Predicting Procedural Justice Behavior:
Examining Personality and Parental Discipline in New Officers

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DISSERTATION
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SUMMARY

This dissertation sought to identify characteristics of police officers associated with their procedurally just behaviors when interacting with community members. Officers' personality traits and parental discipline styles experienced as a child were hypothesized to influence the level of procedural justice exhibited by officers during traffic stops, accidents, and crime reports. This dissertation fills a gap in the policing literature as past research has not used procedurally just behaviors as outcomes to evaluate police performance and the factors that predict such behaviors are not being systematically measured.

Data from 172 Chicago police officers who had a total of 458 interactions with community members were analyzed to test hypotheses about the impact of background and personality characteristics on officers' procedurally just behaviors. The study identified several factors that affected procedural justice behaviors during police-community interactions, including the type of encounter, the community member's age, and whether or not the officer was in a relationship. As for the main hypotheses, the personality trait of Neuroticism was negatively related to procedural justice use, as predicted. However, Conscientiousness was also negatively related to procedural justice use, contrary to expectations. Personality traits unrelated to procedural justice included Extraversion, Agreeableness, and Openness.

The findings about disciplinary practices both supported and challenged the hypotheses: As hypothesized, the parental discipline styles of deprivation of privileges was positively related to procedural justice use, but unexpectedly, the use of corporal punishment was also positively related to procedural justice use. The parental disciplinary styles psychological control and penalty tasks and restorative behaviors were unrelated to procedural justice. Lastly, the officers' level of Neuroticism mediated the relationship between corporal punishment and procedural justice. As such, officers who experienced corporal punishment are likely to have a more neurotic personality, which in turn was associated with lower procedural justice.

Implications of the results are discussed. A central recommendation is that law enforcement agencies should begin to evaluate officers on the quality of their interactions with the public as opposed to the quantity of their daily work. Furthermore, more research is needed to identify characteristics associated with procedurally just behaviors so that hiring and screening procedures can be refined.
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I. INTRODUCTION

American policing has a long history of strained relations with the communities they serve. From the early establishment of police forces in the United States to contemporary times, the police have been society’s primary instrument for controlling crime and social disorder. This authoritative power given to police has exacerbated the deep divide between communities and their police departments. There have been many attempts at reforming police organizations and officers to improve building partnerships with community members (Walker, 1977). Most recently, community oriented policing has developed as a strong model to address this long history of troubled relations (Rosenbaum, 1994, 1998; Skogan & Frydl, 2004). Community policing is a paradigm shift in the management of police organizations to create organizational transformation, develop problem solving techniques, and improve community partnerships. However, police reformers have struggled to see it adequately implemented (Mastrofski, 2006; Mastrofski, Willis, & Kochel, 2007), partly because of the difficulty of measuring such a vague and broad policing style (Rosenbaum, 2004). One solution has been to focus on the problematic behaviors that occur during police-community interactions. Research on procedural justice and police legitimacy has proposed shifting attention to a specific set of behaviors that officers should exhibit to improve community members’ evaluations of an encounter (Decker, 1981; Hawdon, 2008; Hinds, & Murphy, 2007; Tyler, 1990, 2004).

This dissertation focuses on this latest attempt at policing reform, specifically, on the efforts to improve the quality of police-citizen interactions by identifying officer characteristics and behaviors that contribute to such outcomes. This begs the question of what types of individuals should be hired if the goal is to employ officers who interact with members of the community in a respectful and fair manner. With new predictive data, perhaps police organizations can be more effective at recruiting and selecting the “right” individuals for the job, who can successfully perform these community-oriented functions. The current problem is that dimensions that may predict procedural justice behaviors are not being measured systematically.
during hiring practices and procedurally just behaviors are not being used as outcomes to evaluate police performance.

The purpose of this dissertation is to address the above problem and offer a solution through empirical results. The following introduction will discuss the history of problems in police-community relations. The account of how policing has reached its current state through specific strategies of police reform will be detailed. The first section will examine the history of psychological examinations as used for police officer hiring practices. It will discuss how past studies have analyzed officers’ psychopathology and personality traits to predict performance and emphasize how current practices are lacking and new approaches are necessary. The second section will discuss procedural justice theory and its application to police-community interactions. In this section, I posit that procedural justice dimensions, which measure the quality of interactions, are better outcomes for measuring police officer performance today than the current performance indicators. In the third section, new predictors of procedural justice behaviors are presented. This dissertation will give particular attention to measuring developmental characteristics of officers, specifically the parental discipline styles they experienced while growing up. How these developmental experiences influence outcomes later in life will be reviewed. The fourth section integrates this research and theory and delineates the research questions and associated hypotheses of this dissertation.

The fifth section specifies the types of data, measures, analyses, and limitations to the study. Briefly, data come from two studies that were part of the National Police Research Platform (Rosenbaum, Cordner, et al., 2012). In Study 1, an omnibus survey administered to new officers on their first day at the training academy covered dozens of dimensions important to aspects of policing—most notably, personality dimensions and parental disciplinary styles experienced while the officer was a child were captured at this time. In Study 2, attitudes regarding treatment by a police officer were obtained from community members who had had a recent interaction with a police officer. Survey items covered the treatment of the individual by
the officer across a multitude of police legitimacy dimensions, such as the degree of respect and fairness shown to the community member by the officer.

This dissertation has implications on whether police departments should hire individuals who may be abrupt with community members or who are the traditional "just-the-facts" type of officers. Departments need individuals who are willing to build trust with community members through listening, showing concern, and being respectful, among other practices. A chief may be more confident in his or her officers by knowing that the department is consistently hiring recruits who have the qualities and characteristics that increase the likelihood of exhibiting procedurally just behaviors during their interactions with members of the community.

1.1 The History and Context of Policing Today

The field of policing has gone through many stages, and there is a long history of reformation concerning how police officers should approach their jobs. Early police forces in the United States were inefficient, corrupt, and highly influenced by political bodies (Walker, 1977). There was little ability to prevent crime or arrest offenders as officers took a more reactive approach to handling criminal activity by simply responding to calls for their service. Forces were small, especially in the North, and, therefore, the presence of a police patrol was rare and ineffective in reducing crime. Corruption was rampant as there was little oversight and a highly moralistic society caused community members to bribe police to look away from drinking, gambling, deviant sexual conduct, and other illicit behaviors.

Beginning in 1829 in England and advocating for improvements over the next few decades, Robert Peel formalized police officers to create the first modern police force (Bayley, 1985). The London Metropolitan Police was the first organization to develop a mission, strategy, and structure to combat the social issues of crime. The underlying cause of this shift to modernize and formalize policing was related to the crises that England was facing at the time. Urbanization and industrialization were increasing poverty, disorder, and conflict between ethnic
groups, as well as crime. An instrument of social control was needed for the marginalized communities where the majority of the problems were occurring; hence, the modern police force was created. Peel’s strategy was to prevent crime through assigning officers to patrol beats within an operation that was highly organized with uniformed employees, rank designations, and an authoritarian system of command and discipline. This new form of police was public, specialized, and professional (Bayley, 1985). The goal was public safety.

In contrast, American police forces in the early 1800s were unable to control communities as urbanization, industrialization, and immigration forced small towns and cities to develop into larger, urban metropolises. In the 1830s and earlier, the police were a mismanaged, disorganized group of volunteer citizens who formed watches, which were insufficient to address social problems. Rioting in the 1830s spread through major cities as a result of police forces being incompetent to handle the crowded neighborhoods where there were constant clashes between ethnic groups, riots against medical establishments and brothels with the aim of closing them down, and attacks by pro-slavery whites on abolitionists and free blacks. The response was slow, but society at the time pushed for order through an authoritative body that could control crime, or, more specifically, control the groups of individuals who society felt caused the crime. These groups included the minority immigrant populations or any group that was in opposition to the dominant Protestant class. It was not until 1830s that the American police forces reorganized and adopted the English structure of policing. Cities developed quasi-military police organizations that hired uniformed officers to patrol streets and remain visible in problem communities.

From the 1830s to the turn of the century, police departments became an uncontrolled, unaccountable, and corrupt force that the public feared. This development was rooted in the fact that they were immersed in local politics, resulting in low personnel standards by which individuals were hired based solely on their political connections (Miller, 1977). This period became to be known as the political era of policing (Kelling & Moore, 1988). New officers
included individuals with no education and in poor health, and some even had criminal histories. Unprofessionalism and corruption continued along with increased crime rates. Corruption worked on both sides. Community members bribed local officers to ignore criminal activity, and officers bribed their supervisors to gain promotions. There was no training required, mainly because there was no training to provide. Early training sessions only included marksmanship with pistols although a review in 1913 found departments that had formal examinations would automatically pass its officers on their training—whether or not they were capable of handling their weapons (Walker, 1977).

Community relations during the political era were very poor. Officers were stretched so far and thin, sometimes with beats that were four miles long, that developing lasting relations with the public was practically impossible. Community members feared and hated the police because officers often treated them disrespectfully or demeaned them (Walker, 1977). Barriers to increasing police-community relations included patrol assignments that often changed, neighborhood demographics that were constantly shifting, and officers who often did not have any loyalty to their work. Furthermore, the quasi-military structure of police organizations and culture contributed heavily to an “us versus them” mentality among officers, which caused the officers to feel that it was their responsibility to combat crime and contributed to officers believing that the community was to be viewed as the enemy instead of a partner.

Police work focused on new immigrant groups that were perceived as a threat to white middle-class populations, and consequently, the police were used to express society’s views toward these groups. The police mandate was to control these already marginalized groups. For example, the Sunday Closing Law was an often ignored Protestant law requiring businesses to be closed on Sunday, the day of faith for the majority of the population. However, on December 3rd, 1882, New York City police officers arrested 137 community members, all business owners and all of the Jewish faith (Berman, 1987). There was conflict between the Protestant and the Jewish community members because the former faith’s day of rest was Sunday and the latter’s
was Saturday. The police, at the urging of Protestant politicians and business owners, were used to marginalize a minority group who did not adhere to the majority’s opinions and practices. Another example of how the police were used as society’s instrument of social control is shown by business leaders using the police to break up union labor strikes of their less powerful employees. Business owners had the money and the power within communities, and as a result, the police did as they requested.

At the turn of the Twentieth Century, police forces remained corrupt and amenable to politicians and business owners, and they paid little attention to promoting public safety. Reform was sorely needed, and because of the efforts of August Vollmer, Chief of Police in Berkley, California, in the early 1900s, the police in America began a movement that was a complete paradigm shift from earlier practices. The period from 1900 to the 1960s was described as the professional era of American policing, with Vollmer being the promoter of change (Kelling & Moore, 1988). The first to recognize the importance to having a force that was highly educated, Vollmer often hired college graduates to his department and developed college-level courses in police science. He authored the Wickersham Commission Report on Police in 1931. This reform-minded commission documented many abuses in policing and was very instrumental in ushering in efforts to professionalize American policing. The report noted that it was routine for police to beat suspects, threaten community members, and make illegal arrests to extend questioning. As a direct result of this eye-opening report, specific agendas of reform were created, including defining policing as a profession, eliminating political ties with policing, appointing qualified officers and chiefs, and creating specialized units (Wickersham Commission Reports, 1931).

From the 1930s to 1967, the professionalism leadership passed from Vollmer to his most famous student, O. W. Wilson, whose most significant contribution involved creating a management system of personnel. His system was based on a formula of identifying reported crime and calls for service and sending more officers to the affected area. Wilson was also a
firm believer that police forces needed to adopt new technologies, such as the use of police cars for rapid response to calls for service and the use of a mobile crime laboratory to investigate criminal activities. He also was of the opinion that mobile two-way radios resulted in better supervision of officers as well as allowing officers to communicate with their districts and fellow officers on the beat.

The early stages of police professionalization were a slow process, with some departments excelling while others continued in corruption and inefficiency. While the elements of professionalizing departments positively affected response times, crime rates, and other traditional police performance measures and while officers were becoming organized, professional, and competent in their work, many departments still faced significant conflict between their officers and community members, especially those in minority neighborhoods. Tensions between the police and minorities stem from early colonial America when the early police forces developed as part of society’s need to monitor and control slaves. Slave patrols were created to guard against revolts and capture any runaway slaves. Such patrols were more common in the southern states, where some had forces of about 100 officers, so it is not unexpected that such organizations are considered the first modern police forces in the United States (Hadden, 2001).

By the start of the 20th century, race riots, mainly within African American communities, erupted because community members felt discriminated against since departments had very few African American officers, if any at all. A report by the Chicago Riot Commission on the riots of 1919 advocated for the increased hiring of African Americans and while few departments pursued this, those that did sent the new officers to police neighborhoods that with similar backgrounds (Chicago Commission on Race Relations, 1922). In the early 1940s, more riots and violence swept the country, and many cities were shut down because of public unrest, often the result of police treatment of minority communities. The Latino community was also the focus of much police brutality (Sanchez, 2008). Again, as has been stated previously, the police were
used to marginalize these groups because society at the time viewed them as a threat. Media outlets in Los Angeles reported that Latino groups were responsible for increases in crime and unrest. The police were often sent in to deal with the trouble makers, and, instead of approaching the problem in a cautious, respectful manner, the police arrested and used excessive force further damaging any relations between the two groups that may have existed (Escobar, 1999; Sanchez, 2008).

By the 1960s, departments across the United States had widely implemented aspects of the Professional Model. Unfortunately, this model was ill-prepared for the major social events of the civil rights movement, the women’s movement, and protests against the Vietnam War. Police reacted to protests by further marginalizing individuals arguing for equal rights and against the war. The civil rights movement challenged racial discrimination in all aspects of American life. Police departments were not prepared to handle mass protests and riots in ways that would not further damage the image that departments had attempted to change over the previous decades. While departments and officers were now organized and professional, they were not community focused, and these events were severely mismanaged as some police officers beat, abused, and arrested community members who did not follow their orders. Too often, riots began as a result of officers overreacting or abusing their power, for example shooting unarmed, minority community members. Images of police spraying water on protestors, arresting young minority adults, and all-around abusing their authority spread across the media, negatively affecting how the public saw the police.

In 1967, a commission was formed to study issues surrounding race-relations between the police and community. The National Advisory Commission on Civil Disorders (Kerner, 1968), more popularly known as the Kerner Commission, found widespread hostility toward the police in urban, minority communities, but stressed that the blame for this fell on all parts of society. The commission recommended that police operations change to handle community members more appropriately and that more African American individuals be hired as officers.
The Kerner Commission was the first to state that even if a police organization was professional, that did not mean that its policing was done in an appropriate manner. The report stated that “many of the serious disturbances took place in cities whose police are among the best led, best organized, best trained, and most professional in this country” (Kerner, 1968, p. 301). Something was still missing in America's approach to policing.

To help solve the problem departments established police-community relations units with specialized officers whose task was to speak with community members, create ride-along programs, and increase communication between the police and neighborhoods. Some departments allowed civilian review boards to address complaints by community members on police injustices. While this practice was meant to improve the public’s attitudes toward the police, a Department of Justice report found the programs to have little impact in improving police-community relations (Wasserman, Gardner, & Cohen, 1973). For many police departments, this effort was an attempt to improve their immediate image and not one to improve relations with the community, and as a result, many of civilian review boards were quickly dissolved due to police union pressures (Walker, 2001).

Another important consequence of the social turbulence and rising crime rates apparent in the 1960s was the creation of President Johnson’s Commission on Law Enforcement and Administration of Justice in 1965, with an all-encompassing report for reformation of the criminal justice system released in 1967. The report gave considerable attention to the importance of focusing more attention on police relations with the community and on the creation of partnerships to combat neighborhood crime. The commission argued that professionalism must continue in police forces into the modern age through higher recruitment standards, more training, better management and supervision, all while focusing on improving community relations and partnerships (President's Commission on Law Enforcement and the Administration of Justice, 1967).
As a result of the many commissions and reports on policing in America, policing practices and organizations were forced to change if they were not to face continuing public hostility and distrust. The United States was entering the community era of policing (Kelling & Moore, 1988). By the 1970s many police-community programs were started; these included Neighborhood Watch, citizen patrols, and other community crime prevention programs (Rosenbaum, 1988). By the 1980s, a focus on community oriented policing developed, one designed to increase police-community interactions to help build and create lasting relationships and partnerships to combat crime. Community policing emerged as a new philosophy of policing and represented a major paradigm shift in the management of police organizations (Cordner, 1999; Rosenbaum, 1994, 1998, 2004; Skogan & Frydl, 2004). This policing style relied on greater community involvement through partnerships with the police to define neighborhood crime problems (Skogan, 2006; Weisburg & Eck, 2004). Cordner (1999) outlines twelve elements falling within four dimensions of community policing. The philosophical dimension includes elements of citizen input, broad police function, and personal service. The strategic dimension consists of elements of reoriented operations, geographic focus, and prevention emphasis. The tactical dimension involves positive interactions, partnerships, and problem solving elements. Finally, the organizational dimension includes elements of structure, management, and information.

While Cordner’s (1999) detailed definition of community policing has provided a much better understanding of what it means to be a community policing organization, the more common definition of this style uses three components. The Office of Community Oriented Policing Services (COPS) and Rosenbaum (2004) list organizational transformation, problem solving, and community partnerships/engagement as the three key elements of community policing. Organization transformation is accomplished by encouraging officers to form a closer relationship with the neighborhood they serve. Aspects of this can include departmental policy changes to increase officers’ attendance at community meetings and foot/bike patrols on beats.
The second dimension of community policing, problem solving, relies heavily on the Scanning, Analysis, Response, and Assessment (SARA) Model. This problem-solving model stems from work on problem-oriented policing done in the late 1970s in Newport News, Virginia, by Goldstein (1979; 1990). Goldstein worked alongside with police practitioners and community members to identify and solve specific issues facing the city. The steps described by SARA are scan, analyze, respond, and assess. Scanning identifies a specific problem the community is facing. Analyzing determines the nature and extent of the problem, including who the key stakeholders are, e.g., victims, offenders, businesses owners, or other individuals who are affected by the problem. Responding creates an action plan that is specific to the problem at hand, focusing on the sources of the problem and not necessarily on the problem itself. Lastly, assessing determines the achievements or failures that have resulted. This shift in how crime is approached helps police departments form partnerships with the community to address real concerns and problems expressed by community members rather than focusing on departmental priorities.

Finally, the third element of community policing is community engagement and partnerships. This component is accomplished to empower community members and remind them of their responsibility to help reduce crime and disorder. In the SARA Model, police departments are expected to form relationships with community organizations, businesses, and members to approach and handle the problem from multiple directions. Furthermore, including local community members in identifying ways to address problems helps reduce the “us vs. them” mentality the can develop between officers and community members when a problem is addressed solely from a police standpoint.

The implementation of community oriented policing proved much more difficult than expected, mainly because of its broad and vague definition (Rosenbaum, 1988, 2004). While many police chiefs felt their organizations had made successful transitions to the community policing model, often the traditional impediments to organizational change—scarce resources
and a resistant police culture—continued to persist (Mastrofski, 2006; Mastrofski, et al., 2007). Police organizations were still experiencing problems with abuse of power and racist behaviors from officers to end of the century. In fact, by the late 1990s, racial profiling had become a major concern across the United States. A 1998 Human Rights Watch report stated that race was still a leading factor in police brutality (Human Rights Watch, 1998). Departments were being accused of aggressive policing in minority communities, and highly publicized instances of abuse, such as the severe beating of Rodney King as well as disproportionate numbers of traffic stops for African Americans, contributed to declining public confidence in law enforcement through the turn of the century.

While departments, albeit with some difficulty, were beginning to focus officers on policing in a community-oriented manner, it was still apparent that something was wrong with American policing. Having more contact with the public was only part of the solution. Unless the quality of those encounters was also improved, more contact might have the untoward effect of worsening relations with the public. Police departments were encouraging officers to have more interactions with the public but were failing to pay attention to what transpired during routine encounters such as traffic stops and responses to calls for service. Recently, researchers have turned their attention to understanding and monitoring what happens during officers’ contacts with the public. A good deal of literature, which is detailed extensively in this dissertation, has consistently emphasized officers’ use of procedurally just behaviors as an important determinant of community members’ satisfaction with encounters (Dai, Frank, & Sun, 2011; Mastrofski, Reisig, & McCluskey, 2002; Mazerolle, Bennett, Davis, Sargeant, & Manning, 2013; Tyler, 1990, 2004). Despite this body of evidence, most police departments have focused on the quantity of officers’ contact with the public, based on the number of contact cards handed out, the number of traffic stops made, and the number of police-community meetings attended. Assessments on the quality of all those interactions have been excluded, for the most part, from the elements of
the community policing approach. However, such outcomes are better ways to assess officer performance because they directly relate to improving community relations with the police.

Training officers in techniques for enhancing procedural justice (or legitimate policing) behaviors is the latest modification of community policing (Eck & Rosenbaum, 1994; Rosenbaum, 1998; Skogan & Frydl, 2004; Tyler, 1990, 2004). While community oriented policing is more of a general approach to how departments operate, legitimate policing consists of specific behaviors that officers exhibit while interacting with community members. The 1967 President’s Crime Commission report recommended the hiring of minority police officers to help address the problems found between minority populations and police departments at that time (President’s Commission on Law Enforcement and the Administration of Justice, 1967). Today, experts are recommending hiring a new type of officer. A strong police officer today is one who fits to the dominant reform model of the past 30 years—community oriented policing. In recent decades, research has progressed this model to train officers in promoting community-police relationships through fair and respectful treatment of community members from all lifestyles and backgrounds. Modern officers can help build community relationships by being polite and respectful, taking account of an individual’s needs and concerns, acknowledging people’s rights, allowing the community member to share his or her concerns, actively listening to those concerns, and being unbiased in their decision-making (Skogan & Frydl, 2004, Tyler, 1990, 2003, 2004; Tyler & Huo, 2002; Tyler & Lind, 1992). These are the elements and behaviors of procedural justice that many departments strive to have officers meet today. But how are departments to identify individuals who will actively and efficiently use procedural justice techniques in their daily interactions? And what characteristics are associated with procedural justice use in the field? These are just some of the questions that this dissertation will answer.
1.2 Introduction to the problem: Recruiting and selecting the “right” officers

As can be seen from the above, the relationship between the community and police has been severely strained due to police action toward and treatment of community members. There have been many attempts to improve this relationship across the years, but only in recent decades has a valid strategy been proposed. This strategy of community oriented policing has had some successes, but problems have still been apparent with police-community relations. As a result, an additional component to policing in a community oriented approach has developed. This component is known as legitimate policing.

The backbone of every police force is the patrol officers, who come from different backgrounds and have different beliefs, attitudes, and approaches to how they should handle their jobs. Although these individuals differ in many ways, contemporary police chiefs expect them to be community-oriented and to show high quality in their decisions and treatment of the people they serve. This raises the question of whether police organizations are recruiting and selecting the “right” individuals to be police officers. To be a strong police force that has legitimacy with the public, the agency needs to hire people who are capable of successfully performing the multitude of tasks related to the job. While hired recruits adapt to and learn about their new roles in life through extensive training, the agency and the public would be best served by ensuring that the types of individuals hired are the most predisposed to the behaviors and qualities that are community oriented and allow for positive interactions with the community. These predispositions can be determined as a result of the long and arduous hiring process that all job applicants must go through.

Most often, departments will use a multiple-hurdle, screening-out approach that yields a group of individuals who are thought to be the best for the available positions. Scrivner (2006) explains that this process moves candidates from one screening hurdle to the next, and if a failure occurs, then the failed individual is dropped from the applicant pool. This process is relatively rigid and, unfortunately, can cause community oriented applicants to be dropped from
the pool prior to any comprehensive psychological assessments of the candidate’s capacity to fulfill the policing role.

Part of this process involves psychological examinations. In theory, these exams should help to identify the individuals who are inappropriate for police work as well as the people who would excel at the job. In practice, the exams are only used for the former. Metchick (1999) has argued that with the increase of community-oriented policing, police departments would need better identification of personality traits associated with positive performance. While acknowledging the extensive literature on pre-employment psychological examinations, Scrivner (1995) also observed that a department’s dependence on screening-out approaches is more suitable to traditional, reactive policing than to modern, proactive community policing strategies. Both Metchick and Scrivner emphasized the importance of identifying personality traits that complement approaches of strong and proactive community-oriented policing.

To summarize, research over the past 30 years suggests that community policing is a strong model to address the long history of troubled relations between the police and the community (Rosenbaum, 1994, 1998; Skogan & Frydl, 2004). However, police reformers have struggled to implement it adequately (Mastrofski, 2006; Mastrofski, et al., 2007), partly due to an inability to precisely define and measure such a vague and broad policing style (Rosenbaum, 2004). One solution is to focus on the problematic behaviors that occur during police-community interactions. However, research on procedural justice and police legitimacy has proposed shifting attention to focusing on a specific set of behaviors that officers should exhibit to improve evaluations by community members of an encounter (Decker, 1981; Hawdon, 2008; Hinds, & Murphy, 2007; Tyler, 1990, 2004). The current problem is that dimensions that may predict procedural justice behaviors are not being measured systematically during hiring practices and procedurally just behaviors are not being used as outcomes to evaluate police performance.
II. PSYCHOLOGICAL SCREENING IN POLICE HIRING PRACTICES

In 2007, the Society for Police and Criminal Psychology appointed a committee to identify the core domains and skills of the police psychology profession (Aumiller, et al., 2007). The purpose of this exercise was to develop a concrete definition of the field to better guide students and future professionals. There are many components of police psychology, from job analysis, test development, counseling and criminal profiling, to organizational development, among others; through the identification process, the committee recognized 57 distinct proficiencies, which fall within four domains: assessment related activities, intervention services, operational support, and organizational and management consultations. In the following section of this dissertation, the police psychology proficiency of pre-employment, post-offer psychological evaluations of job candidates will be discussed. This component is part of the assessment domain, and a police psychologist accomplishes pre-employment evaluations to “ensure that candidates are free of job-relevant mental impairments; possess adequate stress resilience and emotional hardiness; are able to meet the behavioral, social, ethical, and cognitive demands of modern policing; or satisfy other criteria determined by law or agency requirements” (Aumiller, et al., 2007, p. 67). In other words, this part of police psychological work is important to policing as a whole because the psychologist is acting as a gatekeeper, determining who enters the field as an officer and who does not.

2.1 History of Psychological Screening

Psychological testing of police recruits has a long history with advocates from many areas. Psychological examinations were first recommended by the Wickersham Commission in 1931 (Wickersham Commission Reports, 1931). The Commission argued that individuals hired as police officers needed a high level of intelligence to properly perform their duties. As a result, psychological tests were designed primarily to measure an individual’s intelligence.
Not until 1967 were more in-depth individual characteristics examined for hiring officers. The President’s Commission on Law Enforcement and Administration of Justice (1967) recommended that psychological testing of police officer candidates focus on personality dimensions. This Commission first recommended the use of the Minnesota Multiphasic Personality Inventory (MMPI), advising that “psychological tests, such as the MMPI, and interviews to determine emotional stability should be conducted by all departments” (p. 129).

The philosophy behind this shift was to adapt to current management practices and perform employment testing described in organizational psychology (Lefkowitz, 1977). The Commission advised that individuals who are strong candidates for hiring should have good coping skills, be well adjusted in their lives, be capable of making quick decisions under pressure, have the ability to follow directives from leadership, possess a willingness to be exposed to danger, and the ability to accept contradictory roles (Beutler, Nussbaum, & Meredith, 1988; Craig, 2005).

The National Advisory Committee on Criminal Justice Standards and Goals’ 1973 report, “A National Strategy to Reduce Crime,” supported and expanded the recommendations made by the Wickersham Commission and the President’s Commission on Law Enforcement and Administration of Justice (NACCJS, 1973). The Committee recognized that the patrol officer was the primary force in reducing and preventing crime, and selection was paramount to acquiring the best officers. The Committee report suggested standards for police organizations regarding the psychological component of officer recruitment. According to these standards, police organizations should 1) employ formal processes in the selection of applicants including a written test of mental ability, an in-depth background investigation, an oral interview, a physical examination, and a psychological examination; 2) retain a qualified psychiatrist or psychologist to conduct psychological testing of applicants; and 3) examine the results of psychological testing as predictors of later performance once those predictors have been found to be valid and reliable in the scientific community (p. 337).
The Police Psychological Services Section of the International Association of Chiefs of Police (IACP) further supported the use of psychological examinations in 1986 (Curran & Saxe-Clifford, 2004). The IACP recommended the use of a multitude of validated psychological instruments to assess an applicant prior to any interviews made by the department, and suggested that the interview itself should be part of the final psychological report. Furthermore, the report emphasized that all screening assessments must focus on the abilities necessary in performing police work.

Lastly, the International Association of Directors of Law Enforcement Standards and Training (IADLEST) strongly endorsed the use of psychological screening. Its minimum standards required that all applicants to be sworn police officers be psychologically screened prior to hiring (IADLEST, 2012).

Psychologically evaluating an individual applying to become a police officer is widely advocated, and police departments across the country have made impressive efforts to follow such advice, especially in recent decades. In the earliest found literature on the subject, Parisher, Rios, and Reilly (1979) found that only 20% of their 130 police department sample reported use of psychological assessments. A decade later, Delprino and Bahn (1988) reported that 52% of their 232 national sample of agencies serving populations of 100,000 and more have psychological exams. In 1990, Ash, Slora, and Britton (1990) surveyed 99 departments and found 68% used personality tests as part of their employee selection process. Most recently, Cochrane, Tett, and Vandecreek (2003) reported that, in a random sample of 155 police agencies across the nation, 91.6% advised that psychological assessments are made during selection procedures. This amount ranged from 73.5% for smaller agencies (serving less than 25,000 people) to 98.5% for large agencies (serving more than 100,000 people).

Many states now mandate that police organizations use psychological screening of potential police recruits. According to the 2005 Sourcebook (IADLEST, 2013), 26 states have directives of psychological testing; however, Dantzer (2011) noted that the Sourcebook
excludes data from Alaska, Georgia, Hawaii, Louisiana, New Jersey, and New York. Dantzer advised that a search on the websites of these seven states found five requiring psychological testing, bringing the total to 31 states by 2009.

Although psychological exams are becoming the norm, Cochrane, Tett, and Vandecreek (2003) found them to be only the fifth most popular procedure in evaluating applicants. The most popular were background investigations (99.4%) followed by medical exams (98.7%), interviews (98.1%), and applications (95.5%), and finally psychological exams (91.6%).

P. A. Weiss and Weiss (2011) stated that psychological evaluations are the last thing considered when making hiring decisions in law enforcement. They attributed this to the Americans with Disabilities Act, which states that such evaluations can only be performed after all other factors have been considered. This is at odds with Ho’s (1999; 2001) findings that a police psychologist’s recommendation of hiring was significantly correlated with that individual being hired. Without the recommendation of hiring in Ho’s model, only the results of a written examination proved to influence the decision. In fact, applicants were almost 8.4 times more likely to be hired when they had a positive evaluation by a police psychologist. Obviously, such assessments hold a very valuable place in police hiring practices.

