward police and that race influences citizens' evaluations of the quality of police services and satisfaction with police services. In prior research on attitudes toward police in the United States, African Americans, relative to other racial

groups, have had lower overall opinions of police services as well as lower levels of satisfaction and lower opinions about police fairness, friendliness, use of force, and promptness than all other racial/ethnic categories (Sullivan, Dunham, & Alpert, 1987; Reisig & Parks, 2000; Gallagher et al., 2001; Schafer et al., 2003). In Trinidad, Afro-Trinidadian residents compose a large share of the population, nearly equal to Indo-Trinidadians. Afro-Trinidadians compose approximately 38% of Trinidad's population and an additional 20% of the population is a mixture of Indo-Trinidadians and Afro-Trinidadians (CIA, 2008). Therefore, at the individual level, I compared Afro-Trinidadians (1) to Indo-Trinidadians (referent group) as well as created a second race dummy variable for mixed race (1). However, only the Afro-Trinidadian variable is included in the individual-level model, since being mixed race did not produce any statistically significant relationships in the covariate analysis. As a consequence, the individual-level compares Afro-Trinidadians to Trinidadians of all other races. At the neighborhood level, I included percent Afro-Trinidadian race and percent mixed race.[23] Early neighborhood-level analyses suggested the importance of maintaining percent mixed in the neighborhood model. Race was reported by the respondent in response to the question: What is your racial/ethnic background? Response options included "African/Afro-Trinidadian," "East Indian/Indo-Trinidadian," "mixed", or "other."

Gender. Although a number of studies did not find a link between gender and opinions toward police (Campbell & Schuman, 1972; Garofalo, 1977, Hindelang, 1974), some more recent studies have found women to have more positive opinions toward

[23] Less than .5% of respondents reported being any race other than Afro-Trinidadian, Indo-Trinidadian or mixed.

police (Cao, et al., 1996; Wilson, 1985, Reisig and Parks, 2000; Schafer et al., 2003). For this reason, I kept gender in the model. For my measure, I relied on the interviewer-reported gender (based on sight). Females are the referent group.

Concentrated Disadvantage or Poverty. In studies in the United States on collective efficacy, concentrated disadvantage has represented pockets of hardship and has typically been measured as a composite variable including a variety of measures of poverty. Common components in the United States include percent living below the poverty line, percent receiving public assistance, unemployment, female-headed households, and the percentage of Black residents (Sampson et al., 1997; Sampson et al., 1999; Morenoff et al., 2001; Silver & Miller, 2004). Given the cultural differences between the United States and Trinidad and Tobago, and the limitations in the dataset, I applied a more simplified approach to represent concentrated disadvantage. It is reflected by the percentage of respondents in a neighborhood who reported a monthly income of less than $665TT, which represents the percentage of residents living below the poverty line.[24]

Concentrated Affluence. Sampson and colleagues (1999) stressed the importance of concentrated wealth, as well as concentrated disadvantage in influencing neighborhood outcomes. They found that concentrated affluence had a significant positive effect on child-centered social control. To capture this potential influence, I created a measure of concentrated affluence by using the top 15% of self-reported monthly income across the

[24] To estimate the approximate value of Trinidad and Tobago currency in dollars, divide by six. The cut point of $665TT (about $110 U.S. dollars) is based upon the Analysis of the Survey of Trinidad and Tobago Living Conditions (Kairi Consultants LTD, 2005). This is the most recent, official estimate of the poverty level that could be located.

sample. The top 15% of residents reported making $4000TT per month or more.[25] I created a dummy variable at the individual level and coded it one when the respondent reported making at least $4000 in income in the month preceding the survey and zero when the reported income was less than $4000 in the last month. To aggregate to the neighborhood level, I used the percentage of neighborhood residents within the neighborhood that are coded one on the dummy variable for affluence.

Personal Experience with Police. Having an encounter with police has an important influence on perceptions of police legitimacy at the individual level (Tyler, 1990; Tyler & Huo, 2002) and may also influence assessments about police services and misconduct (Gallagher et al., 2001; Schafer et al., 2003). To capture this experience, prior research has measured whether the personal interactions with police were viewed positively or negatively by the citizen. I applied a similar measure. As part of the community survey, residents were asked five questions about their degree of satisfaction with a variety of different types of interactions with the police during the preceding six months, investigating these results for both voluntary and involuntary contacts. The specific questions include:

How satisfied were you with what the police did when you reported

1) …this burglary?
2) …this robbery?
3) …this assault?

[25] This equates to approximately $667 in U.S. dollars.

4) How satisfied were you with what the police did when you asked for assistance?

5) How satisfied were you with how the police treated you when they stopped you?

Responses ranged from very satisfied to very dissatisfied on a 4-point ordinal scale. For the individual level, having a positive experience with police is a dummy variable and is equal to one for any respondent who reported having a police encounter of any kind and being either very or somewhat satisfied with that encounter. The remaining respondents were coded zero because they did not report having at least one positive encounter with police. At the neighborhood level, the percentage of people having a recent positive experience with police is reflected by the total number of people in the neighborhood reporting at least one positive experience out of the total number of people interviewed. Negative experience with police at the individual level is also a dummy variable that is coded one when the respondent reports having at least one recent police encounter of any kind and claims to be somewhat dissatisfied or very dissatisfied with that encounter. The remaining respondents are coded zero because they did not report having at least one recent negative experience with police. The neighborhood level measure is the percentage of people in the neighborhood who reported having at least one recent negative experience with police divided by the total number of people interviewed in that neighborhood.

Victim. At the individual level I included a measure of recent victimization on the assumption that people who have recently been victims of crime may have a higher

perception of crime and disorder in the area. On the community survey, we asked residents three questions about victimization. Residents were coded as victims (victim = 1), a binary variable, when they responded yes to any of the following three questions that address some of the most common personal offenses in these neighborhoods:

1) In the last six months, has your home been broken into and things stolen?
2) In the last six months, has anyone stolen money or other things from you by threatening you with force?
3) In the last six months, has anyone attacked you physically?

Those that said no to all three questions were coded victim = 0. At the neighborhood level, I used the percentage of neighborhood residents that said yes to any one of the three questions.

Residential Stability. Residential stability and the related measures of mobility and instability have been found in some prior research to have a significant relationship with burglary, the homicide rate, informal social control, and collective efficacy (Morenoff et al., 2001; Sampson et al., 1997; Sampson et al., 1999; Sampson & Raudenbush, 1999). In the United States, it has typically been measured either as a composite of the percentage of residents who have lived at the same address for at least five years and the percentage of households that are owner occupied, or it is simply measured as percentage of residents living at the same address for 5 or more years (Sampson, et al., 1999; Kane, 2005). In the community survey in Trinidad and Tobago, instead of being asked about their specific address, residents were asked to report "How many years have you lived in (community name)?" Individuals have lived in their

respective neighborhoods for an average of 26 years, ranging from 0 to 90 years. At the neighborhood level, the mean number of years ranges from 5 to 44 years, with a neighborhood average of 24 years. In all except three communities, at least 75% of residents reporting living in the community for at least five years. In the community with the highest mobility, 60% of the residents reporting living there for at least five years. Given these statistics, the communities being studied appear relatively stable—people are not frequently moving to new communities. To best capture the variation in stability that does exist, I used the median number of years that residents report having lived in the community. This is similar to a measure employed by Velez (2001) who operationalized residential stability as the mean number of years that respondents lived in their neighborhoods. I used the median in lieu of the mean to avoid allowing extreme outliers in communities with small numbers of interviews to bias the results.

Neighborhood Population Density. Population density has been found in prior research to increase crime and disorder rates (Roncek, 1981; Schuerman & Kobrin, 1986; Sampson & Lauritsen, 1994; Morenoff et al., 2001, Browning et al., 2004). For this study, population density is derived from the community-level spatial database provided by the CSO, which uses 2000 Census information. I computed this measure by dividing the number of residents in a community by the size of the community in square kilometers.

Table 5 and table 6 provide descriptive statistics for the individual level variables included in the analysis and table 7 shows how the key variables are correlated. Table 8

provides descriptive statistics for the neighborhood level variables and table 9 shows how the key neighborhood variables are correlated.

Table 5

Descriptive Statistics for Individual-Level Variables (n=2926)[26]

Dependent Variables	Type	Range	Mean	Standard Deviation	n
Legal institution legitimacy	Binary	0-1	.711	.453	2852
Collective efficacy	Scale	-1.25-1.14	.111	.433	2926
Crime and disorder	Scale	-1.25-1.53	-.185	.623	2926
Independent Variables					
Police service quality	Scale	-1.49-2.24	.452	.739	2926
Police misconduct	Scale	-1.72-1.14	-.490	.579	2926
Social cohesion	Scale	-1.46-1.32	.143	.550	2926
Informal social control	Scale	-1.87-1.35	-.002	.727	2926
Covariates					
Negative experience with police	Binary	0-1	.139	.346	2926
Positive experience with police	Binary	0-1	.137	.344	2926
Age	Scale	18-92	46.000	17.500	2926
Gender (Male=1, Female=2)	Binary	1-2	1.598	.490	2926
Victim	Binary	0-1	.090	.286	2926
Afro-Trinidadian	Binary	0-1	.381	.486	2926
Observed Indicator variables					
Q19 People share values	Ordinal	0-3	1.766	.999	2693
Q21r People do not get along (reverse)	Ordinal	0-3	1.874	.994	2857
Q22 Close knit neighborhood	Ordinal	0-3	1.967	.911	2868
Q23 Neighbors address graffiti	Ordinal	0-3	2.120	.997	2802
Q24 Neighbors address skipping school and hanging out on corner	Ordinal	0-3	1.958	1.062	2783
Q25 Neighbors address fights	Ordinal	0-3	2.025	1.029	2827
Q27 Loitering	Ordinal	0-2	.480	.738	2894
Q31 Street buying/selling drugs	Ordinal	0-2	.700	.853	2697
Q33 Burglary	Ordinal	0-2	.624	.771	2880
Q71 Properly carry out duties	Ordinal	0-3	1.477	1.030	2560
Q73 Police respectful manner	Ordinal	0-3	1.672	.987	2488
Q74 Police accept payments	Ordinal	0-3	1.802	.921	2613
Q76 Police help solve problems	Ordinal	0-3	1.693	.938	2435
Q77 Satisfaction with police	Ordinal	0-3	1.445	1.024	2744
Q80 Stop people without reason	Ordinal	0-3	1.174	.992	2404
Q81 Insulting language	Ordinal	0-3	1.055	1.142	2266
Q82 Excessive force	Ordinal	0-3	1.056	1.037	2253

[26] Although the dataset contains 2,967 cases, the structural equation model dropped 40 cases from the analysis due to missing data on independent variables. One case was dropped due to missing data on all of the dependent variables. The resulting n for the individual-level analysis is 2,926 and the descriptive statistics provided are for these cases. For the analysis, when some dependent variables for a respondent are missing data, a robust weighted least squares estimator (WLSMV) is used. According to Brown (2006, p. 76), when at least one factor indicator is ordinal, as with this dataset, the weighted least squares or robust weighted least squares estimators are more appropriate than normal theory maximum likelihood.

Table 6

Raykov's Reliability Estimate for the Latent Variables[27]

Variable	Raykov's Reliability Estimate
Police Service Quality	.892
Police Misconduct	.873
Social Cohesion	.859
Informal Social Control	.847
Collective Efficacy	.921
Crime and Disorder	.737

Table 7

Correlation Matrix for Key Variables at the Individual Level

	Police Services	Police Misconduct	Cohesion	Informal Social Control	Collective Efficacy	Crime & Disorder	Legitimacy
Police Services	1.00						
Misconduct	-.482	1.00					
Cohesion	.332	-.234	1.00				
Informal Social Control	.286	-.194	.613	1.00			
Collective Efficacy	.333	-.208	.778	.731	1.00		
Crime & Disorder	-.255	.334	-.306	-.280	-.367	1.00	
Legitimacy	.183	-.209	.084	-.016	-.242	.016	1.00

[27] Brown (2006) explains that Cronbach's alpha misrepresents reliability when *tau equivalence* is not upheld (tau equivalence is achieved when the indicators have equal loadings, but different error variances). Raykov (1997) found that when tau equivalence is not upheld and the item loadings of a factor differ by more than .2 and when one or more loadings fall(s) below .6, alpha does not perform well, seriously underrepresenting reliability. Raykov provides an alternative estimate of reliability that reconciles the problems within the context of the confirmatory factor analysis measurement model. The formula is the true score variance divided by the total variance. When measurement errors are not correlated, the equation can be expressed as the squared sum of the unstandardized factor loadings divided by the sum of the squared sum of the unstandardized factor loadings and the sum of the unstandardized measurement error variances (Brown, 2006, p. 338). This formula was used to compute Raykov's reliability estimate using Mplus. For the second order factor, collective efficacy, all of the root observed indicators are used (Raykov, 2009).

Table 8

Descriptive Statistics for the Neighborhood-Level Variables (n=73).

Dependent Variables	Type	Range	Weighted Mean	Weighted Standard Deviation	Mean	Standard Deviation	n
Legitimacy	Scale	0-95.8%	71.10%	10.10%	70.90%	13.90%	73
Collective Efficacy	Scale	-.500-.238	-.018	.110	-.032	.133	73
Crime and disorder	Scale	-.473-.631	.059	.194	.042	.232	73
Independent Variables							
Police service quality	Scale	-.879-.534	.004	.170	-.002	.223	73
Police misconduct	Scale	-.529-.947	.009	.182	-.005	.231	73
Covariates							
Negative experience with police	Scale	0-33%	13.80%	5.70%	13.30%	7.80%	73
Positive experience with police	Scale	0-44%	13.70%	6.10%	14.50%	8.40%	73
Crime prone age	Scale	0-40%	13.20%	5.90%	13.30%	7.70%	73
Afro-Trinidadian (referent=Indo-)	Scale	0-92%	38.40%	20.40%	34.30%	23.80%	73
Mixed race (referent=Indo-)	Scale	0-82%	26.90%	15.60%	24.90%	18.10%	73
Victim	Scale	0-33%	9.00%	5.10%	8.90%	6.50%	73
Affluent	Scale	0-50%	18.60%	9.70%	16.80%	10.60%	72
Below poverty	Scale	0-67%	16.40%	10.40%	18.70%	12.60%	72
Population density (pop/sqkm)	Scale	53-8825	2548	2083	2274	2218	73
Residential stability (median years)	Scale	4-39	26	4.10	25.70	5.70	73

Table 9

Correlations of Key Variables for the Neighborhood Level (weighted)

	Police Services	Misconduct	Collective Efficacy	Crime & Disorder	Legitimacy
Police Services	1.000				
Misconduct	-.669	1.000			
Collective Efficacy	.621	-.559	1.000		
Crime & Disorder	-.481	.620	-.669	1.000	
Legitimacy	-.036	-.110	.083	-.045	1.000

Analysis Strategy

When constructing the measurement model, I experienced two challenges that led me to alter my analysis strategy. First, I found too little variance at the neighborhood level to simultaneously replicate the key variables at both the individual and neighborhood levels. Second, when I attempted to build a two-level model I found that the number of parameters of interest was greater than the number of communities sampled. These issues raised concerns about the accuracy of the estimated standard errors for a two-level model. As a result, I bifurcated my analysis. I tested and created my variables of interest at the individual level, then aggregated those variables to the neighborhood level, and ran two independent sets of analyses.

At the individual level I tested whether residents' attitudes about the quality of police services and police misconduct relate to whether they grant legal institutions legitimacy, as well as their perception of neighborhood collective efficacy, and crime and disorder problems in the neighborhood. I included important covariates that prior

research suggests might influence individuals' opinions about police, legitimacy, collective efficacy, or crime. The analyses employed a multi-level modeling feature in Mplus statistical analysis software that computes standard errors and model fit statistics for complex data, taking into account the non-independence of nested data. Individuals are nested within 73 neighborhoods within 13 police districts. In the individual model, missing data is estimated with a robust weighted least squares estimator, because many of my indicators are ordinal.

At the neighborhood level, I investigated how individual opinions cohere—assessing the relationships between collective experiences and perceptions about police and the neighborhood outcomes of legitimacy, collective efficacy, and crime and disorder. Specifically, I considered whether the average opinion about police services and misconduct in a neighborhood was associated with the percentage of residents who granted legal institutions legitimacy, and subsequently the average collective efficacy and crime and disorder scores for the neighborhood. I incorporated neighborhood-level covariates that prior research suggests may influence police services, legitimacy, collective efficacy, and crime and disorder. The neighborhood-level analyses accounted for the unbalanced sampling design, weighting neighborhoods based on the precision of the estimate—the number of respondents interviewed in the neighborhood. Also, as at the individual level, the neighborhood-level analyses employed a multi-level modeling feature in Mplus that computes standard errors and model fit statistics taking into account the non-independence of nested data—neighborhoods nested within police districts. Because the aggregate variables are scale variables, missing data at the neighborhood

level is estimated with a maximum likelihood estimator (MLR) that "is robust to non-normality and non-independence of observations" (Muthen & Muthen, 2007, p. 484) At the neighborhood level, only two items are missing—one case lacks information on poverty and affluence.

Limitations

The data and analysis strategy suffer from four shortcomings. First, and the primary shortcoming, is that the data are cross-sectional. Although theoretically and conceptually the relationships are in the correct order and are linked, I cannot rule out that the effects in the structural equation models are not actually predictors. Therefore, this initial inquiry into the relationships between police services and misconduct, legitimacy, collective efficacy, and crime and disorder can only conceptually provide a "chain of events" rather than truly test the *causal* effects presented in figures 7 and 8. A study using longitudinal data is needed to ensure that the identified causes not only are related to the effects, but that they also precede the effects. Second, because the measure of legitimacy relies on only one indicator, it provides a weak indicator of the residents' perceptions about legitimacy and about the level of legal institution legitimacy in the neighborhoods. Future research described in chapter five will improve upon this measure and also address the temporal limitations. The third limitation is that the measure for crime and disorder does not include an indicator of violent crime. The results may not be generalizable beyond property crime and disorder in these neighborhoods. An additional limitation is that the independent and dependent variables are drawn from the same survey dataset, raising the potential problem of common method bias. Despite the

shortcomings, however, the research questions are grounded in theory and prior empirical research, the analysis strategy is methodologically sound, and the model fit statistics support that the data are a good fit to the models.

Even acknowledging the limitations I have identified, the Trinidad and Tobago community survey data provide two unique opportunities to examine what prior research has not. First, the data allow a multi-faceted analysis of the role of collective efficacy on crime and disorder in a developing nation—adding an important dimension and advancing development of the theory of collective efficacy, because Trinidad and Tobago offers different contextual challenges and cultural ecology than Chicago and cities in other areas of the United States and Britain. Additionally, the details provided by the interviews with residents allow a rigorous examination of the role that police play in contributing to collective efficacy, and how that contribution may be channeled through the legitimacy of legal institutions—answering whether legitimacy can be the cue that provides the foundation for neighbors to build shared, conventional values and to socialize others to those values. The results provide important answers to currently unanswered theoretical questions and provide the Trinidad and Tobago Police Service with practical guidance about how they can improve community outcomes.

Chapter 4
Results

The result of considerable efforts to build a strong measurement model led me to divide my analysis into two parts. I first present the results of the individual-level analysis, followed by the results of the neighborhood-level analysis, and then discuss the relationship between race and other variables in the models. In chapter five I synthesize what the analyses suggest when considered holistically, the implications for Trinidad and Tobago Police, and the contributions these findings make to theory and the advancement of knowledge about collective efficacy, legitimacy, and a possible role for police in influencing neighborhood outcomes.

Individual Level Analysis

Recognizing the influence that background and demographic characteristics can have on people's opinions, I estimated a structural equation model assessing how individuals' opinions about police services and misconduct relate to their perceptions of legal institution legitimacy, and their assessments of collective efficacy and crime and disorder in their neighborhoods, controlling for a variety of demographic variables. Figure 9 provides the results of that structural equation model, adjusting for the non-independence of the individuals, due to their nesting within neighborhoods and neighborhoods within police jurisdictions.