Psychological examinations within policing have a long history, and the use of them has now reached its highest point—and the reasons behind using such exams are many. The most prominent reason is to identify weak and strong candidates. When there are openings for a new recruit class, many types of individuals may apply. Naturally, the police department wants to hire the applicants who will best use aspects of community policing when on the job. The problem is that other agencies such as Homeland Security, the military, firefighters, and private security contractors also seek hiring the best candidates. At the basic level, all of these agencies are looking for individuals with clean criminal records, little to no drug use, a high school diploma or better, average to high intelligence, excellent physical fitness, and a willingness to work outdoors and in dangerous environments (Wilson & Grammich, 2009). The competition to
attract these individuals is fierce and recruitment strategies are very important. Such strategies, as used by police departments, aim to bring in the types of people who will promote community-police relationships through respectful and fair treatment; hopefully filtering the inappropriate candidates out of the applicant pool in the process.

Because of recruitment strategies, the number of candidates who do apply may be limited; but a police department will always have to make choices about who is selected and who is dropped. In fact, a single law enforcement position opening can easily attract 100 applicants (Stanard & Associates, Inc., 1992). When a police department obtains hundreds, sometimes thousands, of applications for job openings, a long and arduous process is needed to narrow that applicant pool. New recruits must first pass a series of examinations, background checks, and interviews that measure their physical, cognitive, and mental well-being even before they enter the training academy (Reaves & Hickman, 2004).

Cochrane, Tett, and Vandcreek (2003) noted that “on average, police agencies use nine different procedures when selecting new recruits” (p. 527). This multi-hurdle approach aims to screen-out individuals who are believed to be unsuitable for the job. Candidates must pass each procedure before proceeding to the next, and if they fail a procedure, they are much more likely to be dropped from the applicant pool. Fewer departments use a screening in approach, one in which the procedures identify qualities that are considered necessary for the job and are necessary to continue in the applicant pool.

2.2 Types of tests

The exams discussed below fall into one of three groupings. The first are those created for general use to identify psychopathologies and personality traits. The Minnesota Multiphasic Personality Inventory (MMPI), the California Psychological Inventory (CPI), the Personality Assessment Inventory (PAI), and the Wonderlic Personnel Inventory (WPI) all fall within this category. Second are psychological tests created specifically for use in law enforcement
settings. Within this grouping are the Inwald Personality Inventory (IPI) and the Matrix-Predictive Uniform Law Enforcement Selection Evaluation Inventory (M-PULSE). The third type of psychological exam discussed is meant for use with a general population; that is, they are not meant specifically for law enforcement but distinctively measure personality dimensions. Only one test detailed in this dissertation falls within this grouping: the NEO Personality Inventory Revised (NEO PI-R).

There are other psychological examinations that will not be discussed. For example, law enforcement hiring reviews addressing the use the Sixteen Personality Factor (16-PF), the Behavioral-Personnel Assessment Device (BPAD), the Fundamental Interpersonal Relations Orientation-Behavior (FIRO-B) and the Brief Intelligence Test (BIT) have all been mentioned in the literature on this topic. The exams discussed here were chosen because they are the most popular in modern law enforcement hiring practices. For instance, in Cochrane, Tett, and Vandecreek’s (2003) study of 155 national agencies, 71.6% of the agencies used the MMPI-2, 52.9% used the CPI, and 11.6% used the IPI. In Super’s (2006) sample, 69% of the departments used the IPI, 66% used the CPI, 51% used the MMPI-2, 49% used the WPI, and 42% used the PAI.

Along with the many other hiring procedures that are used, psychological exams are used to determine if an applicant is mentally fit for duty. Empirical research has attempted to ascertain which dimensions from specific psychological examinations may be able to predict a wide range of positive and negative police performance. Some of the measured outcomes include use of force, early termination, mental health problems, and scores on supervisor evaluations. There are many different tests available for police organizations to use, and there is still debate about which is best.

The type of measures used in screening practices lack consistency and standardization (Dantzker, 2011). Furthermore, many of these psychological examinations use true-false response measures. The MMPI, CPI, and IPI all have true-false responses while the PAI and
NEO PI-R both use four-point agree/disagree response scales, and the WPT, which measures intelligence, scores on the total number of correct responses. True-false responses are still widely used even though the variance across dichotomous response options are more limited than Likert measures with increased response choices. On the other hand, the respondent can quickly take the exam and not dwell on where s/he may fall on a response scale by limiting the number of responses available. Below, the empirical evidence regarding the predictive validities of these prominent psychological exams will be reviewed.

2.2.1 Prominent Psychological Evaluations of Personality and Psychopathology

2.2.1.1 Minnesota Multiphasic Personality Inventory (MMPI)

The most cited psychological test used in police hiring practices is the Minnesota Multiphasic Personality Inventory (MMPI; Dantzker, 2010; Dantzker & McKoy, 2006; Detrick, Chibnall, & Rosso, 2001; Hargrave, 1985; Hargrave, Hiatt, Ogard, & Karr, 1994; Kornfield, 1995, 2000; Pallone, 1992). The original MMPI was created in 1939 and was primarily used to identify qualities of psychopathology and personality structures. In 1989, the MMPI was updated and released as the MMPI-2. The updated version used a new national sample on which indexes were standardized. This sample was of 2,600 individuals with a more representative background of the general public than the original MMPI (Gregory, 2007).\(^1\)

The MMPI measures ten basic clinical indexes through true-false statements. These indexes are 1) Hypochondriasis (excessive concerns with bodily symptoms), 2) Depression, 3) Hysteria, 4) Psychopathic Deviate, 5) Masculinity-Femininity, 6) Paranoia, 7) Psychasthenia (Obsessiveness/ Anxiety), 8) Schizophrenia, 9) Hypomania, and 10) Social Introversion. Over the years, many additional supplemental indexes have been created; some notable ones

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\(^1\) In 2003, the MMPI-2 RF was released which utilized statistical analyses that were not available at the time the original version was developed. While there has been much research (for example, Arbisi, Sellbom, & Ben-Porath, 2008) on the validity of the MMPI-2 RF's indexes, it has not been as widely accepted into police hiring practices to date. As such, research pertaining to the MMPI-2 RF has been excluded from this review.
measure substance abuse, psychological repression, social discomfort, anger, authority problems, marital distress/family problems, and dominance. Lastly, there are validity indexes used to ensure the examinee is consistent in his or her responses with the Variable Response Inconsistency index and not over- or underreporting psychological symptoms with the Lie and Infrequency indexes. Lastly, the Defensiveness validity index measures the respondent's degree of being in denial or evasive toward questions.

As a result of the MMPI being so widely adopted in police hiring practices for a number of decades, many scholars have used the results of the psychological exam to predict police officer behavior once in the field. The most recognized indexes for use with policing are Depression, Psychopathic Deviate, Paranoia, Schizophrenia, and the Defensiveness indexes (Dantzker, & Freeberg, 2003; W. U. Weiss, Serafino, Serafino, Wilson, & Knoll, 1998; W. U. Weiss, et al., 1999). The most common MMPI index associated with negative officer performance is the Lie index, on which the examinee responds in socially desirable ways to downplay psychopathic symptoms. The Lie index is the common denominator across many studies that have combined multiple MMPI indexes to predict negative officer performance. Hiatt and Hargrave (1988) were able to predict serious disciplinary actions through an aggregated index of the Lie index, the Infrequency index, the Masculinity-Femininity index, the Paranoia index, and the Hypomania index over a three-year period with 55 officers. In a study with a sample of 1,347 police officers, W. U. Weiss, Davis, Rostow, and Kinsman (2003) used scores on the validity Lie index from the MMPI-2 to predict problem behaviors. Their results showed that officers who rated high on the Lie index prior to hiring were significantly more likely to be terminated, have less knowledge of police work, and be insubordinate. By combining the MMPI's indexes of Psychopathic Deviate, Hypomania, and the Lie index, Bartol (1991, discussed below) was able to predict employment termination.

It must be noted that P. A. Weiss and Weiss (2011) observed that the applicants who have psychological disorders are often unlikely to make it through the hiring process to the point
of taking the psychological examination. Individuals who may be experiencing mental health disorders are more likely to be identified and dropped from the pool of applicants when they go through the background investigations, medical exams, and interviews of the hiring process that are all more likely to occur prior to a psychological exam (Cochrane, Tett, & Vandecreek, 2003). As a result, the remaining applicants who take the exam are likely to score normal on the clinical indexes, leading to very low exclusion rates as a direct result of the psychological test. W. U. Weiss, et al. (2003) advised that individuals who rate high on the Lie index appear normal during clinical interviews, but their ratings in denial, lack of acknowledgment of their own shortcomings, and excessive sense of virtue make them obvious choices to drop from the applicant pool. The Lie index is a validity and not clinical index, and as it has been associated with poor police performance, it shows the importance of analyzing both the clinical evaluations of potential officers as well as addressing the results of the non-clinical indexes.

The most common criterions among MMPI studies involved officer suspensions and terminations. Attempting to predict these serious outcomes is important to retaining a strong police force. When an individual is suspended, a department potentially loses a knowledgeable employee who could be valuable in the field. Termination results in new recruits needing to be hired, which is far more expensive than keeping experienced officers on the job. As previously mentioned, W. U. Weiss, et al. (2003) used the Lie index to predict successfully predict termination. Costello, Schneider, and Schoenfeld (1996) found that three aggregated MMPI indexes positively predicted disciplinary suspension days three years into police work among 107 officers who took the exam for pre-employment purposes. The combined indexes were the Infrequency index, which measures the over-reporting of negative psychological symptoms; the Psychopathic Deviate index, which measures the individual’s degree of conflict, anger, and struggle; and the Hypomania index, which measures the level of excitability of the individual. They advised that all three of these indexes have been associated with aggression and found to be related to some aspect of poor job performance. By combining the MMPI’s indexes of
Psychopathic Deviate, Hypomania, and Lie, Bartol (1991) was able to predict employment termination in a sample of 600 officers from 34 small towns over a 13 year period. Bartol described the grouping of these indexes as a measurement of immaturity. The immaturity index also correlated strongly with evaluations from supervisors. Bartol explained that that index is able to predict termination because high scoring officers on the index display inappropriate behavior and make bad decisions while on the job. Using the MMPI to create indexes that measure an individual’s degree of aggression and immaturity show promise in predicting the likelihood of suspensions and terminations. Knowing who these individuals are prior to offering employment can avert the costs associated with training new recruits to replace those terminated or losing an experienced officer on the street when disciplinary action occurs.

Like Bartol (1991) with his immaturity index, Hargrave, Hiatt, & Gaffney (1988) combined the Psychopathic Deviate, Hypomania, and Infrequency indexes as well as a revised version of the Control in Psychological Adjustment index to successfully predict use of unnecessary force by police officers among a small sample of 104 state traffic officers. They concluded that any model that attempts to predict officers’ use of force using MMPI indexes is significantly improved with the addition of the Control in Psychological Adjustment index, which, they observed, measures the degree of emotional and physical control an officer has.

As can be noted from the above review, most studies have analyzed the MMPI’s relation to solely negative performance criterions. These negative outcomes vary widely across the studies, but common measures include termination (Bartol, 1991; W. U. Weiss, et al., 2003), suspensions (Costello, Schneider, & Schoenfeld, 1996; Hiatt & Hargrave, 1988), mental health issues (Schmit & Stanard, 1996), and unnecessary force (Hargrave, Hiatt, & Gaffney, 1988).

Studies that have looked into the relationship the MMPI has in predicting both negative and positive performance measures have shown mixed results. Workowski and Pallone (1999) determined the MMPI to be predictive in problematic officer behavior while not as predictive in positive officer behavior. They recoded a medium-sized police department’s MMPI results to
measure aspects of personality and behavior as opposed to the originally measured psychopathological conditions. They found that having poor morale and being socially introverted were positively correlated with a composite index of negative performance assessments. The negative performance index included written reprimands concerning various departmental policies and procedures, complaints by citizens, and accumulated suspensions and demotions for any infractions over ten years of employment. They emphasized that no MMPI indexes were able to predict cases on the study’s positive performance index, comprised of a variety of awards over officers’ tenure including certificates of commendation, awards of merit for heroism, lifesaving awards, combat cross for bravery, and internal formal departmental awards. The lack of significant predictors with positive performance outcomes may have been due to the small sample size of only 27 male officers. On the other hand, the significant findings with the negative outcomes show the MMPI’s merit in identifying “problem” officers early in their career. In contrast to Workowski and Pallone’s (1999) results, Scogin, Schumacher, Gardner, and Chaplin (1995) found the MMPI’s Psychopathic Deviate, Psychasthenia, Masculinity-Femininity, Hypochondriasis, and Hysteria indexes to predict a supervisor’s ratings of officers among a sample of 69 officers. The supervisor evaluation index was comprised of the officers’ loyalty to the organization, adherence to dress codes, knowledge of the law, and response to supervision. No significant relationships were found between the MMPI indexes on objective internal reprimands (verbal, written, and vehicle), or citizen complaints. Furthermore, the MMPI did not predict positive recognitions such as salary increases or citizen recognitions.

A common approach to using psychological examination results to predict officer performance involves a retrospective methodology. Researchers will often request data from a police department that are connected with officers who have taken an examination years earlier during the pre-employment screening process. As such, the time between the predictive measures from the psychological test and the performance outcomes range widely; for example, with studies focusing on the MMPI, these ranged from three years (Costello,
Schneider, & Schoenfeld, 1996; Hiatt & Hargrave, 1988) to 13 years (Bartol, 1991). While it could be argued that an extended period of time between the measured predictors and criterion damages the strengths of any arguments, it is important to recognize that psychological traits remain with an individual into adulthood even with treatment that may minimize the effects of a disorder. Unfortunately, it is more uncommon to find a study which measures the psychological state of a recruit in the present (that is, at the time of hiring), and then future data collections are made as the years and careers progress. W. U. Weiss, et al. (2003) and Scogin, et al. (1995) conducted their studies in such a fashion; however, both follow-up periods were only one year after the initial assessment. Methodologies with a longitudinal approach strengthen causal inferences by incorporating a predictive validity component; unfortunately, retrospective analyses are quicker, cheaper, and hence more common in this field of research.

While the MMPI and its varieties have become a primary method of evaluating candidates for a law enforcement position, there are many issues with its use. First and foremost, the primary purpose of this assessment tool is and always has been to identify psychopathology. The MMPI was specifically designed to differentiate abnormal groups from the normal population and was never intended to measure personality in a way that would provide a quantifiable dimension of personality traits (Butcher & Tellegen, 1978; Maloney & Ward, 1976). As a result, it is difficult to determine if individuals who score low or average across the psychopathological dimensions would be a wrong fit in a policing career as none of the “red flags” are raised because of the examination (Bartol, 1991). On the other hand, as detailed above, when developed properly, the clinical predictors from the MMPI have been successful in determining negative or counterproductive officer behaviors.

Lastly, the MMPI evaluation tool was standardized with a normative national sample and, as some have argued, therefore does not apply to the police candidates who tend to be psychologically healthier than the rest of the general population (P. A. Weiss, Hitchcock, Weiss,
Rostow, & Davis, 2008). These problems, while unavoidable, can be acknowledged and addressed during any research on police recruitment, screening, and hiring.

2.2.1.2 California Psychological Inventory (CPI)

The California Psychological Inventory (CPI) is a personality assessment instrument that primarily measures the examinee’s emotional and behavioral stability. The CPI was first published in 1956 and an updated version was published in 1987. The most current version contains 462 true-false questions that measure 20 behavioral attributes. For simplification purposes, these indexes can be standardized into four broader measures (Gough, 1957).

The first broad measure is the Interpersonal Style and Orientation measure that combines the sociability, social presence, independence, dominance, self-acceptance, capacity for status, and empathy indexes. The Normative Orientation and Values measure focuses on the socialization, self-control, communality, tolerance, responsibility, good impression, and well-being indexes. The third broad measure is Cognitive and Intellectual Functioning that uses the intellectual efficiency and achievement via conformance and independence indexes. Lastly, the Role and Personal Style index focuses on the flexibility, femininity/masculinity, and psychological-mindedness measures.

The CPI shares 194 items with the MMPI. Hargrave and associates have shown the CPI and MMPI to be highly comparable in terms of predictive validation of personality assessment among police recruits (Hargrave, 1985; Hargrave & Hiatt 1987; Hargrave, Hiatt, & Gaffney, 1986). While these studies were conducted more than two decades ago, the versions of the CPI and MMPI used were the same as those that many departments use today and, therefore, may still be widely applicable to contemporary recruits. The major difference between the two tests is that the CPI assesses everyday concepts used to describe behavior while the MMPI focuses on maladjustment or clinical diagnoses (Aiiken & Groth-Marnat, 2005). The CPI is often used in
conjunction with a psychopathology exam (such as the MMPI) because it measures more commonplace personality characteristics (P. A. Weiss & Weiss, 2011).

Aamodt (2004) conducted a meta-analysis of studies that used the CPI in predicting officer performance ratings, academy training performance, and disciplinary occurrences. Seventeen studies that sought to predict performance ratings were included in the review. The CPI indexes of tolerance and intellectual efficiency were significant predictors of positive officer qualities. Aamodt explained that officers high in tolerance are more likely have such positive officer qualities as being open-minded, nonjudgmental and resourceful, while those with high intellectual efficiency scores are intelligent, clear thinking, and capable of the duties of which they are responsible.

Cuttler and Muchinsky (2006) used the responsibility, socialization, and self-control indexes from the CPI to assess potential dysfunctional job behaviors of officers while they were still in the training academy. The authors argued that these combined CPI indexes formed a measure of the personality trait conscientiousness. The problem behavior outcomes included any accounts of excessive force, sexual misconduct, insubordination, theft of agency property, motor vehicle violations, or inappropriate verbal conduct toward the public, such as racial slurs or profanity. Cuttler and Muchinsky determined that officers who rated higher in these indexes were less likely to exhibit negative behaviors.

Varela, Boccaccini, Scogin, Stump, and Caputo (2004) conducted a meta-analysis of 78 published and unpublished articles on personality tests in law enforcement settings. The results revealed statistically significant relationships between personality tests scores and performance criteria. Negative performance measures included reprimands, complaints, suspensions, and the number of workdays the officer missed, while positive performance measures were more subjective through supervisor and peer ratings of the officers. Of the three types of tests used, prediction with the CPI was highest compared to the MMPI and the Inwald Personality Inventory (discussed in detail below); however, only differences between the IPI and CPI were significant.
They argued that the CPI is a far superior measurement of performance in police screening practices because it measures normal personality traits as opposed to the measures of psychopathology, deviant personality traits, and maladaptive behavior that the other exams test.

Just as P. A. Weiss and Weiss (2011) observed about the MMPI discussed above, Varela, et al. (2004) also note that most pathological job candidates are eliminated during the screening process due to the numerous procedures they must first go through prior to taking a psychological exam. As a result, tests such as the MMPI are not as efficient in identifying additional qualities that will predict performance. The CPI, on the other hand, measures personality traits and may be more useful in this context because it obtains additional information not determined during earlier procedures. An applicant may go through medical tests, interviews, or background searches, during which mental health disorders could be apparent and identified. However, such procedures will not provide direct measurement of personality characteristics that have been shown to relate to officer performance.

Certainly, a case can be made for using the CPI in law enforcement hiring practices, particularly when the above indexes are used. However, similar limitations exist with the use of the CPI as with the MMPI. Furthermore, like many studies throughout this review, the most commonly predicted outcomes are in negative officer performances. Further research gauging the use of CPI dimensions toward positive officer performance outcomes would be beneficial. Aamodt (2004) has addressed this by looking into specific positive officer qualities such as being open-minded and clear-thinking, while Verela, et al. (2006) have used the CPI to predict subjective, positive officer assessments. Regardless of the great proportion of negative performance measures, the CPI remains a popular psychological evaluation used in hiring new police officers.
2.2.1.3 Personality Assessment Inventory (PAI)

The Personality Assessment Inventory (PAI) is a personality and psychopathology evaluation that has become popular in police hiring practices in recent years. The exam has 344 items and uses a four-point, agree/disagree response scale. The items assess numerous contexts such as crisis/evaluation, forensic, pain/medical, personnel selection, and psychotherapy (Morey, 2007). There are 22 non-overlapping indexes that fall within four general groupings: Validity, Clinical, Treatment Consideration, and Interpersonal indexes. Validity indexes measure whether the examinee fakes good or bad responses, exaggerates, or is defensive. The Clinical indexes measure traditional aspects of psychiatric diagnoses. Treatment Consideration indexes assess the ways in which an individual will respond to specific types of psychiatric disorders and do not directly measure if the individual has the psychiatric disorder but how they would behave as a result of specific disorders. Finally, the PAI includes Interpersonal indexes on general personality disorders, something that is excluded in the more popular MMPI-2.

There has been little research using the PAI as a predictor of police performance outcomes. In two separate studies, it was concluded that higher scores on the Validity index negative impression was modestly correlated with problem officer performance after being hired (W. U. Weiss, Rostow, Davis, & Decoster-Martin, 2004; W. U. Weiss, Zehner, Davis, Rostow, & Decoster-Martin, 2005). Officers who engaged in neglectful duties, made conduct mistakes, and received greater reprimands from supervisors were more likely to have higher ratings on the Negative Impression index on the PAI.

The same studies found that the Antisocial index, which includes subscales of antisocial behaviors, egocentricity, and stimulus seeking, was associated with negative performance outcomes, including insubordination, excessive citizen complaints, neglect of duty, conduct mistakes, and termination. Higher scores on the aggression indexes used in the PAI, which
include physical aggression, aggressive attitudes, and verbal aggression, have a similar pattern as those above.

Caillouet, Rostow, and Davis (2004) analyzed four PAI indexes to determine their correlation with the length of time officers had worked within law enforcement. The Anxiety-Related Disorders and Traumatic Stress indexes were significantly associated with how long an officer remains on the current job, leading the authors to conclude that specific stressors and traumatic events are more important than general police work pressures in regards to anxiety symptoms and commitment to the job. Not surprisingly, the resentment subscale of the Paranoia index significantly related to a shortened length of time in the current position. This index focuses on bitterness and cynicism in interpersonal relationships. The authors felt that this relationship might suggest that officers who feel their department pushes them into certain activities are more likely to terminate their employment.

A limitation of the PAI is that results can be difficult to interpret. Roberts, Thompson, and Johnson (2004) created a predictive equation to determine the likelihood that a police psychologist would dismiss a police applicant as a result of their PAI score. This equation, known as the Psychological Rating Risk Factor Statement (PRRFS) places the applicant into one of three groupings based on their risk of negative performance. The equation is included in additional software that these authors created.

In other research, Richardson, Cave, and La Grange (2007) predicted suspensions, terminations, or resignations for new officers based on their PAI results measured at the time of hiring. These authors analyzed the PRRFS score to predict disciplinary actions but determined the score to be non-significant and inappropriate. Upon further examination, Richardson, Cave, and La Grange found that the PRRFS rated only half of the problem officers as high risk and more than half of the non-problem officers as moderate or high risk. Worth noting, however, is that this study was severely limited by a small sample (n=62), which may account for the non-
significant results. More research may be needed on using the PAI indexes to predict officer performance before general acceptance of the test can be made for officer selection.

2.2.1.4 Wonderlic Personnel Test (WPT)

The Wonderlic Personnel Test (WPT) was created in 1936, specifically designed for employee selection. The test primarily focuses on a measurement of general intelligence consisting of 50 increasingly complex questions in reasoning, mathematics, and vocabulary through rational thinking and problem solving (Wonderlic & Hovland, 1939). The questions are meant to capture the examinee’s cognitive ability, which is then typically used to predict future job performance (Ho, 2001).

Normative data are available across more than 80,000 people from various professions, including law enforcement. The WPT is available in many different languages and has a time limit of 12 minutes, so it is quick to administer. In 1931, the Wickersham Commission concluded that police officers should have a high level of intelligence to be able to perform their duties successfully. As a result, the WPT was a popular choice for assessing new officers at the time. More contemporary studies (Dodrill, 1983; Dodrill & Warner, 1988; Super, 1997) have shown that the WPT is a reliable indicator in measuring general intelligence and predicting officer success. Other studies have consistently shown a strong correlation between intelligence and academy performance measures, such as the ability to accurately analyze and understand information presented to them and to respond in a timely manner (Kenney & Watson, 1999).

Ho (2001) conducted a logistic regression analysis on whether or not a candidate would be recommended for hire based on the results of the WPI along with other psychological examinations. The results indicated that the scores from the WPI were the most important predictors of the psychologist's recommendation. Also important to this outcome were results from the psychological exam known as Self-Directed Research, which is used to predict an applicant’s ability to retain a stable tenure of employment as a law enforcement officer. Other
covariates included in the analysis were the candidate’s demographics and results from the California Psychological Inventory, the Inwald Personality Inventory, and the Brief Intelligence Test, none of which significantly predicted the outcome on their own. Ho explained that the results indicated that applicants were almost 2.7 times more likely to be recommended for hiring if they demonstrated above-average intelligence based on the results of the WPT.

Super (1997) used results from the WPT to predict the performance of recruits on the Florida Department of Law Enforcement’s Officer Certification Examination (OCE). The OCE consists of 350 multiple-choice questions covering many aspects of law enforcement practices addressed during training, and the test must be passed to become a police officer. Using discriminate analysis, results provided an overall true classification rate of 90%. That is to say, the WPT was highly accurate in predicting whether a candidate would pass the exam.

Many have argued for a long time that to be a good police officer, a person has to have a high degree of intelligence. The Wonderlic Personnel Test is a worthy psychological examination to assess the level of intelligence an applicant may have; however, being intelligent is only a small part of the set of skills that an officer must have. Intelligence may help an officer in learning and understanding the state and federal laws, and procedures of due process and investigations, but other qualities, such as displaying emotional intelligence, a willingness to approach community members, or exhibiting a high level of procedural fairness, are also necessary for an officer to be successful. The WPT is also limited because it is not specific to the law enforcement selection practices. The exam is based on normative results from the general population, and individuals who strive to become police officers may stand too far apart from that for this psychological test to be applicable.

2.2.2 Tests Designed Specifically for Law Enforcement Populations

In the section above, prominent psychological evaluations of personality and psychopathology were reviewed and discussed. As mentioned, the basis of all those
examinations comes from normative samples of the general population, and, as a result, examinees are assumed to fall within the ranges for that population. This becomes an issue when specialized groups of individuals, such as police officer candidates, may not match that normal distribution of the general population yet still need psychological assessment. Furthermore, the above exams do not identify or detail traits that are particular to police work. In this section, psychological tests that were specifically created for law enforcement populations will be discussed. The two most prominent tests of this kind are the Inwald Personality Inventory and the Matrix-Predictive Uniform Law Enforcement Selection Evaluation Inventory.

2.2.2.1 Inwald Personality Inventory (IPI)

Developed in 1980, the Inwald Personality Inventory (IPI) is a popular psychological screening tool specifically designed to measure the psychological and emotional suitability of an applicant to be a police officer for the job. A total of 310 true-false items are used to measure 26 behavioral characteristics in the context of law enforcement and deviance (Inwald, Knatz, & Shusman, 1983). Although the IPI may be limited by its true-false measurement, the exam is strengthened by the fact that it was developed through interviews with 2,500 public safety officer candidates and items are meant to measure stress reactions, deviant behaviors, and behavioral indexes based on functions and personal issues that are common to police work.

Costa and McCrae (1992) advised that the IPI measures an individual’s personality characteristics to determine psychological fitness relevant to policing. The 26 personality subscales are absence abuse, alcohol, antisocial attitudes, anxiety, depression, driving violations, drugs, family conflicts, guardedness, hyperactivity, illness concerns, interpersonal difficulties, job difficulties, lack of assertiveness, loner type, obsessive personality, phobic personality, rigid type, sexual concerns, spouse/mate conflicts, substance abuse, treatment programs, trouble with the law and society, Type A personality (having a high-strung personality
as opposed to a relaxed, easy going personality), undue suspiciousness, and unusual experience/thoughts.

The vast consensus is that the IPI is a much stronger assessment tool than the MMPI (Inwald & Shusman, 1984; Costa & McCrae, 1992; Scogin, et al., 1995; Simmers, Bowers, & Ruiz, 2003). Analysis models that use both IPI and MMPI indexes to predict negative or positive officer performances have typically resulted in IPI indexes having the stronger correlations. Inwald and Shusman (1984) administered both the IPI and the MMPI to 329 hired male urban police officers to predict poor officer performance during six months at the training academy. The IPI indexes of trouble with the law, job difficulties, and substance abuse, which the authors deemed as behaviors of “acting out,” were found to have substantively greater predictive validity with respect to negative reports, positive reports, attitude problems, absences, derelictions, and restricted duty assignments than the MMPI indexes. Simmers, et al. (2003) conducted a meta-analysis of 18 studies analyzing the conclusions reached by Inwald and Shusman (1984). They assessed the relationships between results from the IPI, MMPI, as well as the MMPI-2 on-the-job performance indexes regarding absences, academy success, positive reviews, demeanor and attitude, negative reports, injuries, lateness, reprimands, restricted duty, and termination. Indexes from the IPI had greater correlations with all these outcomes compared to MMPI/MMPI-2 indexes except on an aggregated catch-all positive performance measure combining supervisors’ ratings of the officers’ loyalty, adherence to physical appearance codes, knowledge of the law, response to supervision, driving skills, call-time response, report writing, in-field performance, officer safety, control of conflict, and problem solving skills. While the correlation from the MMPI indexes outperformed the IPI on this aggregated index, it was not statistically significant. The authors concluded that there is a significantly greater relationship between the IPI and police officer job performance than there is between the MMPI/MMPI-2 and performance. Lastly, Scogin, et al. (1995) used backward-stepping multiple regression analyses to determine which IPI indexes were better able to predict an aggregated supervisor evaluation
index (discussed below). The IPI indexes which were found to be predictive were “depression, substance abuse, unusual experience, guardedness, phobic personality, sexual concerns, interpersonal difficulties, undue suspiciousness, loner type, critical item, trouble with the law and society, job difficulties, mean scale elevation, treatment programs, anxiety, and family conflicts” (p. 70).

Past studies of the IPI’s ability to predict performance commonly create an aggregated supervisor evaluation index as the criterion, although the measurement of such supervisor evaluations differs widely across studies. For example, Detrick and Chibnall (2002) measured officers’ performance based on supervisor evaluations one year after the officers entered the field by combining a wide range of 22 police-specific performance items, such as professionalism, conduct and discipline, and satisfaction. They found officers who measured low in family conflict, high in guardedness, and low in driving violations were significantly more likely to obtain higher evaluations from supervisors. Mufson and Mufson’s (1998) study of 33 officers who were hired over a four-year period used the IPI to predict supervisors’ collective scores on officers’ acceptance of departmental rules; positive interactions with coworkers, supervisors, and the public; ability to understand the requirements and cope with the stress of the job; and negative aspects of immaturity, problematic ethical issues, timidity, and driving problems. They found scoring high on driving violations, high on lack of assertiveness, low on Type A personality, and low on the rigid type indexes to predict officers who were rated poorly by their supervisors or terminated from their job. Finally, Scogin, et al. (1995) predicted supervisors’ assessments comprised of the officers’ loyalty to the organization, adherence to dress codes, knowledge of the law, and response to supervision. While supervisors’ scores may be a valid estimation of an officer’s performance, there are other sources to obtain such assessments. Using peer-reviews from co-workers, external assessments from community members, or personal assessments from the officer him- or herself are also all valuable sources to determine
the quality of the officer’s work. It would be worthwhile for future studies to attempt prediction models with other criterion related to officer performance.