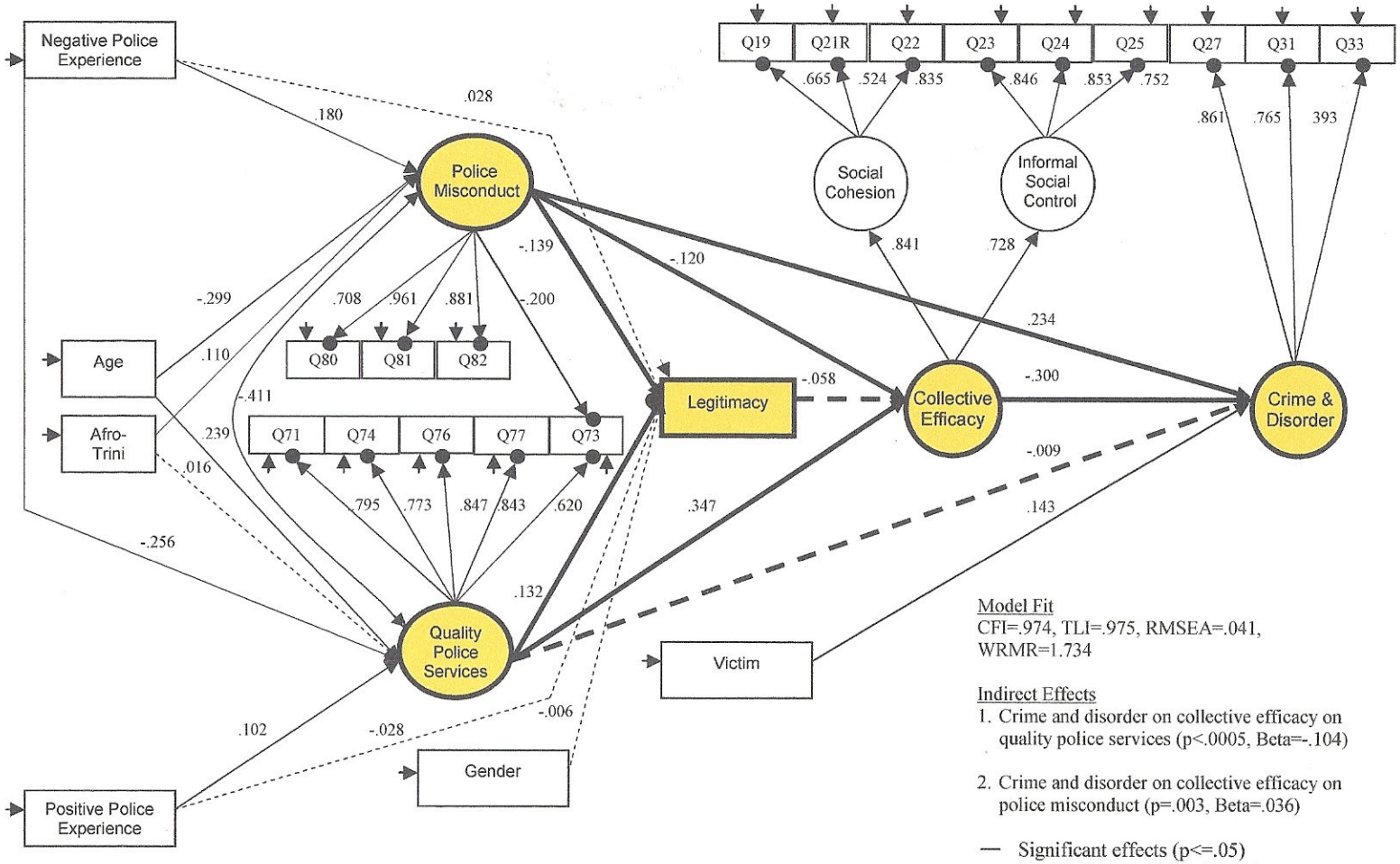


Figure 9. Individual-level structural equation model results (n=2,926).

To improve the readability of the diagram in figure 9, I employed a number of conventions. First, I have shaded the substantive question of interest, asking: Whether an individual's opinions about police misconduct and police services are related to his likelihood of viewing legal institutions as legitimate authorities and thus his view of the neighborhood's level of collective efficacy and crime and disorder. The unshaded areas depict the measurement model described in chapter three, as well as the covariates (e.g., age, race, gender). Based on the results of the structural equation model, I have represented the non-significant relationships with dashed lines and significant pathways with solid lines. The key for the question numbers is provided in table 10. I provide the unstandardized coefficients, standard errors, and the p-values in table 11.

Table 10

Key for Question Numbers

Question Number	Question Topic
Q19	Community members share values
Q21R	People generally get along
Q22	Close knit community
Q23	Whether neighbors would act to address children spray painting graffiti on a local building
Q24	Whether neighbors would act to address children skipping school and hanging out on the street corner
Q25	Whether neighbors would act to address a fight in front of their house and someone was being beaten or threatened
Q27	Level of problem of groups of teenagers or adults hanging out in the community and causing trouble
Q31	Level of problem of people buying and selling drugs on the street
Q33	Level of problem of burglaries, people breaking in and stealing things from homes in the community
Q71	Police know how to carry out official duties properly
Q73	Police address citizens in a respectful manner and tone
Q74	Police are able to maintain order on the streets
Q76	Police try to help solve problems
Q77	Satisfaction with the service provided by police
Q80	Frequency officers stop people without good reason
Q81	Frequency police use insulting language
Q82	Frequency police use excessive force

Table 11

Unstandardized Results of Individual-Level Structural Equation Model (n=2926)

			b	Standard error	Two-tailed p-value
Police Service Quality		*Factor Indicators*	*probit*		
	Q71	Carry out duties	1.000	Referent	Referent
	Q73	Respectful	0.781	.021	<.0005
	Q74	Maintain order	0.970	.017	<.0005
	Q76	Help solve problems	1.074	.024	<.0005
	Q77	Satisfied with services	1.068	.021	<.0005
Police Misconduct		*Factor Indicators*	*probit*		
	Q80	Stop people without reason	1.000	Referent	Referent
	Q81	Use insulting language	1.405	.034	<.0005
	Q82	Use excessive force	1.272	.024	<.0005
	Q73	Respectful	-.285	.030	<.0005
Social Cohesion		*Factor Indicators*	*probit*		
	Q19	Community share values	1.000	Referent	Referent
	Q21r	People get along	0.788	.035	<.0005
	Q22	Close knit neighborhood	1.260	.051	<.0005
Informal Social Control		*Factor Indicators*	*probit*		
	Q23	Stop children—graffiti	1.000	Referent	Referent
	Q24	Stop children skipping school & hanging on corner	1.008	.020	<.0005
	Q25	Stop fight	0.887	.017	<.0005
Collective Efficacy		*Factor Indicators*	*linear*		
		Informal social control	1.000	Referent	Referent
		Social cohesion	1.103	.088	<.0005
Crime and Disorder		*Factor Indicators*	*probit*		
	Q27	Loitering	1.000	Referent	Referent
	Q31	Street drug sales	.885	.061	<.0005
	Q33	Burglary	.450	.041	<.0005
Police Service Quality		*Predictors*	*linear*		
		Age	.011	.001	<.0005
		Positive experience	.248	.036	<.0005
		Negative experience	-.618	.043	<.0005
		Afro-Trinidadian	.028	.035	.428
Police Misconduct		*Predictors*	*linear*		
		Age	-.013	.001	<.0005
		Negative experience	.382	.049	<.0005
		Afro-Trinidadian	.167	.044	<.0005
Legitimacy		*Predictors*	*probit*		
		Police service quality	.158	.039	<.0005
		Police misconduct	-.189	.044	<.0005
		Positive experience	-.080	.086	.349
		Negative experience	.082	.073	.266
		Gender	-.012	.042	.770

Table 11 continued

		b	Standard error	Two-tailed p-value
Collective Efficacy	*Predictors*	*linear*		
	Police service quality	.233	.024	<.0005
	Police misconduct	-.091	.029	.001
	Legitimacy	-.032	.018	.073
Crime and Disorder	*Predictors*	*linear*		
	Police service quality	-.010	.036	.783
	Police misconduct	.279	.049	<.0005
	Collective efficacy	-.468	.056	<.0005
	Victim	.440	.075	<.0005
Police Service Quality with Police Misconduct *(correlation)*		-.215	.014	<.0005

Model Fit

Three of the four model fit statistics, Comparative Fit Index (CFI) = .974, Tucker-Lewis Index (TLI) = .975, and the Root Mean Square Error of Approximation (RMSEA) = .041 suggest that this model is a good fit to the data. However, the fourth model fit indicator, Weighted Root Mean Square Residual (WRMR) = 1.734 is high. In totality, the model appears to fit the data reasonably well.[28] The model explains 15% of the variance across individuals on the quality of police services, 15% of the variance for police

[28] Model fit indicators provide slightly different perspectives on model fit (e.g., absolute fit, close fit, comparative fit relative to the null model) and are differentially impacted by various aspects of the analysis, such as "sample size, model complexity, estimation method (e.g., ML [maximum likelihood], WLS[weighted least squares]), amount and type of misspecification, normality of data, and type of data." (Brown, 2006, p. 86) As a result, some estimators may not always agree on how well the model fits the data. Given the somewhat inconclusive nature of the available model fit statistics, Brown recommends using model fit as only one indication of the appropriateness of the model, applied in combination with information such as statistical significance, absence of negative residual variance (Heywood cases), and direction and size of the parameter estimates relative to the predicted direction and size. In this case, where the inconsistent statistic is the WRMR, it is worth noting that one of the designers of the Mplus software, a well-regarded statistician, reports that the WRMR is not a well-studied it statistic and has not performed as well as expected (Muthen, 2008). CFI and TLI values greater than or equal to .95 represent a good fit, and between .90-.95 are acceptable model fit ranges. RMSEA values less than .05 depict good fit, less than .08 represents a reasonable fit, and RMSEA values .08 to less than .1 are considered mediocre fit. (Brown, 2006) WRMR values less than or equal to 1.0 represent good model fit (Yu, 2002).

misconduct, 5% of the variance across individuals for legitimacy, 17% of the variance across individuals for collective efficacy, and 22% of the variance across individuals for crime and disorder. Although the model does explain a sizable amount of the variance at the individual level, especially for collective efficacy and crime and disorder, the model leaves much variance unexplained. Future research should attempt to discover the phenomena driving this unexplained variation. I describe a future research effort in chapter five that will specifically focus on improving the legitimacy measure and should subsequently improve its explained variance and also that of collective efficacy.

Forming Opinions about Police

Progressing from left to right in the model, a number of covariates play an important role when individuals form opinions about police. The nature of these effects differ somewhat depending on whether residents are asked about the positive—the quality of services—or the negative—police misconduct. At the individual level, the covariates explain 15% of the variation across individuals in their perceptions of misconduct and 15% of the variation across individuals in their perceptions of the quality of police services.

Police Misconduct. Police misconduct refers to when residents see police stopping people without good reason, using insulting language, using excessive force, and to a lesser degree, being disrespectful. Younger people, people who have recently experienced a negative contact with police, and Afro-Trinidadians (relative to Indo-Trinidadians) are more likely to report seeing problems with police misconduct in their neighborhoods. In Trinidad, age plays the strongest role across these predictors in

influencing opinions about misconduct. Having a recent negative experience with police has the next strongest effect. Being Afro-Trinidadian has the weakest effect among the characteristics that significantly predict individuals' perceptions of police misconduct. Age, race, and prior police contact have been important in prior research addressing individuals' opinions about police (Cao et al., 1996; Dunham & Alpert, 1988; Reisig & Parks, 2000; Sampson & Bartusch, 1998, Weitzer & Tuch, 2004). Where prior research differs is that Weitzer and Tuch (2004) reported that prior personal experience with police had the strongest relationship with perceptions of police misconduct. They reported that police-related variables (e.g., personal experience, vicarious experience, media coverage about police) and perceptions about safety and crime in the neighborhood had much stronger associations with perceptions of police misconduct than the individuals' demographic characteristics. If the current research had included some of these additional variables, the strength of the associations may also differ.

Quality of Police Services. Older neighborhood residents, people with a recent positive experience with police, and residents who have not recently had a negative experience with police are significantly more likely to have higher opinions about the quality of police services. High scores on the quality of police services means that people are more satisfied with police services in their neighborhoods, they see the police as more competent, respectful, capable of maintaining order, and willing to help citizens solve their problems. Of the covariates, having a negative experience with police has the strongest effect—reducing residents' opinions about the quality of police services. The next strongest effect is age, followed in strength by having a recent positive experience

with police. The lesser role of positive experiences relative to negative experiences is consistent with prior research addressing the relative effects of positive versus negative encounters with police (Skogan, 2006). Assessments about the quality of police services are not significantly influenced by race of the respondent.

Because of the strength of the effect of having a negative experience with police on opinions about police services and because individuals may also be influenced by hearing about the vicarious experiences of their neighbors, I divided the sample into three groups based on the proportion of residents within the neighborhood that reported being dissatisfied with a recent encounter with police. I re-ran the individual model for the three different subpopulations.[29] The individual model does the best job of explaining opinions about police services among residents living in neighborhoods with an average (n = 2,574, CFI = .972, TLI = .973, RMSEA = .039, WRMR = 1.669) or high proportion (n = 182, CFI = .980, TLI = .980, RMSEA = .018, WRMR = 1.070) of residents who have had a recent negative experience with police. Among the residents from neighborhoods with relatively few negative experiences with police (n=170), only 1% of the variance in opinions about the quality of police services is explained. None of the covariates, including having a negative or positive police contact, significantly predict these opinions (CFI = .960, TLI = .960, RMSEA = .016, WRMR = .959).

I had suspected that the reason for this finding is that neighborhoods where few people have negative experiences with police are probably places with few police

[29] Fourteen percent of respondents have had a recent negative experience with police. I classified residents from neighborhoods within at least one standard deviation of the overall mean (5.5% TO 21%) as "average." Higher proportions are classified as "high" and lower proportions are classified as "low."

contacts in general. Therefore, in these neighborhoods, residents must form opinions about police services without personally experiencing them or even hearing about other neighbors' experiences with police. Comparing the percentage of either positive or negative police contacts across these three groups of neighborhoods provides some support that neighborhoods with few negative experiences do have the lowest amount of police contact. Neighborhoods low on negative experiences report that 17% of residents had either a positive or negative police contact. In the average neighborhoods, 26% had either a positive or a negative contact, while in the neighborhoods high on negative experiences, 35% of residents reported having either a positive or negative contact. The difference across the three groups is statistically significant ($F = 9.696$, df between = 2, df within= 2,964, $p < .0005$).

Additionally, the results reveal that the highest opinions about police services are reported by residents living in neighborhoods with the lowest amount of police contact. Conversely, the lowest ratings of police services are provided by people living in neighborhoods that have the highest amount of contact with police. These findings may suggest that when residents are from neighborhoods where people do not frequently encounter police, they operate under the assumption that "no news is good news" and so have higher opinions about police services. However, in neighborhoods where people are encountering police, assessments of police service tend to be lower and the nature of

personal encounters (positive or negative) with police play a very important role in how police services are assessed by residents.[30,31]

Relationship between Police Services and Misconduct. As would be expected, an individual's views about police services and misconduct are highly interrelated and these opinions have an inverse relationship (Beta = -.411, $p < .0005$). Residents who see police misbehaving also have a significantly lower opinion of the quality of police services; residents with a high opinion about police services also report lower levels of police misconduct. This relationship is one of the strongest in the individual-level model. By incorporating the correlation into the model, I can subsequently look at the independent relationships between opinions about police services and misconduct and a variety of outcomes.

Factors Driving Legal Institution Legitimacy

Hypothesis 1: Delivering higher quality routine police services increases public perceptions of legal institution legitimacy. *Supported.*

[30] Some scholars might question whether this differentiation of neighborhoods by proportion of residents with negative experiences is a proxy for neighborhood disadvantage and consequently argue that poorer assessments of police services among residents of high-contact neighborhoods is a biproduct of the relationship between disadvantage and opinions about police. Prior research has consistently reported that residents living in neighborhoods with higher levels of disadvantage have more negative opinions about police. In this sample, the bivariate correlation between neighborhood-level assessments of police services and poverty is also negative, but the correlation between the percentage in a neighborhood with negative police experiences and service quality assessments is stronger (Pearson correlation = -.444 for negative experiences and -.197 for poverty).

[31] Another important difference across the residents from these neighborhoods divided by the proportion of negative police experiences is their views about crime and disorder. Significantly lower levels of crime and disorder problems are reported by the residents from neighborhoods with few negative police contacts. The highest levels of crime and disorder are reported by residents of neighborhoods with the highest levels of negative police contacts. Having fewer problems in need of police attention may provide a reason that the low police contact group can have a "no news is good news" attitude.

Hypothesis 2: Public observations of police misconduct cause the public to view legal institutions with less legitimacy. *Supported.*

Progressing through the model diagram in figure 9, it is apparent that none of the covariates tested (gender, having a recent positive or negative experience with police)[32] directly and significantly relate to perceptions about legitimacy, but as predicted, both opinions about how well police are providing services and perceptions about police misbehavior do relate to an individual's view of legal institution legitimacy. When residents observe police delivering higher quality routine services, the likelihood of granting legal institutions legitimacy increases. Converting the probit regression to a probability,[33] I found that the probability of someone with the average view of the quality of police services granting legal institutions legitimacy is .64, about two in three chances. The probability of someone with a quality score of 1.2 (about one standard deviation above the mean) granting legal institutions legitimacy increases to close to 1, showing the importance of the relationship between police services and legal institution legitimacy (Beta =.132, $p < .0005$).

Conversely, residents who report seeing more police misbehavior are less likely to grant legal institutions legitimacy (Beta = -.139, $p < .0005$). For example, if the resident has an average opinion about the level of police misbehavior (a score of -.49), the probability of granting legal institutions legitimacy is .7, seven chances in ten. If the perception of police misconduct increases by one standard deviation to a score of .09, the

[32] Preliminary covariate analyses had included race, education, and income as predictors of individuals' perceptions of legitimacy, but they were not significant and they did not have strong support in prior research. For the sake of parsimony, I did not include them as covariates of legitimacy in the final model.
[33] Muthen and Muthen (2007, p. 406) provide an example of the conversion using Mplus output.

probability of granting legitimacy is reduced to .38—not quite four in ten chances. If the perception of misconduct is 1 standard deviation lower than the average, the probability of granting legitimacy is close to 1, a considerable improvement.

The strength of the relationship of quality police services and of police misconduct with a person's likelihood of recognizing the legitimacy of legal authorities is nearly equal. Improving services or minimizing misconduct should improve legitimacy.[34] Additionally, I found that legitimacy is indirectly associated with having a recent negative experience with police through both a resident's views about police service quality and misconduct. Having a negative experience with police indirectly reduces legal institution legitimacy by affecting people's views about the quality of police services and police misconduct. The overall strength of this relationship, though, is small relative to the direct relationships (Beta = -.008 for both effects).

Collective Efficacy

Hypothesis 3: When residents view legal institutions as legitimate, neighborhood collective efficacy will increase. *Not supported.*

Hypothesis 4: Delivering quality routine police services increases collective efficacy. *Supported.*

Hypothesis 5: Delivering quality routine police services improves collective efficacy indirectly by improving legal institution legitimacy, which subsequently increases collective efficacy. *Not supported.*

[34] As I have said previously, since I am using cross-sectional data, the direction of the effects is not definitive, rather is merely in the order that theory and prior research suggests they should operate. Conceivably, a person's view about legal institution legitimacy may influence his perspective on police misbehavior and the quality of police services.

Hypothesis 6: Police misconduct decreases collective efficacy. *Supported.*

Hypothesis 7: Police misconduct diminishes collective efficacy indirectly by reducing legal institution legitimacy, which subsequently decreases collective efficacy. *Not supported.*

Progressing farther right in the model in figure 9, higher collective efficacy represents opinions by individual residents that their neighborhoods are more cohesive—that the neighborhood is close knit, residents share values, and get along—and that their neighborhoods have relatively high levels of informal social control. Residents believe that their neighbors will act to address graffiti, loitering, and fighting in their neighborhoods. Individual residents' views about neighborhood collective efficacy are significantly related to their views about the quality of police services and level of misconduct in the neighborhood. Residents who see police as successful at delivering high quality routine police services (Beta = .347, $p < .0005$) and those who see minimal police misconduct (Beta = -.120, $p = .001$) in their neighborhoods are more likely to report higher levels of collective efficacy in their neighborhoods. The relationship between assessments about the quality of police services and collective efficacy is strong. It is stronger than the relationships between police misconduct and collective efficacy and legitimacy on collective efficacy. The results are consistent with the hypothesis that police do have a role in building collective efficacy. Additional testing with longitudinal data is required to claim that delivering quality services and minimizing misconduct does improve collective efficacy in neighborhoods and not that neighborhoods with higher collective efficacy can obtain better police services and will experience less misbehavior.

Additionally, a stronger test would also include alternative mechanisms for generating collective efficacy, including participation in community organizations. However, the strength and consistency of the correlation within this cross-sectional dataset is promising.

The results, however, do not support the expected relationship between legitimacy and collective efficacy (Beta = -.058, p = .073). LaFree's model predicts that residents who view legal institutions as legitimate authorities will internalize the rules, values, and beliefs represented by legal institutions, adhere to the formal authority of legal institutions, and participate in socializing others to the rules, laws, and values of the institution—operationalized in the model as collective efficacy. However, a non-significant p-value provides no conclusive support that the two constructs are even related. Interpreting the negative coefficient indicates that if a weak relationship does exist between legitimacy and collective efficacy at the individual level, individuals who grant legal institutions legitimacy are less likely to score the neighborhood highly on collective efficacy.

This result is contrary to what theory has predicted. In trying to explain this deviation, I considered two possibilities. First, it may be the case that the results portray a negative relationship between formal social control and informal social control. When residents see police failing to establish themselves as a legitimate authority and failing to deliver services, enforce the law, and address the problems in the neighborhood, it is then that residents take it upon themselves to act to address problems and to self-regulate—increasing informal social control. One way that I explored the plausibility of this

supposition was to add a pathway in the structural equation model directly from legitimacy to informal social control. Overall, the model fit statistics did not change. However, this pathway was significant and the relationship was negative, improving the proportion of the explained variation of informal social control slightly from $R^2 = .530$ to $R^2 = .554$. This provides some limited support that lower levels of legitimacy may be associated with higher collective efficacy because of an inverse relationship between formal social control and informal social control and the contribution that informal social control makes in generating collective efficacy. Similar post hoc analyses adding a direct link from police misconduct and the quality of police services to informal social control improve the R^2 for informal social control and showed that when police do not get the job done in the eyes of the public, the public is more inclined to act to address the problems themselves. What appears to be a contrary finding—the inverse relationship between legitimacy and collective efficacy—may represent the compensatory relationship between formal social control and informal social control. To a small degree, failure to provide quality services, misbehaving during interactions with the public, and failure to gain legitimacy may motivate people to self-regulate and regulate behaviors of others in their neighborhoods.

Kubrin and Weitzer (2003) contemplate this relationship between formal social control and informal social control, suggesting that too little and too much formal social control can both be problematic to social capital. They suggest that too little formal social control may create an impression that police are weak, ineffective, or unresponsive, making residents feel vulnerable, because they lack the support needed to intervene and

exert informal social control. Under these circumstances, local gang or other criminal elements may fill the vacuum with their own form of order maintenance. Conversely, too much formal social control (often resulting in high levels of incarceration) may weaken family and community structures and debilitate neighborhood self-regulation. However, they theorize that the right amount of formal social control can improve neighborhood outcomes—"enhance[ing] residents' capacities to fight crime and disorder" (p. 383).

While examining these relationships with informal social control, I also attempted removing collective efficacy from the model altogether to see if removing it made any difference. I tested the direct relationship between legitimacy and informal social control and social cohesion and subsequently the independent associations that informal social control and social cohesion have with crime and disorder, rather than evaluating their combined association with collective efficacy. However, these changes to the model reduced the overall model fit statistics dramatically such that they are below acceptable levels, and doing so also reduced the explained variation of crime and disorder. These results provide some support that collective efficacy is the product of the synergy between social cohesion and informal social control, but that any relationship between legitimacy and collective efficacy (if there was one) may be a consequence of the residents compensating for failure of police to effectively deliver formal social control in the neighborhood.

The alternative possibility that I considered is that the contrary finding of a negative coefficient between legitimacy and collective efficacy stems from a weak measure of legitimacy. This alternative explanation may be the most likely. Due to

limitations in the dataset, the measure of legitimacy depends on one question asking residents whether they feel that they should accept the decisions of legal authorities. Perhaps with a stronger, more robust measure of legitimacy, the results would be more consistent with what theory predicts. This is a supposition that only future data collection can address. To improve the measure, in addition to asking residents whether they should accept decisions of legal authorities (or police more specifically), including indicators about residents' trust that police will make appropriate decisions, that police care about community interests and problems, residents' respect for the way police use their authority, and additional questions about the duty to accept decisions by police in a factor analysis would likely provide a more reliable, robust measure. Chapter five describes some future research that I am undertaking that will rectify the shortcoming of the legitimacy measure.

As might be expected since legitimacy does not significantly correlate with collective efficacy, the results also do not support hypotheses five and seven. These hypotheses had expected police to improve collective efficacy indirectly by providing high quality services and low levels of misconduct, thereby improving legitimacy and ultimately collective efficacy. Although quality police services and lower levels of misconduct do each significantly relate to legitimacy, the indirect paths from police services and misconduct through legitimacy to collective efficacy are not significant ($p = .111$ for quality services and $p = .113$ for misconduct).

Crime and Disorder

Hypothesis 8: Delivering quality routine police services reduces crime and disorder. *Not supported.*

Hypothesis 9: Delivering quality routine police services reduces crime and disorder problems indirectly by improving collective efficacy, which subsequently decreases crime and disorder. *Supported.*

Hypothesis 10: Police misconduct contributes to crime and disorder problems. *Supported.*

Hypothesis 11: Police misconduct contributes to crime and disorder problems indirectly because it diminishes collective efficacy, subsequently increasing crime and disorder. *Supported.*

Hypothesis 12: Higher levels of legal institution legitimacy improves neighborhood collective efficacy and subsequently reduces crime and disorder. *Not supported.*

The model results that adhered to expectations tested the relationship between collective efficacy and crime and disorder. Higher collective efficacy scores were associated with lower crime and disorder scores and lower collective efficacy scores were associated with higher crime and disorder scores (Beta = -.300, $p < .0005$). Collective efficacy had the strongest relationship with crime disorder—stronger than police misconduct, which is associated with higher levels of crime and disorder (Beta = .234, $p = .001$), stronger than the quality of police services, which had no significant relationship to crime and disorder (Beta = -.009, $p = .783$), and stronger than any of the

indirect relationships. Although residents who had recently been victimized had significantly elevated perceptions about crime and disorder (Beta = .143, $p < .0005$), this effect is also overshadowed by the strength of the relationship between collective efficacy and crime and disorder. This finding is consistent with the research in Chicago and elsewhere that reported that collective efficacy is a powerful force that is capable of reducing crime and disorder problems.[35] Confirming this relationship between collective efficacy and crime and disorder in a developing nation is an important result that bolsters confidence about the robustness of collective efficacy, especially among residents in particularly troubled neighborhoods. It supports that even in areas dramatically challenged by structural disadvantage and violence, collective efficacy still can serve as a lever for diminishing crime and disorder problems.

However, the most interesting result at the individual level, which is unique to this study, is found in two significant indirect relationships. Residents' opinions about the quality of police services and about police misconduct indirectly relate to crime and disorder through collective efficacy. Residents who see Trinidad and Tobago police delivering quality routine police services report greater collective efficacy and less crime and disorder (Beta = -.104, $p < .0005$). However, residents who observe police misbehaving—stopping people without good reason, using excessive force, being disrespectful, using insulting language—report less collective efficacy and higher levels of crime and disorder (Beta = .036, $p = .003$). At the individual level, the results imply

[35] Conceivably, due to the cross-sectional nature of the data, in neighborhoods where Trinidad residents observe less crime and disorder, residents may subsequently feel more cohesiveness in the neighborhood and exert more informal social control—increasing collective efficacy. This finding would not be inconsistent with prior research.

that police behaviors may affect collective efficacy and this effect serves to influence crime and disorder. As previously mentioned, replication of this analysis using longitudinal data is necessary before this causal relationship can be substantiated.

Synthesizing Results of the Individual-Level Model

The results support the theory that police misbehavior reduces legitimacy in the eyes of neighborhood residents, but delivering quality services improves legal institution legitimacy. The strength of the relationship between each of these behaviors with legitimacy is nearly equal. Delivering quality services also appears to be associated with higher collective efficacy, while police misbehavior has the opposite relationship, suggesting it may diminish collective efficacy. Here also, the strength of the relationships is nearly the same. As prior research predicted, higher collective efficacy is associated with lower crime and disorder and the relationship is strong, overshadowing all of the other relationships in the model. Police behaviors may improve or diminish collective efficacy, with important consequences for crime and disorder problems—as perceived by residents. These results at the individual level underscore the importance of delivering quality services that entail maintaining order, helping citizens to solve their problems, being respectful, ensuring that officers are well-trained so that they are competent, and striving to increase citizens' satisfaction with police services, while also putting policies and practices in place that dissuade police unprofessionalism and misbehavior by Trinidad and Tobago police officers.[36]

[36] This synthesis of the results assumes that the direction of the relationship is consistent with theory and in some cases, with prior research findings. However, since the data are cross-sectional, I acknowledge that some of these relationships may be co-occurring or in the opposite direction from my interpretation.

Neighborhood-Level Analysis

Although the results at the individual-level provide important implications for Trinidad and Tobago police, I was particularly interested in how opinions about police services, misconduct, and legitimacy come together within a neighborhood and produce neighborhood-level effects. I estimated a structural equation model assessing how the average neighborhood opinion about police services and misconduct is related to the percentage of residents who grant legal institutions legitimacy, and the subsequent relationship with neighborhood collective efficacy and neighborhood crime and disorder, controlling for a number of important neighborhood characteristics (e.g., poverty, affluence, residential stability, population density). Figure 10 provides the results of the neighborhood-level structural equation model, which adjusts for the non-independence of the data, since neighborhoods are nested within police districts. It also accounts for the unbalanced sampling design by weighting the neighborhood data based on precision (the number of interviews contributing to the aggregate measures).

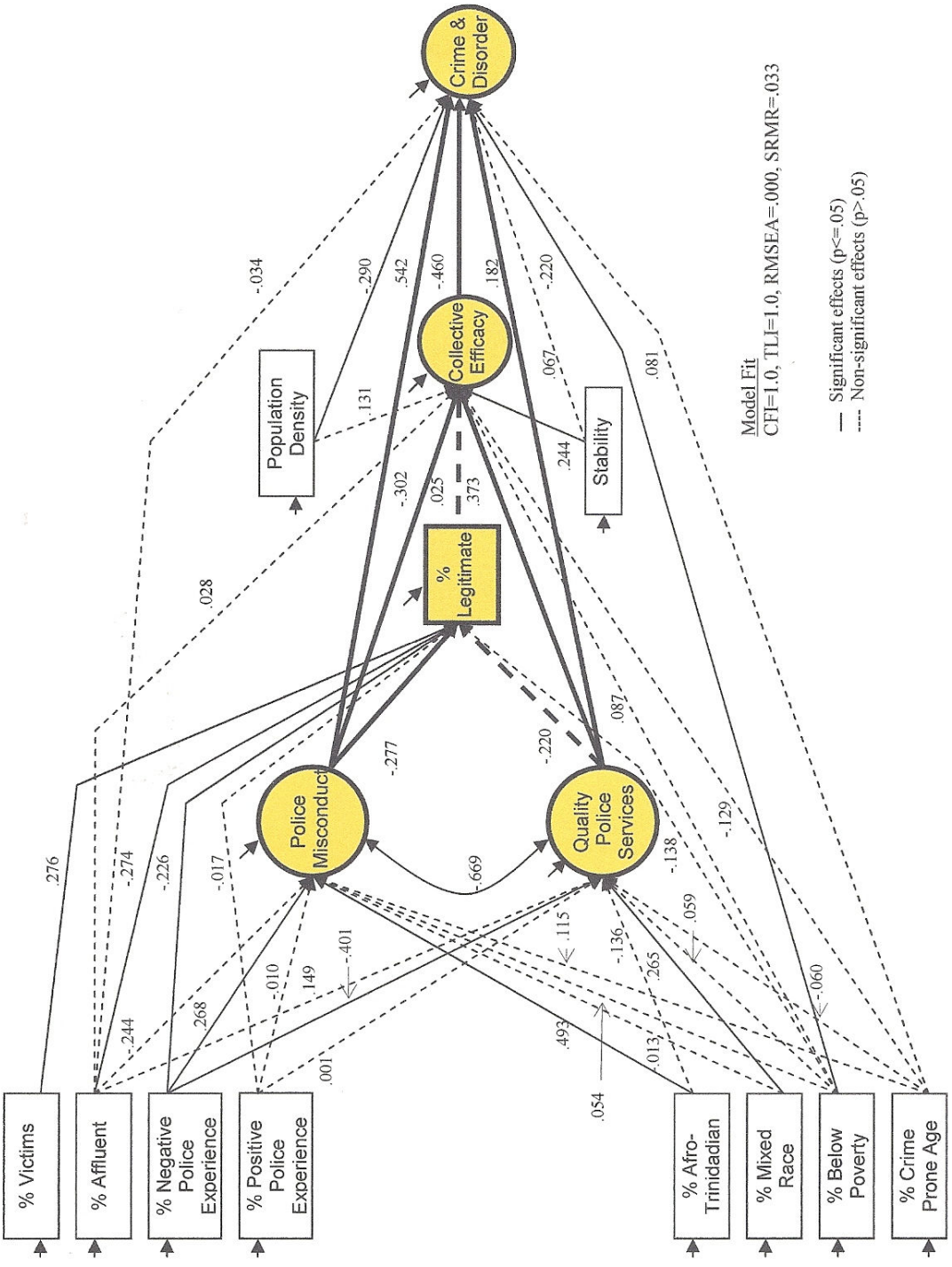


Figure 10. Neighborhood structural equation model results (n=73).

I applied the same conventions at the neighborhood level that I used for the individual-level structural equation model diagram, including shading the key research question, leaving the covariates unshaded, and using solid lines to represent significant relationships and dashed lines to depict pathways that are not statistically significant. The neighborhood-level research question asks whether the average neighborhood opinion about the level of police misconduct and quality of police services relates to the percentage of residents who view legal institutions' authority as legitimate, and subsequently with neighborhood collective efficacy and neighborhood crime and disorder. The neighborhood control variables (e.g., residential stability, population density, poverty) are incorporated into the model to account for those neighborhood qualities that prior research suggests might influence opinions about police, collective efficacy, or crime and disorder. Table 12 provides the unstandardized results of the neighborhood-level model.

Table 12

Unstandardized Results of the Neighborhood-Level Structural Equation Model (n=73)

Dependent Variable		b (Linear)	Standard Error	Two-tailed p-value
Quality Police Services				
	Percent Afro-Trinidadian	-.114	.094	.226
	Percent Mixed	.290	.147	.048
	Percent aged 18 to 24	-.174	.295	.554
	Poverty	.096	.284	.735
	Affluence	.260	.198	.189
	Percent negative experience	-1.203	.259	.000
	Percent positive experience	-.006	.313	.986
Police Misconduct				
	Percent Afro-Trinidadian	.439	.077	.000
	Percent Mixed	-.015	.136	.911
	Percent aged 18 to 24	.352	.271	.195
	Poverty	.096	.186	.607
	Affluence	-.455	.267	.088
	Percent negative experience	.858	.258	.001
	Percent positive experience	-.023	.252	.927
Legitimacy				
	Quality police services	-.131	.075	.080
	Police misconduct	-.155	.074	.036
	Poverty	-.134	.174	.439
	Affluence	-.285	.109	.009
	Percent negative experience	-.403	.176	.036
	Percent positive experience	-.024	.167	.885
	Percent victims	.550	.202	.006
Collective Efficacy				
	Legitimacy	.027	.103	.793
	Quality police services	.239	.058	.000
	Police misconduct	-.182	.084	.030
	Percent aged 18 to 24	-.239	.135	.076
	Poverty	.092	.110	.401
	Affluence	.031	.158	.844
	Population density	.007	.006	.263
	Residential stability	.006	.003	.017
Crime and Disorder				
	Collective efficacy	-.846	.191	.000
	Quality police services	.215	.098	.029
	Police misconduct	.599	.110	.000
	Poverty	-.426	.168	.011
	Affluence	-.070	.197	.722
	Population density	-.028	.007	.000
	Residential stability	.003	.004	.407

Model Fit

All four model fit statistics, CFI = 1.00, TLI = 1.00, RMSEA = .000 (90% confidence interval for the RMSEA is .000 to .095), and the Standardized Root Mean Square Residual (SRMR) = .033,[37] suggest that this model is a good fit to the aggregate data. The model explains 30% of the variance across neighborhoods for the quality of police services, 34% of the variance for police misconduct, 17% of the variance across neighborhoods in legitimacy, 52% of the variance across neighborhoods in collective efficacy, and 65% of the variance in crime and disorder. As with the individual-level model, the model explains a sizable amount of the variance, and yet the model leaves a considerable amount of variance unexplained for the dependent variables. Future research should attempt to learn the factors influencing this unexplained variation. At the neighborhood level, additional details about the nature of police strategies, information about the nature of neighborhood-level coordinated action, and information about the practices of other legal entities are the types of variables that might help to improve the amount of variance explained.

Forming Opinions about Police

Quality Police Services. At the neighborhood level, assessments of the quality of police services and the level of police misconduct are related to the racial composition of the neighborhood and the percentage of neighborhood residents who claim that they have had a negative experience with police recently. Assessments about the quality of police

[37] SRMR is provided instead of WRMR because the model uses a maximum likelihood estimator, due to the continuous dependent variables in the model. SRMR model fit guidelines suggest that the fit is "good" when the value is close to .08 or below (Brown, 2006).

service scores are most strongly associated with the percentage of residents within the neighborhood who have had a recent negative police contact (Beta = -.401, $p < .0005$). Higher percentages of residents experiencing a negative police contact are associated with lower neighborhood quality service scores. The strength of this relationship, however, varies across neighborhoods—in some neighborhoods the percentage of people with prior negative contacts more dramatically influences the quality services score.[38]

In an effort to identify the characteristic of a neighborhood that might instigate this fluctuation, I created several interaction variables with the percentage of residents with negative police experiences, including combining that percentage with the percentage of victims, Indo-Trinidadians, Afro-Trinidadians, affluent residents, poor residents, and the percentage of residents aged 18-24 years. None of these interaction terms significantly influenced the quality scores for the neighborhoods. The best explanation for the differential impact of negative police experiences on quality services scores may be that residents living in predominantly Indian, predominantly African and mixed neighborhoods form their opinions about the quality of police services somewhat differently. In the next section about the role of race, I report that at the individual level, people living in different types of neighborhoods (by racial composition) form some opinions differently. In the case of quality police services, for people residing in predominantly African neighborhoods, the age of the resident has a stronger influence on his or her assessments of service quality than having a negative personal encounter with

[38] I re-ran the neighborhood-level structural equation model allowing the slope of negative experiences with the quality of police services to vary across neighborhoods and the slope was significantly different across neighborhoods ($p<.0005$).

police, although both factors are important influences on service quality scores. I did not have sufficient numbers of neighborhoods in the sample to run the aggregate model separately for each type of neighborhood, however, it seems a reasonable assumption that if individual residents of predominantly African neighborhoods are forming opinions about the quality of police services slightly differently than residents of other types of neighborhoods, this may explain why the strength of the influence of negative experiences on quality scores differs somewhat at the neighborhood level.

In the neighborhood model, I also found that having a higher percentage of mixed race residents, relative to the percentage of Indo-Trinidadian residents in the neighborhood was associated with higher assessments of the quality of police services (Beta = .265, p = .048).

Factors that did not correlate with the neighborhood score for the quality of police services included the percentage of residents: aged 18 to 24, living below the poverty line, who are affluent, who are Afro-Trinidadian relative to the percentage who are Indo-Trinidadian, and with a recent negative experience with police. Two of these factors were significant at the individual-level. For individuals, having a positive experience with police was related to higher quality services scores. However, having more residents in the neighborhood with positive experiences—and neighborhoods certainly varied on this measure, ranging from 0 to 44% of residents reporting a recent positive experience—did not significantly improve the neighborhood quality services score (p = .995). Additionally, while older people were more likely to rate police higher on the quality of services, at the neighborhood level, age did not have the same effect. In this case,

however, age was operationalized as the percentage of the neighborhood that was 18 to 24 years ($p = .555$). If I had also captured the percentage of the population that was much older, for example, older than the sample average of 46 years or perhaps older than sixty years, I may have found different results.

Levels of Police Misconduct. Observations of police misconduct across neighborhoods are most strongly associated with the percentage of Afro-Trinidadians in the neighborhood relative to the percentage of Indo-Trinidadians. Higher percentages of Afro-Trinidadians are associated with higher reported levels of police misconduct in the neighborhood (Beta = .493, $p < .0005$). This relationship may be capturing an important cultural effect based on the race of respondents and/or it may reflect an experience differentially felt based on whether residents live within a predominantly African neighborhood versus other neighborhoods.

Of secondary importance, neighborhoods with proportionately more residents with a recent negative police experience report higher levels of police misconduct (Beta = .268, $p = .001$).[39] It is not the case, however, that these two characteristics are highly correlated, that having more Afro-Trinidadians in the neighborhood is associated with having a higher proportion of residents with a recent negative police experience. In fact, the correlation between the two is negative (Pearson correlation = -.202). Both

[39] As I have mentioned elsewhere, the cross-sectional nature of the data calls into question the direction of the effects. Questions about negative police contacts pertain to encounters occurring over the preceding six months. Although questions about how often police perform certain behaviors associated with misconduct are asked without a time constraint, it is reasonable that residents may rely on observations of police behavior occurring prior to the date of the survey. Conceivably, neighborhoods with higher levels of misconduct subsequently experience disproportionately more negative contacts with police.

neighborhood characteristics independently and strongly associate with the levels of misconduct reported at the neighborhood level.

As with assessments about the quality of police services, the strength of the relationship of accumulating negative experiences with the levels of police misconduct varies across neighborhoods. In some neighborhoods, the relationship is stronger than in others.[40] Adding interaction terms with the percentage of residents with negative police contacts, as with analyses addressing quality services, did not help to explain this fluctuation of the strength of negative contacts on levels of police misconduct. Additionally, dividing the neighborhoods into subpopulations based on the neighborhood racial composition did not reveal stark differences in how negative experiences differentially influence residents' observations of police misconduct. The change in slopes across neighborhoods of negative experiences on police misconduct may be explained by an unmeasured variable or perhaps by running the model with subpopulations of neighborhoods on a characteristic other than race. This interesting finding provides an opportunity for future research to investigate.