Knatz, Inwald, Brockwell, and Tran’s (1992) study differs from those above as it compared racial/ethnic groups’ results on the IPI with a sample of 8,287 correctional officers hired between 1980 and 1985 to predict negative officer performance measures. While the primary activity of these officers was to control inmates at a correctional facility, they were also granted peace officer status, allowing them to carry handguns and make arrests when not in the facility. Using discriminant function analyses, results from the IPI accurately predicted officer tardiness, absences, and disciplinary reviews. No consistent biases across White, Black, or Hispanic groups were found, although Hispanic males tended to have the highest number of correct predictions.

The merit of the IPI is its focus on the policing profession. One should not be surprised that results from a psychological examination designed for the general population, such as the MMPI, are unlikely to predict performance as well as an examination that is specific to the individuals being assessed. Furthermore, the major difference between these two exams is that the IPI is primarily used as a risk assessment tool while the MMPI identifies psychopathologies. While Costa and McCrae (1992) advise that the IPI is superior to the MMPI, they were very concerned that the personality trait conscientiousness (discussed below) was not measured. As such, it is recommended to use the IPI in conjunction with other examinations to get a more detailed picture of the applicant (Inwald & Shusman, 1984).

2.2.2.2 Matrix-Predictive Uniform Law Enforcement Selection Evaluation Inventory

The Matrix-Predictive Uniform Law Enforcement Selection Evaluation Inventory (M-PULSE) is a very recent psychological examination that was developed for hiring law enforcement officers. Created by Davis and Rostow (2008), the exam is 455 items long, with each item scored on a four-point response scale, and it takes about 50 to 90 minutes to
complete. This examination was produced from a normative sample of two thousand police officers from forty-four states within the United States. The strength of the M-PULSE is that it was specifically created to identify police officer candidates who are at risk of problem behavior if hired and sent into the field. This approach is meant to reduce liability for law enforcement agencies by assessing job performance risks prior to the hiring of applicants.

The M-PULSE Inventory has 47 indexes. There are 18 liability indexes which are used to measure past misconduct. These include, but are not limited to, interpersonal difficulties, off-duty misconduct, property damage, traffic accidents, criminal misconduct, and potential for resignation and termination. There are 16 empirical indexes which measure attitudes, values and beliefs in four broad dimensions of negative self-issues, negative perceptions related to law enforcement, unethical behaviors, and unpredictability. Ten indexes come directly from the California Commission on Peace Officer Standards and Training’s (POST) screening dimensions. POST is a police organization established by legislature in 1959 to create and manage the minimum standards in selection and training for California law enforcement (POST, 2013). The POST indexes in the M-PULSE measure aspects of personalities that have been found to be important in police work such as being reckless or impulsive, lacking integrity, being unreliable, having poor decision-making or judgment skills, and being passive or submissive.

There are two validity indexes to assess response bias. The Impression Management index determines if the respondent is trying to create a good impression of him- or herself. The Test Attitude index measures the respondent’s negative attitudes toward taking the examination. And finally, a supplementary index measures potential substance abuse problems.

This psychological police-screening tool holds a lot of promise; however, the academic research community has yet to produce any validation for it. However, the M-PULSE Inventory predicted 86% of the liability cases from its normative sample, and the Cronbach’s Alpha reliabilities for the included indexes are all above .70, with the vast majority being higher than
While such results seem promising, more research is needed on this psychological examination to safely argue its widespread use in officer selection.

### 2.2.3 Other Prominent Personality Tests

#### 2.2.3.1 The “Big Five” Personality Dimensions

The psychological exams detailed above excel at identifying very specific individual traits that may be deemed as positive or negative for police work. The problem with the specificity of these exams is that they do not provide a general profile of the applicant. While this may be where other hiring procedures can have a major impact (i.e. in-person interviews), there are examinations that do provide such details through broader personality narratives and that better characterize an individual.

Many recent studies have been dedicated to simpler measurements based solely on personality traits. Metchick (1999) argued that with the increase of community-oriented policing, police departments would need better identification of personality traits associated with positive performance. While acknowledging the extensive literature on pre-employment psychological examinations, Scrivner (1995) also stated that departments heavily depend on a screening out approach based on the results of such exams; this model of selection is more suitable to traditional, reactive policing than to modern, proactive policing strategies. Both Metchick and Scrivner emphasize the importance of identifying personality traits that complement approaches of strong and proactive community-oriented policing.

Popular measures in predicting officer success involve examination of the “big five” personality dimensions. These personality dimensions have a long history and are well validated by personality psychologists as capturing an individual’s entire personality (Costa & McCrae, 1978, 1992; Digman, 1990; Goldberg, 1993; John & Srivistava, 1999; Tett, Jackson, & Rothstein, 1991; Tupes & Cristal, 1961; Wiggins, 1968). The dimensions are Extraversion, Neuroticism, Agreeableness, Openness, and Conscientiousness.
Extraversion is the broad personality dimension that relates to individuals who are assertive, outgoing, and energetic. Extraverts tend to seek human interaction and feel comfortable in large group settings or being the center of attention. They are talkers and excitement seekers. This trait is in direct contrast to introversion, or being reserved, calm, and solitary. Experts have argued that the two fall on a continuum. Therefore, if a person rates high in Extraversion, s/he would rate low in Introversion at a given point in time (Digman, 1990). Heller, Judge, and Watson (2002) assessed how personality traits influenced job and life satisfaction in a sample with a diverse set of occupations. They reported that extraverted individuals had higher salaries, were promoted more, were more satisfied with their careers, were more social with peers, and were generally happier with life. Because of such qualities, Extraversion is generally seen as a positive personality trait to have.

Neuroticism relates to individuals who are often anxious, moody, worried, tense, and irritable (John & Srivistava, 1999). Neurotics tend to react to situations emotionally and are easily vulnerable to stress because they view interactions and situations as threatening. They often focus on the negative aspects of their lives and as a result seem to experience negative events more often (Heller, Judge, & Watson, 2002). The direct opposite of Neuroticism is emotional stability. Individuals who are considered emotionally stable are able to handle stressful events and tend to be calm and even-tempered. Neuroticism can be useful in jobs that are very detail-oriented, but in general, this personality trait is considered negative and has been found to predict unhappiness with life (Seibert & Kraimer, 2001).

Agreeableness is a characteristic of people who are trusting, good-natured, cooperative, tolerant, forgiving, courteous, and flexible (Barrick & Mount, 1991; Digman, 1990). In regards to work performance among a general population, agreeableness has been positively related to good teamwork skills but has shown a negative relationship with leadership skills (Lim & Ployhart, 2004; Seibert & Kraimer, 2001). Furthermore, those with a high agreeableness generally have a positive outlook toward life and human nature. On the other hand, individuals
who rate low in Agreeableness (i.e., disagreeable) tend to be cynical, rude, suspicious of others, and unlikely to worry about others’ well-being, and they can be considered unfriendly (Seibert & Kraimer, 2001).

Openness refers to an individual’s ability to think abstractly, and be intellectually curious, appreciative of art, creative, and imaginative (Barrick & Mount, 1991). Barrick and Mount (1991) advise that those who rate high in Openness tend to also be highly intelligent but also found Openness to be unrelated to police officer performance. On the other end of the Openness continuum, closed individuals tend to resist change or new experiences and prefer aspects of life that they have been accustomed to (Digman, 1990; McCrae & Costa, 1987). They think in a straightforward, simplistic manner.

Conscientiousness may be the personality trait most related to performance success in any job type. Individuals who rate high in Conscientiousness may display traits such as being organized, persistent, motivated, and goal-oriented. Conscientious people tend to be viewed as dependable; they are careful with their work, thorough, and responsible. Important to policing, conscientious individuals carefully think through a situation before taking any actions. Low conscientious individuals tend to be laid-back, are less goal-oriented, and do not worry so much about their success in life, although this does not necessarily imply that they are lazy. In a sample of many occupational groups, which included law enforcement, Barrick and Mount (1991) found Conscientiousness to be one of the strongest predictors of job performance, as measured by supervisor evaluation ratings, productively, and personnel data including salary level, turnover, status change, and tenure.

There have been attempts to measure these personality traits based on the more popular psychological examinations mentioned previously. Cortina, Doherty, Schmitt, Kaufman, and Smith (1992) used indexes from both the IPI and the MMPI to create measurements of the big five personality dimensions. The authors acted as judges to decide which dimensions were present within each instrument’s indexes. While neither of these psychological exams is meant
to directly measure the five personality dimensions, the authors were unanimous that the IPI provides reasonable measurement of Neuroticism, Extraversion, Agreeableness, and Conscientiousness, while the MMPI only provides measures on Neuroticism, Extraversion, and Conscientiousness. Through multivariate regression analyses, the authors concluded that neither the IPI nor MMPI personality dimensions predict officer academy performance ratings, GPA, or turnover better than a Civil Service exam, which primarily measures cognitive ability. However, the IPI and MMPI Conscientiousness and Emotional Stability (i.e. Neuroticism) indexes significantly predicted GPA and psychological satisfaction of counseling.

On the other side of the literature, Sanders (2008) attempted to predict job performance with the big five personality traits and found that age and non-cynical work attitudes are better predictors. In fact, none of the big five personality traits were able to significantly predict a composite index of eight officer performance measures rated by a chief or assistant chief. These measures included the officer's job knowledge, and his or her quality of work, cooperation, responsibility, initiative, quantity of work, dependability, and interaction with the public. Response options on the last performance measure ranged from “Understands public's concerns, handles problems courteously, effectively,” through “Sometimes lets citizens get to him/her, needs assistance with tact,” finally to “Will argue with citizens making matters worse.” Interestingly, age was found to have an inverted U-shape relationship with supervisors' evaluations, indicating that younger and older officers are both viewed by supervisors as less valuable, while middle-aged officers are seen as the best performers.

Furthermore, an interesting interaction effect was noted with age and the personality trait of Openness (or intellectual curiosity). Results indicated that police chiefs rated older officers who had greater levels of Openness much lower than their counterparts. Sanders (2008) argued that this may be because chiefs expect older officers to be fully socialized to the policing lifestyle. She mentions studies by Bartol (1991) and Hogan (1971), which also found higher performance assessments with mature officers and traditional officers. Perhaps officers who fit
in with the culture are more likely to be viewed as stronger officers than those who express individual characteristics. A chief or supervisor is likely to want employees on the team who will support the direction s/he is seeking to take the organization. Creative or independent thinking could be viewed as a threat the chief’s goals and objectives.

### 2.2.3.2 NEO Personality Inventory (Revised; NEO PI-R)

The Revised NEO Personality Inventory (NEO PI-R) specifically measures the big five personality traits through a 240-item, 30-to-40-minute examination. Response options fall on a five point Likert scale of “Strongly Agree” to “Strongly Disagree.” The exam was published in 1978 and only covered the three personality traits of Neuroticism, Extroversion, and Openness (Costa & McCrae, 1978). Agreeableness and Conscientiousness were added to the exam in 1985.

Proponents of the five-factor model assert that it captures the most basic dimensions underlying all personality traits. The NEO PI-R delves even further into those personality traits by capturing a detailed representation through six subscales within each of the five main personality dimensions, leading to thirty individual indexes.

The exam’s creators, Costa and McCrae (1995) have provided a very detailed explanation measuring personality domains with individual facets; they observed that the instrument began with the five well-established personality factors, and then they subdivided each into the six facets. In order for the facets to meet the author’s criteria, each had to “represent distinct aspects of the domain, be roughly equivalent in breadth, and be conceptually rooted in the existing psychological literature” (Costa and McCrae, 1995, p. 46). Output from the NEO PI-R provides ratings from very high to very low across all the individual facets as well as the five personality dimensions providing a total picture of who that measured individual is. Within Neuroticism, there are indexes measuring anxiety, hostility, depression, self-consciousness, impulsiveness, and vulnerability to stress. Within Extraversion, indexes of
warmth, gregariousness, assertiveness, activity, excitement seeking, and positive emotion are measured. Within Openness to Experience, there are indexes of fantasy, aesthetics, feelings, actions, ideas, and values. Within Agreeableness, indexes of trust, straightforwardness, altruism, compliance, modesty, and tender-mindedness are scored. Finally, within Conscientiousness, there are indexes which measure competence, order, dutifulness, achievement striving, self-discipline, and deliberation.

Several studies have found that Extraversion is predictive of positive police officer performance (Bishop, et al., 2001; Black, 2000; Detrick, Chibnall, & Luebbert, 2004; Piedmont & Weinstein, 1998). Having an extraverted personality is likely to increase supervisory performance evaluations across a wide range of occupations (Piedmont & Weinstein, 1998) as well as specifically in the policing field (Black, 2000; Detrick, et al., 2004). Using the NEO PI-R, Black (2000) found Extraversion to predict officer performance across combined scores of physical, academic, firearm, driving, public speaking, and computer skill indexes. The individual facets of assertiveness and excitement seeking, both of which fall within the Extraversion dimension, significantly predicted the individual outcome of physical performance. Other Extraversion facets have also shown promise in predicting important aspects of police performance. Detrick, et al. (2004) found individuals who scored lower in excitement-seeking to score better academically and have lower disciplinary records, while those who score higher in activity do best in physical training and those who have greater positive emotions to significantly predict lower absenteeism.

A high score on the Neuroticism personality dimension is not a quality a police officer should have, as this dimension has been negatively associated with supervisor performance evaluations (Black, 2000; Peidmont & Weinstein, 1998). Looking within the dimension of Neuroticism at the individual facets, Detrick, et al. (2004) found that police officers with lower anxiety did better on firearm tests and those with self-consciousness issues to be absent more frequently. The Neuroticism facet vulnerability to stress significantly relates to a reduced
likelihood of graduating from police training academies, increased absenteeism (Detrick, et al., 2004), and lower supervisor performance evaluations (Black, 2000). Furthermore, other negative qualities of work and life, such as using the avoidance coping strategies of behavioral disengagement, mental disengagement, denial, and focusing on and venting of emotions has been linked to individuals with greater neurotic personalities (Bishop, et al., 2001).

As Agreeableness is identified with qualities of being trusting, cooperative, and tolerant, the argument could be made that it is a positive personality quality for persons who employed as police officers. In fact, Black (2000) discovered Agreeableness to significantly relate to his aggregated supervisor evaluation index. Likewise, Bishop, et al.’s (2001) study on the relationship of coping to personality found Agreeableness to predict positive reappraisal coping techniques such as emotional social support, religion, and acceptance. However, in contrast, Detrick, et al. (2004) found the Agreeableness facet of altruism to significantly predict absenteeism while the candidate was still in the training academy.

Similarly, few studies have discovered relationships between the personality dimension of Openness with outcomes related to policing. While no studies of the NEO PI-R found significant relations using the aggregated dimension of Openness, Detrick, et al.’s (2004) analysis of the individual facets found many to significantly relate to their policing outcomes of academic scores, disciplinary records, physical training, and absenteeism among recruits going through a training academy. The authors discovered that officers who rated higher in the facet values score better academically while those lower in the facet of ideas and higher in values had fewer disciplinary records and those lower in fantasy did best in physical training; finally, those higher in feelings were associated with greater absenteeism.

Studies using results from the NEO PI-R have found the personality dimension of Conscientiousness to be highly associated with positive work performance measures (Black, 2000; Piedmont & Weinstein, 1998). Piedmont and Weinstein (1998) found the overall Conscientiousness index to significantly positively relate with the three independent measures
of interpersonal relations (e.g., communicates clearly, relates to supervisors, is a team player, and is service minded), task orientation (e.g., is self-starting, hardworking, has detailed skills, and gets things done), and adaptive capacity (e.g., learns and adapts readily, copes effectively with setbacks, functions well in unstructured situations, and plans, coordinates, and follows up work of others). The Conscientiousness index in Black’s (2000) study was also positively related to his criterion that assessed combined scores across numerous academy training tests. Black found the Conscientiousness facets order and self-discipline to be strongly predictive of this aggregated outcome measure. The facet order has also been associated with reduced absenteeism (Detrick, et al., 2004). Bishop, et al.’s (2001) coping study found Conscientiousness to be positively linked with active coping techniques such as suppression of competing activities, planning, social support, and restraint. The fact that Conscientiousness positively significantly predicted these outcomes is not surprising as someone with this personality dimension is thorough with details in work and has a desire to accomplish tasks well. Every positively-viewed employee, in any field of work, will most likely have high conscientiousness.

Using the observer form of the NEO PI-R (Form R), Detrick and Chibnall (2006) assessed entry-level police officers based on reviews by their field training officers (FTO). The observer form provides the option to rate personality characteristics of another person based on the same facets and domains of the more commonly used self-report form. Qualities of average Openness and Agreeableness were important to the models as they described officers who were not extremely cynical and had normal capacities for sympathy and empathy. The authors concluded that “FTOs describe the best entry-level police officers as emotionally controlled, slow to anger, and steady under stress; socially assertive with high need for stimulation; guarded regarding others’ motives and strategic exchange; and highly conscientious, goal-oriented, and discipline” (p. 282).
As can be seen through the research, the individual facets of the big five personality dimensions may be better and more promising predictors than the major domain scores. The NEO PI-R provides the means to measure these facets and is growing in use as a personality assessment of law enforcement officers. The major limitation of the NEO PI-R is that it does not determine major psychopathological issues that the individual may have. As a result, many scholars have advocated that the NEO PI-R be used in conjunction with other psychological examinations (Costa and McCrae, 1992).

2.3 **Notable Themes and Patterns in the Literature**

After reviewing the literature on the use of psychologically screening for police selection, we can see several patterns and themes emerge over time. Most notable is that, whatever the measured outcome is, the possible predictors are limited to what is available through the psychological examination, namely psychopathology traits and personality dimensions. The general practice is to determine who exhibits extreme attitudes, beliefs, and behaviors across psychopathologies and personality traits. For example, individuals who score high on the Lie index on the MMPI or those who are strongly extraverted are the focus of concern when significant relations are found. What is lacking from this literature are examinations into how moderate scores on these predictors influence officer performance. Detrick and Chibnall (2006) noted that officers with average qualities of Agreeableness also have normal capacities for sympathy and empathy as well as not being overly cynical, qualities that may aid officers in their daily interactions with community members. Knowing more about average or normal levels in psychopathologies and personality traits may be just as important to police performance as those who register extreme scores on such measures. More research into this area is needed.

A second pattern is that the vast majority of outcomes are negative. The recurring negative outcomes presented in the above literature include formal reprimands, disciplinary suspension days, referrals to employee assistance programs, termination, unnecessary force,
insubordination, neglect, tardiness, attitude problems, absences, derelictions, and transfers to restricted duty assignments. The few positive outcomes measured include supervisor evaluations, professionalism, knowledge of the job, and satisfaction. Discussed in more detail below, the testing literature has done little to predict the quality of interaction with the public. While the more formal, traditional measures attempt to quantify successful performance, the quality of policing is a major component missing from the literature.

Finally, another pattern is that the measured outcomes throughout these studies are almost all internal indicators of officer performance, i.e., internal organizational indicators. The only outcome measured from an external source is the number of citizen complaints against officers (Scogin, et al., 1995; W. U. Weiss, et al., 2004; W. U. Weiss, et al., 2005). However, it is important to remember that complaints from citizens often come from a very vocal minority of the community and are rarely verified as true (Wagner, 1980). As a result, such complaints should not be used as the sole or primary measure of officer performance and other external sources of assessment are sorely needed.

2.4 The Problem(s) with Psychological Screening

As previously stated, the 1973 National Advisory Committee on Criminal Justice Standards and Goals Report created standards for police organizations to follow regarding psychological examinations. The first recommendation formalized the police hiring process through a multitude of physical, cognitive, and mental examinations. The second recommended the hiring of qualified psychiatrists or psychologists to evaluate applicants. And the third stated that police departments should apply the results from the scientific community’s studies on the use of psychological testing in police hiring.

While all three of the report’s recommendations are meant to change how police departments approach hiring applicants, the third recommendation specifically requires cooperation from academics and scholars to identify and analyze the factors which predict
officer performance. Dantzer (2011) briefly observed that this third recommendation has remained largely unfulfilled. However, as can be seen from the reviews above, there has been research which seeks to identify individual traits that may have an influence on how police officers approach their job. The problem is not the lack of research conducted by the scientific community on psychological examinations; rather, it is the lack of measurement for key constructs that embody the community policing and procedural justice models of focusing on police-community interactions. The current measurements and methods severely limit the type of scholarship that emerges because the theoretical constructs and measures, which resurface repeatedly, are inadequate to understanding contemporary policing. Changes are needed in the range and type of officer characteristics that are measured, as well as the range and type of performance outcomes being predicted. A new lens for understanding police-community interactions is needed. Three issues need to be re-evaluated regarding the performance outcomes used in this research. First, the methodologies of many of these studies focus on recruit officers who are still in their departments’ training academies. As a result, measured outcomes are based on training academy performances as opposed to performance outcomes once the officers are in the field for an extended period. Even after leaving the training academy and entering the field, new officers are still learning the tasks and requirements of their work. It can take many months until an officer is comfortable in and confident about his or her job. Measuring the qualities of an officer at the time of academy graduation is insufficient to understanding how that officer will truly operate once in the field.

Second, data within the training assessments are used to create performance measures. This process limits the conclusions that can be made because such information only measures selected aspects of performance as observed by instructors or as derived from formal testing. To fully understand officer performance, multiple perspectives are necessary from sources external to the organization as well as internal ones. Again, the problem at hand is the absence of community-oriented measurement among instruments that are traditionally used to predict
officer performance. Even when departments evaluate performance beyond the training academy, typically they focus on quantitative counts of officers’ efforts in the field. Under this practice, a good officer is one who is busy: making arrests, handing out contact cards, making traffic stops, writing reports, and performing other duties. Absent from the police hiring literature are assessments of the quality of police-community contacts. The current measures only determine the quantity of an officer’s work, not the quality of it. An officer might write a large number of citations during a given period, but if that officer was rude and disrespectful to the community members encountered, then the broader picture of building community relations and legitimacy would suffer.

Perhaps these dimensions of police performance would be valued more highly if management fully understood what happens during an officer’s contact with the public. There is a plethora of literature that has consistently emphasized the importance of officers’ use of procedurally just behaviors in determining community members’ satisfaction with these encounters (Tyler, 1990, 2004). Thus, in addition to the current quantitative measures of officer performance, new process and outcome measures regarding police-community interactions need to be developed and deployed.

The solution to these issues regarding measurement is simple: police departments need to directly survey community members who have recently interacted with an officer. Doing this solves the problem of relying on training evaluations because measurements are made of officer performance when they are in the field directly doing their work. If police departments value customer service, then the recommendation here is that they follow the lead of the private sector and measure customer satisfaction with police services and begin to understand the components that contribute to a positive customer experience. With the above recommendations for changing the measured outcomes of officer performance, change in the measured characteristics predicting those outcomes would also be beneficial. While psychological exams used in past research have been able to predict departments’ internal
outcomes, it is unknown whether and how such measures might relate to the use of procedural justice techniques. Hence, the predictors of procedurally just behavior will have to be identified and applied to the psychological examinations used during police hiring practices.

Currently, most psychological predictive measures are based on the personality traits of the officers. As stated earlier, identifying the personality traits of an individual who will approach his or her job with the desired community-oriented mindset is becoming an increasingly important task for police departments. What the psychological predictive measures do not currently measure is how personality may influence an individual’s likelihood of demonstrating procedurally fair behaviors when on the job. As will be hypothesized later in this dissertation, certain personality traits that have been used in the past will also predict the use of key procedural justice behaviors among officers; however, I will hypothesize that developmental characteristics that have molded individuals over their entire lives will serve as better predictors of procedurally just behaviors on the job than the officers’ personality traits.

The primary purpose of psychological evaluations is to determine who may be unfit for a job. The tests excel at alerting departments that an individual may be prone to have aggression, depression, schizophrenia, deviate lifestyles, among other undesirable traits, and therefore, if hired, may pose a potential risk to the community members the department serves. As a result, departments primarily use these exams to screen out inadequate candidates. What is unknown is whether the exams can help to identify which officers have the qualities that are likely to lead to successful community interactions.

With changes in how officer performance is measured and predicted, it may be possible to identify those who need to be screened in, or those to whom special attention should to be given because they have the individual qualities that have been empirically identified as belonging to good police officers. The goal of this dissertation is to test the importance of both personality and developmental factors for predicting the quality of police-community member
interactions. Within a community policing framework, the hypotheses will be guided by models of procedural justice. If such characteristics can be identified prior to an offering of employment, departments will save money by hiring individuals who will most efficiently and effectively understand and use techniques of procedural justice once in the field.
III. POLICE LEGITIMACY & PROCEDURAL JUSTICE THEORY

A common message in criminology is that the police are the gateway to the criminal justice system. In a similar fashion, a citizen’s interaction with a police officer is the gateway to his or her views of policing as a whole. Many dimensions to police-community interactions affect the views of the process and what the overall outcomes will be. Police-community encounters can have positive or negative outcomes, and it is the process of the interaction, especially in the aspects of procedural justice, which can have a substantial influence to a community member’s views of the encounter.

The following chapter will dissect the many aspects of procedural justice and the impact each aspect has on public views of legitimate policing. The first section will explain the theory behind police legitimacy through practices of procedural justice. Next, operationalization of legitimate police and procedural justice is discussed. Here the individual constructs, concepts, and measurements are detailed. The literature will then be reviewed to emphasize the direct and long-term impact that policing in a procedurally just manner can have. As not all groups are equal, the differences that legitimate policing has across demographic and encounter characteristics are detailed. The last section of this chapter will discuss the procedures and challenges facing implementation of police legitimacy and procedural justice into police departments.

3.1 Procedural Justice Theory

In recent decades, the guiding principle to researching police-community encounters has been based on police legitimacy theories. The research emphasizes that community-level benefits through legitimate policing are possible, and these benefits are the result of individual interactions between officers and community members. When viewing authority figures as legitimate, individuals are judging the rightfulness of the conduct of those authority figures as well as of the organization’s that supervises them (Skogan & Frydl, 2004). Legitimacy is “the
property that a rule or an authority has when others feel obligated to defer voluntarily” (Tyler, 2003, p. 307). Officers can build their and their department’s legitimacy by forming relationships with the community members they serve through repeated, short and polite interactions (Rosenbaum, 2013). Legitimate authorities are regarded as people whose decisions and rules should be accepted and followed by others. When individuals view an authority as legitimate (as a result of aspects of procedural and distributive justice), those individuals are more likely to cooperate with the rules, laws, and requests from that authority (Tyler, 2003). Police officers who are considered legitimate authorities will be more effective at achieving their goals within a community. Trusted police departments and officers have the public support needed to address crime and disorder. In addition, the public will be more likely to invest taxpayer money to legitimate departments and to cooperate with investigations by identifying offenders or calling the police for help in the first place. Those stopped during a traffic offense will be more likely to trust the officer’s decision and adhere to the outcome of their offense. Lastly, and perhaps most importantly, community members view legitimate police as active and important members benefiting the community that they serve.

These are just some of the outcomes that may develop within a community that views its police as legitimate. However, for a police organization to reach that point, officers should follow specific behaviors during interactions. To develop and maintain legitimacy and public cooperation, community members are most concerned about the procedures through which legal behaviors operate (Tyler, 1990). An officer’s fairness in how s/he handles a community member’s problem strongly influences that citizen’s views of the encounter (Tyler, 2001b; Tyler & Lind, 1992). The community member is more likely to defer to an officer’s decisions when s/he views the process as being fair.

Thibaut and Walker (1975) were the first scholars to hypothesize that individuals are more likely to accept outcomes that they believe were fairly decided. Leventhal (1980) explored and elaborated this idea in the setting of court proceedings. He argued that the elements that
make up fair procedures are identifiable and measurable. According to Leventhal, procedural fairness involves consistency in decision-making, suppression of bias in decision-making, accuracy of the decision, whether the decision is correctable, whether the individual is given the opportunity of representation, and whether procedures agree with the individual’s morals and ethics (Leventhal, 1980). Tyler has since been the leading scholar in this field. In his early work studying Leventhal’s hypotheses on a panel of Chicago residents addressing their views of the courts and police, Tyler (1988) developed his own set of dimensions that captured his initial view of procedural fairness. These included the effort of the authority to be fair, honest, ethical, and unbiased, whether opportunities for representation and appeal were made available by the authority, and the quality of his or her decisions. While these ideas and the core constructs behind the theory have changed over the years through work by Tyler and others, current empirical research generally supports the early ideas behind the theory.

Weber’s (1968) early framing of legitimacy, specifically why people obey authority figures, is the basis for much of the modern perspectives of legitimacy. He argued that an authority’s ability to have an individual obey a command did not rest solely on that authority’s possession or capability to deploy power, but instead on the existence of rules and authorities that are voluntarily obeyed as a result of societal norms and behaviors. This dissects the issue of legitimacy by asking not what people obey but why people ought to obey. The argument is that people have feelings regarding their internal obligation to obey social norms and respect moral values and that they may be unwilling to go against those feelings (Hoffman, 1977). Tyler (2004) observes that this perspective of legitimacy, which focuses on moral codes and values, is related to policing because the obligation to obey occurs as a result of the quality of the rules and the integrity of the authority administering the rules. People cooperate and comply with an authority’s requests due to their feelings of responsibility and obligation toward that authority. If the authority damages the views and attitudes of members of the public toward their legitimacy
through behaviors of injustice and disrespect, then the likelihood of cooperation and positive feelings about an obligation to obey diminish.

Procedurally just behaviors of an authority can have a large impact in determining an individual’s satisfaction with an encounter that then, in turn, influences his or her views on that figure’s trust and legitimacy. Evaluations of the police consider many aspects of procedural justice; that is, the “fairness of the process through which the police make decisions and exercise authority” (Sunshine & Tyler, 2003, p. 514). Individuals define this process by considering several elements, such as participation, neutrality, treatment of respect and dignity, and trust in the motives of the officer (Tyler, 2004). Such elements fall into two broader categories by which individuals assess procedural fairness: the quality of their treatment and the quality of a police officer’s decision-making (Tyler, 1990; Tyler & Huo, 2002).

Components which assess the quality of treatment that an individual experiences during a police encounter involve aspects of whether the officer was polite and respectful, took account of the individual’s needs and concerns, and respected lawful rights (Tyler, 1990, 2004; Tyler & Huo, 2002; Tyler & Lind, 1992). A distinct element of fairness is treating the individual with dignity and respect; community members who are disrespected and treated rudely are unlikely to cooperate with an officer. People highly value having their rights acknowledged and respected during an encounter. As a result of feeling disrespected, they disrespect the officer in turn, escalating the interaction towards a negative outcome.

The quality of the officer’s decision-making is also of importance. People value having the reasons for an authority’s decision made apparent to them. Such transparency increases the legitimacy of the officer and agreement with the outcomes on the part of the members of the public (Tyler, 2003). There are three separate components within this dimension. The first is whether the individual was able to actively participate in a discussion with the officer prior to a decision being made. When community members are able to voice their opinions, they will believe that the officer has information that is more accurate, and, therefore, the decisions are
viewed as fairer. Furthermore, people are more satisfied with procedures that allow them to share their views by explaining their situation to authorities (Skogan & Frydl, 2004). The second component is that the officer is neutral and objective in his or her decision-making. This includes whether or not the officer was impartial and listened to all involved parties in the same manner without personal bias or self-interest. Those who believe there is evidence of evenhandedness and objectivity perceive the process as fairer. The third component is that of formal justice; the officer adheres and applies the rules consistently during the encounter. This typically looks at officer consistency across individuals within an encounter.

Trusting the officer’s motives is essential to procedural justice, and the two dimensions above greatly influence this outcome. Furthermore, an individual will not be able to view an authority as legitimate or accept any made decisions if s/he is not willing to trust the officer. Officers will become trustworthy during an encounter if they explain their actions, are honest, and consider all the views and concerns of the people involved. The individuals who have to speak and interact with an officer will have more trust if the officer answers any questions sufficiently, explains what will happen next in the process, and provides useful tips about how to avoid such situations in the future. Individuals want authorities that care about their well-being and consider their needs and concerns. When an officer accomplishes this, they will be more likely to trust the officer and view the process as fairer.

One explanation for why these two dimensions (quality of the interaction and quality of the decision-making) are so important during police-community interactions is that individuals are concerned about their standing in society (Tyler, 1990). The way that a police officer treats community members and makes decisions regarding those community members communicates the degree to which the officer values and accepts them as part of society. Authority figures are meant to treat all members of society equally, but when interactions are abrupt, rude, one-sided, and so on, it signals to a community member that s/he is not worthy of fair treatment and therefore, is less valued than other group members. High evaluations in the quality of a
community member’s treatment and the quality of an officer’s decision-making provide feelings of protection and worth, which in turn can contribute to viewing the officer as a legitimate authority that should be supported and obeyed. When a community member views an officer as legitimate, cooperation is likely to increase because the officer's decisions are more likely to be accepted (Tyler, 1990; Tyler & Huo, 2002).

Procedural justice is part of the normative perspective of justice (Sunshine & Tyler, 2003). This normative view argues that police who are fair in their interactions with community members will be viewed as more legitimate. The other view of justice is the instrumental perspective, which considers feelings toward police performance, risk, and judgments about distributive justice (Sunshine & Tyler, 2003). According to this perspective, police can increase support and their legitimacy by having high performance in controlling crime, effectively deterring criminal behavior, and distributing their resources equally across people and communities (Hinds & Murphy, 2007).

Distributive justice, which describes the distribution of police resources and views about what a fair outcome should be, is the main component in the instrumental perspective (Tyler, 2000). Essentially, it examines whether the police are favoring certain neighborhoods, group of community members, races, and/or classes as well as whether the outcomes people receive are fair based on their behavior. Furthermore, police performance levels are of concern. Whether or not the work of the police is adequate to the crime and disorder levels within a neighborhood will affect how the public views the police. If the police are not performing to the degree that the community expects, trust towards them is likely to be low. Authorities (institutions and individuals) cannot be trustworthy if the provided services are not adequate across the many domains of social life.

Procedural justice and distributive justice are two distinct phenomena. The two perspectives are also separate from whether or not the individual views the outcome as favorable (Tyler, 1990). Tyler's (1988) early research exploring satisfaction and perceptions of
contacts with courts and police found that the favorability of the outcome had a separate impact from perceptions of fair procedures. For example, a person might receive a traffic ticket and be very upset as a result, but s/he may also think, “Well, I did run that light, so I do deserve this.” In such a case, s/he views the outcome as unfavorable but fair in a distributive justice sense. To add further to this example, the officer may have explained his or her reasoning behind writing the ticket, and the person receiving the ticket may feel that the officer did make a good judgment according to the facts and acted in an unbiased manner. Now the dimension of procedural justice is present.

In summary, police behaviors of procedural and distributive justice create views of legitimacy that, in turn, affect the public’s willingness to obey and cooperate with the law. Procedural justice is comprised of three main dimensions: the quality of interpersonal interaction, the quality of decision-making, and trust in the motives of the police. The quality of interaction involves aspects of authoritative politeness, respectfulness, and taking account of the needs and concerns of involved individuals. Allowing participation and voice, being neutral, objective, and consistent are the qualities that make up the component of decision-making. Trust-based motives involve explanations of authority actions and necessary future steps, honesty, and consideration of all views and concerns of those involved. Distributive justice concerns the qualities of police performance, equal distribution of police resources, and the fairness of outcomes. High marks in these areas create a sense of trust and feelings that authority figures are legitimate.

3.2 **Measurement of Procedural Justice**

Measurement to determine the quality of police-community encounters has long been part of police department assessments, whether through specific community surveys or with broader organizational measurements. Early scholars aimed to better measure police behavior and organizations in order to directly compare departments and determine where and when
consideration for improvement may be necessary. Bellman (1935) created the first standardized survey instrument which was meant to provide an objective measurement across all aspects of a police department. His goal was to quantifiably measure the quality of selection, training, and promotion of personnel, and the duties within all divisions, as well as obtain a specific understanding of the internal operation in the department.

Looking specifically at items that may concern police-community encounters, Bellman (1935) questioned departments on whether patrolmen “become familiar with all persons on [the] beat, their residences, character and occupation,” “furnish information to tourists and strangers,” “visit regularly schools and all public places,” “cultivate the acquaintance of peddlers, solicitors, mailmen, milk drivers, newsboys, car-men, express-men, cab drivers, and every other person who regularly works in the territory of the beat,” and “acquire the confidence of all people residing on the beat through kindness and helpfulness whenever possible.” Response options included satisfactory, barely adequate, and unsatisfactory. Although these questions were developed in the 1930s, they are the basis for items that measure legitimacy in policing today—most notably the last item considering public confidence through kind and helpful officers.

The major problem with Bellman’s methodology was that he expected the chief of police to fill the instrument out. Besides the issue of whether or not the police chief is honest in his or her assessments, it is doubtful if the chief would be the most knowledgeable individual to answer some of these items. For instance, only a patrol officer would be able to say anything about his or her level of knowledge of the individuals that reside in the community, and, more importantly, only a community member would be able to assess his or her confidence in the police.

Bellman claimed that he meant his instrument to be a template when assessing police departments. He expected the measurements and questions to change, but the use of internal views and records to assess productivity and efficiency became standard practice for a number of years. During the professional era of policing (1900 - ~1960), the leading methodology
involved collecting officers’ performance records, which included tallying accounts of an officer’s efforts in the field, including the number of arrests, contact cards handled out, traffic stops, cleared calls, and other day-to-day activities. The motive behind measuring these was that if an officer was busy in the field, then s/he was efficient and effective. However, such measurements only determine the quantity of an officer’s work, not the quality of it. An officer may write a large number of citations during a given period, but if that officer was rude and disrespectful to the community members that he encountered then the broader goal of building community relations would suffer. When a police department is attempting to determine the quality of police-community interactions as well as the public assessment of the police, the only appropriate respondents are those from the community in question. Although methodologies and measurements changed, it was not until the latter half of the twentieth century that asking the public for their opinions of police become a more common practice. A multitude of singular items, scales, and coding schemes has been used over more recent decades of measuring police legitimacy when surveying the public.

In the following section, the latent constructs that contribute to and define police legitimacy are dissected. These include the dimensions (and sub-dimensions) of procedural and distributive justice, which affect how an individual will view an officer’s legitimacy as a result of an encounter. The sub-dimensions that make up the concept of legitimacy are separated out and discussed. Next, the outcome measures expected from legitimate police are touched on. These include components such as satisfaction, obligations to obey the law, cooperation, and compliance. Differences in attitudes within these constructs across individual demographic characteristics are covered.

3.2.1 Primary Procedural Justice Measures

Empirical research on legitimacy attempts to measure how the process of determining an authority as legitimate occurs and how this then affects an individual’s behavior towards the
law and requests of police officers (Skogan & Frydl, 2004). Individuals are more likely to cooperate with investigations or report criminal activity, comply with police requests, and feel an obligation to obey the law as a result of viewing an officer or a police department as legitimate. However, in order to measure legitimacy, it is first necessary to determine what makes an encounter be seen as positive. Tyler (1990, 2001b) argues that community members are most concerned with procedural justice. The quality of interpersonal treatment and the quality of officer decision-making have been the two main dimensions of procedural justice for many years. A more recent measure of procedural justice involves the degree to which an officer exhibits empathetic actions toward a community member during an interaction. Empathetic support has not been studied to the same extent as the quality of treatment and decision-making but has become of more interest recently.

3.2.1.1 Quality of Interpersonal Treatment Measures

The first, and most widely researched, dimension of procedural justice is the quality of interpersonal treatment. This dimension may be the driving factor behind an encounter being deemed as procedurally just. Depending on the study (and factor analyses), some authors create separate dimensions from survey responses while others compile all the items measuring the quality of interpersonal treatment into one index. When separated into subscales, components include whether the officer was polite and respectful, took account of individual needs and concerns, and respected people’s rights (Tyler, 1990, 2004; Tyler and Huo, 2002; Tyler & Lind, 1992).

Some of the key variables that have been used to measure the quality of interpersonal treatment during police-community interactions include whether officers “treat people/me with dignity and respect,” “respect people’s rights,” and “treated me politely” (Jackson & Sunshine, 2007; Mazerolle, Antrobus, Bennett, & Tyler, 2013; Murphy, Tyler, & Curtis, 2009; Rosenbaum, Lawrence, Hartnett, McDevitt, & Posick, 2012; Sunshine & Tyler, 2003; Tyler, 1988, 1989, 1990,
1997; Tyler & Fagan, 2008; Tyler & Wakslak, 2004). Such items essentially measure how well the officer has treated the community member. This needs to be measured because treating the individual with dignity, respect, politeness, and concern are highly correlated with overall satisfaction from an encounter.

### 3.2.1.2 Quality of Officer Decision-Making Measures

When operationalizing the quality of the officer’s decision-making, many different items have been used in studies across the years. Some of the key items used in multiple studies include whether officers “apply the rules consistently to different people,” “accurately understand and apply the law,” “made decisions based on the facts,” “try to get the facts in a situation before deciding how to act,” or whether the community member “was treated the same way that others would be treated in a similar situation” (Rosenbaum, Lawrence, et al., 2012; Sunshine & Tyler, 2003; Tyler & Fagan, 2008; Tyler & Wakslak, 2004).

For scholars who separate officer decision-making into multiple sub-dimensions (as opposed to one grand “treatment of decision-making” index), there are typically three components: the degree the officer allows the community member to voice their concerns or participate in the conversation, the impartialness of the officer, and his or her consistency (Sunshine & Tyler, 2003; Tyler, 2003, 2004; Tyler & Lind, 1992). Allowing the individual to have a voice in the decision-making causes the officer to be viewed as having more accurate information, and therefore, any decisions that are made are considered more legitimate. Officers who are neutral and objective in their decision-making are viewed as making more honest and fairer decisions.

Lastly, an officer who adheres to and consistently applies the rules at all times during the interaction is an important component to the assessment of the decision-making dimension. Officer consistency towards individual members of the public is typically measured within a singular interaction. However, broader measurements of consistency are also worth considering.
when assessing police legitimacy. In one of his earliest studies, Tyler (1988) measured consistency by separating police behavior into four dimensions. The first looked at police behavior over time, specifically, at the differences in treatment and outcome between people who had multiple encounters with the same police officer. The second considered whether people in similar situations would be treated the same way. The third assessed consistency between the expectations of the individuals (what they thought would happen) and the actual outcomes. Finally, Tyler looked at the differences in the consistency between an individual’s encounter and encounters of close friends and family members. All these measures aimed at determining whether police were acting in routine and accepted ways when interacting with the public. However, researchers never followed through with this type of measurement, and they typically look at consistency for those involved in a single encounter.

### 3.2.1.3 Police Empathetic Concern

While there has been much research on procedural justice using the above items, much of the literature is missing dimensions of empathy that an officer may or may not exhibit during an encounter with victims of crime. Recently research has begun to shift focus from the traditional procedural justice domains toward aspects of officer care, emotional support, and emotional control.

For example, Wells (2007) used individual items that considered whether the officer went out of his or her way and took additional actions in duties. Specifically, the study determined whether the officer referred the community member to another agency during the encounter, re-contacted the individual after the encounter, explained the reasoning behind a traffic ticket (when that was of concern), or helped the individual feel more secure in the future.

In another study, Dai, et al. (2011) measured “police care” by questioning whether an officer provided assistance to the community member in a variety of ways, such as reassuring them or contacting an agency for them. In earlier research, these types of officer behavior were
frequency over looked. Besides the traditional items related to capturing the community member’s participation and voice, they also analyzed the degree to which an officer complied with requests and, more importantly, whether or not the officer explained his or her reasoning for not complying. Such information is vital to an individual who has just been a victim of a crime to help him or her understand the officer’s role and in building legitimacy.

The National Police Research Platform (Rosenbaum, Cordner, et al., 2012), from which data are used for analyses in this paper, measured dimensions of officer demeanor, communication, emotional control, task competence, and emotional support. Items from Rosenbaum, Cordner, et al.’s study focused on specific ways that an officer might benefit a victim of a recent crime, in addition to the tradition procedural justice measures of whether or not the officer was respectful, polite, fair, etc. Research on victimization has supported the view that an officer’s behavior can have a large impact on victim reaction, recovery, and coping, which can further impact the likelihood of future cooperation with authorities (Ahrens, 2006; Starzynski, Ullman, Filipas, & Townsend, 2005; Ullman, 1999). According to Ullman (2000), instrumental, emotional, and information support are three positive officer behaviors that they can exhibit toward victims; while blaming the victim, taking control of their decisions, distracting them from what happened, and showing egocentric behavior are four key dimensions of negative behaviors.

While the measurement of officer empathy is a newer dimension, it is certainly gaining ground in police legitimacy research. Traditional views of policing may argue that it is not an officer’s role to be friendly or consoling to victims of a crime; however, recent research has shown that such behaviors will significantly increase positive feelings toward the police as well as recovery from the crime: police empathy is a necessary component in measuring police legitimacy.
3.2.2 **Distributive Justice**

The second view of justice is the instrumental perspective. Distributive justice is the main component of this perspective. Measurements of distributive justice examine peoples’ views of the distribution of police resources, the degree of police performance, and views about what is a fair outcome (Sunshine & Tyler, 2003; Tyler, 2000). The instrumental view argues that public support increases as the police effectively control crime by creating credible risks of detection and sanctioning those who break the law equally across all people and communities (Hinds & Murphy, 2007). Individuals who view police officers and departments as legitimate believe that police do not favor one geographic area or population of people over others. People expect the same treatment as anybody else, and when that does not happen, mistrust develops.

Police performance measures indicate how good a job the police are doing in their neighborhoods and cities. Such survey questions determine whether the police combat and control all aspects of crime, are prompt in responding to calls, are efficient, and generally help community members with problems that are under the police domain. In areas where crime and disorder are rampant, community members may view the police as failing in their duties. As that feeling increases, views toward the department’s legitimacy decrease.

Specific items used to measure distributive justice include questions such as “Do people in your neighborhood receive the quality of service they deserve from the police?” (Sunshine & Tyler, 2003; Tyler & Wakslak, 2004), “How good a job are the police doing in dealing with the problems that really concern people in your neighborhood?” (Hinds & Murphy, 2007; Rosenbaum, Lawrence, et al., 2012), and “How quickly do the police respond when called for help?” (Tyler & Wakslak, 2004).

3.3 **Outcomes of Procedural Justice Use**

In theory, broad, positive societal level changes can occur through the simple process of officers behaving in procedurally fair ways during police-community interactions. The above
dimensions of procedural and distributive justice are the antecedents of legitimacy, which is “the property that a rule or an authority has when others feel obligated to defer voluntarily” (Tyler, 2003, p. 307). Legitimate authorities are regarded as people whose decisions and rules should be accepted and followed by others. Mazerolle, et al. (2013) conducted a recent systematic review of the literature regarding legitimacy and police. They described the process of obtaining views of legitimacy and its outcomes as occurring in the following manner:

**Figure 1 Flowchart of Police Legitimacy and Outcomes**

As shown in the above flowchart and previously discussed, aspects of procedural justice are an important component of views of legitimacy; however, there are other dimensions that also influence those views such as distributive justice, local police performance, legality, and tradition. No matter the factors that promote views of legitimacy, individuals’ behavior and attitudes toward the police are likely to change for the better when they feel that police operate in a legitimate fashion.
The effects of an officer behaving in a procedurally just manner during community interactions are many. The most immediate and direct outcome of procedural justice is a perception that police authority is legitimate, which leads to an increase in community satisfaction with police encounters, and satisfaction with a police encounter grows when a community member feels that the officer was trustworthy, believed that decisions were made fairly, and felt respected and shown concern. As satisfaction with the encounter increases, views of the officer’s legitimacy increase. Police officers who are deemed as legitimate during an encounter are much more likely to obtain cooperation (Tyler, 2003), willingness to consent (Tyler and Huo, 2002), and respect and compliance (Dai, Frank, & Sun, 2011) from the community member. The opposite is also true; people who experience disrespectful and unfair behavior from police are less likely to follow an officer’s directives (Paternoster, Brame, Bachman, & Sherman, 1997; Tyler, 1990, 1997). The degree of an individual’s willingness to obey directions from a police officer is the most direct extension of the concept of legitimacy (Skogan & Frydl, 2004).

Trustworthiness, defined as the degree to which the community member believes that the officer is acting out of altruism and with a sincere desire to be fair, is a much sought-after goal of police-community interactions (Tyler & Wakslak, 2004). Some of the specific items used to measure officers’ behaviors that affect the assessment of his or her trustworthiness include that they “give honest explanations for their actions to the people they deal with,” “take account of the needs and concerns of the people they deal with,” and “treat people as if they can be trusted to do the right thing” (Hinds, 2009; Hinds & Murphy, 2007; Sunshine & Tyler, 2003; Tyler, 1997; Tyler & Fagan, 2008; Tyler & Wakslak, 2004). Through aspects of procedural justice, such as being honest or showing concern, an officer can increase whether a community member can feel that the officer is trustworthy. Trustworthiness and legitimacy go hand and hand, and without one, the likelihood of the other being present is low.
Procedurally just behavior does not only affect views toward the officers involved in the encounter but creates lasting, broader community-level effects. While community members typically only interact with a specific officer, that officer’s behavior will play a role in future evaluations of the police in general. Therefore, individual officers who are routinely procedurally fair while interacting with community members will influence the broader views of their department. As views of the police department see it as legitimate and fair, public support will increase.

When feelings of legitimacy toward police increase, indirect outcomes, such as crime and reoffending, should decrease. If individuals view police procedural and distributive justice highly, either from a specific encounter or more generally, then the expectation is that they will comply and cooperate with an authority’s rules and requests as well as with society’s laws. Obviously, this is an outcome that many police organizations want to achieve. Paternoster, et al. (1997) found that in instances of domestic violence, offenders who viewed the experience as fair were significantly less likely to reoffend; hence, procedural justice encourages long-term obedience to the law. Looking specifically at restorative justice techniques in comparison with traditional court settings, Tyler, Sherman, Strang, Barnes, and Woods (2007) discovered that offenders who experienced greater procedural justice during their conference or court proceedings were about 12% less likely to be rearrested in the following three to four years. As these studies show, the use of procedural justice not only affects the immediate rates of satisfaction in the outcome but also creates a lasting impact in reoffending among offenders.

When ratings of legitimacy are high, communities are more likely to cooperate, comply, hold confidence, and be satisfied with police officers and departments. As legitimacy increases, willingness to obey the law increases, and there is the possibility of reduction in crime and disorder. As can be seen, the actions and behaviors of the officers on the street, who interact with offenders, victims, and community members on a daily bases, will have a large impact on societal operation. Those whose behaviors are procedurally just will be viewed positively in the
community, and those whose behaviors are not will be disliked, which will potentially dissolve the accumulated benefits.

### 3.3.1 Outcomes by Demographic and Encounter Characteristics

Differences in perceptions of procedural justice and police legitimacy among difference segments of the population provide additional insights into police-community relations and the importance of justice concepts. Many studies have examined these relationships within and across demographic lines, including race/ethnicity, age, and socioeconomic status.

#### 3.3.1.1 Race/ethnicity

The most prominent demographic component in legitimacy research has involved examining attitudes toward the police and differences in satisfaction with encounters across racial and ethnic lines. Analyses of race/ethnicity differences has generally found that African Americans are the most critical and have the poorest attitudes, followed by Hispanics, while Whites have more positive attitudes toward the police (Bayley & Mendelsohn, 1968; Brown & Benedict, 2002; Decker 1981; Engel, 2005; Gallagher, Maguire, Mastrofski, & Reisig, 2001; Reisig & Parks, 2000; Tuch & Weitzer, 1997; Webb & Marshall 1995; Weitzer, 2000; Weitzer & Tuch, 1999).

These differences between racial/ethnic attitudes toward the police occur for many reasons. Individuals who are members of a minority population in the United States, primarily those who are young and living in low-income urban areas, face many difficulties with the police as they are often stopped and arrested at higher rates than Whites (Brunson & Miller, 2006). Furthermore, when stopped by the police, African Americans are more likely to have perceptions of procedural and distributive injustices or report mistreatment to a greater degree than Whites (Engel, 2005; Sullivan, Dunham, & Alpert, 1987). Brunson and Miller (2006) found that young African American men “especially disliked the way officers spoke to them. For
example, they noted that police officers routinely used antagonistic language, engaging in
name-calling, cursing and derogatory remarks” (p. 627).

Interestingly, Mastrofski, et al.’s (2002) study of 3,130 suspects found race/ethnicity to
be a significant element in determining disrespect from police officers, although not in ways that
were expected. White suspects were more likely than minorities to receive disrespect from
police officers, even when controlling for the degree of disadvantage in the neighborhood where
the encounter occurred. However, the leading factor in the analysis was the behavior of the
suspect, irrespective of his or her race/ethnicity. If a suspect initiated disrespect toward an
officer, they were more likely to receive disrespect from the officer than individuals who
respected the officer.

Although satisfaction levels and attitudes toward the police are different across race and
ethnic lines, much of Tyler’s research has determined that there is little difference in the
importance these groups place on procedural justice (Tyler, 1994, 1997, 2000; Tyler & Huo,
2002). Tyler and associates argue that all individuals evaluate police officers in similar ways,
that is, by the fairness of their treatment and the officer’s decision. When determining their level
of satisfaction from an encounter, community members of all ethnic groups are primarily
influenced by aspects of procedural justice.

However, looking more closely at procedural justice, Tyler (2001b) did find differences
between the psychological basis of legitimacy across racial groupings. In his study, it was found
that Whites and African Americans are more concerned with the quality of their treatment. On
the other hand, Hispanics are more concerned with the quality of the officer’s decision-making,
focusing heavily on the officer’s neutrality. Sunshine and Tyler (2003) found slightly different
results than Tyler’s (2001b) study. Results from their study found that Whites were especially
sensitive to their treatment, valuing this dimension most when evaluating the encounter, but
African Americans put the most emphasis on the quality of the officer’s decision-making, and
Hispanics fell somewhere in between, valuing both the quality of their treatment and the quality
of the officer’s decision-making (Sunshine and Tyler, 2003). In a third study, Tyler and Huo (2002) found the ways racial groups define a fair procedure similar among Whites, Hispanics, and African Americans.

3.3.1.2 Age

Studies which look at differences in age have routinely found that younger individuals hold less favorable views toward the police than older people (Reisig & Correia, 1997; Reisig & Giacomozzi, 1998; Reisig & Parks, 2000). Older people have also been found to be more confident in the police than younger individuals are (Ren, Cao, & Lovrich, 2005). A leading reason behind this is that younger people are likely to view police officers as trying to take away their freedoms and individualities while older people feel the police are protecting their assets and persons.

3.3.1.3 Socioeconomic Status

Differences in views held by members of different socioeconomic statuses (SES) toward the police are complex. Most studies have found that being a homeowner or having a higher SES relates to more positive attitudes (Reisig & Parks, 2000; Weitzer, 2000; Weitzer & Tuch, 1999). Weitzer (2000) looked at policing attitudes across race/ethnicity and class position. Respondents were from either a middle-class White community, a middle-class African American community, or a lower-class African American community in the Washington, DC area. Across all three groups, respondents acknowledged that African Americans are mistreated more by the police than Whites are. Interestingly, respondents from the middle-class African American community rated the police the highest. Past research has often treated a racial grouping as if it is homogeneous, but the results from this study suggest otherwise. Class standings differentially affect views of the police across these racial groups. Unfortunately, this study did not collect information from a lower class White community, an obviously important group to survey.
Further mystifying this relationship, Weitzer and Tuch (1999) report that when analyzing global views of the police, such as police protection of neighborhoods, police racism, as well as views of the criminal justice system as a whole, differences between classes were found among African American respondents. For each of these global views, a higher education for an African American corresponded to significantly more negative views toward the police compared to their less educated African American counterparts. However, when looking at views about individual police-community encounters, specifically their treatment by the local police and personal experiences with the police, no class differences were found among African Americans. It is worth noting, however, that the measurement of income (a measurement perhaps more specific to social standing than education) did not relate to views toward the police among either racial group. Weitzer and Tuch (1999) consider why middle-class African Americans are so critical of the police. One solution they offer is that this group of individuals is “acutely aware of race-based discrimination due to an expectation that class position should shield middle-class Blacks from mistreatment” (p. 502). As a result, perceived discrimination is amplified and dissatisfaction with the police increases.

3.3.1.4 Neighborhood Factors

As the previous research has shown, there are differences in the ways police are viewed among key demographic groups. However, looking only at such factors can fall short in explaining why differences in outcomes occur. For example, research controlling for neighborhood and contextual factors has altered the way scholars have viewed the impact of demographic differences. When controlling for variables such as past victimization, fear of crime, quality of life, community culture/disorder, and informal collective security, several studies have found that the effects of race/ethnicity on attitudes toward the police become non-significant (Cao, Frank, & Cullen, 1996; Correia, Reisig, & Lovrich, 1996; Ren, et al., 2005; Schafer, Huebner, & Bynum, 2003). Using the Project on Policing Neighborhoods (POPN) data,
Reisig, McCluskey, Mastrofski, and Terrill (2004) concluded that once neighborhood characteristics had been accounted for, African American suspects were no more likely to behave disrespectfully toward officers they were interacting with. The authors concluded that economic and social disadvantage factors probably have a larger role in promoting African American disrespect toward the police than their race alone.

There are other neighborhood factors also worth measuring. For instance, Reisig and Giacomazzi (1998) found increased fear of crime to decrease confidence in the police, while Ren, et al. (2005) found the exact opposite. As for past victims, both studies found that being victimized decreased some attitudes, specifically confidence, toward the police (Reisig & Giacomazzi, 1998; Ren, et al., 2005). Lastly, Schafer, et al. (2003) found that increases in the amount of major crime in a neighborhood significantly decreased community member perceptions of broad traditional police services but had no effect on views of community police services. This work is consistent with the distributive justice model. Fear, victimization, and crime rates all suggest to the community that the police have failed to keep them safe.

3.3.1.5 Type of Contact

Past research has identified that the types of contact affects peoples’ attitudes toward a police officer and is an important element to measure in this type of research. Most studies analyze three types of police-community member encounters: traffic stops, traffic crashes, and crime reporting. These three encounters fall into two groups, police-initiated (non-voluntary) encounters and citizen-initiated (voluntary) encounters. Typically, satisfaction levels with police-initiated encounters are much lower than with encounters in which the community member requested police assistance (Decker, 1981; Skogan, 2005; Tyler, 1990; Wells, 2007). These differences exist primarily because individuals focus more on their treatment during non-voluntary stops than they do during voluntary stops when they are mainly seeking help from the police and so focus on the outcomes.
For instance, community members may be primed to distributive and procedural injustices when police-community encounters occur during traffic stops as they are likely to perceive even legitimate traffic stops as a form of harassment (Engel, 2005). Therefore, individuals are more prone to notice and benefit from procedural justice factors during traffic stops (Tyler, 1990; Tyler & Folger, 1980). Individuals involved in a traffic stop will be satisfied to a greater extent than those involved in other types of encounters when an officer explains why he or she stopped the vehicle or allows the person to explain why the infraction occurred. This is because individuals do not expect officers to be helpful during non-voluntary contacts. On the other hand, if officers are respectful and neutral during non-voluntary encounters, community members are more likely to be pleased no matter the outcome of the stop. Using data from a survey of Evanston, IL residents, Tyler and Folger (1980) found that the impact of a perception of procedurally fair treatment on judgments of the police was more important among non-voluntary stops. Wells (2007) analyzed the effects of procedural justice on police performance across the three types of police-community encounters and found procedural justice factors to matter least for crime victims (voluntary contacts). Wells argued that crime victims are more concerned with the outcome-orientated behaviors than with procedurally fair treatment.

3.3.1.6 Past Experiences

Community members’ past experiences of the police, which have shown to influence current views of the police, is another important dimension to measure, one that fewer studies have captured. During encounters in which individuals have strong feelings toward the police due to their past experiences with police, procedural justice may not be the primary factor in forming levels of satisfaction. The long-term effects of negative past or vicarious experiences are considerable in altering individuals’ expectations of and attitudes toward police. Engel (2005) found that individuals are more likely to have opinions of procedural and distributive injustice when they are often stopped by police. Decker (1981) came to the conclusion that
attitudes toward the police are firmly embedded in the social structure. He argued that contextual factors, such as neighborhood crime rates and past victimizations, significantly influence attitudes toward the police. Schuck and Rosenbaum (2005) came to the same conclusion, identifying a relationship between negative police-community contacts and negative global and neighborhood assessments of the police. Based on empirical results from a cross-sectional sample of 479 individuals from the city of Chicago, they argued that individual assessments of police performance must account for neighborhood-level views of the police as well. Their results determined that residents are capable of distinguishing between “the police” and “the police in my neighborhood,” and that negative experiences from police encounters create lasting effects that contribute to lower attitudes about police officers and policing as a whole. During an interaction between a community member and officer, satisfaction is not only determined by the amount of procedural fairness the officer exhibits during that moment but also by the attitudes that the community member brings with him or her to the encounter.

As the results above show, there are characteristics of a police-community interaction that are outside the control of an officer. The community member’s background, residence, demographic characteristics, as well as the aspects of the contact (voluntary vs. involuntary, past victimizations, past experiences), can all indirectly influence a community member’s satisfaction with an encounter. While the degree of procedural justice may not always be the most important or prominent component in a police-community interaction, having an officer behave in procedurally just ways can only positively affect a community member’s feelings about the interaction.

3.4 Conclusion

Scholars of legitimate policing have dichotomized police approaches into the instrumental and normative perspectives (Sunshine & Tyler, 2003; Tyler, 1990, 2001a). The instrumental view minimizes officers’ values while emphasizing sanctions and threats toward the
public. Often police officers may develop an orientation towards the public of skepticism and suspiciousness (Gilmartin, 2002). They ask themselves, “Are these people doing things that would justify stopping them, questioning them, and searching them.” Community members are seen as potentially criminal, and the police are meant to continuously look for signs of illegitimate behaviors as opposed to having a more positive perspective toward the community.

When the police focus on their effectiveness in combating crime, they are mainly viewing people as potential criminals and asking themselves when they should reprimand, fine, or arrest those individuals. Such an approach creates an orientation towards the community that is antithetical to building legitimacy. The way that a police officer treats and makes decisions regarding a community member communicates the degree to which the officer values and accepts that person as part of society. The trouble with a focus on instrumentality and punishing offenders is that it undermines people’s values, which in turn damages the relationship between the community and the authorities.

On the other hand, the normative perspective, based upon legitimacy and techniques associated with procedural justice, alters the views community members may have toward officers and the departments they represent in ways that allow officers to exercise their authority (Tyler & Lind, 1992). But there is more to procedural justice than increasing cooperation, compliance, or obtaining consent; treating the public with dignity and respect are, simply, the appropriate behaviors for a public servant to have. Treating community members equally, fairly, and courteously improves relations and increases partnerships with the community in the fight against crime and disorder. Furthermore, legitimate policing increases the safety of officers because they are much less likely to be drawn into an escalating spiral of conflict that ends with someone, either the officer or individual, getting injured (Tyler, 2012).