Characteristics of neighborhoods that do not strongly associate with neighborhood assessments of police misconduct include the percentage of residents who are living below the poverty line; who are 18-24 years old; who have recently been victims of burglary, robbery, or assault; who are affluent, and who have had a recent positive experience with police. In his study in New York City, Kane (2002) cautioned that "the

[40] I re-ran the neighborhood-level structural equation model allowing the slope of negative experiences with the police misconduct to vary across neighborhoods and the slope was significantly different across neighborhoods (p=.011).

very communities likely in need of the most protection by the police due to conditions favoring deviance also may be in need of the greatest protection from the police due to conditions favoring deviance [by police]" (p. 40). The results in Trinidad do not support that variation in the amount of police misconduct across neighborhoods correlates with structural variables that prior studies have found to influence crime and disorder. Instead, the evidence supports that at the neighborhood level, views about the level of police misconduct may be based on negative experiences and vicarious experiences with police shared among residents, and perhaps differences in police behaviors across neighborhoods with different racial compositions, rather than neighborhood structural characteristics like poverty, affluence, and age composition.

As with the individual-level model, a strong negative correlation (-.669) exists between police misconduct and quality services ratings. Neighborhoods with a high score for police misconduct tend to have lower quality service scores and neighborhoods with high quality of service scores tend to have lower reported levels of police misconduct. Including the correlation within the neighborhood model allowed me to parse out and test the independent associations of misbehavior and quality of services within neighborhoods and the various neighborhood outcomes. Distinguishing the independent linkages of these two types of behavior is especially helpful for providing implications and recommendations to the Trinidad and Tobago Police Service.

Legitimacy

Hypothesis 1: Delivering higher quality of routine police services increases public perceptions of legal institution legitimacy. *Not supported.*

Hypothesis 2: Public observations of police misconduct cause the public to view legal institutions with less legitimacy. *Supported.*

At the neighborhood level, legitimacy is measured by the percentage of residents who responded that they agreed or strongly agreed that they should accept the decisions of legal authorities. Neighborhood characteristics associated with the proportion of residents assuming this obligation include perceptions about police misconduct (Beta = -.277, p = .036), the percentage of residents who were recently victimized (Beta = .276, p = .006), the percentage of affluent residents (Beta = -.274. p = .009), and the percentage of residents with a recent negative experience with police (Beta = -.226, p = .022). The strength of these neighborhood characteristics on legitimacy is very similar.

Neighborhoods with higher levels of police misconduct and neighborhoods with higher proportions of residents with recent negative police experiences had significantly fewer residents in the neighborhood granting legal institutions legitimacy. These results support the hypothesis that higher levels of police misconduct detract from legal institutions' legitimacy across neighborhoods in Trinidad. The results also suggest that the individual-level findings reported by Tyler and colleagues (Sunshine & Tyler, 2003; Tyler, 1990; Tyler, 2001) may hold at the aggregate level. When neighborhoods have higher proportions of residents with negative personal experiences with police, the consequence is that legal institutions will hold less legitimacy in those neighborhoods.[41] Kane (2002) questioned whether higher levels of police-citizen contact in neighborhoods

[41] Although the data are cross-sectional, the residents were asked about prior police experiences occurring over the preceding six months and are subsequently asked their view of legitimacy at the point in time of the survey, so for this relationship, directionality is less problematic.

would increase police misbehavior and subsequently diminish legitimacy. The results in Trinidad showing the significant indirect relationship between a high proportion of negative police experiences in the neighborhood with higher levels of misconduct and subsequently less legitimacy provide support for his theory.

Another link to legitimacy that may also be police-related is that having more victims in the neighborhood was associated with higher proportions of residents reporting legal institution legitimacy. This finding may suggest that in neighborhoods where higher proportions of people find a personal need for police services—such as reporting a crime—legal institutions gain legitimacy. The challenge for police who may try to apply these results proactively to improve legal institution legitimacy is ensuring that when police in Trinidad respond to victims in these neighborhoods, they do not generate an increase in the percentage of residents reporting negative experiences with police. The percentage of residents reporting a recent negative experience and the percentage of victims in the neighborhood are positively correlated at .370, suggesting this is an important and valid concern for police.

The other neighborhood characteristic with a significant association with legitimacy is having a higher percentage of affluent residents. This measure is not equivalent to a higher mean income in the neighborhood, rather speaks to the proportion of people whose income falls within the top 15% for the sample. Neighborhoods with a higher proportion of affluent residents have a lower proportion of residents who view legal institutions as legitimate. Neighborhoods with more affluent residents also tend to be more densely populated (Pearson correlation = .260). Although I cannot test this

hypothesis with the current data, I speculate that the contrast of a pocket of residents who are relatively wealthy living in close proximity to poorer or even average income residents may provide a constant a reminder to neighbors of what they do not have, and may generate tensions or feelings of unfairness about the way "things are." The feeling that things are not fair may taint residents' views about the legitimacy of institutions, including legal institutions. If this view is shared by sufficient numbers of residents, it will affect consensus in the neighborhood about legitimacy. This may be one neighborhood-level manifestation of Tyler and colleague's individual-level findings about the influential role of views about distributive justice and procedural justice in influencing legitimacy.[42]

The neighborhood-level data do not support hypothesis one, that providing higher quality police services improves legal institution legitimacy. This relationship is not significant, and the coefficient is negative. A negative coefficient suggests that if a weak relationship exists between quality police services and legitimacy, neighborhoods with better scores for quality services will have fewer proportions of residents granting legal institutions legitimacy. As at the individual level, it is difficult to explain this finding about legitimacy that is contrary to expectations. Two explanations seem most likely. First, the lack of consistency with expectations may be a product of the weak measure of legitimacy. Alternatively, an unmeasured variable may be influencing both the neighborhoods' scores for quality services and the percentage of residents granting

[42] The closest test that I could perform was to focus on neighborhoods with high proportions of affluent residents and examine the average legitimacy scores for individuals, grouped by income levels. The results were not very telling, showing slight differences across groups (percentiles) and slightly higher means for residents in the lower income groups.

legitimacy to legal institutions. In the final chapter, I describe plans for future research that will use an improved measure of legitimacy and should remove the former concern. If that measure of legitimacy proves more reliable, then I will better be able to assess the relationship between quality services and legitimacy and if it remains negative, I can investigate the plausibility that a third variable is influencing views of police services and legitimacy.

Collective Efficacy

Hypothesis 3: When residents view legal institutions as legitimate, neighborhood collective efficacy will increase. *Not supported.*

Hypothesis 4: Delivering quality routine police services increases collective efficacy. *Supported.*

Hypothesis 5: Delivering quality routine police services improves collective efficacy indirectly by improving legal institution legitimacy, which subsequently increases collective efficacy. *Not supported.*

Hypothesis 6: Police misconduct decreases collective efficacy. *Supported.*

Hypothesis 7: Police misconduct diminishes collective efficacy indirectly by reducing legal institution legitimacy, which subsequently decreases collective efficacy. *Not supported.*

The factors related to neighborhood collective efficacy are similar to the factors associated with individuals' assessments of collective efficacy. The results support the expectation that police behavior can influence neighborhood collective efficacy. Neighborhoods with higher scores for quality police services also have higher collective

efficacy. Neighborhoods with higher levels of police misconduct have less collective efficacy. The strongest association, among those measured, with collective efficacy is the quality of police services (Beta = .373, $p < .0005$), followed by the level of police misconduct (Beta = -.302, $p = .030$). However, the strength of the correlation between police misconduct and collective efficacy varies across neighborhoods.[43] Subpopulation analyses investigating the role of race and of racial composition of the neighborhood that I describe in the next section help to explain this differential relationship with police misconduct. Residents living in predominantly African neighborhoods, while they report experiencing somewhat higher levels of police misconduct in their neighborhoods, do not report that police misconduct is related to collective efficacy ($p = .453$). This is a stark difference from the residents of predominantly Indian neighborhoods ($p = .005$).[44] Among residents living in mixed neighborhoods views about collective efficacy are also not significantly associated with police misconduct, but that relationship is nearly significant ($p = .06$). The relationship between police misconduct and collective efficacy is stronger among residents living in mixed neighborhoods than residents living in predominantly African neighborhoods.[45]

[43] I re-ran the neighborhood-level structural equation model allowing the slope of police misconduct with collective efficacy to vary across neighborhoods and the slope was significantly different across neighborhoods ($p=.029$).
[44] The difference in the coefficients is statistically significant ($Z = 2.059$), applying the formula recommended by Paternoster, Brame, Mazerolle, & Piquero (1998).
[45] The coefficient for police misconduct in the mixed neighborhood model is significantly different from predominantly African neighborhoods ($Z = -4.386$), but not from predominantly Indian neighborhoods ($Z = 1.477$).

Consistent with prior research, residential stability is positively associated with collective efficacy (Beta = .244, p = .017). Neighborhoods with higher median numbers of years that residents lived in the neighborhood had higher collective efficacy.

What may not important to neighborhood collective efficacy, according to these results, is the proportion of residents that view legal institutions as legitimate (Beta = .025, p = .793). The results, as at the individual level, are inconsistent with the relationship predicted by LaFree's model. However, the findings must be considered inconclusive—the relationship warrants further examination with a measure of legitimacy that is more robust. In chapter five, I provide details about a future study that will do that.

Also contrary to expectation is that population density is not a statistically significant predictor of collective efficacy and the coefficient is positive. In Sampson and Raudenbush's (1999) study of collective efficacy in Chicago, population density had a significant inverse effect. Higher population density neighborhoods tended to have lower levels of collective efficacy. The mean density of the neighborhoods in the Chicago sample was 7,028 people per square kilometer (standard deviation = 4,101) (Morenoff et al., 2001) relative to the U.S. national average of 29.4 people per square kilometer (Earth Trends, 2003b). The mean density of the Trinidad neighborhood sample is 2,548 people per square kilometer (standard deviation = 2,083) relative to a national average of 252.3 (Earth Trends, 2003a). Less than 1% of the sample neighborhoods in Trinidad fall even within one standard deviation below the mean of the Chicago sample. Although the Trinidad sample neighborhoods are considerably denser than the average for the country, they are considerably less dense than the neighborhoods in the Chicago sample. Relative

to the Chicago neighborhoods, the Trinidad neighborhoods reflect a fairly low dosage of this potential influence of population density on collective efficacy.

I had contemplated whether the difference in signs of the correlation between density and collective efficacy may be suggestive of a tipping point. In theory, below the tipping point, neighborhoods with residents living in closer proximity to one another would have more collective efficacy. In rural areas and places with more distance between neighbors, I would expect less interaction and communication with neighbors, and so the ability to generate shared norms may be diminished. However, above a critical population density tipping point, I theorize that closer proximity may lead to crowding, conflict, diversity, and reduced levels of collective efficacy. This theory seems plausible based upon the results of bivariate correlations that I ran for neighborhoods with population densities that are more than one standard deviation above the mean for the Trinidad sample. For these fourteen neighborhoods (19% of the sample), I found that population density and collective efficacy were inversely related (correlation = -.332). Among the more dense Trinidad neighborhoods, the relationship between population density and collective efficacy operates as it does within the Chicago neighborhood sample. Additionally, among these dense neighborhoods, higher population densities also are related to higher crime and disorder problems (correlation = .396), consistent with prior research, but different from the results when I ran the model for the entire sample. The results lead me to think that population density may not hinder neighborhood collective efficacy or contribute to crime and disorder problems until it reaches a certain critical level, at which point it becomes a risk factor.

Finally, tests of the indirect relationships between perceptions of police and collective efficacy through legitimacy also were not statistically significant. Although the quality of police services and misbehavior have important direct relationships with collective efficacy, neither are strongly associated with collective efficacy through their relationships with neighborhood legitimacy (p-value for police services = .801, p-value for police misconduct = .799). This is not unexpected, since the direct relationship between legitimacy and collective efficacy was not statistically significant.

One indirect pathway that is statistically significant is the relationship between the percentage of Afro-Trinidadian residents and collective efficacy through perceptions of police misconduct (p = .032). Having a higher percentage of Afro-Trinidadian residents indirectly is associated with lower collective efficacy in the neighborhood because neighborhoods with higher proportions of Afro-Trinidadians report higher misconduct, and higher police misconduct is associated with less collective efficacy. The strength of this relationship is weaker than each of the direct relationships (Beta = -.149), but is important nonetheless. I attempt to disaggregate this finding further within the next section on race.

Crime and Disorder

Hypothesis 8: Delivering quality routine police services reduces crime and disorder. *Not supported.*

Hypothesis 9: Delivering quality routine police services reduces crime and disorder problems indirectly by improving collective efficacy, which subsequently decreases crime and disorder. *Supported.*

Hypothesis 10: Police misconduct contributes to crime and disorder problems. *Supported.*

Hypothesis 11: Police misconduct contributes to crime and disorder problems indirectly because it diminishes collective efficacy, subsequently increasing crime and disorder. *Not supported.*

Hypothesis 12: Higher levels of legal institution legitimacy improves neighborhood collective efficacy and subsequently reduces crime and disorder. *Not supported.*

The literature review supporting this study makes clear that the influence of collective efficacy on crime and disorder in the United States is consistently supported by studies conducted in Chicago, Baltimore, Seattle, and elsewhere. Of interest was whether similar relationships are found in Trinidad and Tobago, where residents reportedly struggle with widespread disadvantage, inadequacies in infrastructure, acute violence, and corruption. The results at the neighborhood level support what I found at the individual level, that even under these difficult circumstances, higher levels of collective efficacy in a neighborhood are associated with lower levels of crime and disorder. This relationship is moderately strong (Beta = -.460), but is not the strongest association with crime and disorder at the neighborhood level.

I found that police misconduct had the strongest association with crime and disorder at the neighborhood level (Beta = .542). This suggests that when police stop people without good reason, use excessive force, are disrespectful, and use insulting language during encounters with the public, these types of police misbehavior may

contribute to neighborhoods' crime and disorder problems. A quote from a surveyed resident perhaps sums this up best, "The police shows no respect at all. They slap residents and does all sorts of things. They contribute to crime." This finding is consistent with what Kane (2005) found when he examined the influence of police misconduct on violent crime within neighborhoods considered extremely disadvantaged in New York City. He found that on average more misconduct events occurred as the level of disadvantage increased. Within the more disadvantaged neighborhoods, using longitudinal data, he reported that police misconduct significantly increased violent crime. Within extremely disadvantaged neighborhoods, the influence of police misconduct on violent crime was very strong—more important than the influence of structural disadvantage, police responsiveness, percentage of youth in the area, and residential stability. In fact, in Kane's study, only prior levels of violent crime had a stronger influence on the violent crime rate than police misconduct. The Trinidad data used in this dissertation are not longitudinal and so I cannot draw similar causal conclusions. However, my correlational results in Trinidad, in what might reasonably be labeled extremely disadvantaged neighborhoods provide further support for Kane's conclusions that police misbehavior has strong detrimental effects on neighborhoods.

Of course, I cannot rule out that in disadvantaged, high-crime Trinidad neighborhoods, officers may view crime as normal, victims as deserving, and subsequently, officers alter their policing approach (Klinger, 1997)—perhaps committing bad behavior in what they view as bad places. An earlier study by Kane (2002), also using longitudinal data in New York City, reports that structural disadvantage is

conducive to police misconduct, providing limited support to this alternative interpretation advanced by other scholars of the high crime-high misconduct association (Weitzer & Tuch, 2004).

Just as with collective efficacy, the strength of the relationship between police misconduct and crime and disorder varies significantly across neighborhoods.[46] It plays a greater role in some neighborhoods than others. In the next section on race, I provide some details about those differences.

One statistically significant result at the neighborhood level that did not have statistical significance at the individual level is the direct relationship between quality police services and crime and disorder. In neighborhoods, the relationship between quality services and crime and disorder is significant and positive (Beta = .182, p = .029). Neighborhoods with higher quality police services also have higher levels of crime and disorder. This is not a welcomed finding for police (unless the relationship is actually working in the opposite direction, suggesting that police are giving their best to the neighborhoods that need them most). Assuming that the conceptual order of the effects is correct (even though this association is the weakest of the significant relationships with crime and disorder), it undoubtedly would be disturbing for police to learn that by delivering services well, they may contribute to crime and disorder. As with the other contrary findings in my analysis, I surmise how this relationship could be explained. To disaggregate the result, I re-ran the neighborhood analysis, changing the dependent

[46] I re-ran the neighborhood-level structural equation model allowing the slope of police misconduct with crime and disorder to vary across neighborhoods and the slope was significantly different across neighborhoods ($p<.0005$).

variable first into the average neighborhood score for burglary (the only crime in the crime and disorder variable) and then the combined average scores for street level drug sales and loitering, to represent disorder. The model fit statistics were not very good (for the burglary model: CFI = .944, TLI = .847, RMSEA = .072, SRMR = .044; for the disorder model: CFI = .94, TLI = .835, RMSEA = .075, SRMR = .044), but are sufficient to interpret the results cautiously to try to hypothesize about why delivering better services is associated with higher levels of crime and disorder.

In both models, only one variable was statistically significant. For burglary, having a higher percentage of residents aged 18 to 24 was associated with higher levels of burglary ($p = .018$). What I focused on, however, was the relationship between the quality of police services and the burglary or disorder outcome. For the disorder model, as it was in the general neighborhood model, the coefficient was positive. For the model with burglary as the outcome, however, the coefficient was negative. This suggests that higher quality police services may be associated with lower levels of burglary—the relationship that police agencies hope to achieve. However, for disorder, higher quality services may be associated with higher levels of disorder. I offer two possible explanations. The first possible explanation is that when residents' views about the quality of services are higher and they view police as more competent and capable, their expectations are raised about the ability of the police to address problems like disorder that otherwise, they might not expect police to handle or they may not even recognize the behaviors as problems. The alternative explanation that I provide, based on this result, is that given the cross-sectional nature of the data, the relationships may actually be

reversed. That would mean that higher burglary problems reduce neighborhood views about the quality of police services in the neighborhood, but disorder problems do not have the same impact on people's views of police. I will be able to investigate this last hypothesis in a future study that uses three years of community survey data, allowing me to work with the data in the temporal order in which they are hypothesized. I have referenced this study throughout this chapter and describe the study in chapter five.

Another contrary finding is that lower levels of poverty are associated with higher levels of crime and disorder (Beta = -.220, p = .011). To try to understand why this may occur, I examined the bivariate correlations of variables with the percentage of residents living below the poverty line. The strongest relationships are with variables representing the racial composition of the neighborhood and population density. Lower population densities were associated with higher levels of poverty. I interpret this result to suggest that in the more rural areas, poverty is more common. To learn more about the race-poverty connection, I ran cross-tabulations of the neighborhoods: neighborhood composition by high, average, and low levels of poverty. Predominantly Indian neighborhoods in the sample have higher levels of poverty. Forty-two percent of the predominantly Indian neighborhoods were classified as high poverty neighborhoods, relative to 8% of predominantly African neighborhoods and 7% of mixed neighborhoods. None of the predominantly Indian neighborhoods were classified as low poverty, but 20% of the mixed and 11% of the predominantly African neighborhoods were low poverty areas. Sixty-five percent of the neighborhoods classified as high poverty were predominantly Indian neighborhoods. Residents of predominantly Indian neighborhoods,

on average, reported slightly higher levels of cohesion and collective efficacy and lower levels of crime and disorder. It may be that the relationship between poverty and crime and disorder at the neighborhood level is contrary to expectations because of the strength of collective efficacy in these neighborhoods, in spite of considerably higher levels of poverty.

Perhaps the most interesting results in the portion of the neighborhood model predicting crime and disorder outcomes are the indirect pathways. The results are consistent with the theory that indirectly, by delivering high quality routine police services, this improves collective efficacy and significantly reduces crime and disorder problems ($p = .001$). The strength of this association (Beta = -.172) is weaker than any of the direct associations, but is nonetheless statistically significant and theoretically important. The other statistically significant indirect relationship is that having a higher percentage of Afro-Trinidadians in the neighborhood is associated with higher levels of police misconduct and subsequently higher levels of crime and disorder (Beta = .267, $p < .0005$). I have alluded to the differential experience with and relationships with police misconduct across neighborhoods with different racial compositions. Within the next section I talk more about how race and misconduct interrelate and may influence the key relationships.

The indirect linkage of critical importance to the test of Gary LaFree's model was not statistically significant. I did not find that legitimacy in the neighborhood is associated with higher collective efficacy and subsequently less crime and disorder

problems (p = .797). Failure to find this indirect relationship is not surprising, since the direct relationship between legitimacy and collective efficacy was not significant.