The quality of policing, such as officers’ lawfulness, their ability to fight crime and provide services, a department’s effectiveness, and the capacity of police forces, has improved dramatically in recent decades. However, public support for the police has not increased at a
similar rate and has remained especially low in minority populations. In the past thirty years, in fact, public confidence in the police has essentially remained flat (Jones, 2011). Therefore, other methods of influencing the public’s views of a police organization’s legitimacy should be considered today. The pursuit of legitimacy in policing can be done in many ways and settings: through research which surveys community members and builds knowledge about how they view the police that serves them, which is then applied through partnerships with the police department and policy makers; through internal departmental changes, by which supervisors and upper command staff treat their employees with the same fairness and respect that they expect their officers to treat community members; and through training practices to change active officers’ understandings of the benefits of policing in legitimate ways, whether those officers are recruits or veterans.

Finally, legitimate policing can be implemented by identifying and hiring the types of individuals who will most likely practice procedurally just behaviors. The President’s Crime Commission in 1967 recommended the hiring of minority police officers to help address the problems found between minority populations and police departments at that time. Today, experts are recommending hiring a new type of officer: one who can police in a way that promotes community-police relationships and exhibits fair, respectful treatment of community members of all lifestyles and backgrounds. But how are departments to identify individuals who will actively and efficiently use procedural justice techniques in their daily interactions? And what characteristics are associated with procedural justice use in the field? As previously noted, psychological and personality screening tools are a good way to determine traits of applicants, but what traits need to be measured? The following section argues for the identification of developmental characteristics that may affect an applicant’s use of procedural justice behaviors as a police officer. Specifically, the outcomes associated with how an individual was disciplined as a child by his or her parents for misbehavior will be detailed and related to the behaviors of procedural justice. By hiring individuals who know and follow the procedurally fair methods
when interacting with community members, a police department should, eventually, have a force that the community views as a legitimate authority.
IV. PARENTAL DISCIPLINE AND POLICE LEGITIMACY

The behaviors that lead to being procedurally just are not characteristics that an individual can simply learn overnight and use at will. Being respectful, fair and unbiased are traits that develop across a person’s life. Although training may help, officers cannot simply go through an exercise and suddenly be active listeners. While the training may identify areas where they need to improve, and they can work to make those improvements, many would argue that the qualities of procedural justice are engrained moral characteristics that define a person. Morality, as Hoffman (1979) observes, is “the part of a personality that pinpoints the individual's very link to society, and moral development epitomizes the existential problem of how humans come to manage the inevitable conflict between personal needs and social obligations” (p. 958). But how do these moral views develop in an individual? Many would argue that a parent, who is the most significant figure in a child’s life, has the ability and responsibility to develop an individual’s moral code.

The qualities that eventually develop into the behaviors of procedural justice are most likely learned from a young age. It has been assumed since Freud that a child’s behavior is most likely learned through modeling the behavior of his or her parents and then experiencing and evaluating the positive or negative consequences of those actions (Grusec & Goodnow, 1994, Hoffman, 1979, 1994). However, while many parents strive to instill their children with certain values and morals, this is not exactly an explicit process. Bandura (1962) pointed out that the process a child goes through to identify with their parent and follow their example is too complex. Instead, he observed that children learn through imitation by simply mimicking the behaviors of those who surround them. As children get older, it is through repeated lessons about fairness or being respectful that they may cognitively acknowledge and developed such qualities within themselves. In contrast, for an individual who was never taught or witnessed these finer points of behavior, acting in a procedurally just manner is much more unlikely as an adult. The earliest experiences of handling conflict and interpersonal interactions occur with
one’s parents and as a result, how a parent raises and disciplines a child influences the trajectory of that child’s moral and interpersonal development, views, and life for years to come.

The relations between types of parental discipline and views of morality have been well researched. Moral internalization is fostered through consistent inductive disciplinary techniques which emphasize the negative consequences a child’s behavior may have on others along with the parent’s frequent expression of affection separate from the disciplinary correction (Hoffman, 1977). The ways in which parents discipline their children vary widely, and much research has been done to identify the effects specific punishments can have later in life. Parental disciplinary practices have been linked to the development of children’s self-esteem (Becker, 1964) and conscience (Becker, 1964; Kochanska, Tjebkes, & Forman, 1998; Steinmetz, 1979), antisocial or behavior problems in childhood (Forehand & McMahon, 1981; Patterson, Debaryshe, & Ramsey, 1990; Patterson, Reid, & Dishion, 1992), aggression later in life (Becker, 1964; Loeber & Hay, 1997; McCord, 1979; Straus, 1994), delinquency (Hoeve, et al., 2009; McCord, 1979; Patterson, et al., 1992; Sampson, 1993), adult criminality (McCord, 1979), and mental health issues such as depression or alcoholism (Holmes & Robins, 1988). The ways a disobedient child is disciplined and punished can affect his or her outlook on life and life course. In the following section, the argument is put forth that beliefs about fairness and justice are shaped by parental punishment. First, the different types of child-rearing and the supporting theories behind them are laid out. Then, the prominent parental discipline dimensions and the impact such conduct can have on an individual’s life are dissected and discussed.

4.1 **Constructs of Child-Rearing**

One goal of raising a child is to develop a moral character and optimal competence so that child may succeed in life. Baumrind (1996a) defines these goals aptly as “character [being] what it takes to will the good, and competence [being] what it takes to do good well” (p. 406). More specifically, Baumrind explains that an individual with character will interact in ways that
reflect positive social responsibility, moral commitment, and self-discipline, all of which will regulate his or her conscience. Character forms through interactions with other responsible individuals, and during the formative years, such individuals are the child’s own parents, who have the ability and power to control interactions as well as the ways in which their child is likely to interpret experiences. A competent individual is one who is able to effectively function in society by reaching for and achieving personally and culturally valued goals (Baumrind, 1996a). In ideal circumstances, an individual’s competence is developed from a young age through learned parental demands that create rules and boundaries. As the child discovers what is “too far” or “not far enough,” s/he begins to understand the appropriate methods of functioning properly in society.

Many dimensions of parenting have been proposed. From results in a longitudinal study observing the behavior of and rating the impact of the home environment among 67 preschool children, Baldwin (1948) posited three parental dimensions: warm-cold, democratic-autocratic, and emotionally involved-uninvolved. As it sounds, the warm-cold dimension reflects the degree to which the parent exhibits warm behaviors toward the child such as expressions of love or friendship. The democratic-autocratic dimension refers to how decisions about rules of behavior are handled between the parent and child. Decisions can be made in a more democratic fashion, in which the child’s input and feelings are sought, or in an autocratic manner, in which the parent does not seek any input. The third dimension reflects variations in a parent’s emotional involvement in his or her child’s life and development. While greater emotional involvement could be viewed as a positive aspect of parenting—for example when the parent shows warm feelings or apologizes in an appropriate manner—there could be instances when greater emotional involvement could have detrimental effects on a child’s development—for example when a parent screams at the child or cries to manipulate them. Baldwin’s (1948) dimension of emotional involvement is more about sharing feelings, whether positive or negative, in a controlled manner.
Becker (1964) offered two continuums that a parent’s child rearing style might fall within. The first he titled warmth-hostility and the second, restrictiveness-permissiveness. A parent high in warmth but also very restrictive was believed to raise compliant, well-behaved children, while parent high in warmth but permissive caused children to be more socially outgoing, independent and creative (Sears, Maccoby, & Levin, 1957).

Similar to Becker’s (1964) parental dimensions, more recent factor analyses of parents’ childrearing behaviors have supported two general concepts of responsiveness and demandingness (Maccoby & Martin, 1983). Responsiveness (also called warmth, support, or acceptance) is characteristic of parents who attempt to guide their child’s development by being attuned, supportive, and accommodating to the child’s needs and demands. Facets of responsiveness include warmth, reciprocity, attachment, and clear communication and person-centered discourse. On the other hand, demandingness (also called control) involves parental behaviors of direct confrontation, monitoring, and consistent discipline. A child of demanding parents must meet his or her parents’ maturity expectations, is highly supervised, and often confronted and disciplined for any wrongdoings (Baumrind, 1996a). While responsiveness involves subtle manipulations intended to guide a child toward the right behavior, demandingness comprises direct confrontations intended to deliberately direct the behavior.

Based on three months of observing 134 preschool children in their school setting along with two separate three-hour-long home visits, Baumrind (1971) divided the ways in which a parent approaches how to raise a child into four typologies based on the non-mutually exclusive continuums of responsiveness and demandingness. The four parenting typologies are authoritative, authoritarian, permissive, and unengaged. By definition, authoritative parents are both highly demanding and highly responsive; they set firm controls on their child’s behavior and expect maturity in return while also being willing to listen and adjust their viewpoints based on the child’s explanations. Authoritarian parents are more likely to be highly demanding but not responsive; they are likely to demand full obedience and discourage negotiation with the child.
Permissive parents are responsive but not demanding; they will make few demands of the child and will hardly ever discipline for misbehavior but will listen and help guide a child toward the right path. Finally, unengaged parents are both not demanding and not responsive. Authoritative parents are most likely to raise children who are socially competent and have strong moral characters (Baumrind, 1971; Maccoby & Martin, 1983), while an authoritarian oriented parenting style may have negative effects on the child (Baumrind, 1966; Farrington, 1989). Unengaged parents have been particularly associated with delinquent behavior (Maccoby & Martin, 1983; Steinberg, Blatt Eisengart, & Cauffman, 2006).

These findings suggest that parents who are harsh and authoritarian are more likely to raise socially inept children. Such parents often assert their power over the child to control him or her. Power assertion is possible across many disciplinary techniques including corporal punishment and withdrawal of privileges or material resources, and through displays of anger, shame, or disapproval. When reared in this manner, a child’s socialization is hindered because the parent’s power assertion provides a model of aggression, likely influencing the child to become more angry and hostile in his or her social or moral conduct (Hoffman, 1970b, 1982). As Bandura (1962) and other social learning theorists note, the child imitates the behaviors of those they interact with. Since children observe behaviors of aggression or physical force as methods of solving or addressing a problem, they will imitate such behaviors in the future when they come across issues that they must solve themselves. In contrast, parents who influence children's development through practices of empathy, kindness, and philanthropy toward others are much more successful in raising socially competent individuals. Behaviors of direct training in role-taking; use of reasoning in daily lives; creating a positive and supportive parent-child relationship; and being consistent in beliefs, self-perceptions, actions, and morals strengthen desired behaviors and eliminate undesired or ineffective behaviors while building character and competence (Colby & Damon, 1992; Oliner & Oliner, 1988; Stein & Perrin, 1998).
A goal parents may have while raising their child is for the child to eventually accept prosocial values as his or her own so that socially accepted behavior is inspired within the adult individual and not an expectation of external influences and consequences. This process is known as internalization and is largely influenced by the child’s perception of his or her parent’s position and the child’s acceptance or rejection of what is perceived to be the parent’s viewpoint (Grusec & Goodnow, 1994). Internalization guides an individual to make the right decision based on his or her own internal value system which was developed as a result of external societal or parental pressures. Hoffman (1994) argues that internalization is a process influenced by children’s capacity for empathy and their feelings of anxiety and fear, and their relationship with their parents. Whether explicitly stated or implicitly implied, the ways that a parent disciplines his or her child for misbehavior relays a message to that child. As children grow older and are taught by external factors about specific prosocial manners and antisocial behaviors, they will internalize the teachings and messages, eventually being lead to make the decisions taught to them on their own without the guidance of external influences. This self-disciplinary process is the key to developing moral character and strong competence. When a child does something, he or she will determine whether the conduct was appropriate based on a parent’s reaction. If the behavior was inappropriate, parents may take a multitude of approaches to disciplining the child for such behavior. The purpose of a disciplinary encounter is to encourage a child to behave in accordance with the standards set by the parents. These standards ensure that they become aware they have an obligation to comply with legitimate authority (Baumrind, 1996a).

4.2 Theories of Child-Rearing

The history of the theory and research into the effects of parenting styles is long and well developed. Much of the early literature applied psychoanalytic theory to explain why a child will pursue parental approval (Grusec & Goodnow, 1994). Scholars of psychoanalysis argued that
parental frustration brought on by a child’s misbehavior will lead to feelings of hostility within the child. However, the child also feels that the expression of his or her hostility will lead to further punishment and, therefore, suppresses those emotions. To elicit continued parental approval, children adopt the rules set by their parents as well as emulate their personalities and inner states. Previous punishment that came externally from the parents now becomes internal through feelings of guilt. Hence, the process of internalization, as the child is motivated through a sense of guilt and fears of punishment to act in accordance with the societal standards that have been set by his or her parents. However, the major component of this process is how much the child identifies with the disciplining parent. If s/he does not agree or identify with the parent, s/he is unlikely to internalize the parental behaviors or accept any punishments.

Slightly different from the use of psychoanalytical theory above, Sears, et al. (1957) applied psychoanalytic theory along with learning theory to study how children imitate the positive features of their parents. Social learning theorists, such as Bandura (1962), have suggested that children can quickly learn to recreate positive experiences by acting in ways that they have observed their parents behaving or in the ways that they have been told to behave by their parents. Sears, et al. (1957) were some of the earliest social scientists to focus on specific disciplinary techniques in child rearing. They argued that parents who focus on using techniques that were love-oriented, such as praise, social isolation, and withdrawal of affection, would influence the internalization of parental standards more than parents using disciplinary techniques that are object-oriented, such as rewards, deprivation of privileges or material objects, and corporal punishment. The authors argued that when the love-oriented techniques are applied, children must replicate their parent’s values to obtain love and acceptance. In contrast, object-oriented disciplinary techniques allow the child to attempt to avoid punishment by hiding, fleeing, or evading conflict with his or her parents—reactions that do not foster the internalization of the parents’ values.
Hoffman’s (1970a, 1970b) research supported that of Sears, et al. (1957) in that Hoffman found children whose parents relied on object-oriented disciplinary techniques were less likely to be successful in internalizing aspects of moral values. Object-oriented discipline related to decreased attempts to resist temptations, decreased altruism and moral reasoning, and decreased feelings of guilt over antisocial behavior. However, Hoffman also discovered that the most successful parents are those who use reasoning that draws children’s attention to the effects of their misbehaviors on others. Hoffman argued that the reasoning process sensitizes a child to how his or her behavior affect events and people beyond the personal consequences to him- or herself. Reasoning was a leading factor to internalization, independent of specific disciplinary techniques.

Attribution theory has been applied to studying how a child will behave because of different parenting styles. This approach is based on the idea that a young child has difficulty in responding to instruction from others because s/he cannot easily take on their perspective (Brody & Shaffer, 1982). Parents have the responsibility to create a positive role model to help the child establish strong habits of good behavior. Perry and Perry (1983) emphasized that children are unable to detect whether their misbehavior will be discovered and therefore conform to the behavior they know their parents expect even in the absence of supervision. As children grow older, they begin to realize transgressions will not be exposed but, because of years of healthy habit forming and internalization, they continue behaving in socially accepted ways.

Independent of the applied theory or the specific parental style, the message a child internalizes is greatly important to his or her development. A child’s personality forms through the process of internalizing what is being taught, whether it is positive, socially accepted behavior or otherwise, which becomes ingrained as his or her self-identification. Teaching and socialization of a child is most effective when parents are clear in the purpose of the discipline, have an affective bond with the child, enforce the punishment, and express their message
clearly, firmly, repeatedly and consistently—and finally, when the child perceives the message and punishment as fair (Baumrind, 1996a; Canadian Paediatric Society, 1996; Glueck & Glueck, 1950; Grusec & Goodnow, 1994; Parke & Deur, 1972). The resulting discipline when a child misbehaves is made with regard to the child’s welfare and should come from a nurturing and loving perspective. Discipline should not be made as a result of the parent’s anger toward the child’s transgression (Polite, 1996). As long as parental discipline reflects these characteristics, the child will eventually internalize the messages the parents set forth and behave in the ways that are expected of him or her. The danger is that, depending on what is taught to the child, the resulting behavior may be either detrimental or beneficial to character and competence. How a parent reacts to transgressions and then issues discipline reinforces his or her expectations of how the child should behave when interacting with others. For example, a parent who slaps his or her child for a misbehavior may at the same time be teaching the child that it is okay to physically harm another when that person has done something wrong. In contrast, a parent who sits down with his or her child, tells the child what was done wrong, has a conversation with the child about why it was wrong and how it affects other individuals, and delivers a fair punishment may be teaching the child to be respectful of others and mindful of behavior. Such prosocial behavior when dealing discipline in turn teaches prosocial behavior to the child.

4.3 Dimensions of Parental Discipline Styles

There are many different methods of disciplining a child (for overviews, see Holden, 1997; Van Leeuwen, Fauchier, & Straus, 2012), and the research of this dissertation considers four popular approaches. These include corporal punishment, psychological control, deprivation of privileges, and penalty tasks and restorative behaviors. Depending on the disciplinary approach that is used, different outcomes can be expected as will be discussed below.
4.3.1 Corporal Punishment

Corporal punishment, that is using physical intervention to discipline, is one of the most researched dimensions of parental discipline. It has been broadly defined as bodily punishment of any kind (Friedman & Schonberg, 1996), and more specifically as “the use of physical force with the intention of causing a child to experience pain, but not injury, for the purpose of correction or control of the child’s behavior” (Straus, 1994, p. 4). Such physical force includes slapping, spanking, punching, shaking, grabbing, shoving, and hitting with or without an object.

In early disciplinary research, use of corporal punishment techniques to discipline a child was found among 99% of child-rearing parents (Sears, et al., 1957). More recently, it has been determined that the use of the corporal punishment discipline style peaks when the child is two to four years of age (Socolar & Stein, 1995; Wissow, 2002), although a recent nationwide study found it to peak when the child was between five and eight years (Gallup, Moore, & Schussel, 1995). Straus and Stewart (1999) found 35% of parents from their nationally represented sample had used corporal punishment techniques in the previous year and this was most prevalent for parents of three- to four-year-old children at 94%. According to their research, this use declines rapidly after the child reaches age five, with over half of parents reporting use when the child is 12 years old, a third at age 14, and only 13% of parents using corporal punishment when the child is 17 years old. Corporal punishment use is more common in African American families and by lower socioeconomic status parents (Straus & Stewart, 1999), although 84% of all Americans regard physical punishment as “sometimes necessary” as long as it does not cross the line to abuse (Straus, 1991).

The effect corporal punishment use may have on a child remains unclear within scholarly discussions. On one side, scholars argue that physical punishment produces immediate, harmful, and long-lasting emotional, cognitive, and behavioral problems with children (see, for example, American Academy of Pediatrics, 1998; McCord, 1997). Such scholars have found evidence that corporal punishment is associated with negative effects later
in life, including aggression, damaged self-esteem, anti-social behavior, delinquency, and depression (Becker, 1964; Gershoff, 2002a, 2002b; Hoeve, et al., 2009; Patterson, 1982; Straus, 1994, 1996; Straus, Sugarman, & Giles-Sims, 1997). When corporal punishment extends into early adolescence, it has been linked with adult depression, spousal violence, alcohol abuse, physical abuse of children, alienation, and masochistic sex (Eron, 1996; McCord, 1996; Straus & Kantor, 1994; Straus, et al., 1997; Straus, & Yodanis, 1996).

Straus and Paschall (1998) discovered a link between corporal punishment use and reduced cognitive development among young children. They established that parents who use physical punishments are significantly less likely to use verbal methods to control their child's behavior. Verbal methods, including reasoning and explanation, have been associated with increasing neural connections and cognitive performance in young children. Therefore, at least indirectly, corporal punishment reduces the progression of these important childhood developments.

Applying social learning theories, opponents of the use of corporal punishment argue that its use teaches children that violence is an acceptable strategy for solving interpersonal differences (Graziano, 1994). Repeat use internalizes the parent's conduct, and violent conflict strategies become normal behavior for the child. The child's hostility and aggression increase because the parent's corporal punishment disciplinary techniques model and promote aggressive tendencies (Aronfreed, 1969; Walters & Grusec, 1977). The concern is that corporal punishment leads to childhood aggression, which in turn, is the best predictor for aggression as an adult (Eron, Huesmann, Dubow, Romanoff, & Yarmel, 1987; Lefkowitz, Eron, Walder, & Huesmann, 1977).

In the same vein, McCord (1996) argued that egocentrism is an unintended consequence associated with a child's fear of being physically punished. Punishment is only effective when used in combination with a message to be aware of the consequences. A parent who uses physical punishment indirectly teaches the child to be concerned with avoiding his or
her own pain and to make a conscious effort to avoid it (McCord, 1996). This parenting style can make it much more difficult to later teach a child the importance of being considerate to others because the parents behave in a way that can seem inconsiderate to the child. As a result, what the child may internalize is that physical behavior, rather than thoughtful, rational behavior, will cause others to behave in ways that his or she wants. This can lead to increased aggression, delinquency, and other negative characteristics as the child begins to use his or her physical influence to obtain goals.

Straus (1991) applied the macro-sociological cultural spillover theory to describe how the use of corporal punishment will spread into other aspects of life and society. Much like the concept of internalization but broader, cultural spillover results when a society uses force to obtain socially desirable features, and, as a result individuals in that society tend to also use force to achieve their own goals. Straus (1996) explains and provides empirical documentation for how the use of corporal punishment in educational and family settings has produced children who are prone to violent and aggressive behaviors. Straus connects cultural spillover theory to other learning theories, such as differential association theory (Sutherland, 1924) and social learning theory (Bandura, 1977). He explains that the illegitimate behaviors an individual may exhibit are not just a result of his or her own individual deviance but are in fact a reflection of what has been learned from family, culture, and society.

While researchers have acknowledged that the use of this discipline style often results in an immediate decrease in the undesired behavior that parents are trying to prevent (Gershoff, 2002a, 2002b; Larzelere, 2000; Newsom, Flavell, & Rincover, 1983; Straus, 1991), over time the physical punishment must increase in intensity, duration, and frequency to maintain such efficiency (Hyman, 1996). The increased frequency of corporal punishment is associated with negative outcomes (Larzelere, 2000). The problem is that while the undesirable behavior is suppressed at that moment, the child does not learn why his or her behavior was considered wrong or learn adaptive behaviors that would produce more positive results in the future.
(Hoffman, 1983; Hyman, 1996; Straus, et al., 1997). The child does not learn the reasons that behaving correctly is important because parents who engage in this form of punishment tend not to communicate how the child’s behavior affects others. Therefore, the child may repeat the same behavior in the future leading to increased frustration from the parents.

In contrast to the negative outcomes detailed above, other psychologists and pediatricians have argued that the use of corporal punishment can be effective and necessary as long as it is reasonable and not abusive or neglectful (Baumrind, 1996a, 1996b; Baumrind, Larzelere, & Cowan, 2002; Canadian Paediatric Society, 1996; Larzelere, 1996, 2000).

Analysis by Larzelere (1996) found important outcome differences linked with corporal punishment as a result of the child’s age. Of the 18 studies investigating corporal punishment use prior to age 13, eight studies found beneficial outcomes, seven had neutral outcomes, and only three suggested detrimental outcomes for the child. For 13 studies that analyzed this discipline style for child around the age of 13, five had negative outcomes, seven found neutral outcomes, and only one had beneficial results. Four studies looking at the results of being disciplined by corporal punishment when a teenage all had damaging outcomes. It seems, then, that corporal punishment use with younger individuals holds more beneficial outcomes than its use with preteenagers and older.

A meta-analysis with 38 studies, looking specifically at the outcomes of nonabusive and customary spanking by parents, found mainly beneficial outcomes (Larzelere, 2000). Most important to this study was that all of the clinical samples—four of which were randomized control trials—found positive results. However, detrimental outcomes were noted in five of the eight longitudinal studies included in the analysis; the author explained that this was primarily due to overly frequent use of physical punishment found within those samples.

Larzelere (1996) found more positive outcomes associated with corporal punishment when the parents were positively involved in their child’s lives, were motivated more by child-oriented outcomes than by parent-oriented outcomes, did not increase the child’s fear of
discipline by the parents, shared the discipline responsibilities with spouses, followed through with warnings to the child, did not use psychological control, and eventually moved away from physical punishments and instead applied deprivation of privileges as a punishment as the child grew older. Such dimensions are infrequently measured in the research that has associated negative outcomes with corporal punishment use. Obviously, the parent-child relationship, including the aspects above, is very important in how the punishment is received and understood by the child.

More recently, in a very detailed meta-analysis of 70 studies published between 1961 and 2000 and involving 47,751 people, Paolucci and Violato (2004) found that exposure to corporal punishment does not substantially increase risk to youth of developing affective, cognitive, or behavioral pathologies. There is, however, a small increased risk for developing emotional and behavioral problems, but there are no changes to internal or deep-rooted cognitive structures as a result of such discipline.

Many scholars have argued that much of the research of corporal punishment is methodologically flawed. Identifying the faults within 35 empirical studies, Larzelere (1996) argues that methodological limitations may have severely affected the field’s conclusions on the subject. The leading issue with the methodologies was found to involve the measurement (or lack thereof) of abuse. Studies that excluded measures of physical abuse were more likely to find beneficial outcomes, while studies that included violent and abusive parents found more harmful and neutral outcomes. Another methodological issue found that studies with stronger internal validity were more likely to find beneficial outcomes associated with customary and non-abusive physical punishment.

To explain the inconsistencies found with this body of research, Benjet and Kazdin (2003) identified many methodological issues and limitations on both sides of the argument. They explained that conceptual and operational definitions are not uniform across studies, and as a result, terms like spanking, physical punishment, harsh punishment, and punitive
punishment have all been used interchangeably to conceptualize corporal punishment. Another flaw was found in how studies have assessed dimensions of corporal punishment. Some studies use retrospective self-reporting of self-experience, and some ask parents to recall their use; in addition, some studies are cross-sectional or longitudinal, and others are more proactive or clinical. All these different assessment methods can contribute to the inconsistent findings. The authors also raise the valid point that the time sequence of corporal punishment and outcomes is not well established. Many researchers use a cross-sectional design, meaning that one cannot assume that corporal punishment leads to later identified outcomes. While studies using a longitudinal design help with this issue, many do not measure the outcome at time 1 to determine if the change is a result of the punishment or if it was evident from the beginning. Lastly, Benjet and Kazdin (2003) explain that the lack of research on confounding and spurious variables has not established the causal role of corporal punishment and its outcomes. They offer the example, among others, that a parent who spanks his or her child frequently may do so as a result of personal stress levels with life circumstances as opposed to being a direct result of the behavior of the child being punished. Agreeing with Benjet and Kazdin’s (2003) assessment of the issues, Baumrind (1996b) believed that the causal effect of corporal punishment and negative outcomes has not reached a consensus. She pointed out that a model of causation must minimally establish that the association is consistent, strong, specific, temporal, and theoretically correct. Such constructs must be addressed to better establish the contributions physical punishment has on child development.

4.3.2 **Psychological Control**

The parenting dimension of psychological control first gained attention in the 1960s through the work of Becker (1964) and Schaefer (1965a, 1965b). Becker (1964) defined psychological discipline as when a parent behaves in ways that attempt to call on a child’s pride and guilt by withdrawing love from, isolating, or shaming the child. This discipline is meant to
manipulate the love relationship between the parent and child in order to control the child’s behavior. Schaefer (1965a, 1965b) identified through factor analyses parental behaviors of psychological control to include intrusiveness, parental direction, and control through guilt. Schaefer (1965b) noted that psychological control attempts to “control the child’s activities and behaviors that would not permit the child to develop as an individual apart from the parent” (p. 555). Through techniques of psychological control from the parents, the child believes that the only way to modify parents’ unhappiness is through better behavior (Sears, et al., 1957). Barber (1996) identified such behaviors of parental psychological control to include constraining verbal expressions of the child, invalidating his or her feelings, having erratic behaviors when dealing with the child, personally attacking the worth of a child, laying guilt on the child, and withdrawing love or attention from the child. These behaviors are associated with the child internalizing problems (Barber, Olsen, Shagle, 1994).

The most frequently used form of psychological control involves raising one’s voice or yelling in order to send a message. The use of yelling at a child in response to misbehavior increases with the age of the child, peaking when the child is between five and eight years old and remaining high up to 17 years old (Regalado, Sareen, Inkelas, Wissow, & Halfon, 2004). A report from the Gallup Organization (Gallup, et al., 1995) advised that 95% of parents yelled at their children between the ages five and eight within the previous year, while that percentage drops to 88% for 13- to 17-year-olds. The same report detailed that slightly more than half of parents reported that they yelled at their 13- to 17-year-olds between six to more than 20 times in the previous year. Straus and Field’s (2003) nationally represented sample of parents found that 98% of parents used one or more forms of psychological control in the previous year with their child aged five or younger. This rate stayed relatively stable, at about 90%, from the ages six to 17. However, it is worth noting that the occurrence of severe psychological control, such as swearing at the child or threatening to kick him or her out of the house, was found to be much lower—at about 10% to 20%—with young children and 50% with teenagers.
Psychological control is more prevalent within families of lower socioeconomic statuses. More specifically, within that class, such disciplinary techniques are found with parents of low income and less education (Clausen & Crittenden, 1991; Loos & Alexander, 1997). Parents in minority families and single-headed households are also more likely to use psychological control to discipline their children (Clausen & Crittenden, 1991).

Early scholars, as well as more contemporary researchers, have almost exclusively conceptualized this type of discipline as a negative form of control. Parental psychological control directly affects internal, cognitive characteristics of a child. An environment in which parents control their child through psychological means will potentially inhibit the child’s emotional and psychological needs (Maccoby & Martin, 1983), independent expression and autonomy, and interaction with peers and others (Baumrind, 1965, 1978; Hauser, 1991; Hauser, et al., 1984). Such control impedes the child’s sense of awareness and perception of self by limiting healthy interactions with peers and interfering with exploration, both of which help develop the child’s definition of self and are needed to establish a stable identity (Erikson, 1968; Marcia, 1980; Youniss & Smollar, 1985). Such implications lead to feelings of guilt, self-responsibility, confession, aggression (Becker, 1964), delinquency (Barber, 1996; Hoeve, et al., 2009), alienation (Baumrind, 1968), social withdrawal (Baumrind, 1967; Barber, et al., 1994), inability to make conscious choice (Baumrind, 1966), dependency (Baumrind, 1978; Becker, 1964), low self-esteem (Coopersmith, 1967), and depression (Barber, 1996; Barber, et al., 1994). Furthermore, while withdrawal of love does not arouse anger or hostility in the child, it also does not foster awareness of or sensitively to the feelings of others (Grusec & Goodnow, 1994). The guilt that a child feels as a result of discipline through psychological control is not guilt that creates a consciously self-critical reaction but is more in line with the psychoanalytic definition of guilt, that is, an irrational response to one’s own impulses (Hoffman, 1970a).
4.3.3 Deprivation of Privileges

The parental discipline style of deprivation of privileges exists within what is referred to as the parental style of behavioral control. Behavior control is similar to Maccoby & Martin’s (1983) demandingness, which involves parental behaviors of direct confrontations, monitoring, and consistent discipline. More specifically, behavioral control is defined as rearing through attempts to control and regulate the child’s behavior by rule setting and monitoring.

In their meta-analysis of 161 manuscripts, containing 119 independent studies, Hoeve, et al. (2009) found parental disciplinary styles associated with behavioral control to relate to less delinquent activity among children disciplined in that fashion. However, when the behavioral control was inconsistent, this relationship switched, and those children were in fact significantly more likely to behave in a delinquent manner. Inadequate behavioral control has also been associated with externalized behavior problems in adolescents, including impulsivity, aggression, and drug use (Barber, 1996; Barber, et al., 1994; Baumrind, 1971, 1991; Loeber & Dishion, 1984; Maccoby & Martin, 1983; McCord, 1979; Olweus, 1980; Patterson & Stouthamer-Loeber, 1984). Such outcomes develop because a child raised in an under-controlled environment is not likely to foster self-regulation and is more likely to be impulsive and reckless while at the same time taking risks and violating social norms. Such individuals would be more likely to be susceptible to peer influence, whether negative or positive.

More specific to this study, depriving a child of his or her privileges is a common parental discipline style that is meant to control the child and restrict behaviors or punish him or her by taking away material possessions or activities that give the child pleasure. Such characteristics of this disciplinary style include sending a child to his or her room, grounding him or her, or taking away access to things and activities s/he enjoys such as watching television. Depending on the age of the child, the specific punishment may change. For example, putting a child in timeout is most frequent with children between the ages one to three while grounding or
restricting peer-involved activities is more common with teenagers (Socolar & Stein, 1996; Wissow, 2002).

By creating an environment that controls the adolescent’s behaviors, parents are capable of setting the rules and boundaries on how their child is expected to act. The child will quickly learn the negative consequences of his or her misbehaviors and attempt to follow the rules to prevent loosing freedoms and materials that s/he wishes to have. This parental discipline style is very similar to the “carrot and stick” mantra; if the behavior is in line with expectations, then the child continues receiving privileges, but if s/he misbehaves then those privileges are taken away.

4.3.4 Penalties Tasks and Restorative Behaviors

Penalty tasks and restorative behaviors are also parental disciplinary styles that fall within behavioral control; however, instead of altering behaviors through removing privileges, this discipline style issues chores or behaviors to restore interpersonal relationships that were fractured. This is the most relevant parenting discipline style to aspects of respect and fairness as the behaviors associated with this punishment attempt to repair the relationship through acts of empathy or acknowledgment that a misjudgment was made. Of the four mentioned, it is the only discipline style in which the punishment attempts to repair the damage made by the misbehavior as opposed to issuing a punishment to teach the child prosocial characteristics and alter future behavior. Parents who use this disciplinary style have created an environment that is highly controlled but which also focuses the attention of the child on how misbehavior has affected others and an environment in which it is natural that the result of that misbehavior should be to make reparations for misdeeds.

Characteristics of disciplining with penalty tasks and restorative behaviors include making the child apologize for undesirable actions, giving him or her extra chores, or having him or her make amends through behaviors such as fixing or paying for things s/he broke. These
punishments make the child think about what s/he did and how those behaviors have affected him or her and, more importantly, others. As detailed in the sections above, the messages that are issued to a child during punishment are eventually internalized, and the child will set forth and behave in the ways that are expected of him or her. This discipline teaches children that when they misbehave, whether intentionally or not, their immediate behavior should be to make amends. As the child internalizes this message, s/he learns to acknowledge how his or her behaviors affect others and to consciously make decisions to refrain from damaging relationships.

4.4 Conclusion

When comparing the four parental discipline styles above, research suggests that two are more likely to influence a young individual's life negatively, while the other two are more likely to have positive impacts. Both corporal punishment and psychological control fall into the former category, having been linked with long-lasting emotional, cognitive, and behavioral problems with children (American Academy of Pediatrics, 1998; Barber, 1996; Barber, et al., 1994; Baumrind, 1965, 1966, 1967, 1968, 1978; Becker, 1964; Hoeve, et al., 2009; Maccoby & Martin, 1983; McCord, 1996, 1997; Straus, 1994, 1996; Straus & Kanter, 1994; Straus, et al., 1997; Straus, & Yodanis, 1996). In contrast, behavioral techniques, such as disciplining a child through the deprivation of privileges or by assigning tasks and restorative behaviors, have been found to reduce delinquency, depression, impulsivity, recklessness, and improve other aspects of a child's self-regulation (Bean, Barber, Crane, 2006; Hoeve, et al., 2009; Maccoby & Martin, 1983).
V. RESEARCH QUESTIONS AND HYPOTHESES

The following section lays out the research questions and hypotheses of this study. The questions pertain to how personality dimensions and developmental background characteristics, specifically those related to parental discipline, are predictors of an individual’s use of procedurally just techniques later in life. If research is able to identify the characteristics of individuals that are likely to affect their behaviors and treatment of others in their work and life, police organizations can begin to select job applicants who are best suited for this line of work and thus begin to transform their department into an agency with the capacity to generate greater public trust and confidence.

5.1 Research Question 1

Through screening instruments such as the Revised NEO Personality Inventory (NEO PI-R), departments can determine specific personality characteristics of applicants for police positions. The problem with the current assessments is that the ability to predict the quality of an officer’s interpersonal communication in the field is unknown and instead researchers have focused more on traditional police officer performance outcomes. The big five personality dimensions have already been discussed in detail, and this section will articulate the hypothesized relationships between these traits and procedural justice outcomes.

Officers who score high in Extraversion typically earn higher salaries, receive more promotions, have greater job satisfaction, are more social with their peers, generally have a happier outlook towards life (Heller, et al, 2002), obtain higher scores on performance evaluations by their supervisors (Black, 2000; Detrick & Chibnall, 2006; Piedmont & Weinstein, 1998), and score higher on physical training tests (Detrick, et al., 2004). On the other hand, those who are more introverted score higher on academic examinations and receive fewer disciplinary records during their tenure as police officers (Detrick, et al., 2004).
Neuroticism or emotional instability is generally considered a negative personality characteristic. Neurotic individuals are often anxious, moody, worried, tense, and irritable (John & Srivistava, 1999). Officers who rated lower in Neuroticism are more likely to score higher on performance assessments (Black, 2000; Detrick & Chibnall, 2006; Piedmont & Weinstein, 1998) and get higher marks on firearm tests (Detrick, et al., 2004). Officers with lower neurotic traits are more satisfied with counseling they have gone through (Cortina, et al., 1992). However, a worthy attribute to neuroticism is that such individuals tend to be more detail-oriented in their daily work (Seibert & Kraimer, 2001).

Agreeableness has been associated with having better teamwork skills, but is also considered an undesirable quality to have if the individual is in a leadership position (Lim & Ployhart, 2004, Seibert & Kraimer, 2001). Detrick and Chibnall (2006) noted that officers with average qualities of Agreeableness have normal capacities for sympathy and empathy as well as appropriate levels of cynicism. Officers who rate low in Agreeableness tend to be cynical, rude, suspicious of others, and unlikely to worry about others’ well-being, and can be considered unfriendly (Seibert & Kraimer, 2001).

Officers who rate higher on the personality trait Openness score better academically (Detrick, et al., 2004), which is not surprising as more open officers tend to also be highly intelligent (Barrick & Mount, 1991). In contrast, Openness has been shown to be associated with more negative job performance assessments, such as lower physical testing scores and greater disciplinary records (Detrick, et al., 2004). However, Barrick and Mount (1991) found Openness to be unrelated to police officer performance.

Conscientiousness, the personality trait associated with dependable, careful, thorough, and responsible workers, is consistently correlated with police performance measures such as scores on academic, firearm, driving, and public speaking tests, as well as aspects of professionalism and job satisfaction (Black, 2000; Detrick & Chibnall, 2006; Piedmont &
Weinstein, 1998) although conscientious officers did tend to obtain lower scores on physical exams (Detrick, et al., 2004).

As can been seen, the outcome measures of officer performance used in the above studies provide some guidance regarding how these personality traits may be related to social interactions with other adults. Unfortunately, many of the outcome measures are not directly focused on such interactions but instead look to determine aspects of physical, firearm, and academic examinations, disciplinary records, and other traditional, aggregated performance indexes. The importance of police-community interactions has been apparent since the emergence of community-oriented approaches to policing in the 1970s and 1980s, so it is surprising that little research has been done to examine the outcomes of these interactions. Past research has provided considerable insight into how personality dimensions affect traditional performance of police officers, but as the performance measures change from a quantity orientation to a quality orientation, new questions arise. Thus, the first pertinent research question is the following:

Research Question 1:

What personality dimensions, if any, contribute to a police officer’s use of procedural justice when interacting with community members?

While this question has not been directly studied before, certain hypotheses can be developed based on what is known about each personality dimension and the aspects of procedural justice.

5.1.1 Hypothesis 1A

Officers with higher levels of Extraversion will be perceived as behaving in a more procedurally just manner when interacting with community members than officers with lower levels of Extraversion.

Extraversion, the personality trait that is associated with individuals who are outgoing, social, and assertive, is likely a positive trait in relation to procedural justice use. Individuals who are highly extraverted may be more likely to approach community members during patrols and
start up conversations. Extraverted officers may be perceived as more likeable, which may connect to community members’ views of respect, and transparency, which may affect their views of the officer’s fairness in decision-making. While they may be viewed as worse listeners because they enjoy being the center of attention, they may also encourage others to talk by extending the conversation, which may increase their being seen as listening and giving the community member a voice during the interaction. Thus, the expectation is that officers who have extraverted personalities will be rated higher on procedurally just manners than officers who are more introverted.

5.1.2 Hypothesis 1B

Officers with lower levels of Neuroticism will be perceived as behaving in a more procedurally just manner when interacting with community members than officers with higher levels of Neuroticism.

The personality trait which would most benefit a community encounter as a result of increased procedural justice use is that of emotional stability, the opposite of Neuroticism. Digman (1990) explains emotional stability as having emotional control and not being neurotic or anxious. This is the ability to keep a cool, level emotional state during a stressful situation. Having such a quality will benefit an individual who is often making tough decisions and solving problems, such as patrol officers who deal with victims and offenders. When in an aggravated state, clear decisions will not be made and procedural justice behaviors will be hindered. Being respectful, making fair decisions, and showing emotional concern will all be more likely if the officer is emotionally stable.

5.1.3 Hypothesis 1C

Officers with higher levels of Agreeableness will be perceived as behaving in a more procedurally just manner when interacting with community members than officers with lower levels of Agreeableness.

Individuals who rate high in the Agreeableness dimension show characteristics of altruism, nurturance, caring, and emotional support. These empathetic qualities should be
extraordinarily helpful when dealing with a recent victim of crime, with a person involved in a traffic accident, or even with a driver during a traffic stop. In fact, recent research in police legitimacy has measured the degree of officer empathy during police-community encounters (Dai, et al., 2011, Posick, Rocque, & Rafter, 2012; Rosenbaum, Lawrence, et al., 2012; Wells, 2007). The opposite end of this personality dimension are qualities such as hostility, self-centeredness, spitefulness, and jealousy. Low Agreeableness involves being suspicious of others, being unlikely to worry about others’ well-being, and possibly being considered unfriendly (Seibert & Kraimer, 2001). Officers who rate higher in their Agreeableness may be more likely to obtain community member cooperation and consent. On the other hand, the same cannot be said for officers who exhibit high levels of hostility. As such, officers who have personalities in line with Agreeableness are likely to be rated higher on procedural justice behaviors than officers who do not have agreeable personalities.

5.1.4 **Hypothesis 1D**

Officers with higher levels of Openness will be perceived as behaving in a more procedurally just manner when interacting with community members than officers with lower levels of Openness.

The personality trait of Openness involves the ability to be open to feelings and new ideas, and to have abstract thoughts (Digman, 1990). Openness is the ability to understand that people come from different cultural and social backgrounds and that different norms exist across communities. Officers who have an open personality should be better able to adapt to such a new environment and be more tolerant of cultural differences. They are more likely to understand that a decision made in one encounter may not apply to a similar encounter in a different environment or with different individuals. Thus, officers with an open personality may be more prone to better decision-making and be more respectful toward others.
5.1.5 Hypothesis 1E

Officers with higher levels of Conscientiousness will be perceived as acting in a more procedurally just manner when interacting with community members than officers with lower levels of Conscientiousness.

Finally, the personality trait Conscientiousness is also likely to be associated with more procedural justice use in the field. Conscientiousness has been strongly linked to workplace performance measures (Barrick & Mount, 1991; Black, 2000; Piedmont & Weinstein, 1998). Conscientious individuals are more likely to communicate clearly, be viewed as dependable, be careful with their work, function well in unstructured situations, and be thorough and responsible individuals. All of these skills are likely to increase positive views of officers by community members during an encounter.

To summarize the above hypotheses, all personality traits, except for Neuroticism, are expected to be positively associated with an officer’s procedural justice use when interacting with a community member. It is important to recognize that personality characteristics are not mutually exclusive dimensions. An individual can exhibit multiple traits, such as being extraverted while also being conscientious. Officers with the personality traits outlined in the hypotheses above are more likely to have positive outcomes with community member encounters.

5.2 Research Question 2

While personality traits are likely to influence aspects of procedural justice use in the field, other developmental characteristics should be considered as well. This paper argues for the use of assessing an individual’s upbringing, specifically parental discipline practices during childhood. Much like personality, it is unknown how upbringing and developmental factors will affect behaviors later in life. There is a paucity of research on how discipline styles impact behaviors related to procedural justice, such as an individual’s respectfulness, fairness, or
emotional support during social interactions. As such, the pertinent research question is the following:

Research Question 2:

What parental discipline styles experienced during childhood, if any, contribute to a police officer’s use of procedural justice when interacting with community members?

As parental discipline styles have already been discussed in detail, this section will briefly summarize the outcomes associated with discipline and the hypothesized relationships with procedural justice.

5.2.1 Hypothesis 2A

Officers who experienced greater levels of parental discipline involving corporal punishment will be perceived as behaving in a less procedurally just manner when interacting with community members than officers exposed to lower levels of corporal punishment as a child.

The practice of corporal punishment is the use of physical force on a child for the purpose of correcting behavior. Depending on many factors, including the parent-child relationship and the way the message is displayed, the use of this punishment can produce highly detrimental outcomes later in life. Studies have found corporal punishment to be linked with aggression, damaged self-esteem, anti-social behavior, delinquency, and depression (Becker, 1964; Gershoff, 2002a; Hoeve, et al., 2009; Patterson, 1982; Straus, 1994, 1996; Straus, et al., 1997). While corporal punishment’s influence on aspects of procedural justice has not been researched directly, results from these studies provide a logical argument for hypothesizing a negative relationship with procedural fairness. The use of physical discipline tends to promote aggressive behaviors within the child. As the child internalizes aggression, s/he can develop personalities that are in direct contrast to the facets that define procedural justice. An aggressive individual is unlikely to be respectful in his or her decision-making or emotionally supportive. Furthermore, as McCord (1996) argued, a parent who uses physical punishment to teach a child makes the child believe that s/he should be concerned with and
make a conscious effort in avoiding his or her own pain, a mentality that may affect his or her ability to be considerate of others later in life. Thus, the expectation is that officers who experienced corporal punishment as a child will be rated lower on procedural justice behaviors than officers who did not receive this type of discipline.

5.2.2 **Hypothesis 2B**

Officers who experienced greater levels of parental discipline involving psychological control will be perceived as behaving in a less procedurally just manner when interacting with community members than officers exposed to lower levels of psychological control as a child.

Discipline through psychological control occurs when a parent behaves in ways that attempt to call on a child’s pride and guilt by withdrawing love, isolating the child, or shaming him or her (Becker, 1964). An environment in which parents control their child through psychological means will potentially inhibit the child’s emotional and psychological needs (Maccoby & Martin, 1983), independent expression and autonomy, and interaction with peers and others (Baumrind, 1965, 1978; Hauser, 1991; Hauser, et al., 1984). Furthermore, while withdrawal of love does not arouse anger or hostility in the child, it also does not foster awareness of or sensitively to the feelings of others (Grusec & Goodnow, 1994). These are all important characteristics that are believed to be necessary during police-community interactions for the officer to appropriately understand the emotional needs of the community members s/he is interacting with. Without these emotionally supportive traits, the officer is unlikely to be viewed as procedurally just by the community members. Furthermore, aggression later in life has been associated with discipline through psychological control (Becker, 1964). Aggressive officers are likely to be viewed as disrespectful because they would be rude and possibly hostile to a community member. The inability to make conscious choices (Baumrind, 1966) and a dependency on other officers (Baumrind, 1978; Becker, 1964) are associated with psychological control, and indecisive officers and/or those who are dependent on their partners are likely to be viewed as having poor decision-making skills by community members. Lastly, psychological
control has been linked to social withdrawal (Barber, et al., 1994; Baumrind, 1967), low self-esteem (Coopersmith, 1967), and depression (Barber, 1996; Barber, et al., 1994), all personal characteristics that could lead to lower ratings by community members on procedural justice dimensions.

5.2.3 **Hypothesis 2C**

Officers who experienced greater levels of parental discipline involving deprivation of privileges will be perceived as behaving in a more procedurally just manner when interacting with community members than officers exposed to lower levels of deprivation of privileges as a child.

Deprivation of privileges is a behavioral control discipline style that is practiced by restricting behaviors or punishing a child by taking away material possessions or activities that give pleasure. Inadequate behavioral control has been associated with externalized behavior problems in adolescents, including impulsivity, aggression, and drug use (Barber, 1996; Barber, et al., 1994; Baumrind, 1971, 1991; Loeber & Dishion, 1984; Maccoby & Martin, 1983; McCord, 1979; Olweus, 1980; Patterson & Stouthamer-Loeber, 1984). Environments that control the privileges a child has access to help regulate his or her impulsiveness and immaturity by enforcing prosocial and appropriate behavior. As these characteristics are internalized, the child is likely to become well-grounded and follow accepted standards of social behavior, such as respectful and fair treatment of others. Officers who experienced being disciplined through deprivation of privileges as children are likely to understand that acting-out or being impulsive will not help them reach their goals. A calm, levelheaded officer will be more likely to act in a way that is viewed as procedurally fair and sensitive to the needs to others.

5.2.4 **Hypothesis 2D**

Officers who experienced greater levels of parental discipline involving penalty tasks and restorative behaviors will be perceived as behaving in a more procedurally just manner when interacting with community members than officers exposed to lower levels of penalty tasks and restorative behaviors as a child.
The final parental discipline style is punishment through penalty tasks and restorative behavior. This discipline style falls within behavioral control, like deprivation of privileges; however, instead of altering behaviors through removing privileges, this discipline style assigns chores or requires behaviors to restore interpersonal relationships that were fractured. As Hoffman’s (1970a, 1970b) research shows, parents are more successful when they use reasoning to draw the child’s attention to the effect of his or her misbehaviors on others. The penalty tasks-restorative approach to discipline relies on reasoning techniques that in turn help sensitize the child to how his or her behaviors affect people beyond the personal consequences the child experiences him- or herself. Such other-oriented disciplinary techniques are essential to developing characteristics that promote respectfulness, fairness, empathy, and compassion toward others. Thus, the expectation is that officers who experienced this discipline style as a child will be rated higher on procedural justice behaviors than officers who did not receive this type of discipline.

To summarize the hypotheses presented for parental disciplinary styles on aspects of procedural justice: Both corporal punishment and psychological control are expected to be negatively related to procedurally just behavior, while both deprivation of privileges, and penalty tasks and restorative behaviors should be positively related with procedurally just behavior later in life. While these relationships have not been directly measured before, the hypotheses are based on past research and theories about the effects of discipline on interpersonal behavior. How a parent raises and disciplines a child can affect the trajectory of that child’s life for years to come. Parents have considerable influence in the messages that children internalize and display in their daily interactions with others. This behavior is not limited to childhood, and as a child grows older, his or her instilled orientations to others develop into the personalities that manifest themselves in adult social interactions.
5.3 **Research Question 3**

Using personality data to predict an officer’s performance has long been a popular practice in police hiring. Through screening instruments, such as the MMPI, CPI, IPI, and NEO PI-R, measures of personality have been used to predict a wide range of performance measures. In contrast, parental discipline styles have not been studied in relationship to police performance. Yet, as I have argued above, these styles can affect the development of a child leading to outcomes later in life that may influence how an individual will behave during interpersonal interactions. The above-stated hypotheses indicate how personality dimensions and parental discipline styles are likely to independently predict the quality of police performance. A third research question is whether and how these dimensions are related to each other as they influence procedurally just behaviors.

Disciplining children tends to occur during their younger years, when guidance about wrongdoings is still necessary as the children learn about themselves and their environment. Research has found specific disciplinary actions to peak when the child is two to four years, three to four years, and five to eight years, with disciplinary practices with older children being less common (Gallup, et al., 1995; Regalado, et al., 2004; Socolar & Stein, 1995; Straus & Stewart, 1999; Wissow, 2002). Personality, on the other hand, tends to form between adolescence and young adulthood, and remains relatively stable from that point forward (McCrae & Costa, 1987, 2003, 2008; McCrae, et al., 2000). Assuming that parental discipline precedes the development of personality, the question remains whether any effects of parental discipline on the interpersonal skills of police officers works through the officers’ personality traits or has a direct effect on such adult social skills. Thus, the final research question asks:

**Research Question 3:**

Do personality dimensions mediate the relationship between parental discipline styles and an officer's expression of procedurally just behaviors when interacting with community members?
One possibility is that parental discipline styles are significant predictors of procedurally just behaviors because they relate to personality, and when personality is accounted for in a model predicting procedural justice, the importance that disciplinary factors have may diminish. Studies have found relations between how a parent raises his or her child and the personality characteristics that child exhibits later in life. For instance, parents who were stricter or more demanding in their disciplinary styles raised children who were shyer and had poorer relations with peers, both qualities of Introversion (Becker, 1964; Watson, 1957). However, the analysis of personality as a mediator between parental discipline and procedural justice has yet to be examined. This relationship could occur through any of the four parental discipline styles and five personality traits discussed in this research. For example, research has shown that parents who discipline through psychological control increase their child’s inability to understand their emotions and decrease his or her interaction with peers (Baumrind, 1965, 1978; Hauser, 1991; Hauser, et al., 1984; Maccoby & Martin, 1983). These outcomes are likely to relate to an introverted (i.e. not extraverted) personality as the child develops into adulthood. As Hypothesis 1A proposes, officers with a higher level of extraversion will exhibit greater levels of procedurally just behavior than officers with lower levels of extraversion.

Other mediated relationships may exist as well; however, it will be necessary to first determine which personality and parental discipline dimensions are significant predictors to procedurally just behaviors. This will be resolved through the HLM analysis associated with the first two research questions. Once significant personality and parental discipline dimensions are known, they will be used to test whether personality mediates the relationship between parental discipline and procedurally just behaviors. Thus, the final hypothesis states:

5.3.1 **Hypothesis 3**

Personality dimensions will partially mediate the relationship between parental discipline styles and procedurally just behaviors.
5.4 **Conclusion**

To review, the first research question focuses specifically on how personality might affect use of procedural justice in the field, while the second research question asks a similar question but focuses on the impact of parental discipline styles. The personality traits of being extraverted, agreeable, open, and conscientious are each hypothesized to have a positive relationship with procedurally just behavior during police-citizen encounters, while a negative relationship is expected for the neurotic personality. For discipline styles, the deprivation of privileges and the penalty tasks and restorative behaviors approaches are hypothesized to have a positive relationship with procedural justice behavior, while negative relationships are expected for corporal punishment or psychological control. The final research question asks whether personality will mediate the relationship between parental discipline and procedural justice. The expectation is that certain personality traits, found to be significantly related with procedurally just manners, will have an indirect effect on the relationship between significant parental discipline styles and procedurally just behaviors. The next section will outline the methods that were used to answer these questions. The data sources, measures, and analyses are discussed.
VI. METHODS

6.1 Data Source

Data for this research come from the National Police Research Platform (NPRP), an ongoing project to collect information from police organizations, police officers, and community members (Rosenbaum, Cordner, et. al, 2012). For this study, data come from two projects that were initiated through the NPRP: a study of police recruits and a police contact survey called the Police-Community Interaction (PCI) survey. All data were previously collected by the NPRP and de-identified datasets were provided to the researcher for secondary data analysis. The original protocols for collecting these data were approved by the Institutional Review Board at UIC (Protocols Numbers 2009-0186 & 2007-0925). Although the NPRP is a national project and many police agencies took part in both the recruit and PCI studies, only data collected in Chicago were used in the following analyses.

The NPRP’s recruit study (UIC Protocol #: 2009-0186, PAF#: 2008-04381) followed new officers from their first week at the training academy through approximately one year into the field. The total length of the study was 18 months. On the first day of the training academy the project was described to the police recruits and they were invited to participate. Prospective informed consent was obtained from future participants. Researchers of the NPRP emphasized throughout data collection that responses are confidential and individual level results would never be reported. A master identification number was used to link surveys between an officer, and this linkage information was kept in hardcopy, i.e., physical files under lock and key, or on a computer under password protection. Datasets, files, and documents linking officers with their identification numbers were never stored in the same place, electronically or physically.

Several data collection strategies were used to gather information on new officers. First, recruits were asked to take an omnibus survey that covered dozens of dimensions important to aspects of policing. This paper-and-pen survey was administered in person, in a group setting
with the new officers. The information concerning personality dimensions and parental
disciplinary styles were captured during this data collection period.

Second, data from the NPRP’s Police-Community Interaction (PCI) survey were also a
source of information for this research (UIC Protocol #: 2007-0925). For the recruit sample,
these data were collected after the new officers had left the training academy and begun their
patrol functions. Between October 2011 and April 2013, community members were surveyed
about their feelings concerning a recent contact with a police officer. Participants were eligible if
they had had a recent contact because of a reported crime incident, a reported traffic accident,
or a traffic stop, and the Chicago Police Department’s Research and Development division
scanned records to extract the names and addresses of community members who had had
such contact. Attached to each individual record was a unique personal identification number or
PIN, which the community member would have to enter in order to access the survey. The
purpose of the PIN was to prevent duplicated responses on the same police-community
member interaction. If a duplicated PIN was found in the dataset, the response completed
earlier, that is, closer to when the interaction occurred, was kept as the valid response.

The superintendent of police then sent letters to these individuals encouraging them to
complete a short survey evaluating their encounter. The letter indicated that the department

is fully committed to professional service so we have established a new method
for you to give us feedback about our performance. We have asked university
researchers to conduct an independent survey of persons with recent police
encounters. This will help us to improve our services. The survey is short,
confidential, and voluntary. It will ask you how you were treated and your level of
satisfaction with the police services. (Rosenbaum, Lawrence, et al., 2012, pp.7-3)

The letter also emphasized that this was an independent survey and that the police department
would never know whether someone chose to complete the survey or how he or she answered
the survey questions. The letters were mailed approximately two weeks after the encounter.
Community members could access the survey either by calling into an automated telephone
response system (an interactive voice survey) or by going online (a web-based survey).
Community members had to provide informed consent prior to entering the survey for both the telephone and web modes.

To identify the subsample for inclusion in the research on police recruits, cases from the PCI survey were linked by officer. A master identification number had been assigned to officers in the recruit study to link the multiple surveys officers had completed. As a graduate student who had worked on the NPRP as a research assistant, the identifying information linked to the master identification number was accessible to me. To link the recruits with data obtained from the PCI survey, the Chicago police department was asked to create a separate database for survey invitation letters sent to community members involving police reports taken by the recruit sample. Data associated with the other Chicago police officers who were not involved in the study remained anonymous to UIC researchers. A new unique identification number was randomly assigned to officers, and the link between the original NPRP identification number and this new identification number was destroyed. Therefore, the identities of the officers participating in recruit study were anonymous in the final datasets used in analyses of this study. No further information was collected from the officers or community members.

6.1.1 Missing Data

Cases were only included for analysis if the respondent, whether the officer or the community member, answered enough questions to calculate the scales. The rule for scale creation was that the respondent must have answered at least half of the items that make up the scale. If fewer than half the items were answered, then the case was not included in the final samples. The following missing data replacement method was conducted for cases where some missing data was present.

Prior to any analysis and scale creation, the degree of missing cases was determined across all pertinent variables. All items were available for all respondents to answer, and it was
always the respondent’s decision to answer a question or to skip it and leave it blank. Review of frequency distributions found no concern of variables missing 10% or more data.

To account for this random missing information, missing data were estimated through Student’s \( t \) distribution imputation (Rubin, 1987). This expectation maximization technique allows for multiple imputations for missing data, permitting valid statistical inferences to be made. Multiple imputation accounts for correlations that may be present between items within the dataset that can influence responses. In contrast, single imputation methods, such as determining the mean of valid responses and filling in missing responses with that mean or using predicted values from linear regressions, typically lead to biased estimates of parameters and therefore invalid inference (Nadarajah, & Kotz, 2008; Rubin, 1987). Degrees of freedom for this estimation was set at four. Once the estimation and imputation were accomplished, there was no missing data remaining for scale creation and analysis.

A different approach was used for missing demographic information specific to the PCI Survey. The demographic characteristics sex, race, and age of community members were collected through self-response to the survey instrument as well as provided to the NPRP research team by the Chicago Police Department. These two datasets (the response dataset and the police dataset) were linked through the arbitrary personal identification number (PIN) assigned to the specific encounter between an officer and community member. Self-responses on demographic characteristics took precedence to the policing data; that is to say, if there was a valid response on the demographic questions from the respondent to the survey, that response was considered the valid response. However, if demographic questions of the survey were skipped or if the respondent did not make it that far in the survey, demographic characteristics on age, sex, and race were substituted with the police report information. More information on this replacement method of this missing data is detailed below.
6.2 **Measures**

This section details all the measures that were included in the analyses. Demographic characteristics of the PCI survey and recruit sample are first detailed. The predictor measures involving personality dimensions and parental discipline styles are then explained. Lastly, the outcome measure of procedural justice use is discussed. This section also reports some preliminary analyses to address the missing data problem and to establish the nature of the data.

6.2.1 **Participants and Sample Characteristics**

Background characteristics of both the officer and the community member were included to help control for features that might influence how the encounter was experienced, viewed, or handled. There has been much research on how specific community member and officer demographic characteristics may affect outcomes of the encounter (Brown & Benedict, 2002; Decker, 1981; Engel, 2005; Gallagher, et al., 2001; Reisig & Parks, 2000; Reisig, et al., 2004; Ren, et al., 2005; Schafer, et al., 2003; Skogan, 2005; Tyler, 1990; Weitzer, 2000; Weitzer & Tuch, 1999). As such, controlling for these factors is important. Community member controls include the gender, age, race, and the type of police encounter. Officer demographics include gender, age, race, relationship status, past military experience, and past police officer experience.

6.2.1.1 **Police-Community Interaction (PCI) Survey**

The total population of eligible participants who had an interaction with an officer from the recruit study and to whom invitation letters were mailed was 8,359. A total of 458 individuals responded and completed the survey leading to an overall response rate of 5.5%. Demographic characteristics collected and used in the following analyses include the community member's sex, race, and age.
Sex was a dichotomous variable (1 = male). Of the 404 cases that had data on the community member’s sex from both the respondent dataset and the police dataset, 96.3% matched across the two datasets. Police data were substituted for response data when the response data was missing. After this replacement, 455 cases had valid responses, and sex was evenly split across the sample with 50.2% being male. The other 3 cases with missing data on the respondent’s sex were calculated through the Student’s t distribution for the analyses.