Synthesizing the Neighborhood Model Findings

The results at the neighborhood level show that consistent with prior research in Chicago and other cities, in Trinidad neighborhoods, higher collective efficacy is associated with lower levels of crime and disorder. In neighborhoods where police deliver higher quality services, collective efficacy is higher and crime and disorder problems occur at significantly lower levels. Also, the results support that by minimizing police misconduct, Trinidad and Tobago police may also be able to increase neighborhood collective efficacy, subsequently reducing crime and disorder. Finally, neighborhoods in Trinidad gain from high levels of residential stability that, consistent with prior research on collective efficacy, also are related to higher neighborhood collective efficacy.[47] The positive relationship between residential stability and collective efficacy is stronger than some of the challenges that Trinidad neighborhoods face, including poverty and having a high proportion of residents of crime prone age in the neighborhood—perhaps serving as a protective factor of sorts against even worse levels of crime and disorder.[48]

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[47] This relationship is important because although the Trinidad neighborhoods have high levels of stability, stability alone is not sufficient to reduce crime and disorder problems. Sampson et al. (1997) reported that "higher stability without the expected greater collective efficacy is not a positive neighborhood quality" (p. 277). In their study, when they accounted for the influence of collective efficacy on homicide, residential stability was associated with higher levels of homicide. Without high levels of collective efficacy to mediate this positive relationship, Trinidad neighborhoods would be expected to have higher levels of homicide—as in fact they do.

[48] This synthesis of the results assumes that the direction of the relationship is consistent with theory and in some cases, with prior research findings. However, since the data are cross-sectional, I acknowledge that some of these relationships may be co-occurring or in the opposite direction from my interpretation. Future

Importance of Race in Influencing Opinions and Perceptions

Mastrofski and Lum (2008) point out that in Trinidad and Tobago, strong racial and ethnic tensions between Afro-Trinidadians and Indo-Trinidadians—tensions originating from their colonial experiences as slaves and indentured servants respectively—challenge policing and governance in that country. They assert that a major consequence of the racial tensions, the ongoing struggle for political power, and media fueling the racially-divided party politics is a threat to the legitimacy of government institutions, including police. Given these ongoing historical tensions and since currently the Trinidad and Tobago government is led by the African-dominated People's National Movement party, differences of opinion by race about police and legal institution legitimacy may be expected and in fact were found in the above analyses. Inasmuch as racial differences permeate the politics and business of Trinidad and Tobago, it is important to consider whether race makes a difference for the processes under examination in this research.

In the United States, prior studies have found many differences of opinion about police by race. Members of the racial majority (Whites) typically have higher opinions of police than members of minority races (e.g., Hispanic and Black citizens) (Gallagher et al., 2001; Tyler, 2005). Prior research also suggests that perceptions of police misconduct are also shaped by race, among other variables. Weitzer and Tuch (2004) report that African Americans harbor the most negative views. In the United States though, the racial distribution is a clear dominant majority with white citizens composing 75% of the

analyses with longitudinal data (described in chapter five) will provide more definitive answers to the directionality question.

population, while black residents comprise only 12% of the population (United States Bureau of Census, 2000). In Trinidad, the number of Afro-Trinidadians is nearly equal to the number of Indo-Trinidadians. So, while racial tensions are ongoing and competition for dominance in business and politics continues, there is not a strong minority status for either racial group as exists in the United States. As such, opinions among Trinidadians about police services and neighborhood outcomes may not be as strongly and consistently influenced by race, as may be expected in the United States, where minority status is closely entwined with powerlessness or inequality (Kane, 2002). Jackson (1989) explains that in the United States "Since policing is a tangible manifestation of authority, it taps the pool of resentment in those without resources…(S)ubordinate groups still view the police as a repressive tool of the dominant group" (as cited in Kane, 2002, p. 870).

To investigate the potential racial effects at the individual level, I undertook three sets of supplemental analyses. First, I compared differences of opinion about police, legitimacy, collective efficacy, and crime and disorder for respondents reporting their race as Afro-Trinidadian, Indo-Trinidadian, or mixed. I conducted an analysis of variance to assess whether any observed differences are statistically significant. I ran a similar analysis of variance test comparing individuals based on their residence in neighborhoods of various racial compositions. I divided the neighborhoods into predominantly African—at least 60% of the randomly sampled respondents in the neighborhood report being Afro-Trinidadian—predominantly Indian—at least 60% of the randomly sampled respondents in the neighborhood report being Indo-Trinidadian—and mixed neighborhoods—neither Afro-Trinidadian nor Indo-Trinidadian respondents compose at

least 60% of the respondents in the neighborhood. See figure 11, which displays the racial composition of the study neighborhoods using this breakdown.

The results of the analysis of variance tests showed statistically significant differences by race for views about the quality of police services, misconduct, and legitimacy, but substantively, the differences were slight. Comparisons across individuals based on the racial composition of their neighborhoods found statistically significant differences for views about the quality of police services, misconduct, collective efficacy, and crime and disorder problems. Most of these differences also are substantively small, with the exception of perceptions about police misconduct and views about crime and disorder, where differences were modest, but noticeable. Residents of predominantly African neighborhoods reported more problems with police misconduct. Residents of predominantly Indian neighborhoods reported fewer crime and disorder problems.

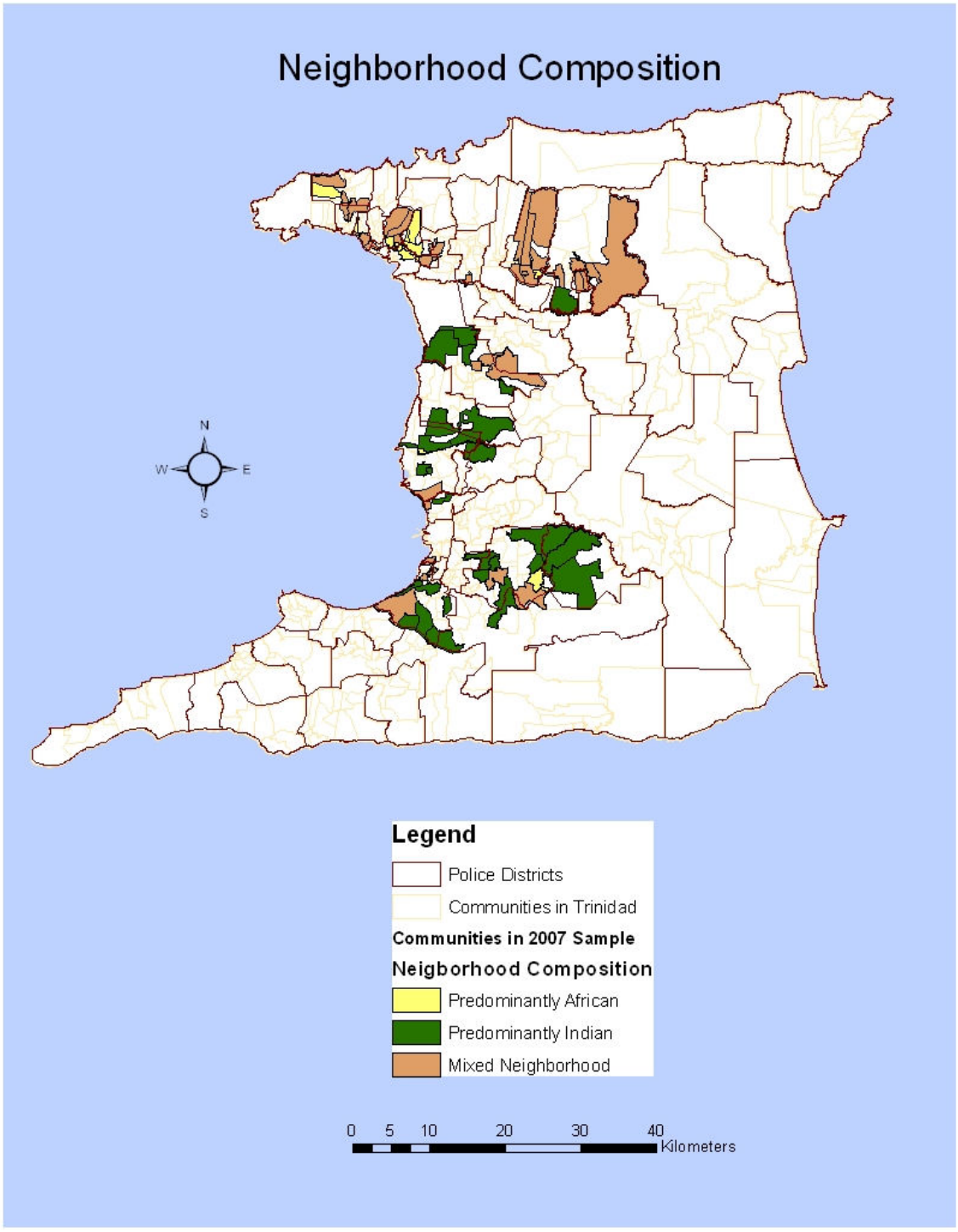

Figure 11. Neighborhood composition of sampled communities in Trinidad.

For the second analysis, I added a variable to the individual-level structural equation model to represent the type of neighborhood where a resident lives as a predictor of perceptions of police misconduct and perceptions about the quality of police services. I dummy coded three variables—predominantly African neighborhood, predominantly Indian neighborhood, or mixed neighborhood—and rotated the referent group. With this additional variable in the model, I observed similar model fit statistics to the initial individual-level model (CFI = .972, TLI = .973, RMSEA = .039, WRMR = 1.7).

The results, provided in table 13, showed significant direct and indirect associations for neighborhood affiliation (by racial composition). While the respondent's race, age, and prior police experience remained important predictors of perceptions of police misconduct, also residents who live in predominantly African neighborhoods relative to residents of predominantly Indian neighborhoods reported significantly higher levels of police misconduct (p=.031). Indirectly, residing in a predominantly African neighborhood was associated with higher misconduct and subsequently lower levels of legitimacy (p=.045). In the original individual-level model, not only was being Afro-Trinidadian associated with higher perceptions of police misconduct, but a number of indirect pathways from Afro-Trinidadian race through police misconduct to various theorized outcomes, including legitimacy, collective efficacy, and crime and disorder were also statistically significant. These relationships remain when neighborhood affiliation is included in the model, but all of these linkages are relatively small in magnitude. Residing in a predominantly African neighborhood had a stronger

relationship with perceptions of police misconduct than being Afro-Trinidadian, but both of these relationships are overshadowed by the contributions that youth and having a prior negative police make to increasing perceptions of police misconduct. This analysis suggests that race plays only a minor role in assessments about police misconduct, with Afro-Trinidadians having slightly higher perceptions of police misconduct. Residents' neighborhood affiliations (by racial composition) add more to the understanding of views about police misconduct. It may be that living in a predominantly African neighborhood in Trinidad colors residents' views about police misconduct or that police misconduct is more prevalent in those areas.

Table 13

Adding Neighborhood Composition to the Individual-Level Model (n=2,926)

		b	*Standard Error*	*Beta*
Police Service Quality	*Factor Indicators*	*Probit*		
Q71	Carry out duties	1.000	Referent	0.794
Q73	Respectful	0.786***	.022	0.624
Q74	Maintain order	0.969***	.017	0.772
Q76	Help solve problems	1.077***	.023	0.849
Q77	Satisfied with services	1.070***	.021	0.844
Police Misconduct	*Factor Indicators*	*Probit*		
Q80	Stop without reason	1.000	Referent	0.702
Q81	Use insulting language	1.426***	.034	0.963
Q82	Use excessive force	1.287***	.026	0.881
Q73	Respectful	-.282***	.030	-.196
Social Cohesion	*Factor Indicators*	*Probit*		
Q19	Community share values	1.000	Referent	0.661
Q21r	People get along	0.797***	.036	0.527
Q22	Close knit neighborhood	1.271***	.052	0.837
Informal Social Control	*Factor Indicators*	*Probit*		
Q23	Stop children—graffiti	1.000	Referent	0.846
Q24	Stop skipping school & hanging on corner	1.007***	.020	0.852
Q25	Stop fight	0.888***	.017	0.752
Collective Efficacy	*Factor Indicators*	*Linear*		
	Social cohesion	1.000	Referent	0.841
	Informal social control	1.109***	.090	0.728
Crime and Disorder	*Factor Indicators*	*Probit*		
Q27	Loitering	1.000	Referent	0.858
Q31	Street drug sales	0.890***	.060	0.767
Q33	Burglary	0.459***	.043	0.400
Police Service Quality	*Predictors*	*Linear*		
	Age	0.011***	.001	0.239
	Positive experience	0.248***	.036	0.102
	Negative experience	-.616***	.043	-.255
	Afro-Trinidadian	0.044	.036	0.026
	Predominantly African neighborhood	-.049	.060	-.021
	Mixed neighborhood	-.124	.068	-.046
Police Misconduct	*Predictors*	*Linear*		
	Age	-.012***	.001	-.292
	Negative experience	0.379***	.049	0.179
	Afro-Trinidadian	0.101*	.044	0.067
	Predominantly African neighborhood	0.220*	.102	0.108
	Mixed neighborhood	0.085	.094	0.036
Legitimacy	*Predictors*	*Probit*		
	Police service quality	0.158***	.039	0.132
	Police misconduct	-.198***	.045	-.144
	Positive experience	-.089	.086	-.030
	Negative experience	0.083	.074	0.028
	Gender	-.014	.042	-.007
Collective Efficacy	*Predictors*	*linear*		
	Police service quality	0.234***	.024	0.350
	Police misconduct	-.085**	.029	-.112
	Legitimacy	-.031	.018	-.057
Crime and Disorder	*Predictors*	*linear*		
	Police service quality	-.013	.036	-.013
	Police misconduct	0.275***	.047	0.230
	Collective efficacy	-.473***	.057	-.302
	Victim	0.441***	.074	0.144
Police service quality with crime and disorder (correlation)		-.210***	.014	-.408

For the third analysis, I ran a series of subpopulation analyses in Mplus and tested for differences in the coefficients across the models.[49] I first separately estimated the individual-level structural equation model for Indo-Trinidadians (n=1,006, CFI = .975, TLI = .977, RMSEA = .027, WRMR = 1.254) and Afro-Trinidadians (n=1,116, CFI = .981, TLI = .982, RMSEA = .024, WRMR = 1.164). See table 14 for the results. The second subpopulation analysis compared residents of all races living in predominantly Indian neighborhoods (n = 732, CFI = .976, TLI = .977, RMSEA = .025, WRMR = 1.204), predominantly African neighborhoods (n = 445, CFI = .971, TLI = .971, RMSEA = .022, WRMR = 1.182), and mixed neighborhoods (n=1,749, CFI = .972, TLI = .973, RMSEA = .031, WRMR = 1.422).[50] Table 15 compares the results for residents of predominantly African and predominantly Indian neighborhoods.

[49] The formula for this test, provided below, is recommended by Paternoster, Brame, Mazerolle, and Piquero (1998).

$$Z = \frac{b_1 - b_2}{\sqrt{SEb_1^2 + SEb_2^2}}$$

[50] I attempted to run similar analyses across the neighborhood-level data, but with only 73 neighborhoods, I did not have sufficient numbers of cases.

Table 14

Individual-Level Model for Race Subpopulations

			Afro-Trinidadian Residents			*Indo-Trinidadian Residents*		
			b	*Std. Error*	*beta*	*b*	*Std. Error*	*beta*
Police Service Quality		*Factor Indicators*	*Probit*					
	Q71	Carry out duties	1.000	Referent	0.805	1.000	Referent	0.816
	Q73	Respectful	0.857***	.037	0.686	0.764***	.042	0.628
	Q74	Maintain order	0.933***	.029	0.757	0.972***	.029	0.795
	Q76	Help solve problems	1.052***	.030	0.842	1.012***	.033	0.824
	Q77	Satisfied with services	1.054***	.025	0.844	1.027***	.032	0.836
Police Misconduct		*Factor Indicators*	*Probit*					
	Q80	Stop without reason	1.000	Referent	0.722	1.000	Referent	0.642
	Q81	Use insulting language[a]	1.320***	.045	0.928	1.598***	.073	0.994
	Q82	Use excessive force	1.280***	.034	0.903	1.349***	.045	0.852
	Q73	Respectful	-.235***	.044	-.167	-.267***	.064	-.167
Social Cohesion		*Factor Indicators*	*Probit*					
	Q19	Community share values	1.000	Referent	0.607	1.000	Referent	0.725
	Q21r	People get along	0.797***	.063	0.485	0.877***	.047	0.637
	Q22	Close knit neighborhood	1.322***	.097	0.801	1.187***	.061	0.859
Informal Social Control		*Factor Indicators*	*Probit*					
	Q23	Stop children—graffiti	1.000	Referent	0.850	1.000	Referent	0.886
	Q24	Stop skipping school & hanging on corner [a]	1.013***	.025	0.861	0.939***	.026	0.833
	Q25	Stop fight	0.884***	.028	0.751	0.863***	.027	0.766
Collective Efficacy		*Factor Indicators*	*Linear*					
		Social cohesion	1.000	Referent	0.911	1.000	Referent	0.747
		Informal social control	1.112***	.152	0.724	1.288***	.134	0.785
Crime and Disorder		*Factor Indicators*	*Probit*					
	Q27	Loitering	1.000	Referent	0.868	1.000	Referent	0.845
	Q31	Street drug sales	0.876***	.083	0.762	1.001***	.111	0.846
	Q33	Burglary	0.492***	.068	0.430	0.434***	.067	0.373

Table 14 Continued

		Afro-Trinidadians			*Indo-Trinidadians*		
		b	*Std. Error*	*Beta*	*b*	*Std. Error*	*Beta*
Police Service Quality	*Predictors*	*Linear*					
	Age	0.013***	.002	0.263	0.008***	.002	0.162
	Positive experience [a]	0.188**	.057	0.072	0.382***	.076	0.151
	Negative experience	-.667***	.061	-.249	-.707***	.089	-.300
Police Misconduct	*Predictors*	*Linear*					
	Age	-.013***	.002	-.302	-.009***	.002	-.233
	Negative experience	0.456***	.084	0.192	0.344***	.079	0.191
Legitimacy	*Predictors*	*Probit*					
	Police service quality	0.172**	.060	0.146	0.127	.076	0.109
	Police misconduct	-.151*	.070	-.113	-.115	.113	-.075
	Positive experience	0.013	.128	0.004	-.136	.138	-.046
	Negative experience	0.195	.125	0.062	0.036	.125	0.013
	Male	0.022	.060	0.011	-.060	.079	-.029
Collective Efficacy	*Predictors*	*Linear*					
	Police service quality	0.255***	.039	0.391	0.196***	.033	0.310
	Police misconduct [a]	0.040	.044	0.054	-.184***	.050	-.222
	Legitimacy [a]	0.034	.025	0.062	-.051	.033	-.094
Crime and Disorder	*Predictors*	*Linear*					
	Police service quality	-.003	.057	-.003	0.008	.047	0.008
	Police misconduct	0.240***	.063	0.206	0.402***	.083	0.305
	Collective efficacy	-.501***	.086	-.317	-.441***	.075	-.277
	Victim	0.328**	.124	0.093	0.479***	.115	0.175
Police service quality with crime and disorder (correlation)		-.242***	.026	-.447	-.212***	.023	-.431
n			1,116			1,006	
R^2 Police service quality			.157			.151	
R^2 Police misconduct			.146			.101	
R^2 Legitimacy			.047			.025	
R^2 Social cohesion			.830			.558	
R^2 Informal social control			.524			.616	
R^2 Collective efficacy			.146			.208	
R^2 Crime and disorder			.178			.271	

[a.] Coefficients for Afro-Trinidadians and Indo-Trinidadians differ significantly, $p < .05$.
* $p < .05$ **$p < .01$ ***$p < .001$

Table 15

Individual-Level Model for Neighborhood Affiliation (by Race) Subpopulations

		Residents of Predominantly African Neighborhoods			*Residents of Predominantly Indian Neighborhoods*		
		b	*Std. Error*	*beta*	*b*	*Std. Error*	*beta*
Police Service Quality	*Factor Indicators*	*Probit*					
Q71	Carry out duties	1.000	Referent	0.882	1.000	Referent	.797
Q73	Respectful [a]	0.671***	.059	0.597	0.882***	.046	.707
Q74	Maintain order [a]	0.871***	.034	0.786	1.045***	.046	.830
Q76	Help solve problems [a]	0.927***	.029	0.828	1.058***	.043	.839
Q77	Satisfied with services	1.009***	.025	0.889	1.024***	.031	.814
Police Misconduct	*Factor Indicators*	*Probit*					
Q80	Stop without reason	1.000	Referent	0.644	1.000	Referent	.694
Q81	Use insulting language	1.469***	.102	0.907	1.450***	.056	.985
Q82	Use excessive force	1.455***	.087	0.899	1.276***	.039	.875
Q73	Respectful [a]	-.459***	.114	-.281	-.038	.067	-.026
Social Cohesion	*Factor Indicators*	*Probit*					
Q19	Community share values	1.000	Referent	0.572	1.000	Referent	.723
Q21r	People get along	0.775***	.120	0.444	0.891***	.046	.645
Q22	Close knit neighborhood	1.512***	.172	0.860	1.199***	.068	.866
Informal Social Control	*Factor Indicators*	*Probit*					
Q23	Stop children—graffiti	1.000	Referent	0.865	1.000	Referent	.895
Q24	Stop skipping school & hanging on corner	0.969***	.042	0.838	0.986***	.021	.882
Q25	Stop fight	0.887***	.049	0.768	0.902***	.026	.808
Collective Efficacy	*Factor Indicators*	*Linear*					
	Social cohesion	1.000	Referent	0.856	1.000	Referent	.747
	Informal social control	1.200***	.246	0.678	1.240***	.147	.748
Crime and Disorder	*Factor Indicators*	*Probit*					
Q27	Loitering	1.000	Referent	0.714	1.000	Referent	.801
Q31	Street drug sales	0.830***	.105	0.595	1.067***	.128	.874
Q33	Burglary [a]	1.004	.115	0.717	0.553***	.084	.453