Age was kept as a continuous variable. Of the 388 cases that had data from both datasets, 63.4% matched age exactly. When adjusting the police data’s age by one year, either one additional year or one year less, 85.3% of the data matched across the datasets. At four more or less years, 91.0% of the cases matched. Police data were substituted for response data when the response data was missing. After this replacement, 454 cases had valid age responses that ranged from 18 to 85 years (M = 48.9, SD = 16.1). The remaining 4 cases were calculated through the Student’s t distribution for the analyses.

Of the 246 cases that had data concerning the community member’s race/ethnicity from both datasets, 88.2% matched across both on this demographic characteristic. This is quite high, as sex is visibly apparent and age is obtained by asking the community member or through information obtained from an identification card, but a determination of race is made based on the officer’s judgment at the time of the encounter. Police data were substituted for missing response data. After this replacement, 442 cases had valid responses. The other 16 cases were calculated through the Student’s t distribution for the analyses.

Chicago’s racial/ethnicity composition is distributed almost evenly across the three majority groupings, with 31.7% Whites, 32.4% African Americans, and 28.9% Hispanics for the entire city (U.S. Census Bureau, 2010). However, it is a common practice for new recruit officers to patrol areas of the city that have higher crime rates and higher levels of poverty. Such areas of Chicago are racially homogeneous, typically made up of African American and/or Hispanic communities. Because the sample used in this analysis only surveyed community members
who had interactions with new recruit officers, it did not come as a surprise that 62.4% of the community members in the PCI sample were African Americans. The rest of the sample were 15.4% Whites, 16.7% Hispanics, and 5.5% other or mixed races. As a result, race was coded as a dichotomous variable on whether or not the community member was African American (1 = African American).

The type of police-community interaction can drastically change the behaviors of the responding officer. For example, an officer may be more emotionally supportive when dealing with a victim of a crime than s/he would be when dealing with a traffic violator. Furthermore, different expectations of outcomes exist for citizen-initiated stops than for police initiated stops. To help control for these factors, the type of encounter for the police-community interaction was included in the following analyses. The majority of the sample was comprised of crime reporting encounters (57.0%) but also included 25.8% traffic accidents and 17.2% of traffic stops. This item was dummy coded. Traffic stops are the only police-initiated encounter type in the sample and as a result this variable was treated as the reference category.

The majority of respondents chose to respond by phone survey (70.1%). Although community members could respond either by calling into a computer assisted telephone self-interview or by going online and completing a web survey, past analysis has shown the two modes to produce the same substantive findings (Rosenbaum, Lawrence, et al., 2012). In their modal analysis of an earlier phase of the PCI survey, Rosenbaum, Lawrence, et al. (2012) first compared results on scales of satisfaction, degree of procedural justice use, views of local police officers and neighborhood police departments, and fear of crime for both web and automated telephone surveys. They found no substantive differences in results across these modes. To further support the use of these electronic methods, a random control trial was conducted to compare electronically obtained results with results from a more traditional method, the telephone interview. Again, no substantive differences were found between electronic and telephone interview results. Because of the results from Rosenbaum, Lawrence,
et al.’s (2012) study, modal differences were excluded from the following analyses for this dissertation.

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<th>Table I. Demographic and Covariates of PCI Survey and Recruit Samples</th>
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<td><strong>PCI Survey Respondents (n = 458)</strong></td>
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<td></td>
</tr>
<tr>
<td><strong>Recruit Officers (n = 172)</strong></td>
</tr>
<tr>
<td>Gender</td>
</tr>
<tr>
<td>Race</td>
</tr>
<tr>
<td>Age</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Relationship Status</td>
</tr>
<tr>
<td>Education</td>
</tr>
<tr>
<td>Previous Military Experience</td>
</tr>
<tr>
<td>Previous Police Officer</td>
</tr>
</tbody>
</table>

6.2.1.2 Recruit Study

The NPRP’s Chicago recruit study had a total of 310 recruit participants. However, the following analyses included a total of 172 recruits (55.5%) who were involved in the recruit study, had responses to the PCI survey, and had valid data on items used to create indexes for this study. Background characteristics were included in the following analyses to determine the impact demographics may have on officer procedural justice use as well as to control for such factors. These recruits were predominately male (80.8%, 1 = Male). Racial characteristics of the
recruits were fairly split between officers who were White (41.9%) and those who were of a minority race (58.2%). As a result, race was coded as a dichotomous variable (1 = Minority Race). Age was measured on the first day at the police training academy and kept as a continuous variable, ranging from 24.7 to 39.8 (M = 29.5, SD = 4.0).

Other background characteristics that were included in the analysis and thought to impact procedural justice use were the officer’s educational level, his or her current relationship status, previous military experience, and previous service as an officer in another police department. Education was coded as an ordinal variable, ranging from 1 = Some high school to 9 = PhD or similar (M = 4.5, SD = 1.2). The majority of officers had a college degree or higher (58.7%). The officer’s current relationship status was a dichotomous variable measuring whether s/he were married or in a relationship (26.9%, 1 = currently in a relationship). A total of 21.1% of the officers had past military experience (1 = Previously in the military), and 11.6% were previously officers in another police department (1 = Previously an office in another department).

6.2.2 Predictor Measures

As detailed in the literature reviews and research questions above, predictive measures in the analyses for this study include officers’ personality dimensions and the parental disciplinary styles they were exposed to during childhood. This study follows the literature and uses the five core personality dimensions: Extraversion, Agreeableness, Conscientiousness, Neuroticism, and Openness. The parental disciplinary styles involve four domains of discipline: corporal punishment, psychological control, deprivation of privileges, and penalty tasks/restorative behaviors. All presented factor loadings are after Student’s t analyses for missing data were completed.
6.2.2.1 Personality Dimensions

Personality research has a long history in which five main dimensions have been validated by personality psychologists as capturing an individual’s entire personality (Costa & McCrae, 1978, 1995; Digman, 1990; Goldberg, 1993; John & Srivistava, 1999; Tett, et al., 1991; Tupes & Cristal, 1961; Wiggins, 1968). The dimensions are Extraversion (talkative and outgoing vs. quiet and reserved), Neuroticism (tense and worried vs. emotionally stable and relaxed), Agreeableness (kind and considerate vs. rude and critical), Openness (creative and imaginative vs. simple and unimaginative), and Conscientiousness (thorough and careful vs. disorganized and careless).

The NPRP used 44 items from the International Personality Item Pool (Goldberg, et al., 2006) to measure the big five personality dimensions. The section of questions began by stating, “Here are a number of characteristics that may or may not apply to you. For example, do you agree that you are someone who likes to spend time with others? Please circle the number that indicates the extent to which you agree or disagree with that statement.” A specific question, for example, would then read “I am someone who is full of energy.” Response options included 1 = Strongly Disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, and 5 = Strongly Agree.

Principle component factor analysis was first conducted on all 44 items to statistically and conceptually distinguish constructs reflected in these survey items. Factors were identified in line with the literature on the big five personality traits. Items within each construct were then again analyzed in a principle component factor analysis to ensure uniformity within individual scales. Reliability or internal consistency of the scales was also checked through the Cronbach’s Alpha statistic. Lastly, scale normality was confirmed.

Factor analyses confirmed the expectation of individual personality dimensions. The extraversion index was comprised of seven items, two of which were reverse coded. The items measure the degree to which the respondent self-identified as outgoing, talkative, or being full of
energy. Specific items include “I am someone who is full of energy” and “… generates a lot of enthusiasm.” Higher scores indicate a more extraverted personality type.

Table II. Extraversion Index

<table>
<thead>
<tr>
<th>Items (1= Strongly Disagree, 5=Strongly Agree)</th>
<th>Factor Loading</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Is outgoing, sociable</td>
<td>.765</td>
</tr>
<tr>
<td>2. Is talkative</td>
<td>.685</td>
</tr>
<tr>
<td>3. Has an assertive personality</td>
<td>.680</td>
</tr>
<tr>
<td>4. Tends to be quiet – Reverse Coded</td>
<td>.638</td>
</tr>
<tr>
<td>5. Is full of energy</td>
<td>.627</td>
</tr>
<tr>
<td>6. Generates a lot of enthusiasm – Reverse Coded</td>
<td>.593</td>
</tr>
<tr>
<td>7. Is sometimes shy, inhibited – Reverse Coded</td>
<td>.564</td>
</tr>
</tbody>
</table>

Eigenvalue 2.99
Percent Variance Explained 42.67

Scale Statistics

<table>
<thead>
<tr>
<th>n</th>
<th>M</th>
<th>SD</th>
<th>Min</th>
<th>Max</th>
<th>Skewness</th>
<th>Cronbach’s Alpha</th>
</tr>
</thead>
<tbody>
<tr>
<td>172</td>
<td>3.76</td>
<td>0.58</td>
<td>2.00</td>
<td>5.00</td>
<td>-0.07</td>
<td>.77</td>
</tr>
</tbody>
</table>

The neuroticism index measures the degree to which an individual is nervous, worrisome, depressed, tense and not relaxed. Eight items were found to be unidimensional, with three items being reverse coded. Specific items include “I am someone who can be moody,” “… worries a lot,” and “… can be tense.” Higher scores will indicate a higher degree of having a neurotic personality.

Table III. Neuroticism Index

<table>
<thead>
<tr>
<th>Items (1= Strongly Disagree, 5=Strongly Agree)</th>
<th>Factor Loading</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Gets nervous easily</td>
<td>.729</td>
</tr>
<tr>
<td>2. Is relaxed, handles stress well – Reverse Coded</td>
<td>.710</td>
</tr>
<tr>
<td>3. Remains calm in tense situations – Reverse Coded</td>
<td>.683</td>
</tr>
<tr>
<td>4. Can be moody</td>
<td>.674</td>
</tr>
<tr>
<td>5. Can be tense</td>
<td>.638</td>
</tr>
<tr>
<td>6. Worries a lot</td>
<td>.635</td>
</tr>
<tr>
<td>7. Is emotionally stable, not easily upset – Reverse Coded</td>
<td>.628</td>
</tr>
<tr>
<td>8. Is depressed, blue</td>
<td>.549</td>
</tr>
</tbody>
</table>

Eigenvalue 3.46
Percent Variance Explained 43.28

Scale Statistics

<table>
<thead>
<tr>
<th>n</th>
<th>M</th>
<th>SD</th>
<th>Min</th>
<th>Max</th>
<th>Skewness</th>
<th>Cronbach’s Alpha</th>
</tr>
</thead>
<tbody>
<tr>
<td>172</td>
<td>2.11</td>
<td>0.56</td>
<td>0.79</td>
<td>3.88</td>
<td>0.37</td>
<td>.80</td>
</tr>
</tbody>
</table>
Individuals who scored high on agreeableness were more likely to be kind, considerate, and forgiving towards other people in general. The agreeableness index was measured through nine items, four of which were reverse coded. Specific items include “I am someone who is generally trusting” and “… is considerate and kind to almost everyone.” Higher scores on this index indicate a personality more in line with the agreeableness personality dimension.

Table IV. Agreeableness Index

<table>
<thead>
<tr>
<th>Items (1 = Strongly Disagree, 5 = Strongly Agree)</th>
<th>Factor Loading</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Is sometimes rude to others – Reverse Coded</td>
<td>.784</td>
</tr>
<tr>
<td>2. Is considerate and kind to almost everyone</td>
<td>.772</td>
</tr>
<tr>
<td>3. Is helpful and unselfish with others</td>
<td>.706</td>
</tr>
<tr>
<td>4. Likes to cooperate with others</td>
<td>.719</td>
</tr>
<tr>
<td>5. Is generally trusting</td>
<td>.679</td>
</tr>
<tr>
<td>6. Can be cold and aloof – Reverse Coded</td>
<td>.641</td>
</tr>
<tr>
<td>7. Starts quarrels with others – Reverse Coded</td>
<td>.582</td>
</tr>
<tr>
<td>8. Has a forgiving nature</td>
<td>.576</td>
</tr>
<tr>
<td>9. Tends to find fault with others – Reverse Coded</td>
<td>.511</td>
</tr>
</tbody>
</table>

| Eigenvalue | 4.03 |
| Percent Variance Explained | 44.77 |

<table>
<thead>
<tr>
<th>Scale Statistics</th>
<th>n</th>
<th>M</th>
<th>SD</th>
<th>Min</th>
<th>Max</th>
<th>Skewness</th>
<th>Cronbach’s Alpha</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>172</td>
<td>4.11</td>
<td>0.51</td>
<td>2.33</td>
<td>5.05</td>
<td>-0.33</td>
<td>.83</td>
</tr>
</tbody>
</table>

Openness was comprised of eight items measuring the respondent’s creative thinking, problem solving, and artistic orientations. Specific items include “I am someone who is original, comes up with new ideas,” “… is curious about many different things,” and “… has an active imagination.” Higher scores on this index indicate a more “open” personality.
Table V. Openness Index

<table>
<thead>
<tr>
<th>Items (1= Strongly Disagree, 5=Strongly Agree)</th>
<th>Factor Loading</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Is ingenious, a deep thinker</td>
<td>.718</td>
</tr>
<tr>
<td>2. Likes to reflect, play with ideas</td>
<td>.707</td>
</tr>
<tr>
<td>3. Is inventive</td>
<td>.636</td>
</tr>
<tr>
<td>4. Is original, comes up with new ideas</td>
<td>.627</td>
</tr>
<tr>
<td>5. Is sophisticated in art, music, or literature</td>
<td>.587</td>
</tr>
<tr>
<td>6. Values artistic, aesthetic experiences</td>
<td>.583</td>
</tr>
<tr>
<td>7. Is curious about many different things</td>
<td>.484</td>
</tr>
<tr>
<td>8. Has an active imagination</td>
<td>.457</td>
</tr>
</tbody>
</table>

Eigenvalue 2.94
Percent Variance Explained 36.78

<table>
<thead>
<tr>
<th>Scale Statistics</th>
<th>n</th>
<th>M</th>
<th>SD</th>
<th>Min</th>
<th>Max</th>
<th>Skewness</th>
<th>Cronbach’s Alpha</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>172</td>
<td>3.90</td>
<td>0.50</td>
<td>2.75</td>
<td>5.00</td>
<td>-0.04</td>
<td>.74</td>
</tr>
</tbody>
</table>

Finally, the last personality dimension of conscientiousness was measured through nine items, four that were reverse coded. These items assess the degree to which individuals are thorough, careful, and hardworking. Specific items include “I am someone who is a reliable worker” and “… perseveres until the task is finished.” Higher scores on this index indicate a more conscientious personality.

Table VI. Conscientiousness Index

<table>
<thead>
<tr>
<th>Items (1= Strongly Disagree, 5=Strongly Agree)</th>
<th>Factor Loading</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Can be somewhat careless – Reverse Coded</td>
<td>.718</td>
</tr>
<tr>
<td>2. Is easily distracted – Reverse Coded</td>
<td>.708</td>
</tr>
<tr>
<td>3. Tends to be lazy – Reverse Coded</td>
<td>.684</td>
</tr>
<tr>
<td>4. Tends to be disorganized – Reverse Coded</td>
<td>.671</td>
</tr>
<tr>
<td>5. Is a reliable worker</td>
<td>.663</td>
</tr>
<tr>
<td>6. Makes plans and follows through with them</td>
<td>.648</td>
</tr>
<tr>
<td>7. Persevers until the task is finished</td>
<td>.617</td>
</tr>
<tr>
<td>8. Does a thorough job</td>
<td>.577</td>
</tr>
<tr>
<td>9. Does things efficiently</td>
<td>.545</td>
</tr>
</tbody>
</table>

Eigenvalue 3.80
Percent Variance Explained 42.25

<table>
<thead>
<tr>
<th>Scale Statistics</th>
<th>n</th>
<th>M</th>
<th>SD</th>
<th>Min</th>
<th>Max</th>
<th>Skewness</th>
<th>Cronbach’s Alpha</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>172</td>
<td>4.21</td>
<td>0.50</td>
<td>2.11</td>
<td>5.00</td>
<td>-0.67</td>
<td>.82</td>
</tr>
</tbody>
</table>
6.2.2.2 Parental Discipline Styles

There are many different ways a parent may discipline a child when misbehavior occurs. As mentioned in the literature review section above, parents may yell at their child, take away things that are important to him or her, make him or her apologize to those who s/he mistreated, among many other practical reactions. Respondents of the NPRP Recruit study were asked to think back to their childhoods and report the frequency of specific behaviors their parents may have responded with when they did something wrong.

The items on parental discipline used in this research come from Straus and Fauchier’s (2011) *Manual for the Dimensions of Discipline Inventory* developed at the University of New Hampshire Family Research Laboratory. The Adult Recall Form A asked adults to describe the disciplinary practices of both parents when the respondents were 10 years old, using a complex nine-point frequency scale. To simplify this survey for administration in the context of a larger battery of tests with limited time, the NPRP limited the number of questions, used a 4-point scale (1 = Never, 2 = Rarely, 3 = Sometimes, and 4 = Very Often), and asked the following: “When you were a child and did something wrong or misbehaved, how often did your parents do the following things?” Fifteen items were analyzed in a principal components factor analysis to determine the dimension subsets. Items within each resulting construct were again factor analyzed to ensure uniformity within individual scales. Reliability was also checked through the Cronbach’s alpha statistic. Normal distributions of the indexes were confirmed as well. The final dimensions were parental discipline through corporal punishment behaviors, through psychological aggressive behaviors, through depriving privileges, and through penalty tasks and restorative behaviors. Higher scores on all these indexes indicate that the respondent experienced that parental discipline style more frequently when a child.

The corporal punishment index was comprised of three items measuring the frequency the respondent’s parents used physical discipline when s/he misbehaved, for example, whether
his or her parents used a paddle, hairbrush, belt, or other object to hit him or her. Higher scores indicate experiencing this discipline style more as a child.

### Table VII. Corporal Punishment Index

<table>
<thead>
<tr>
<th>Items (1=Never, 2=Rarely, 3=Sometimes, 4=Very Often)</th>
<th>Factor Loading</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Spank, slap, smack, or swat you</td>
<td>.887</td>
</tr>
<tr>
<td>2. Use a paddle, hairbrush, belt, or other object to hit you</td>
<td>.846</td>
</tr>
<tr>
<td>3. Shake or grab you to get your attention</td>
<td>.727</td>
</tr>
</tbody>
</table>

Eigenvalue 2.03  
Percent Variance Explained 67.71

<table>
<thead>
<tr>
<th>Scale Statistics</th>
<th>n</th>
<th>M</th>
<th>SD</th>
<th>Min</th>
<th>Max</th>
<th>Skewness</th>
<th>Cronbach’s Alpha</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>172</td>
<td>2.08</td>
<td>0.79</td>
<td>0.74</td>
<td>4.00</td>
<td>0.56</td>
<td>.76</td>
</tr>
</tbody>
</table>

The psychological control index was comprised of six items. The items measure the frequency that the respondent’s parents used psychological control techniques in response to his or her misbehavior. Specific items include “Try to make you feel ashamed or guilty,” “Hold back affection by acting cold or not giving hugs,” or “Deliberately not pay attention when you misbehaved.” Unidimensionality and reliability were checked across the items. Higher scores on this index indicate the officer experienced more parental discipline styles that used psychological control behaviors when a child.

### Table VIII Psychological Control Index

<table>
<thead>
<tr>
<th>Items (1=Never, 2=Rarely, 3=Sometimes, 4=Very Often)</th>
<th>Factor Loading</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Try to make you feel ashamed or guilty</td>
<td>.796</td>
</tr>
<tr>
<td>2. Tell you that you were lazy, sloppy, thoughtless, or some other name like that</td>
<td>.780</td>
</tr>
<tr>
<td>3. Hold back affection by acting cold or not giving hugs</td>
<td>.731</td>
</tr>
<tr>
<td>4. Deliberately not pay attention when you misbehaved</td>
<td>.677</td>
</tr>
<tr>
<td>5. Shout or yell at you</td>
<td>.661</td>
</tr>
<tr>
<td>6. Send you to bed without a meal</td>
<td>.546</td>
</tr>
</tbody>
</table>

Eigenvalue 2.97  
Percent Variance Explained 49.51

<table>
<thead>
<tr>
<th>Scale Statistics</th>
<th>n</th>
<th>M</th>
<th>SD</th>
<th>Min</th>
<th>Max</th>
<th>Skewness</th>
<th>Cronbach’s Alpha</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>172</td>
<td>1.83</td>
<td>0.58</td>
<td>1.00</td>
<td>3.83</td>
<td>0.94</td>
<td>.79</td>
</tr>
</tbody>
</table>
The deprivation of privileges index measures the degree to which parents would take away or restrict activities of the officer when s/he misbehaved as a child. Specific items include “Take away your allowance, toys, or other privileges because of misbehavior,” or “Put you in ‘time out’ or send you to your room.” Higher scores on this scale indicate parents more often disciplined the officer by depriving privileges when s/he was a child.

<table>
<thead>
<tr>
<th>Items (1=Never, 2=Rarely, 3=Sometimes, 4=Very Often)</th>
<th>Factor Loading</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Take away your allowance, toys, or other privileges because of misbehavior</td>
<td>.850</td>
</tr>
<tr>
<td>2. Ground you or restrict your activities outside the home because of misbehavior</td>
<td>.753</td>
</tr>
<tr>
<td>3. Put you in “time out” or send you to your room</td>
<td>.730</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Eigenvalue</th>
<th>Percent Variance Explained</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.82</td>
<td>60.74</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Scale Statistics</th>
<th>n</th>
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<th>SD</th>
<th>Min</th>
<th>Max</th>
<th>Skewness</th>
<th>Cronbach’s Alpha</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>172</td>
<td>2.83</td>
<td>0.71</td>
<td>1.00</td>
<td>4.00</td>
<td>-0.31</td>
<td>.66</td>
</tr>
</tbody>
</table>

The last parental discipline dimension is the penalty tasks and restorative behavior index. This dimension measured how often parents would give extra chores or tasks in order for their child to make up for any misbehavior. For example, the parents may have “made you apologize or say you were sorry for misbehavior.” Principle components factor analysis and Cronbach’s alpha statistic were used to confirm unidimensionality and internal consistency.

<table>
<thead>
<tr>
<th>Items (1=Never, 2=Rarely, 3=Sometimes, 4=Very Often)</th>
<th>Factor Loading</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Make you do something to make up for the misbehavior; for example, pay for a broken window</td>
<td>.824</td>
</tr>
<tr>
<td>2. Give you extra chores as a consequence</td>
<td>.815</td>
</tr>
<tr>
<td>3. Make you apologize or say you were sorry for misbehavior</td>
<td>.502</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Eigenvalue</th>
<th>Percent Variance Explained</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.60</td>
<td>53.16</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Scale Statistics</th>
<th>n</th>
<th>M</th>
<th>SD</th>
<th>Min</th>
<th>Max</th>
<th>Skewness</th>
<th>Cronbach’s Alpha</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>172</td>
<td>2.79</td>
<td>0.69</td>
<td>1.33</td>
<td>4.00</td>
<td>-0.13</td>
<td>.56</td>
</tr>
</tbody>
</table>
6.2.3 Outcome Measures: Procedural Justice

Measurement of procedural justice can be complex. According to the works of Tyler and associates (Sunshine & Tyler, 2003; Tyler, 1988, 1989, 1990, 1997, 2004; Tyler & Fagan, 2008; Tyler & Wakslak, 2004) there are two main dimensions of procedural justice: the quality of interpersonal treatment and the quality of the officer's decision-making during the interaction. Tyler's research has determined that there is little difference in the importance individuals place on these dimensions of procedural justice (Tyler, 1994, 1997, 2000; Tyler & Huo, 2002). Other researchers have been unable to separate items measuring procedural justice into Tyler's dimensions and have only be able to find a single unidimensional construct of procedural justice (Gau, 2012; Jonathan-Zamir, Mastrofski, & Moyal, 2013; Kochel, 2012). Principal components factor analysis of all the procedural justice items used in the NPRP's PCI data determined a single factor loading and unidimensionality. As such, the procedural justice items were combined into one broad dimension producing a comprehensive assessment on the community members attitudes of the officer's behaviors. Reliability was checked using the Cronbach's alpha statistic and found to be very high ($\alpha = .97$) and normality of the criterion was confirmed.

Respondents to the PCI Survey were provided with statements about behaviors the officer may have displayed during the interaction and asked to respond with their level of agreement regarding whether the officer acted in that fashion. For example, “During the encounter, the officer treated me politely.” Response options included 1 = Strongly Disagree, 2 = Disagree, 3 = Agree, and 4= Strongly Agree.
<table>
<thead>
<tr>
<th>Items (1= Strongly Disagree, 4=Strongly Agree)</th>
<th>Factor Loading</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Listened to what I had to say</td>
<td>.925</td>
</tr>
<tr>
<td>2. Treated me politely</td>
<td>.924</td>
</tr>
<tr>
<td>3. Treated me with dignity and respect</td>
<td>.917</td>
</tr>
<tr>
<td>4. Was fair and evenhanded</td>
<td>.912</td>
</tr>
<tr>
<td>5. Seemed concerned about my feelings</td>
<td>.904</td>
</tr>
<tr>
<td>6. Considered my views</td>
<td>.902</td>
</tr>
<tr>
<td>7. Answered my questions well</td>
<td>.899</td>
</tr>
<tr>
<td>8. Seemed to believe what I was saying</td>
<td>.896</td>
</tr>
<tr>
<td>9. Made decisions based on the facts</td>
<td>.892</td>
</tr>
<tr>
<td>10. Appeared to know what he or she was doing</td>
<td>.877</td>
</tr>
<tr>
<td>11. Explained what would happen next in the process</td>
<td>.840</td>
</tr>
<tr>
<td>12. Took the matter seriously</td>
<td>.797</td>
</tr>
<tr>
<td>13. Remained calm</td>
<td>.742</td>
</tr>
<tr>
<td>14. Discriminated against me because of my race, gender, age, religion, or sexual orientation</td>
<td>.574</td>
</tr>
<tr>
<td>15. Talked down to me – Reverse Coded</td>
<td>.554</td>
</tr>
<tr>
<td>16. Interrupted me – Reverse Coded</td>
<td>.486</td>
</tr>
</tbody>
</table>

Eigenvalue: 10.96
Percent Variance Explained: 68.47

<table>
<thead>
<tr>
<th>Scale Statistics</th>
<th>n</th>
<th>M</th>
<th>SD</th>
<th>Min</th>
<th>Max</th>
<th>Skewness</th>
<th>Cronbach's Alpha</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>458</td>
<td>3.11</td>
<td>0.80</td>
<td>1.00</td>
<td>4.00</td>
<td>-0.97</td>
<td>.97</td>
</tr>
</tbody>
</table>

Sixteen items, two of which require reverse coding, were aggregated to assess the degree of procedural justice the officer demonstrated. This scale should have strong content validity as the items cover many aspects of procedural justice including the quality of treatment and the quality of decision-making. Items measuring the degree to which the officer exhibited support and listened during the encounter were also be included in this index. Emotional support and active listening are key components to victim recovery (Ullman, 1999), but an officer who “seemed concerned about feelings” or “seemed to believe what [the respondent] was saying” may be just as important during traffic stops or accidents.
6.3 Data Analysis Plan

The above scale computations, imputation of missing cells, and checks of normality were accomplished using the Statistical Package for the Social Sciences (SPSS) 19.0 software. Police officers routinely have interactions with community members that result in police reports. As a result, there are usually multiple PCI survey responses per officer. To account for this nesting of cases within officers, hierarchical linear modeling (HLM) was used to best analyze this two-level data. The level-one cases were the police-community interactions from the PCI survey, and level-two groupings were the individual officers from the recruit study. The number of PCI Survey responses pertaining to an interaction with an individual officer ranged from one to ten, with the average being three. As a result, hierarchical linear modeling was used to analyze the data; specifically, through a two-level parametric linear mixed model. Two datasets were created in SPSS: the level-one dataset that contains the community member responses to the PCI survey and the level-two dataset that contains the recruit data. Once cleaned, those datasets were transposed into Scientific Software International’s Hierarchical Linear and Nonlinear Modeling 7.0 software to be analyzed appropriately (Bryk & Raudenbush, 1992; Raudenbush & Bryk, 2002).

6.3.1 Hierarchical Linear Model

The statistical equation is presented below to help the reader better understand the HLM that was used in this study. A hierarchical linear modeling was used to answer the first two research questions. To reiterate, these questions are:

1) What personality dimensions, if any, contribute to police officer’s use of procedural justice when interacting with community members?

2) What parental discipline styles experienced when a child, if any, contribute to police officer’s use of procedural justice when interacting with community members?

The HLM included all of the above personality and parental discipline predictors in a single analysis. All items were included in the single model to better assess the individual contribution
each had on procedural justice behavior among officers. The criterion – the degree of procedural justice during the interaction – as well as the demographic characteristics for the community members and officers, were included.

As this was a nested dataset – multiple police-community interactions per officer – there was a level-one model and a level-two model. The level-one model consisted of community members’ assessments of officers’ procedural justice and is best represented as the traditional linear regression formula. Encounter type, along with the community member’s demographic characteristics, were included in the formula to predict the procedural justice outcome. The full model is presented below:

**Figure 2. Hierarchical Linear Model: Predicting Procedural Justice**

**Level-One Model**

\[ Y_{ij} (Procedural\ Justice) = \beta_{0j} + \beta_{1j}*(Crime\ Report_{ij}) + \beta_{2j}*(Traffic\ Accident_{ij}) + \beta_{3j}*(Age_{ij}) + \beta_{4j}*(Gender_{ij}) + \beta_{5j}*(African\ American_{ij}) + r_{ij} \]

**Level-Two Model**

\[ \beta_{0j} = \gamma_{00} + \gamma_{01}*(Gender_{j}) + \gamma_{02}*(Age_{j}) + \gamma_{03}*(Relationship_{j}) + \gamma_{04}*(Education_{j}) + \gamma_{05}*(Minority_{j}) + \gamma_{06}*(Military_{j}) + \gamma_{07}*(Previous\ Officer_{j}) + \gamma_{08}*(Extraversion_{j}) + \gamma_{09}*(Neuroticism_{j}) + \gamma_{10}*(Agreeableness_{j}) + \gamma_{11}*(Openness_{j}) + \gamma_{12}*(Conscientiousness_{j}) + \gamma_{13}*(Corporal\ Punishment_{j}) + \gamma_{14}*(Psychological\ Control_{j}) + \gamma_{15}*(Deprivation\ of\ Privileges_{j}) + \gamma_{16}*(Task\ and\ Restore_{j}) + U_{0} \]

\[ \beta_{1j} = \gamma_{10} \]

\[ \beta_{2j} = \gamma_{20} \]

\[ \beta_{3j} = \gamma_{30} + U_{3} \]

\[ \beta_{4j} = \gamma_{40} + U_{4} \]

\[ \beta_{5j} = \gamma_{50} + U_{5} \]

In the model above, \( Y_{ij} \) corresponds to the procedural justice score for community member \( i \) within officer \( j \), and \( r_{ij} \) is an error term to describe the unique effect of each community member. The subscript \( j \) indicates that the values for the coefficients will change as a function of the officer variables.

The level-two models were expected to influence each slope (\( \beta \)) of the level-one predictors. No interaction effects were hypothesized between officer and community member characteristics, so no predictors are present in the level-two model for \( \beta_{1} \) to \( \beta_{5} \). Officer
characteristics can be found in the level-two model for $\beta_0$, the constant of the level-one model. Here the predictors of the officer demographic characteristics were included, along with personality traits and parental discipline styles. These dimensions predict $\beta_0$, which in turn influences the level-one model’s average score for the officer’s procedural justice use.