Table 15 continued

		Residents of Predominantly African Neighborhoods			*Residents of Predominantly Indian Neighborhoods*		
		b	*Std. Error*	*beta*	*b*	*Std. Error*	*Beta*
Police Service Quality	*Predictors*	*Linear*					
	Age [a]	0.021***	.002	0.378	0.008***	.002	0.164
	Positive experience [a]	0.071	.065	0.024	0.361***	.075	0.147
	Negative experience	-.691***	.072	-.241	-.569***	.081	-.245
	Afro-Trinidadian	-.042	.094	-.020	-.081	.092	-.032
Police Misconduct	*Predictors*	*Linear*					
	Age	-.013***	.002	-.336	-.009***	.002	-.201
	Negative experience	0.444***	.098	0.224	0.327**	.116	-.245
	Afro-Trinidadian	0.107	.070	0.072	0.232**	.085	-.032
Legitimacy	*Predictors*	*Probit*					
	Police service quality	0.337***	.087	0.323	0.250***	.071	0.206
	Police misconduct	-.029	.119	-.019	-.043	.107	-.030
	Positive experience	-.230	.201	-.073	-.303*	.154	-.101
	Negative experience	-.001	.187	0.000	0.147	.162	0.052
	Male	-.086	.104	-.041	0.071	.114	0.035
Collective Efficacy	*Predictors*	*linear*					
	Police service quality	0.228***	.045	0.451	0.217***	.036	0.331
	Police misconduct [a]	0.048	.071	0.065	-.124**	.044	-.162
	Legitimacy	0.053*	.023	0.109	-.065	.085	-.120
Crime and Disorder	*Predictors*	*linear*					
	Police service quality	0.029	.072	0.038	-.024	.066	-.024
	Police misconduct [a]	0.067	.090	0.062	0.355***	.082	0.307
	Collective efficacy	-.639***	.166	-.434	-.418***	.088	-.277
	Victim	0.569***	.147	0.194	0.513***	.158	.185
Police service quality with crime and disorder (correlation)		-.291***	.031	-.563	-.244***	.025	-.462
n			445			732	
R^2 Police service quality			.230			.114	
R^2 Police misconduct			.186			.083	
R^2 Legitimacy			.117			.053	
R^2 Social cohesion			.732			.559	
R^2 Informal social control			.459			.560	
R^2 Collective efficacy			.212			.184	
R^2 Crime and disorder			.235			.286	

a. Coefficients for residents in predominantly African and predominantly Indian neighborhoods differ significantly, p<.05. * p < .05 **p < .01 ***p < .001

The results of the analyses show that there are only a few meaningful differences across subpopulations in the relationships between individuals' demographic characteristics, experiences with police, views about police, legal institutions, and neighborhood outcomes. What stands out are the varied relationships between perceptions of police misconduct and views about collective efficacy and crime and disorder. Indo-Trinidadians reporting higher levels of police misconduct reported less collective efficacy, but Afro-Trinidadians did not report this same association. Also, residents living in predominantly Indian neighborhoods that reported higher levels of police misconduct and subsequently lower levels of collective effiacy also reported more problems with crime and disorder. Residents of predominantly African neighborhoods did not report this linkage. Within the model for residents living in predominantly African neighborhoods, police misconduct did not have a significant relationship with either collective efficacy or crime and disorder.

Combined, the three types of analyses reveal an interesting story about how race and perhaps more importantly, the racial composition of a person's neighborhood relates to residents' experiences with and views about police services and behavior, collective efficacy, and crime and disorder in Trinidad and Tobago. The results suggest that although residents' views differed slightly by race on a few variables, in many ways, race of the individual does not determine how they view police or the neighborhood, however, residence in a particular neighborhood, based on racial composition (regardless of the individual's race) is associated with some differences in what is most important to

residents' opinions about the quality of police services, collective efficacy, and crime and disorder.

Quality of Police Services

Race and residence in a neighborhood that is predominantly African or predominantly Indian do not directly relate to opinions about the quality of police services, when all of the other potential factors are considered. Additionally, for the subpopulations of Afro-Trinidadians and Indo-Trinidadians, I found that age and experiences with police have similar relationships with views about police services (although the strength of positive experiences with police on views about the quality of police services is stronger among Indo-Trinidadians ($p<.05$)). Afro-Trinidadians and Indo-Trinidadians who are older, those who have a recent positive experience with police, and those who have not recently had a negative experience with police rate police services higher. I found similar results across the subpopulation analysis by neighborhood affiliation. The exception is that residents of predominantly Indian neighborhoods with a recent positive experience with police rated police services more highly, while residents of predominantly African neighborhoods did not report this same association.

In this way, residents from neighborhoods with different racial compositions form their opinions a little differently. This difference cannot be explained by differences across neighborhoods in the proportion of residents experiencing positive police contacts (chi square = .238, df = 1, p = .665). About 12% of residents in predominantly African neighborhoods experience positive contacts with police, relative to about 13% in predominantly Indian neighborhoods (and 14% in mixed neighborhoods). For some

reason other than the prevalence of personal police experiences among neighbors, positive police contacts in predominantly Indian neighborhoods impress individuals and they vary their police service ratings more strongly based on those contacts than residents in predominantly African neighborhoods. Nonetheless, with this one exception, people of different races and living in different neighborhoods appear to form opinions about the quality of police services using similar lenses.

Prevalence of Police Misconduct

Relative to views about the quality of police services, I found more differences by race on individuals' views about police misconduct. This is consistent with prior research that reported variation in perceptions of police misconduct by race (Weitzer & Tuch, 2004). On average, the highest levels of police misconduct were reported by Afro-Trinidadians; they reported seeing significantly more misconduct than Indo-Trinidadians and people of mixed race ($F = 20.231$, df between = 2, df within = 2,907, $p<.0005$). However, I found greater differences across residents living in different neighborhoods classified by their racial composition. Residents of predominantly African neighborhoods reported the highest levels of police misconduct relative to residents of other neighborhoods ($F = 30.208$, df between = 2, df within = 2,907, $p<.0005$). Figures 12 and 13 show the distribution of views about police misconduct across race and racial composition, relative to the overall means.

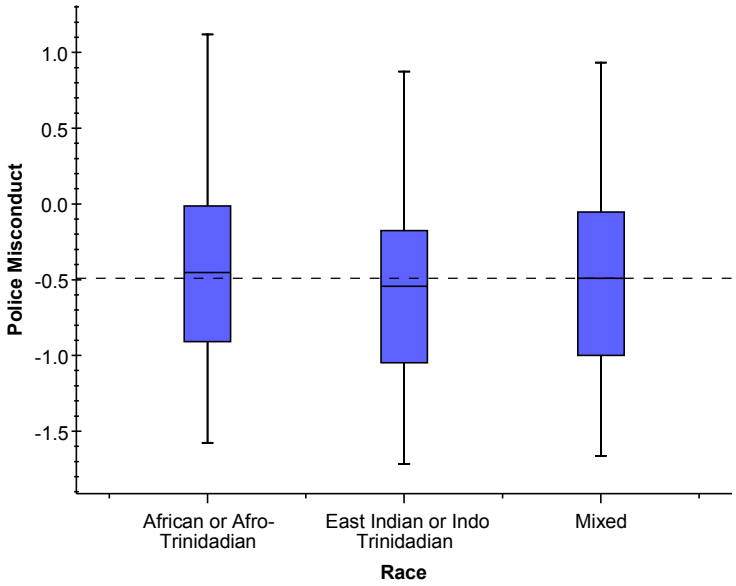

Figure 12. Box plot of residents' police misconduct scores by race, relative to the overall mean.

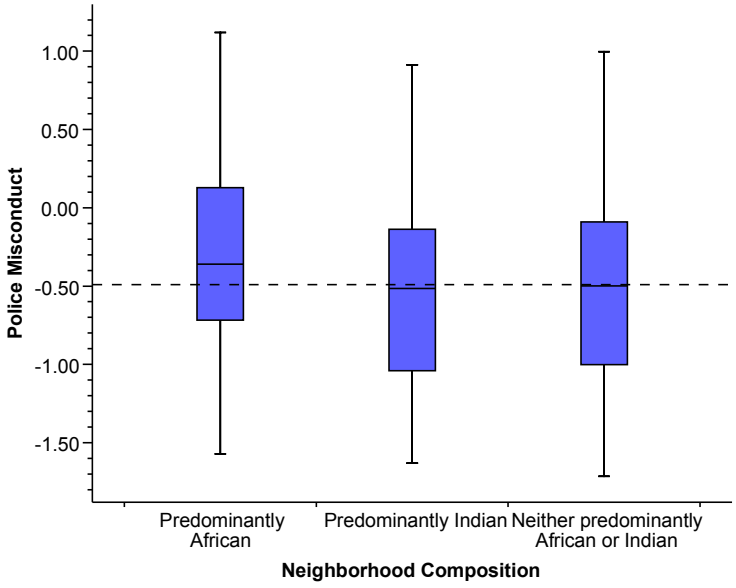

Figure 15. Box plot of residents' police misconduct scores by neighborhood type, relative to the overall mean.

Both a resident's race and his residence in a predominantly African neighborhood are associated with higher reported levels of police misconduct (although these are not the most important factors associated with perceptions of misconduct).[51] However, the subpopulation analyses by race and neighborhood affiliation showed that residents' views about police misconduct are similarly influenced by their youth and having a recent negative experience with police. Both of these characteristics contribute to reports of more police misconduct. Because similar characteristics appear to influence views about police misconduct and yet differences by race and neighborhood affiliation remain, these results suggest a need to objectively examine whether police misconduct disproportionately occurs in predominantly African neighborhoods in Trinidad or against Afro-Trinidadians and to include some additional measures of neighborhood crime, safety, and police experiences in future research to try to explain these differences.[52]

Collective Efficacy

On average, Indo-Trinidadians, Afro-Trinidadians and mixed race Trinidadians do not differ on their views about the collective efficacy in their neighborhoods, and although residents living in different types of neighborhoods (by racial composition) do, on average, statistically differ in their assessments of collective efficacy in the neighborhood, this difference is small. Residents of predominantly Indian neighborhoods reported slightly higher levels. Munasinghe (1997) offers a possible explanation for this

[51] Neighborhood affiliation (Beta = .146 for predominantly African neighborhood) plays a stronger role than race (Beta = .066), but age (Beta = -.291) and having a recent negative police experience (Beta = .178) each have stronger relationships with views about police misconduct.

[52] Weitzer and Tuch (2004) found that in addition to the variables measured in the Trinidad neighborhoods, views about police misconduct in the neighborhood were also associated with neighborhood crime, safety, vicarious experiences with police, media exposure to reports of police misconduct, and views about community policing.

slight difference. He explains that unlike Afro-Trinidadians (whom he labels "culturally naked," because as slaves their ancestors were stripped of their culture), Indo-Trinidadians are "culturally saturated." Indo-Trinidadians have a culturally defined identity that manifests itself in rituals and religion, things that give people a feeling of shared values and "communal strength" (Munasinghe, 1997, p. 81). It may be that when Indo-Trinidadians live in sufficient numbers in close proximity in a neighborhood (creating a predominantly Indian neighborhood), these shared values and rituals that are grounded in culture contribute to the slightly higher levels of collective efficacy found in predominantly Indian neighborhoods and provide some protection against crime and disorder problems.

This cultural explanation provides a possible reason for slight differences in views about collective efficacy across neighborhoods of different racial compositions. I also examined the subpopulation analyses results to look for differences in the factors expected to predict collective efficacy. First, however, I describe the similarities. In all of the subpopulation analyses, as with the overall model, higher assessments about the quality of police services are associated with higher levels of collective efficacy. In all of the models, this relationship is the strongest of the factors related to collective efficacy. This consistency provides strong support for the theory that police can promote collective efficacy by improving police services. Although as I have said previously, with cross-sectional data, I cannot rule out the alternative explanation that neighborhoods with higher collective efficacy may be able to negotiate better quality police services.

The difference revealed in these analyses is in how police misconduct relates to collective efficacy in the models for residents of predominantly African versus predominantly Indian neighborhoods (see table 15). Residents living in predominantly Indian neighborhoods who report higher levels of police misconduct report lower assessments of neighborhood collective efficacy. Yet, within predominantly African neighborhoods, I found no evidence to suggest that views about police misconduct relate to collective efficacy. Furthermore, the coefficient was positive within predominantly African neighborhoods, suggesting that if a weak relationship exists, residents who report higher levels of police misconduct also report higher assessments of collective efficacy. I theorize about a possible reason for these results within the next section on crime and disorder, where I also found a significant difference across subpopulations by neighborhood affiliation for the relationship between police misconduct and crime and disorder.

A similar statistical comparison of the coefficients across race subpopulation models (see table 14) revealed a significant difference in how legitimacy relates to collective efficacy for Afro-Trinidadians versus for Indo-Trinidadians. Although the relationship between legitimacy and collective efficacy is not statistically significant within either model, comparing the coefficients across models shows that legal institution legitimacy has a stronger positive relationship with collective efficacy among Afro-Trinidadians than among Indo-Trinidadians. Examining this relationship within predominantly African neighborhoods, I found in that analysis that the relationship is statistically significant. Within predominantly African neighborhoods, legal institution

legitimacy is associated with higher assessments of neighborhood collective efficacy. This is the only model that provides limited support for LaFree's legitimacy theory. In predominantly African neighborhoods, not only are higher levels of legitimacy associated with higher levels of collective efficacy (Beta = .109, p = .021), but indirectly, through collective efficacy, legal institution legitimacy is associated with fewer crime and disorder problems (Beta = -.047, p = .012). Within the section synthesizing the supplemental analyses about race, I theorize about why LaFree's model may be upheld in these neighborhoods, but does not find evidence to support it elsewhere in my research.

Crime and Disorder

Perceptions of crime and disorder levels in neighborhoods do not significantly differ by race, but as might be expected since crime concentrates in geographic areas (Sherman, Gartin, & Buerger, 1989), the average crime and disorder scores do differ somewhat by neighborhood affiliation (racial composition). The highest levels, on average, are reported by residents of predominantly African neighborhoods, while residents of predominantly Indian neighborhoods report the lowest average levels of crime and disorder. See figure 14, which shows the levels of crime and disorder reported by residents based on their neighborhood affiliation, relative the overall mean.

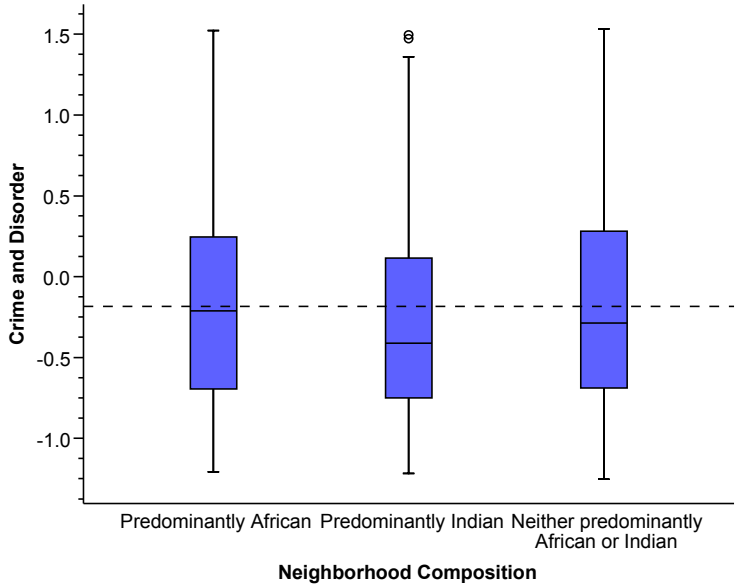

Figure 14. Box plot of residents' perceptions of crime and disorder by neighborhood affiliation relative to the overall mean.

Within the overall sample as well as consistently across residents by race and across residents living within neighborhoods of different racial compositions, individuals' assessments of police service quality do not significantly and directly relate to crime and disorder, but are indirectly associated with lower levels of crime and disorder through a positive relationship with collective efficacy.

Also consistently across all models, higher levels of collective efficacy are associated with lower levels of crime and disorder. Except for Indo-Trinidadians and residents living within predominantly Indian neighborhoods, the relationship between collective efficacy and crime and disorder is the strongest of the measured relationships. For Indo-Trinidadians and for residents living in predominantly Indian neighborhoods,

police misconduct has a stronger relationship with residents' perceptions of the crime and disorder problems than collective efficacy. This does not mean that the relationship between collective efficacy and crime and disorder in these neighborhoods is relatively weaker. I did not find a significant difference across the models for the relationship between collective efficacy and crime and disorder. What I found was that in predominantly Indian neighborhoods misconduct has stronger relationship with crime and disorder than in predominantly African neighborhoods ($p < .05$) and within predominantly Indian neighborhoods, the relationship between misconduct and crime and disorder outweighs the relationship between collective efficacy and crime and disorder (Beta = .307 for misconduct versus Beta = -.277 for collective efficacy).

For residents living within predominantly African neighborhoods—the neighborhoods with the highest (on average) reported levels of misconduct—police misconduct does not significantly relate to collective efficacy nor crime and disorder. However, in the areas where police misconduct is reportedly less prevalent (predominantly Indian neighborhoods), it has a relationship with both collective efficacy and crime and disorder.

Since the Trinidad and Tobago Police Service is headed by Afro-Trinidadians and appears to operate with a majority of African police officers, Indo-Trinidadians and residents of predominantly Indian neighborhoods may feel a greater sense of violation when they observe what they believe to be police misbehavior. Although Africans and residents of predominantly African neighborhoods appear to see higher levels of misconduct, on average, they do not appear to respond in the same way. It may be that

within neighborhoods where police misconduct levels reach a certain relatively high range, residents become accustomed to this behavior and even higher levels of misconduct don't dramatically alter their views as it would among residents in neighborhoods with relatively lower levels of misconduct overall.

Another possible explanation for these findings is that residents living in areas experiencing higher levels of crime and disorder problems may resign themselves to extreme tactics by police, even those that violate civil liberties, especially when those tactics are applied in the neighborhood to people other than the individual respondent. This is consistent with Rosenbaum (1993), who found that people are willing to dispense with some civil liberties to gain a feeling of security. This explanation cannot be tested with the current data, because it would be a tautological argument.[53] However, it is not inconsistent with the results that show that: (1) on average, residents of predominantly African neighborhoods report the highest levels of crime and disorder and the highest levels of police misconduct, yet moderate scores for the quality of police services, (2) within this subpopulation, police misconduct is not associated with residents' assessments of collective efficacy or crime and disorder, and (3) personally having a negative experience with police is associated with a poorer rating for police service quality, higher levels of observed corruption, and indirectly, significantly lower reported levels of collective efficacy and significantly higher levels of crime and disorder.

[53] In chapter 5, I describe a future research effort in which I will analyze Trinidad and Tobago community survey data collected at three points in time over a three year period. During that analysis, this hypothesis can be tested because I can include perceptions of the levels of crime at time one and the ultimate outcome can be perceptions of crime at time three.

Synthesizing the Role of Race

Overall, race has a limited role relative to other factors (e.g., age, prior experiences with police) in influencing residents' views about the police and neighborhoods. The results also show few differences across races and neighborhood affiliation (by racial composition) in the factors related to residents' opinions about police, legal institutions, and neighborhood measures of well-being. The lenses through which residents evaluate police behaviors, how assessments about police service quality relate to assessments about neighborhoods, and the relationship between collective efficacy and crime and disorder are consistent across subpopulations by race and in most cases, by neighborhood affiliation.

- Younger residents and those experiencing a negative contact with police consistently rated police service quality lower.
- Younger residents and those experiencing a negative contact with police consistently reported higher levels of police misbehavior.
- Higher levels of collective efficacy are consistently associated with lower levels of crime and disorder.
- Higher quality police services are consistently associated with higher levels of collective efficacy and with lower levels of crime and disorder—indirectly—through collective efficacy.

Consistency by race and neighborhood affiliation showing a positive relationship between the quality of police services and collective efficacy and a negative association between collective efficacy and crime and disorder problems provides strong support for

the idea that by improving police services, police can promote collective efficacy as an additional lever for reducing crime and disorder.

However, the results did find some race-related differences worth noting. Where a person lives in Trinidad, either in a predominantly African, predominantly Indian, or mixed neighborhood is associated with residents' views about police misconduct and indirectly with legitimacy and neighborhood outcomes, including collective efficacy and crime and disorder. Most notably, in predominantly African neighborhoods, where the average collective efficacy scores are slightly lower (on average) and average assessments of crime and disorder are highest, residents report experiencing relatively more police misconduct. Yet, police misconduct is not subsequently associated with problems for legitimacy, collective efficacy, or crime and disorder for these residents (unlike for residents of predominantly Indian neighborhoods). Within predominantly African neighborhoods, although nowhere else, LaFree's model is upheld. Higher levels of legitimacy are associated with higher levels of collective efficacy and subsequently with fewer crime and disorder problems. Speculating about this result, I offer that it may be that LaFree's model about the role of institutions in instigating value consensus and socialization of neighbors to those values is most applicable in neighborhoods struggling the most to build consensus around conventional values, exert informal social control, and deal with crime and disorder problems. The implication for police working in predominantly African neighborhoods is that in these neighborhoods, which have limited capacity to self-regulate, residents may need legal institutions to help neighbors to negotiate shared norms and generate a sense of ownership and responsibility for the area

in order to improve collective efficacy. This assertion is worthy of further exploration in future research.

On the contrary, on average, residents in predominantly Indian neighborhoods reported slightly lower levels of police misconduct, lower quality police services, higher levels of collective efficacy, and the lowest levels of crime and disorder. Within predominantly Indian neighborhoods, police misconduct has important negative relationships—individuals in these neighborhoods that report more problems with police misconduct are less likely to grant legal institutions' legitimacy, they report lower levels of collective efficacy, and their assessments of crime and disorder are higher. The implications for Trinidad and Tobago police are that police misbehavior in predominantly Indian neighborhoods are particularly consequential—with the potential to dramatically diminish neighborhood well-being. Although residents in predominantly Indian neighborhoods appear to give police the benefit of the doubt—giving them high ratings in the absence of problems—they are less forgiving when incidents of misconduct or negative contacts occur than residents of predominantly African neighborhoods. Within these neighborhoods where the need for police services appears lower (because, on average, they have somewhat higher collective efficacy and lower crime and disorder problems), police behaviors contrary to conventional values may damage the neighborhood—significantly diminishing collective efficacy and increasing crime and disorder.

These results in Trinidad mirror those reported in Miami by Dunham and Alpert (1998), who found that differences by race are secondary to the relationship between a

person's neighborhood affiliation and assessments of police. Dunham and Alpert explained that "residents of various culturally distinct neighborhoods may have different values dictating the appropriateness of police behavior and of the policing styles used in specific situations" (p. 506). They warned that "police strategies and practices incongruent with the basic culture and values of a neighborhood would likely be ineffective and perhaps even counterproductive to maintaining order and controlling crime" (p. 506). This explanation for neighborhood differences in the United States also provides a credible explanation for why aggressive policing strategies are so detrimental in predominantly Indian neighborhoods in Trinidad, but they don't have the same relationships in predominantly African neighborhoods. Residents of these different neighborhoods have different needs for police and apparently different expectations about how police should maintain order and control crime.

Chapter 5
Conclusions, Implications, and Recommendations

Consensus Between the Individual and Neighborhood Models

Results at the individual and neighborhood levels are quite consistent. Figure 15 shows in solid lines the relationships that were statistically significant in both models and consistent in direction (positive or negative). The arrows (short red arrows and two longer blue arrows) depict two consistently significant indirect pathways. In chapter 2, I explained the purpose and importance of examining the relationships at both the individual and neighborhood levels. Opinions about police are formed by individuals and influenced by a number of personal demographic and experiential factors (including personal contacts with police). It is at the individual level that police often encounter the public and may help shape public views of police one person at a time. However, the neighborhood-level results show the larger picture, examining how individual opinions cohere to produce neighborhood consequences (e.g., collective efficacy and crime and disorder). Understanding how the relationships work at both levels helps provide guidance for police during their encounters with individuals and as they allocate resources and plan neighborhood policing strategies. When the results at both levels are consistent, this provides a clearer message for police about how to behave to generate positive outcomes among individuals and across neighborhoods. Of course, because the

conclusions are drawn from correlational analyses, rather than being based on longitudinal data, I cannot establish that police behaviors cause the outcomes, rather, I draw conclusions and propose recommendations consistent with the theorized direction of the effects.

The results support that police behavior in Trinidad and Tobago may have important consequences for legal institution legitimacy and for neighborhood outcomes. Additionally, the results support that police may be able to contribute to and use neighborhood collective efficacy as a lever to reduce crime and disorder problems. The results, however, do not (in general) support that the mechanism through which police accomplish this is legal institution legitimacy.

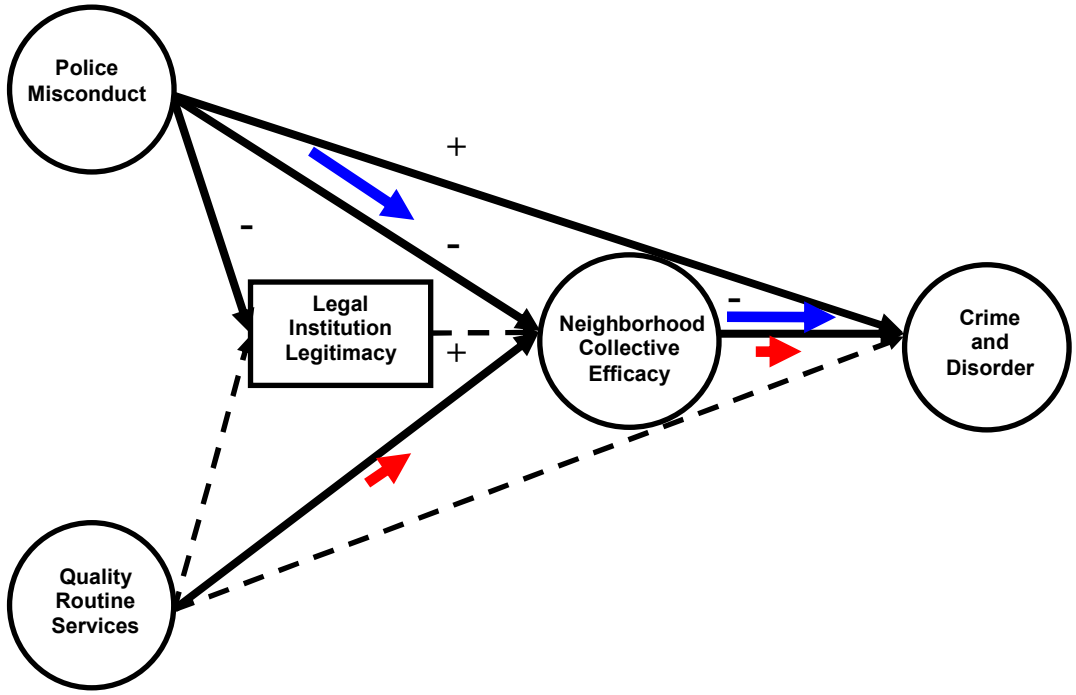

Figure 15. Synthesis of statistically significant relationships at the individual and neighborhood levels.

Overall, the findings report encouraging news for those seeking ways to improve feelings of safety and security in urban neighborhoods. The results support that in Trinidad and Tobago, as in Chicago and other cities where it has been studied, collective efficacy may provide an important defense against crime and disorder. Even though Trinidad struggles against extreme levels of violent crime, and despite Trinidad's infrastructural challenges and lower quality police services, neighborhoods with higher levels of collective efficacy have less crime and disorder. An increase of 1 standard deviation of collective efficacy is associated with a .46 standard deviation decline in crime and disorder—a medium sized association—providing an important empirical testimony to the robustness of this relationship outside of the United States and strong support for theories about collective efficacy.

The next question this raises then is whether despite an environment in Trinidad and Tobago that is characterized by mistrust and corruption,[54] police could somehow promote collective efficacy. I was concerned that unprofessionalism and corruption might prevail and diminish collective efficacy in neighborhoods. Additionally, with service delivery at very low standards, I had wondered whether improvements to services, even if only slight, could promote collective efficacy and improve other neighborhood outcomes.

The results corroborate the hypotheses that based on the nature of police behaviors as perceived by residents,[55] Trinidad and Tobago police have the capacity to strengthen or diminish collective efficacy. Across the individual and neighborhood

[54] As reported by Transparency International (2007a) and is commonly described in Trinidad newspapers.
[55] In this research, measures of police misbehavior are reported by residents who serve as informants about misconduct and service delivery in their neighborhood. Consequently, rather than a prescribed, objective set of criteria, the measures reflect what residents saw and how residents interpretted the behavior, given their individual and neighborhood perspectives.

models, higher levels of police misconduct are associated with a cascade of negative consequences, including low legal institution legitimacy, lower levels of collective efficacy, and higher levels of crime and disorder. Additionally, indirectly (following the long blue arrows), where residents report seeing more police misconduct, collective efficacy is lower and residents report more crime and disorder problems. Consistently across the full individual-level and neighborhood-level models, the relationship between police misconduct and crime and disorder problems is stronger than the link between quality police services and crime and disorder, demanding important consideration be given to professionalizing the police. Skogan (2006) showed that negative experiences with police carry a stronger weight than positive experiences. This may help to explain why bad policing outweighs good policing in their relationships with crime and disorder problems.

However, the relationship between higher quality police services and collective efficacy is one of the most consistent relationships studied. In areas and across individuals reporting higher quality services, collective efficacy is stronger, and through collective efficacy (following the short red arrows) higher quality services are associated with fewer crime and disorder problems. This association held for the full individual model, the neighborhood model, and for the subpopulations of Afro-Trinidadians, Indo-Trinidadians, residents of predominantly African neighborhoods, residents of predominantly Indian neighborhoods, and residents of mixed neighborhoods. Despite what I described in chapter 1 as relatively lower quality of services in Trinidad and Tobago than in the United States (or at least lower levels of satisfaction with services), by

all accounts, neighborhoods with slightly better quality services, even if still relatively poor, should experience benefits.

These results support that adjustments in police policies and practices in Trinidad and Tobago that are designed to improve services and purge corruption and misconduct should greatly improve collective efficacy and crime and disorder in neighborhoods. This conclusion provides impetus for the Ministry of National Security in Trinidad and Tobago to invest in reforms designed to enhance police services, increase accountability and professionalism, and to improve public perceptions of police. The results support that the Model Stations initiative, which assumes these goals, if successful, may be an investment that provides valuable returns.

Missing from these analyses, however, is a measure of community organizations and their contribution to promoting collective efficacy and reducing crime and disorder problems. Churches, schools, civic associations, business groups, and other community organizations may also play an important role in promoting collective efficacy and addressing crime and disorder problems. This effect could rival the relationships between police services or misconduct and outcomes such as collective efficacy and crime and disorder. Future research addressing the role of police in promoting collective efficacy as a lever to reduce crime and disorder problems should incorporate this and additional alterative sources of collective efficacy. In the current models, adding a measure of individuals' memberships in neighborhood organizations that try to deal with neighborhood problems into the individual-level model and adding a measure of the percentage of residents who are members at the neighborhood level, support the

continued important association between quality police services and collective efficacy and between police misconduct and crime and disorder. Membership, as expected, did have a positive relationship with collective efficacy, but the association was not even half as strong as the relationship between quality police services and collective efficacy (At the individual level: n = 2,614, CFI = .975, TLI = .976, RMSEA = .040, WRMR = 1.649. At the neighborhood level: n = 73, CFI = 1.00, TLI = 1.00, RMSEA = .000 (probability RMSEA <= .05 = .696), SRMR = .031). This affirms the important contribution that police can make to promoting neighborhood well-being by striving to deliver quality services.

Yet, despite evidence that supports that police can influence collective efficacy and apply this as a lever to reduce crime and disorder problems, a key component of my inquiry theorized that these relationships would operate a bit differently than they actually do. Drawing on a model of institutional legitimacy by LaFree (1998), I hypothesized that the nature of police behaviors would influence whether residents recognize the authority of legal institutions as legitimate—that by minimizing levels of misconduct and improving service quality, police could generate respect for legal institutions—reinforce legal norms, and help neighbors to build consensus on the value and application of those norms in their neighborhoods. Subsequently, neighbors would socialize others to the norms in the form of collective efficacy. My concern at the outset of the study had been that because of Trinidad and Tobago Police Service's reputation of corruption and misconduct, police may not be able to fulfill this role and contribute positively to legal institution legitimacy. In this regard, the results are consistent with the

claim that police can be a positive influence on legitimacy, but they also support that more misconduct is associated with less legitimacy. More importantly, the results of the analysis do not support the theorized link between legitimacy and collective efficacy. The findings showed that what police in Trinidad and Tobago do is related to collective efficacy, although this association with collective efficacy appears to be direct. It is not a consequence of how their behaviors shape residents' views about legal institution legitimacy. Legitimacy, in these analyses, had no substantive relationship with collective efficacy. However, since the measure of legitimacy in the study was relatively weak, this result does not offer a conclusive understanding about legitimacy as a mechanism for police to enhance collective efficacy and reduce crime. Near the end of this chapter, I describe a replication study that will improve the measure of legitimacy and should better examine the merits of LaFree's legitimacy theory.

Important Nuances in these Relationships

Examining these relationships from a variety of perspectives, careful study of some of the covariates in the model, and investigating some significant randomly varying slopes revealed some important nuances in how the hypothesized relationships operate. At the individual level, age, race, and personal experiences with police provided a lens through which views about police behaviors were shaped. Also, being a victim resulted in elevated views of crime and disorder. Similarly, at the neighborhood level, residents' experiences with police, racial composition of the neighborhood, residential stability, percentage of victims in the neighborhood, and population density were related to views about police behaviors, collective efficacy, and crime and disorder. Generally, these

covariates operated much as expected and as they have behaved in prior studies, with younger people having poorer views of police, negative personal experiences souring impressions of police, and residential stability associated with stronger collective efficacy. However, findings contrary to expectations led me to investigate and discover some important nuances occurring with these relationships.

Race and Neighborhood Racial Composition and Misconduct

For example, a detailed analysis of the role of race and racial composition of a person's neighborhood revealed that where a person lives in Trinidad, either in a predominantly African, predominantly Indian, or mixed neighborhood does have important implications for residents' views of police and their neighborhoods. Neighborhood affiliation plays a stronger role in how those views are formed than an individual's race. The greatest differences appear to be that on average, residents of predominantly African neighborhoods reported higher levels of police misconduct, slightly lower levels of collective efficacy, and the highest levels of crime and disorder. Within these neighborhoods, police misconduct, though apparently more prevalent, has a less important relationship to neighborhood outcomes such as collective efficacy and crime and disorder than in other neighborhoods. Failing to find an association between police misconduct and neighborhood outcomes, I interpreted this result to suggest that in predominantly African neighborhoods that are struggling with higher levels of problems and little capacity to deal with them may be resigned to extreme tactics by police, even those that violate civil liberties, especially when those tactics are applied in the neighborhood to people other than the individual respondent. This is consistent with

Rosenbaum (1993), who found that people will dispense with some civil liberties to gain a feeling of security.

Legitimacy

Also within these predominantly African neighborhoods, although nowhere else, LaFree's model is upheld. Higher levels of legitimacy are associated with higher levels of collective efficacy and subsequently fewer problems with crime and disorder. It may be that LaFree's theory about the role of institutions in instigating value consensus and socialization of neighbors to those values is most applicable in neighborhoods struggling the most to build consensus around conventional values, exert informal social control, and deal with crime and disorder problems. Legal institution legitimacy may have a greater impact in areas where residents are desperate for intervention because they cannot successfully handle the problems on their own. This is a potentially illuminating finding that may not have been identified had the study not been conducted in Trinidad, where some neighborhoods are highly disadvantaged (even compared to neighborhoods in Chicago), crime and violence is rampant, and problems with police misbehavior are reportedly profuse—possibly breeding the extreme circumstances under which legitimacy is the mechanism needed to generate collective efficacy.

Additionally, legitimacy may be easier to engender where police are needed most. Having more victims in the neighborhood resulted in higher proportions of residents reporting legal institution legitimacy. This finding may suggest that in neighborhoods where higher proportions of people find a personal need for police services—such as reporting a crime—legal institutions are more likely to gain legitimacy. These tentative

assertions about the potential differential development of and role for legitimacy based on context is worthy of further exploration in future research. Does a greater need for police services boost legitimacy of legal institutions? Within areas with little to no neighborhood capacity to deal with problems, can legal institution legitimacy help to build the cohesion and value consensus necessary to generate collective efficacy?

One of the covariate coefficients in the model raised another question about legitimacy. Investigating the unanticipated negative relationship between the proportion of affluent residents and legitimacy led me to speculate that living in proximity to wealth might generate perceptions of unfairness about the distribution of wealth. Theoretically, these generalized feelings of unfairness about residents' social status in the neighborhood may subsequently reduce the legitimacy granted to legal institutions by poor or average income residents in the neighborhood. An empirical test of this hypothesis would expand existing knowledge about the neighborhood-level predicates of procedural justice and their influence on legitimacy.

Collective Efficacy and Population Density

I also found nuances pertaining to collective efficacy. An unexpected positive coefficient representing the relationship between population density and collective efficacy (higher density associated with higher collective efficacy) led me to carefully examine the density of the Trinidad neighborhoods relative to the neighborhoods in Chicago. I realized that the Trinidad sample represented much less dense areas than had been studied in Chicago and so I conducted a sub-analysis of the denser Trinidad neighborhoods. Within the denser Trinidad neighborhoods, the relationship between

population density and collective efficacy was negative, as it was in the Chicago studies. From this analysis, I theorized that at low population densities (e.g., as in more rural areas), neighbors would experience relative isolation and so would have less need of a working trust with neighbors. Under these circumstances, I would expect lower levels of collective efficacy. I speculated that up to a critical tipping point, increasing population densities would be expected to generate more opportunities for interaction and consensus building and a greater need to develop a working trust among neighbors, thus producing higher levels of collective efficacy. However, beyond the critical point, population density would be expected to diminish collective efficacy, perhaps due to increasing levels of diversity, fast-paced lifestyles, or higher levels of social isolation that can occur in congested urban areas. An empirical test of this theory would make an important contribution to what we know about how collective efficacy operates.

Contacts with Police

On a more practical level, the results also showed that neighborhoods with differing amounts of police contact differed in their views of misconduct and quality services. Neighborhoods with a higher percentage of residents with a recent negative police experience reported higher levels of police misconduct. In neighborhoods where people frequently encounter police, the nature of personal encounters with police (positive or negative) play an important role in how police services are assessed by residents. Consistent with prior research by Skogan (2006) and Reisig and Parks (2000), the results suggest that negative experiences have a stronger relationship with assessments about police services than positive experiences. Residents may simply

remember negative experiences better. Baumeister, Bratslavski, Finkenauer, and Vohs (2001) conclude, based on a review of prior research, that people give more weight to negative experiences and that relative to negative experiences, positive experiences have little effect on attitudes and behaviors. The results in Trinidad support their claims.

Examining Negative Experiences with Police. Since having a negative experience with police was an important predictor of opinions about police services and misconduct, I examined residents' explanations for why they rated the encounter negatively.[56] More than half (53%) of the negative contacts happened when residents called the police for assistance, versus about 26% when residents contacted police to report being assaulted, burglarized, or robbed, and 21% of experiences that happened when being stopped by police.

Among the vast majority, citizen-initiated contacts—those who had contacted police for assistance or to report crimes—the negative rating stemmed from failure of police to respond or to take action or due to slow response times (some residents who mentioned specific timeframes claimed that a response took two, four, or even seven hours). More than half (55%) of citizen-initiated contacts with police resulted in negative encounters. Thus, dramatic improvements to opinions about police and legitimacy could be made if Trinidad and Tobago police respond promptly to requests for assistance and reports of crime, and then take appropriate action. Additionally, prior research by Sunshine and Tyler (2003) and Tyler and Huo (2002) suggest that police share information with victims about the progress of their cases. Providing the vehicles,

[56] Some people had multiple negative experiences with police, and I reviewed explanations for all negative experiences.

officers, protocols, and training needed to respond to calls and take appropriate action and follow-up, as well as instituting supervisory mechanisms to ensure accountability to these expectations would provide a relatively straightforward solution.

Among residents stopped by police, 36% reported having a negative experience. They complained of excessive force, inappropriate searches of people and vehicles, disrespectful treatment, and officers using foul or insulting language. Curbing these possible violations of procedural justice should also improve opinions about police services, misconduct, and legitimacy. Prior research says as much, that to increase perceptions of legitimacy among individuals, police must focus on policing fairly—applying procedural justice both in their implementation of routine policies and procedures and during encounters with members of the public. Prior research promotes explaining the reason(s) for the stops and detailing citizens' rights during encounters to improve citizens' satisfaction with officer-initiated encounters (Skogan, 2006).

Where these findings in Trinidad differ from prior research is that in the United States, officer-initiated contacts produce more negative encounters than citizen-initiated contacts. In Chicago, Skogan (2006) reported that 42% of residents stopped by police reported having a negative experience, while 22% of residents who initiated police encounters had a negative experience. This difference may provide impetus for future empirical inquiries about how the context of the encounter or style of policing may relate to expectations during and assessments about the encounter. Recall that Kubrin and Weitzer (2003) explained that policing in developed nations is mobile, while in developing countries, it tends to be fairly stationary, requiring residents to seek out police

services at a station. These statistics about satisfaction during officer-initiated versus citizen-initiated contacts suggest that in Chicago, where police are more mobile and officer-initiated contacts may be more common, they produce a relatively higher proportion of negative consequences. In the relatively less mobile style of policing in Trinidad and Tobago, residents report a higher proportion of negative consequences for those who actively seek help from the police. Interesting questions could be asked about whether needs (e.g., due to levels of violence or social disorganization) or generalized expectations for police services in an area may help explain residents' tendencies to favorably or unfavorably assess police services.

Given the strength of the influence of negative police experiences on opinions about police, I plotted the variations across neighborhoods to assess whether neighborhoods with the highest levels of negative police experiences cluster within any one police district (see figure 16). However, the critically high neighborhoods are spread out across several districts, suggesting that the procedural justice problems mentioned by those who had encountered police is not a product of the differences in policing strategies or styles across police jurisdictions within Trinidad, but rather may be a systemic challenge for Trinidad and Tobago Police to address.

A similar examination of the communities with the highest reported levels of police misconduct also does not suggest that misconduct is particularly prolific within or is limited to a particular police district. Figure 17 shows the relatively low, medium, and high levels of police misconduct, classifying neighborhoods into these categories based on the natural breaks (Jenks) in the data.

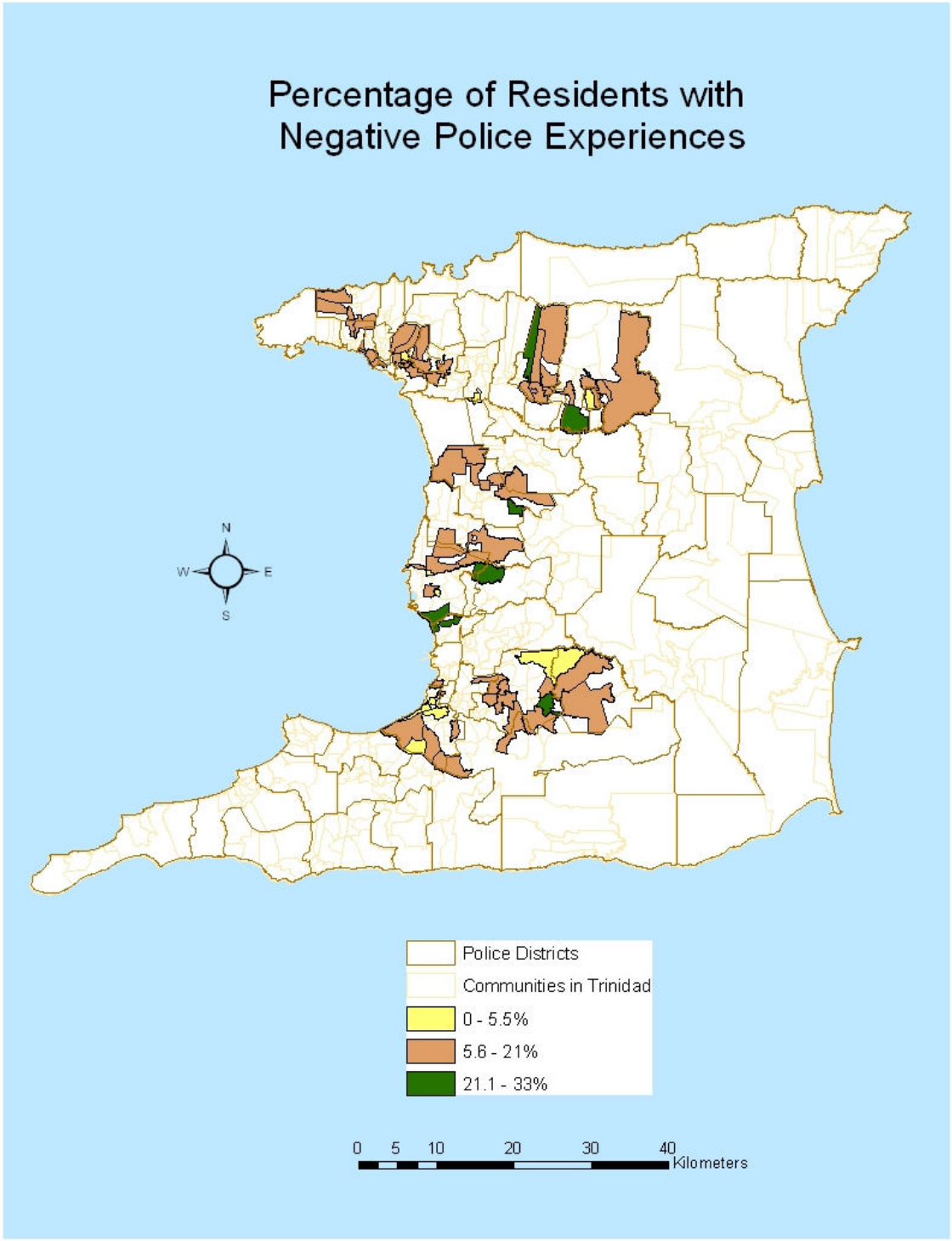

Figure 16. Percentage of neighborhood residents with negative police experiences.

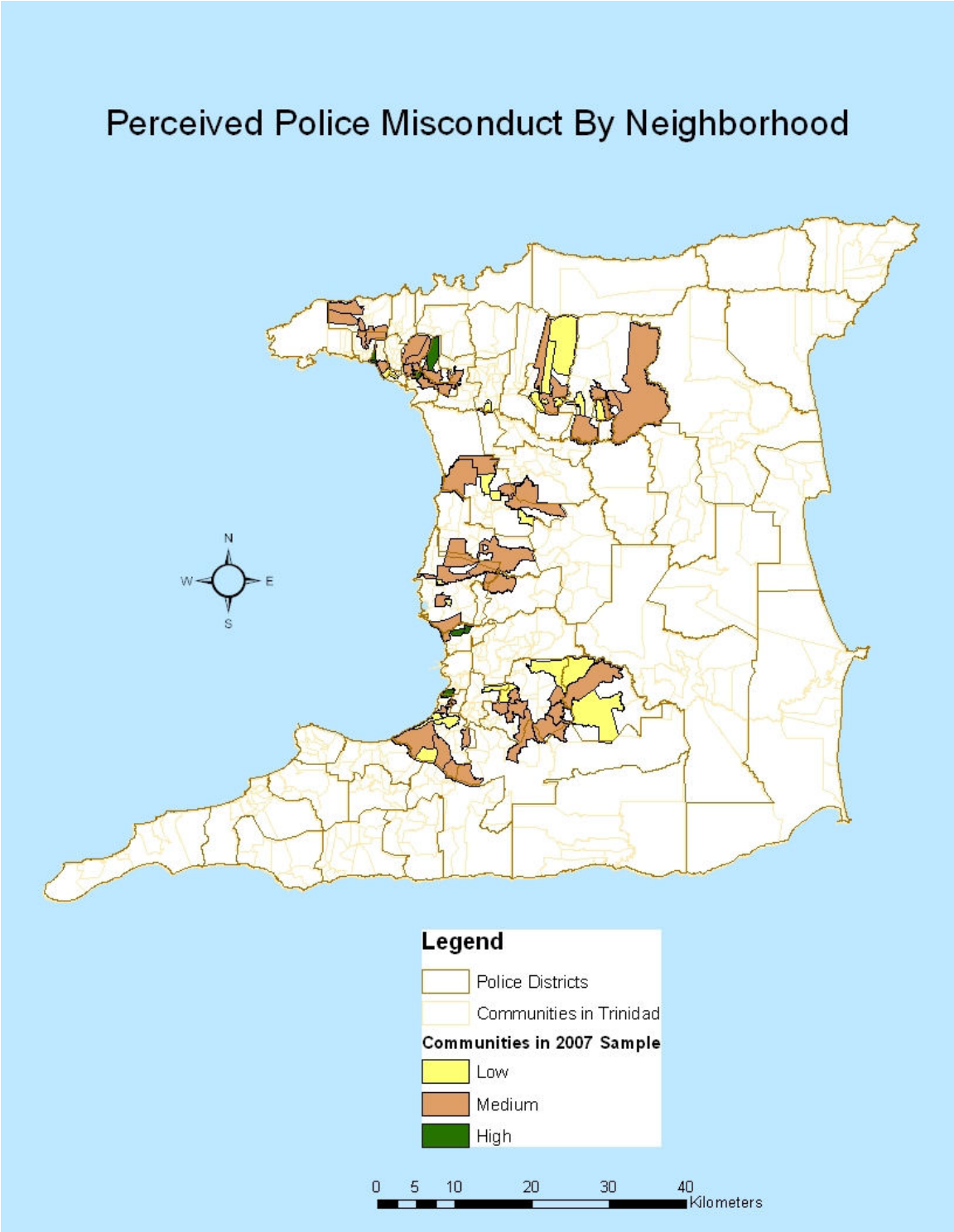

Figure 17. Perceived misconduct levels by neighborhood.

The Practical Application in Trinidad and Tobago

The practical message for the Trinidad and Tobago police is that their behaviors are associated with important consequences for neighborhoods. Neighborhoods reporting higher quality police services also report higher levels of collective efficacy and less crime and disorder. Conversely, when neighborhoods experience (or perceive that they experience) higher levels of police misconduct, this is associated with lower legitimacy for legal institutions, less collective efficacy, and more crime and disorder in the neighborhood.

Referring to the indicators comprising the concepts of quality services and police misconduct, the implications for Trinidad and Tobago Police Service are to focus their polices, hiring, training, and accountability measures toward building competence of officers, improving response times, and ensuring respectful behavior during interactions with the public, when they stop people or respond to requests for assistance and reports of crime. They should aim to solve citizens' problems and address citizens' priorities as well as their own, and make order maintenance, as well as crime control, a priority. They should make satisfying the public a priority. Many of these goals are included in the ongoing Model Stations initiative, and so future studies investigating outcomes in the study neighborhoods may well find improvement in legitimacy, collective efficacy, and crime and disorder problems.

A strategy that I did not examine in Trinidad, but that may complement ongoing reform efforts and may help police to further promote collective efficacy is community policing. Scott (2002) questioned whether police may improve collective efficacy and

social capital in neighborhoods through community policing, by encouraging residents' efforts to collectively take action, engaging residents in problem solving with the police, and increasing citizens' access to police. His findings in Indianapolis, Indiana show that when residents had greater access to police at all levels—patrol officers, neighborhood-based officers, middle management, and upper management—their neighborhoods were characterized by higher levels of trust, cohesion, shared norms, and the capacity to act to solve problems (i.e., collective efficacy). Neighborhoods with greater access to police also had more police-citizen activities and higher levels of resident involvement in problem solving. In Weitzer and Tuch's (2004) national survey in the United States, they found that residents of neighborhoods where community policing was implemented reported fewer problems with police misconduct in the neighborhood and in the city overall.

Additional research is needed to determine whether improving public access to the police and implementing community policing in Trinidad would have similar benefits. However, based on these positive results in prior research, I offer several specific recommendations for consideration by the Trinidad and Tobago Police Service. In Trinidad, increasing access for the public to police may entail increasing police visibility, increasing the amount of interaction, and improving communication. Some strategies that may promote these goals and efforts to promote community policing include:

- Forming a strong working relationship with the Citizen Security Programme, a community-based organization (already operating in many

of the communities in the sample) that promotes crime reduction through community-led initiatives

- Sending line-level and mid-level officers to attend and participate in community meetings and events
- Organizing community events
- Instituting foot and bike patrols in urban areas
- Permanently assigning responsibility to patrol officers and supervisors for specific geographic areas, paying particular attention to the cultural characteristics of the area—assigning officers with similar cultural backgrounds to work in the area
- Being responsive to citizens' requests for assistance, including returning phone calls, taking incident reports, establishing protocols for officers to apply during a variety of circumstances, and providing sufficient vehicles and drivers to ensure officers respond to crime scenes
- Providing information to citizen victims about the status of police action on their crime or other reported problems.
- Hosting community meetings onsite at the police station
- Annually holding an open house for neighborhood residents to come to the police station on a certain date to meet officers, ask questions, and socialize, similar to how many U.S. volunteer fire stations promote a sense of community and support for the organization.

Additionally, the findings suggest a need to directly address problems with police misbehavior. I encourage Trinidad and Tobago Police Service to implement strategies consistent with Skogan and Frydl's (2004) recommendations. Despite being advanced as recommendations to promote police legitimacy, their recommendations speak directly to the issues raised in my measure of police misconduct in Trinidad and Tobago. Based on their extensive review of empirical evidence, Skogan and Frydl emphasize (1) lawful conduct by the police—adhering to laws and regulations designed to direct their behavior; (2) applying the minimal use of force and personal intrusion required to resolve any particular situation; (3) eliminating opportunities for and incidents of police corruption; (4) upholding internal standards of conduct; and (5) treating civilians with respect, neutrality, and dignity during police-citizen interactions.

One approach to institutionalizing these behaviors is professionalizing the police. Achieving these results requires focusing on the process of policing. Some suggestions for doing so include:

- Creating and enforcing mechanisms of accountability, such as written policies addressing use of force and standardized procedures for handling incidents and arrests
- Maintaining written reports of incidents, arrests, and use of force
- Instituting supervisory review of patrol officers' decisions and behavior
- Adopting early identification systems that warn against a pattern of misbehavior by individual officers or groups of officers working in specific geographic areas

- Implementing a Compstat approach for management
- Initiating external review mechanisms such as reports to the community or citizen oversight boards.

In addition to addressing officers' behavior during interactions with the public, Weitzer and Tuch's (2004) research showed an important connection between perceptions of police misconduct and exposure to reports in the media about police misconduct. Because media reports about police misconduct seem somewhat commonplace in Trinidad and Tobago, the Trinidad and Tobago Police Service may also wish to focus on promoting positive working relationships with media outlets—sharing timely information about officer shootings, crime problems, police programs, and other items that left unsaid may lead to misrepresentations in the media or misunderstandings in the public.

Implications for Theory

This research makes a number of contributions to theory by providing answers to unanswered questions, reaffirming results of prior research, and raising intriguing new questions that have implications for policy and practice. First and foremost, this dissertation provides evidence that collective efficacy operates much the same in a developing nation as it has within developed countries, such as the United States and Britain. In Trinidad, violence and social and economic disadvantage may pose some challenges to generating collective efficacy, however, the relationship between collective efficacy and crime and disorder is strong. Despite an environment characterized by mistrust among neighbors (according to the World Values Survey. See footnote 1),

corruption in government (Transparency International, 2007a), and deficient services (according to residents who participated in the community survey used for this research), neighborhoods with higher levels of collective efficacy had significantly lower levels of crime and disorder problems. This evidence provides confirmation of the robustness of the inverse relationship between collective efficacy and crime and disorder and provides a glimmer of hope for neighborhoods struggling against many problems.

Another important contribution is the realization that police can make a difference in the quality of neighborhood life, directly as well as indirectly. This research suggests that police have the capacity to contribute to neighborhood collective efficacy and that their efforts in that regard can be a lever to reduce crime and disorder problems. The results showed that slight improvements in the quality of police services (even if they are relatively low overall) are associated with higher collective efficacy. This association holds even when examined across different types of neighborhoods. Scholars have theorized that political institutions can promote collective efficacy. This dissertation empirically documents a pathway through which police can do so. By improving services and minimizing misconduct, police may steer neighborhoods toward consensus over legal norms and encourage residents to build a sense of community and self-regulate to address local problems. Given the strong relationship between collective efficacy and crime and disorder problems, identifying a new mechanism through which collective efficacy is promoted is a discovery of important consequence.

The results also provide an important first step towards examining the theoretical relationship between legal institution legitimacy, collective efficacy, and crime. This

dissertation outlines the issues and how the relationships may play out in reality. However, the results do not provide definitive conclusions about whether legal institution legitimacy can foster collective efficacy, thereby reducing crime. Yet, the research does raise important questions that can guide future inquiries. Some questions about the role of legitimacy and how it is generated that this research raises are:

1) Does legal institution legitimacy (when measured well) have an important influence on collective efficacy and ultimately on crime and disorder?
2) Does legal institution legitimacy play an important role in creating consensus about legal norms and building collective efficacy in neighborhoods that struggle against elevated levels of crime and disorder problems and with relatively low levels of cohesion and informal social control?
3) When residents live in close proximity to one another, does a pocket of wealth in an otherwise average or low-income area generate feelings of unfairness that subsequently influence residents' perceptions of institutional legitimacy?

Other theoretical and practical questions raised by this research include:

1) Does collective efficacy develop differently in neighborhoods of different population densities, such that below a certain tipping point, increasing density strengthens collective efficacy, but above that point, density diminishes collective efficacy?

2) When residents live in neighborhoods with relatively high levels of crime and disorder and little capacity to deal with it due to low levels of collective efficacy, are they more willing to dispense with civil liberties and permit (or even welcome) aggressive or illegal police tactics in the hopes of some relief from the crime problems?

3) When residents' access to police is restricted, does this stimulate fear, thus reducing collective efficacy because residents withdraw and are unwilling to exert informal social control?

Finally, given the cross-sectional nature of the data, additional research is needed to answer the following questions:

1) Are the relationships between police misbehavior and quality services on collective efficacy and crime and disorder upheld when longitudinal data can ensure the correct temporal order of the causal effects?

2) Does delivering higher quality police services raise expectations among residents that police will address disorder problems?

3) Does the quality of police services influence levels of disorder in a neighborhood, or is the causal direction reversed such that views about the quality of police services are affected by the levels of disorder?

Researchers studying these questions should also aim to improve upon the challenges raised by common method bias. For example, observing police in action would provide an independent assessment of police misconduct and the quality of services, reducing concerns raised when the same method is used to measure both the

independent and dependent variables. Also, using officially recorded crime statistics or a separate victimization survey to measure crime and disorder would reduce concerns about consistency effects, illusory correlations, and implicit theories (Podsakoff et al., 2003).

Future Research

My future research plans include two studies that aim to answer several of the questions listed above. I will focus first on whether by improving the reliability and robustness of the measure for legitimacy, it becomes an important force driving individuals' perceptions of collective efficacy and crime and disorder, as well as influencing neighborhood level outcomes. The research questions and covariates will remain the same. I will run the replication using interviews of residents in many of the same neighborhoods, but in 2008, one year after the baseline data collection. In this 2008 version of the in-person interview, the project added several questions to the survey about legitimacy that can be combined with factor analysis to create a more reliable and comprehensive measure of legitimacy. In addition to asking residents whether they should accept the decisions of legal authorities, the 2008 survey also asked residents about their level of agreement with the following statements:

1) If a police officer tells a person to stop doing something, the person should stop even if the person feels that what he is doing is legal.
2) I feel that I should accept the decisions made by police, even if I do not understand the reasons for their decisions.
3) I respect the way police use their authority in my community.

4) The police can be trusted to make decisions that are right for the people in my community.

5) The police care about the crime-related concerns and problems of people in this community.

These analyses will continue to be constrained because they are cross-sectional. However, in the subsequent waves of the survey, individual residents were not re-contacted; rather, new random samples were drawn from each neighborhood during each wave. So the relationships at the individual-level are limited to one wave of data per analysis. However, I will also build a model at the neighborhood level that corrects the problems with temporal order. I can do this using three waves of survey data in Trinidad neighborhoods in 2007, 2008, and 2009. If the replication study using the 2008 data suggests that the improved measure of legitimacy does relate to collective efficacy and crime and disorder, I will generate measures for the covariates and perceptions of police behaviors from the 2007 sample, the legitimacy measure will come from 2008 data, and I will use 2009 data for the collective efficacy and crime and disorder measures. If LaFree's theory about legitimacy is not upheld using the 2008 cross-sectional analysis, I will exclude legitimacy from the time-series analysis and the 2008 data will contribute the collective efficacy measure and the 2009 data will contribute the crime and disorder measure. These data present many opportunities to examine how Trinidad and Tobago police influence neighborhood outcomes and should add much to what has already been discovered in this dissertation and to what we have learned using similar studies in the United States and other developed nations.

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Curriculum Vitae

Tammy Rinehart Kochel is an American citizen and was born in York, Pennsylvania on September 20, 1971. She received her Bachelor of Science degree in Sociology, Magna Cum Laude in 1993 from James Madison University and her Master of Arts degree in 1994 from Southern Illinois University. Prior to working towards her doctoral degree at George Mason University, she had a career as a grant advisor and policy analyst with the Office of Community Oriented Policing Service at the United States Department of Justice during its first four years of operation. Subsequently, she served as a project director for a consulting firm and managed a number of research and training projects on various aspects of policing, emergency management planning, and child support enforcement. Additional professional experience includes teaching undergraduate administration of justice courses at George Mason University; consulting for the RAND Corporation; serving as a peer reviewer for the United States Departments of Education, Health and Human Services, and Justice; working as a correctional officer for Rockingham County (VA) Sheriff's Office; and working as a police cadet at James Madison University. Her research pursuits address neighborhood ecology and well-being, research methods and statistics, and policing, particularly community policing and other reforms, organizational factors, issues of legitimacy, discretion and decision-making, and performance measurement issues. Honors received while completing her doctoral degree at George Mason University include receipt of the Provost's High Potential Graduate Research Assistant Award and a College of Humanities and Social Sciences Dissertation Fellowship Award. Upon completing her doctoral degree requirements, she has accepted a tenure-track assistant professor position at Southern Illinois University Carbondale.