Lastly, variation across the officers was expected with regard to the level-two officer predictors as well as the community member’s age, gender and race. As a result, error terms ($U_0$, $U_3$, $U_4$, and $U_5$) were present in the level-two model. Including the error terms for these formulas implies that officers were expected to vary in their demographic characteristics, personality traits, and parental discipline styles as well as across the community members they interacted with by age, gender and racial lines. Essentially, this means the officers in the recruit study were different from each other in those specific qualities. Variation across officers on the types of encounters they typically handle was not expected; therefore, error terms ($U_1$ and $U_2$) were not present for $\beta_1$ or $\beta_2$.

### 6.3.2 Mediation OLS Regression Model

The third research question was answered through a mediation regression analysis (Baron & Kenny, 1986). As hypothesis #3 states, personality will partially mediate the relationship of parental discipline style and procedural justice usage. To simplify the mediation regression model, only statistically significant personality and parental discipline predictors from the above HLM analysis were used in the analysis. The specific mediation model with pertinent personality and parental discipline styles variables is detailed in the results section below. The following explains the mediation analysis that was conducted.

The first step was to combine the data files into a single SPSS dataset with the officer being the unit of analysis. All the covariates of officer characteristics, previously the level-two data, remained. The criterion of procedural justice behavior found at the community member level data of interactions with officers was aggregated to individual officers. For example, if an...
officer had four interactions associated with him or her, the procedural justice scores for all four interactions were combined and an average score was computed for that officer.

The full model can be depicted as follows:

Figure 3. Mediation OLS Regression Model

In the simple mediation model, Model B above, a parental discipline style is postulated to exert an effect on procedural justice through the mediator, personality. This total effect is represented as the c path in Model A above. The a path is the coefficient of a parental discipline style in predicting a personality dimension from the parental discipline; and the b and c' paths are the coefficients in the model predicting procedural justice from personality and parental discipline, respectively. The c' path quantifies the direct effect of the parental discipline style. The indirect effect, measured by the product of path a and b, quantifies the effect of the parental discipline style on procedural justice through the personality dimension. The total effect is the direct effect (c') plus the indirect effect (ab), or c = c' + ab.

The most commonly used approach to determine if a mediation relationship exists follows the four steps validated by the research of Baron and Kenny (1986), James and Brett (1984), and Judd and Kenny (1981), known as the causal steps approach. The first step is to show that the predictor, a parental discipline style in this case, is correlated with the criterion, procedural justice. The second step is to determine whether the parental discipline style is correlated with the mediator, a personality dimension. This step is depicted as path a above.
Again, the parental discipline styles and personality dimensions used will be the remaining significant predictors of procedural justice found in the HLM analysis. The third step is to determine whether the personality dimension affects procedural justice usage, illustrated as path b above. If the effect of path b is found to be significant then it would be concluded that partial mediation exists. However, if any of the relationships from steps one, two, or three are found to be not significantly different from zero, then no additional tests for mediation are needed, as mediation is not statistically possible.

To test for a full mediation effect the results from step three are used. In the full model, the effect of parental discipline on procedural justice through personality is depicted by path c'. If this relationship is now non-significant with the inclusion of the personality dimension, full mediation can be argued. If the effect is less than it was found to be in step one and personality is significant, partial mediation exists.

While Baron and Kenny’s (1986) causal steps approach has been a popular method to determining mediation effects, limitations to this approach have been extensively documented (Hayes, 2009). Studies have shown that this approach to assessing intervening variable effects is among the lowest in power (Fritz & MacKinnon, 2007; MacKinnon, Lockwood, Hoffman, West, & Sheets, 2002). As a result of the multiple steps in this approach, it is the least likely to actually detect mediation effects. Other criticisms include that the causal steps approach does not provide an estimate of the size of the indirect effect, nor does it provide an overall test of the mediation (i.e. the degree to which one satisfies all four conditions).

Preacher and Hayes (2004) point out that because of the multiple hypothesis tests required in the causal steps approach, there are more null hypotheses that must be rejected in order to claim an indirect effect. The more null hypotheses, the greater the probability of a decision error. These authors have proposed a more sensible approach that would minimize the number of tests needed to support results of mediation. They have written a SPSS program
macro to conduct bootstrapping analyses for simple and complex mediation analyses. The process of bootstrapping is detailed:

Bootstrapping generates an empirical representation of the sampling distribution of the indirect effect by treating the obtained sample of size n as a representation of the population in miniature, one that is repeatedly resampled during analysis as a means of mimicking the original sampling process. The resampling of the sample is conducted with replacement, so that a new sample of size n is built by sampling cases from the original sample but allowing any case once drawn to be thrown back to be redrawn as the resample of size n is constructed. Once a resample is constructed, a and b [paths] are estimated [using] this resampled data set and the product of the path coefficients recorded. (Hayes, 2009, p. 412)

This sampling and resampling process is repeated many times, typically at least 1,000 although 5,000 is the recommended amount. After the bootstrapping procedure is completed, confidence intervals for the indirect effect are estimated. If the upper and lower confidence levels do not range from positive to negative values, that is, do not cross the value of zero, then the researcher can claim significant findings of the indirect effect. Research has shown that bootstrapping is a more valid and powerful method for testing intervening variable effects as opposed to the causal steps approach (MacKinnon et al., 2004; Williams & MacKinnon, 2008). As such, the mediation regression analysis presented in this dissertation was conducted with the bootstrapping approach. Coefficients and bootstrapping confidence internals were estimated using the MedCurve and Indirect SPSS macros created by Preacher and Hayes (Hayes & Preacher, 2010; Preacher & Hayes, 2008).
VII. RESULTS

7.1 Preparatory Analyses

7.1.1 Correlations and Relationships of Predictors and Outcome Measures

Zero-order correlations between variables were calculated prior to the HLM and mediation regression analyses. The reader can find tables and graphs of these relations in Appendices A and B.

Nineteen different constructs were measured and used to predict procedural justice use during a police-community member interaction. These predictors include the type of police-community member encounter, three demographic background characteristics of community members, six background characteristics of the police officers they had contact with, five core personality dimensions of the officers, and four parental discipline styles that the officers were exposed to as children. Table 7.1 reports the descriptive statistics of the personality and discipline indexes, as well as the criterion variable.

<table>
<thead>
<tr>
<th>Table XII. Descriptive Statistics of Criterion and Predictors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scale</td>
</tr>
<tr>
<td>--------------------------------</td>
</tr>
<tr>
<td>Procedural Justice</td>
</tr>
<tr>
<td>Personality Predictors</td>
</tr>
<tr>
<td>Extraversion</td>
</tr>
<tr>
<td>Neuroticism</td>
</tr>
<tr>
<td>Agreeableness</td>
</tr>
<tr>
<td>Openness</td>
</tr>
<tr>
<td>Conscientiousness</td>
</tr>
<tr>
<td>Parental Discipline</td>
</tr>
<tr>
<td>Corporal Punishment</td>
</tr>
<tr>
<td>Psychological Control</td>
</tr>
<tr>
<td>Deprivation of Privileges</td>
</tr>
<tr>
<td>Penalty Tasks and Restorative Behaviors</td>
</tr>
</tbody>
</table>

Correlations of the predictor and outcome measures were assessed. A correlation matrix of the Pearson r statistic across all variables is available for review in Appendix A. Many items were significantly correlated, but none displayed a bivariate correlation larger than $r = .64$.  

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Furthermore, OLS regression analysis determined that none of the items produce variance inflation factor (VIF) scores greater than the accepted cut-off value of 10 (Kutner, Nachtsheim, & Neter, 2004). Therefore, no multicollinearity issues were noted.

### 7.1.2 Predictor Relationships to Procedural Justice

The assumption of linearity in the relationship between predictor variables and the criterion, procedural justice, was addressed prior to running the main analyses. Linear regression assumes that each relationship is linear, but that is not always the case. To determine whether curvilinear relationships existed, each predictor variable was squared and cubed. Two HLM analyses including the covariates and other predictors were conducted with the addition of these squared and cubed predictor variables. The first analysis included the original predictor and the squared predictor to determine if the relationship with procedural justice was quadratic. The second analysis matched the first, but also included the cubed predictor to determine if the relationship with procedural justice was cubic. Scatter plots of the predictors and the aggregated (officer level) criterion scores as well as results from the HLM analyses are detailed in Appendix B.

Each relationship between the squared and cubed personality and parental discipline style predictors and procedural justice was investigated. In total, only one relationship was found to be nonlinear: the model with Neuroticism-squared proved to be a better relationship than its linear or cubic possibilities. This relationship was examined further through a scatter plot of Neuroticism-squared on the aggregated procedural justice scores, displayed in Figure 7.1 below.

The plot shows that officers with a “pure” emotionally stable personality (i.e. none or very low Neuroticism) are associated with lower procedural justice scores than those with a low score of Neuroticism. At this low level of Neuroticism, procedural justice behaviors peak.
However, the degree of procedural justice behaviors lower drastically as the neurotic personality increases from this peak.

**Figure 4. Scatter Plot of Neuroticism$^2$ and Procedural Justice**

As a result, the following analyses recognize the relationship between Neuroticism and procedural justice as quadratic. All other relations between the predictors and procedural justice were treated as linear.

### 7.1.3 Power Analysis

Power analyses were conducted to ensure confidence in the probability of rejecting the null hypotheses when the evidence supports the research hypotheses (i.e. the probability of not committing a Type II error). Power is determined through a significance test of the probability of rejecting the null hypothesis given the effect size in the population, the significance level, and the sample size. Cohen (1988, 1992) suggests that power is moderate when it is .50 and high when it is at least .80.

Measuring statistical power is slightly different in HLM analyses than multivariate regression analyses due to the multilevel data. Snijders (2005) outlines the steps to measure
power in a HLM setting. Two power analyses were conducted: an A-priori analysis to measure the minimum sample size required and a post-hoc analysis to determine the statistical power based on the sample sized used. An online HLM power calculator was used for both tests (Soper 2014a, 2014b). Following Cohen’s (1992) guidelines for the A-priori analysis to determine the minimum sample size, the effect size was set at .15, the desired statistical power level was set at .80, and the significance level at .05. Results showed that the minimum required sample size at these parameters would be 151. The parameters were set at the “minimum” level to achieve confidence in the results. Increasing the levels for either the effect size, power level, or significance level increases the minimum sample size needed; however, the sample sized used in this study was 172, leading to the conclusion that the sample was sufficient at these parameters. The second power analysis determined the power of the sample used. The effect size was again set at .15 and the significance level was set at .05. The result indicated an observed power of .87, a very high level according to Cohen (1988, 1992). Increasing the significance level to .01 resulted in a power of .69 and setting the effect size at .10 with a .05 significance level resulted in a .66 power, both still at respectable levels. As a result of these power analyses, confidence in the HLM analysis and rejection of the null hypotheses was high.

7.2 HLM Results

This section details the results from the hierarchical linear model that was conducted in order to answer research questions one and two pertaining to the influence an officer’s personality and experienced parental discipline on procedural justice use. The level-one community member variables were centered around the group mean and the level-two officer variables were centered around the grand mean to improve model convergence and interpretation (Kreft, Leeuw, & Aiken, 1995).

To confirm normality of the data and that homoscedastic residuals were dispersed randomly around zero, an Empirical Bayes estimate of the residual values was conducted for
level-two data. The results indicate that the residuals were uncorrelated with the level-two predictors entered into the model (Raudenbush & Bryk, 2002). The residuals followed a normal distribution, with a mean of approximately zero and a standard deviation of 0.03. The Akaike Information Criterion (AIC), which measures the degree of fit for a model to the pertinent data, was found to be 1137.43 based on 11 parameters. After numerous model runs, the HLM results reported here were found to have the best degree of fit. In the multiple linear regression, \( R^2 \) is usually defined as the “explained proportion of variance,” but to adjust to an HLM analysis, Snijders and Bosker (1994) employ the equivalent definition of “proportional reduction in mean squared prediction error.” The appropriate method for calculating the amount of explained variance for HLM is debatable, but the application of Snijders’ and Bosker’s (1994) interpretation indicates 12.55% of the community member level-one variance and 16.18% of the officer level-two variance is accounted for by this model.

Covariance parameter estimates indicate that between-officer effects account for relatively little variance in procedural justice as compared to the between-community member variance (between-officer variance = 0.013, within-officer variance = 0.54, intraclass correlation coefficient = 2.3%). These values may indicate more variability within officers than there is between officers. Furthermore, an estimation of the reliability of the sample mean in any officer for the true officer mean can be derived by substituting the estimated variance components. The estimated reliability is .80, indicating that the sample means tend to be quite reliable as indicators of the true officer procedural justice means.

Table 7.2 details the results on the estimated variance of the officers’ mean procedural justice scores and the community members’ gender, age, and race. The estimated variance of the officers’ mean procedural justice scores is 0.013. A Chi-Squared test of the final estimation of variance components found a significant difference in procedural justice scores between the officers \((\chi^2(5) = 13.63, p < .05)\). This analysis leads to the conclusion that the procedural justice scores significantly differ between officers.
Table XIII. HLM Final Estimation of Variance Components

<table>
<thead>
<tr>
<th>Random Effect</th>
<th>Variance Component</th>
<th>SD</th>
<th>d.f.</th>
<th>$\chi^2$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean Procedural Justice, $\mu_0$</td>
<td>0.01</td>
<td>0.11</td>
<td>5</td>
<td>13.63*</td>
</tr>
<tr>
<td>Gender, $\mu_1$</td>
<td>0.03</td>
<td>0.18</td>
<td>22</td>
<td>15.20</td>
</tr>
<tr>
<td>Age, $\mu_2$</td>
<td>0.00</td>
<td>0.01</td>
<td>22</td>
<td>18.27</td>
</tr>
<tr>
<td>African American, $\mu_3$</td>
<td>0.05</td>
<td>0.05</td>
<td>22</td>
<td>25.15</td>
</tr>
<tr>
<td>Level-1 effect, $r_{ij}$</td>
<td>0.54</td>
<td>0.74</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

$^t = p < .10, ^* = p < .05, ^** = p < .01, ^*** = p < .001$

The estimated variance of the community members’ gender, age, and race slopes over the 172 officers were found insignificant. This analysis leads to the conclusion that the differences of the community members’ gender, age, and race did not significantly differ across the officers in this sample. The officers of this sample essentially interacted with the same type of individuals in regards to their gender, age, and race.

7.2.1 Main Results

Table 7.3 provides the estimate for the coefficients in the model. First, the results on the community covariates are detailed, followed by the officer covariates, and finally the results of the predictors associated with the hypotheses is reported.

The type of encounter that caused the police-community member interaction to occur was found to significantly influence procedural justice use. The final estimation of fixed effects found significant, positive relations with the mean procedural justice scores for both crime reports and traffic accidents when compared to traffic stops (respectively, $\gamma_{10} = 0.47$, $t(456) = 3.35$, $p < .001$ and $\gamma_{20} = 0.65$, $t(456) = 4.42$, $p < .001$). Substantively, this indicates that crime reports have a 0.47 increase and traffic accidents have a 0.65 increase of the average procedural justice score when compared to the level of procedural justice present during traffic stops. In other word, community members involved in a traffic accident received the most procedurally just behaviors ($M = 3.34$) followed closely by those reporting a crime incident ($M =$
3.13), which were both significantly higher than the procedural justice experienced during traffic stops (M = 2.71).

<table>
<thead>
<tr>
<th>Table XIV. HLM Results to Predict Procedural Justice Behaviors</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Fixed Effect</strong></td>
</tr>
<tr>
<td>------------------</td>
</tr>
<tr>
<td>Mean Procedural Justice</td>
</tr>
<tr>
<td>Intercept $\gamma_{00}$</td>
</tr>
<tr>
<td>Gender $\gamma_{01}$</td>
</tr>
<tr>
<td>Age $\gamma_{02}$</td>
</tr>
<tr>
<td>Relationship $\gamma_{03}$</td>
</tr>
<tr>
<td>Education $\gamma_{04}$</td>
</tr>
<tr>
<td>Minority $\gamma_{05}$</td>
</tr>
<tr>
<td>Military $\gamma_{06}$</td>
</tr>
<tr>
<td>Previous Officer $\gamma_{07}$</td>
</tr>
<tr>
<td>Extraversion $\gamma_{08}$</td>
</tr>
<tr>
<td>Neuroticism $\gamma_{09}$</td>
</tr>
<tr>
<td>Neuroticism^2 $\gamma_{010}$</td>
</tr>
<tr>
<td>Agreeableness $\gamma_{011}$</td>
</tr>
<tr>
<td>Openness $\gamma_{012}$</td>
</tr>
<tr>
<td>Conscientiousness $\gamma_{013}$</td>
</tr>
<tr>
<td>Corporal Punishment $\gamma_{014}$</td>
</tr>
<tr>
<td>Psychological Control $\gamma_{015}$</td>
</tr>
<tr>
<td>Deprivation of Privileges $\gamma_{016}$</td>
</tr>
<tr>
<td>Tasks &amp; Restorative Behavior $\gamma_{017}$</td>
</tr>
<tr>
<td>Crime Report Slope</td>
</tr>
<tr>
<td>Base $\gamma_{10}$</td>
</tr>
<tr>
<td>Traffic Accident Slope</td>
</tr>
<tr>
<td>Base $\gamma_{20}$</td>
</tr>
<tr>
<td>Age Slope</td>
</tr>
<tr>
<td>Base $\gamma_{30}$</td>
</tr>
<tr>
<td>Gender Slope</td>
</tr>
<tr>
<td>Base $\gamma_{40}$</td>
</tr>
<tr>
<td>African American Slope</td>
</tr>
<tr>
<td>Base $\gamma_{50}$</td>
</tr>
</tbody>
</table>

\( ^* = p < .10, ^*^ = p < .05, ^** = p < .01, ^*** = p < .001 \)

Only one of the three community member demographic items was found to significantly predict higher procedural justice behaviors among the officers. The final estimation of fixed effects for community members' age shows a marginally significant, positive relation with the mean procedural justice score ($\gamma_{30} = 0.006$, $t(171) = 1.77$, $p < .10$). This indicates that as a
community member’s age increases by 1 unit, the mean procedural justice score increases by 0.006 units. The community member’s gender and whether they were African American were not found to significantly differ from zero, indicating that those factors did not influence the degree of an officer’s procedural justice behavior.

The vast majority of officer background characteristics were not found to significantly relate to officers’ procedural justice behaviors during community interactions. The intercept in Table 7.3 \( (\gamma_{00}) \) is the expected officer score of procedural justice behaviors during a police-community member interaction with the average community member and was found to significantly predict procedural justice behavior \( (\gamma_{00} = 3.11, \ t(154) = 94.2, \ p < .001) \). Officers’ minority race status, gender, age, education level, previous officer and military experience were each found to be non-significant in the model. Interestingly, officers’ relationship status was found marginally significant. If an officer was involved in a relationship at the time of beginning the police training academy, his or her mean procedural justice score decreased by 0.12 units \( (\gamma_{03} = 0.12, \ t(154) = -1.71, \ p < .10) \).

The following details the results of each hypothesis posited in this paper for research questions one and two. These questions pertained to how personality dimensions and parental discipline styles affect officers’ procedural justice behavior when interacting with a community member. Potential explanations and implications of these findings are discussed in the following section.

Results of the personality dimensions Extraversion, Agreeableness, and Openness relationship with procedural justice were found insignificant. Furthermore, the parental disciplinary styles psychological control and penalty tasks and restorative behaviors were also found to not significantly differ from zero. That is to say, the findings provide no empirical support for hypotheses 1A, 1C, 1D, 2B, and 2D. These personality and parental discipline styles had no influence on the officers’ procedurally just behaviors in the field.
Hypothesis 1B stated that officers with lower levels of Neuroticism will be perceived as behaving in a more procedurally just manner when interacting with community members than officers with higher levels of Neuroticism. As mentioned above, the relationship of Neuroticism and procedural justice was not linear. That is, a “pure” emotionally stable personality was found to be associated with lower procedural justice scores than individuals with a low degree of Neuroticism, where procedural justice behavior peaks. However, as a person’s neurotic personality increases from this peak the degree of procedural justice behavior lowers drastically. This was confirmed through the HLM analysis. After controlling for the linear relationship, Neuroticism was found to significantly predict procedural justice behaviors ($\gamma_{010} = -0.20$, $t(154) = -3.11, p < .01$). Although a linear relationship was assumed, the results are in line with what Hypothesis 1B predicted: overall, a greater degree of Neuroticism leads to lower procedurally just behaviors.

Interestingly, the personality dimension of Conscientiousness was found to have a marginally significant negative relation with procedural justice behaviors ($\gamma_{013} = -0.17$, $t(154) = -1.77, p < .10$). This is the opposite of what was predicted in Hypothesis 1E, which stated that officers with higher levels of Conscientiousness will be perceived as acting in a more procedurally just manner than officers with lower levels of Conscientiousness. Instead, officers who are more likely to communicate clearly, be viewed as dependable, be careful with their work, function well in unstructured situations, and be thorough and responsible individuals are less likely to exhibit behaviors of being respectful, polite, and impartial.

In regards to the parental disciplinary styles, only one of the four research hypotheses was directly confirmed. Hypothesis 2C proposed that officers who experienced greater levels of parental discipline involving deprivation of privileges would be perceived as behaving in a more procedurally just manner when interacting with community members than officers exposed to lower levels of deprivation of privileges as a child. Results from the analysis confirm this relation
between deprivation of privileges and procedural justice behaviors, although the relation was only marginally significant ($\gamma_{016} = 0.09, t(154) = 1.72, p < .10$).

Hypothesis 2A stated that officers who experienced greater levels of parental discipline involving corporal punishment will be perceived as behaving in a less procedurally just manner when interacting with community members than officers exposed to lower levels of corporal punishment as a child. Results on this relation were significant but in the opposite direction that was hypothesized. Instead of corporal punishment negatively affecting procedural justice behavior later in life, results from the analysis found corporal punishment to positively relate to these behaviors ($\gamma_{014} = 0.20, t(154) = 4.08, p < .001$). This surprising result is discussed in detail below.

### 7.3 Mediation Regression Results

To delve deeper in the relationships that were found in the above HLM analysis, a mediation regression analysis was accomplished to determine if there was a causal effect between parental discipline styles, personality traits, and procedural justice behavior. As mentioned above, both the Conscientiousness and Neuroticism personality traits were found to significantly correlate with procedural justice; however, gamma coefficients and t-tests show that Neuroticism is more strongly correlated with procedural justice than Conscientiousness was found to be. The same was found with the two significant parental disciplinary style predictors of corporal punishment and deprivation of privileges: corporal punishment was found to have a stronger relationship with procedural justice than deprivation of privileges. As such, the relationships between corporal punishment, Neuroticism and procedural justice were analyzed.

The third research hypothesis stated: “Personality dimensions will partially mediate the relationship between parental discipline styles and procedurally just behaviors.” Prior to the results of the HLM analysis being known, when this hypothesis was first proposed, it was unknown what personality or parental discipline styles would be found to significantly affect
procedural justice. Now that the significant relationships are known from the HLM results, this hypothesis can be updated to posit the following:

### 7.3.1 Hypothesis 3 (Updated)

The personality dimension Neuroticism will partially mediate the relationship between the parental discipline style corporal punishment and procedurally just behaviors.

As mentioned in the methods section, data were aggregated to test this hypothesis. The criterion of officer procedural justice behavior found at the community member level of data was aggregated to the individual officer level. For example, if an officer had four interactions associated with him or her, the procedural justice scores for all four interactions were combined and an average scores was computed for that officer. Results from the HLM analysis determined whether demographic characteristics of the individual community members varied across the officers (see Table 7.2). All community member demographic characteristics (that is, their gender, age, and whether or not they were African American) were found to not vary across officers. As a result, these fields of information were not aggregated and dropped from the following mediation analysis. Lastly, all demographic characteristics of the officer as well as the significant personality trait conscientiousness and parental discipline style deprivation of privileges remained in the mediation analysis as covariates.

Coefficients and bootstrapping confidence internals were estimated using the MedCurve and Indirect SPSS macros written by Preacher and Hayes (Hayes & Preacher, 2010; Preacher & Hayes, 2008). The Medcurve macro estimates instantaneous indirect effects in simple mediation models while allowing for linear and nonlinear paths. Using this macro was necessary as relationships between corporal punishment to Neuroticism and to procedural justice were both linear but the relationship between Neuroticism to procedural justice was quadratic. The indirect macro was used to estimate the a path, that is, the path between corporal punishment and procedural justice without including Neuroticism as a mediator.
7.3.2 **Main Results**

The analysis tested whether linkages between corporal punishment and procedural justice were associated with Neuroticism. Results for path coefficients between corporal punishment, the Neuroticism mediator, and procedural justice are detailed in Table 7.4. Higher levels of corporal punishment were associated with higher levels of Neuroticism ($b = 0.13$, s.e. = 0.05, $p < .01$). Moreover, lower levels of Neuroticism were associated with higher scores of procedurally just behaviors ($b = -0.19$, s.e. = 0.09, $p < .05$).

<table>
<thead>
<tr>
<th>Path a</th>
<th>Coefficient</th>
<th>SE</th>
<th>t Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Corporal Punishment to Neuroticism</td>
<td>0.13</td>
<td>0.05</td>
<td>2.77**</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Path b</th>
<th>Coefficient</th>
<th>SE</th>
<th>t Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Neuroticism$^2$ to Procedural Justice</td>
<td>-0.19</td>
<td>0.09</td>
<td>-2.14*</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Path c</th>
<th>Coefficient</th>
<th>SE</th>
<th>t Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Corporal Punishment to Procedural Justice</td>
<td>0.16</td>
<td>0.06</td>
<td>2.58*</td>
</tr>
</tbody>
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<thead>
<tr>
<th>Path c'</th>
<th>Coefficient</th>
<th>SE</th>
<th>t Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Corporal Punishment to Procedural Justice through Neuroticism</td>
<td>0.20</td>
<td>0.06</td>
<td>3.19**</td>
</tr>
</tbody>
</table>

Results after controlling for Officer’s race, gender, age, relationship status, education, previous officer and military experience, and level of conscientiousness and deprivation of privileges.

Finally, Neuroticism significantly mediated the effect of corporal punishment on procedural justice because the upper and lower confidence intervals of the indirect effect did not include zero. As the relationship between Neuroticism and procedural justice was quadratic, three values of corporal punishment through Neuroticism were tested using Preacher and Hayes (2008) bootstrapping method for testing indirect and direct effects with 5,000 bootstrapped samples. Table 7.5 details the results of the indirect effect of corporal punishment on procedural justice through Neuroticism. Differences in behaviors of procedural justice were explained by differences in experienced corporal punishment to having a neurotic personality. In other words, officers who experienced corporal punishment are likely to have a more neurotic personality, which in turn was associated with lower procedurally just behaviors.
Table XVI. Indirect Effect of Corporal Punishment through Neuroticism

<table>
<thead>
<tr>
<th>Degree of Corporal Punishment through Neuroticism</th>
<th>Effect on Procedural Justice</th>
<th>SE</th>
<th>Lower C.L.</th>
<th>Upper C.L.</th>
<th>p level</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.297</td>
<td>-0.020</td>
<td>0.016</td>
<td>-0.056</td>
<td>-0.001</td>
<td>&lt; 0.10</td>
</tr>
<tr>
<td>2.084</td>
<td>-0.025</td>
<td>0.018</td>
<td>-0.075</td>
<td>-0.001</td>
<td>&lt; 0.05</td>
</tr>
<tr>
<td>2.870</td>
<td>-0.031</td>
<td>0.020</td>
<td>-0.087</td>
<td>-0.003</td>
<td>&lt; 0.05</td>
</tr>
</tbody>
</table>

Number of Bootstrap Samples: 5,000

The results show that the coefficient of the c path (corporal punishment to procedural justice) was a weaker relation than the coefficient of the c’ path (corporal punishment to procedural justice through Neuroticism), as reported in Table 7.4. In true partial mediation analysis, the c’ path coefficient should be a lesser value than the c path coefficient (Baron & Kenny, 1986). The results presented in this analysis are likely due to a confounding effect, more specifically, a negative confounding or suppressor effect (Mackinnon, Krull, & Lockwood, 2000; Tzelgov & Henik, 1991). Horst (1941) was the first to notice this statistical occurrence. He advised that a variable could be uncorrelated with the criterion and still improve prediction by virtue of being correlated with other predictors. He called such variables suppressors, which implied that it suppresses criterion-irrelevant variance in other predictors. In this case, Neuroticism is significantly correlation with procedural justice, but its inclusion in a model with corporal punishment improves the relationship between corporal punishment and procedural justice. As outlined in MacKinnon, Krull, and Lockwood (2000), because the difference between the c path coefficient \( b = 0.16 \) and c’ path coefficient \( b = 0.20 \) is negative \( (0.16 - 0.20 = -0.04) \) and because the coefficient of c is less than the coefficient of c’, a suppression effect exists.

To account for the negative confounding that exists between these variables, additional analyses were conducted according to Imbens (2004) to determine if a significant causal effect of corporal punishment on procedural justice exists. To ensure that the confounding effects do not affect claims of mediation, propensity scores of the covariates in the model were estimated for corporal punishment. Typically, propensity scores are the conditional probability of receiving a treatment, however, a variable such as corporal punishment can be dichotomized into high
and low level groupings. Upon inspection of the distribution of corporal punishment, it was found that 55.8% of the officers had scores near or above the mean of 2.08 (range is one to four). Scores of corporal punishment were grouped into 1 = high (55.8%) and 0 = low (44.2%) categories. A logistic regression was conducted with the new dichotomized corporal punishment as the criterion and other variables (excluding procedural justice) as predictors in order to calculate propensity scores. An OLS regression was then conducted with procedural justice as the criterion and included the dichotomized corporal punishment variable along with the covariates and propensity scores. This analysis controls for the confounding effects, and found corporal punish to still significantly relate to procedurally just behaviors ($b = 0.25$, s.e. = 0.93, $p < .01$). The significance of the dichotomous corporal punishment predictor implies a significant causal effect with procedural justice. For this causal effect interpretation to be true, the assumption of no biases should be met, specifically that the propensity scores were constructed based on all possible confounding variables; and provided the assumption that the model of the propensity scores is correct for the data (Imbens, 2004). However, it can rarely be stated with certainty that all confounding variables are available within a certain dataset. Nonetheless, the results after controlling these confounding effects lead to the conclusion that corporal punishment likely causes procedurally just behaviors. Results from the propensity scoring and confounding analyses are detailed in Appendix C and explanations and implications are presented in the following section.
This dissertation began with the premise that building a strong community-oriented police force involves, among other things, identifying and hiring individuals who have the background and skill set that allows them to exhibit high quality interactions with members of the public. Such an orientation in a department’s screening and hiring practices raises the question of whether police organizations are selecting the “right” individuals to be officers. Past research suggests that community policing is a strong model to address the long history of troubled relations between the police and the community (Rosenbaum, 1994, 1998; Skogan & Frydl, 2004). However, police reformers have struggled to implement it adequately (Mastrofski, 2006; Mastrofski, et al., 2007), partly due to an inability to precisely define and measure such a vague and broad policing style (Rosenbaum, 2004). One solution has been to focus on the problematic behaviors that occur during police-community interactions. Research on procedural justice and police legitimacy has proposed shifting attention to focusing on a specific set of behaviors that officers should display to improve the ratings they receive from community members after an encounter (Decker, 1981; Hawdon, 2008; Hinds, & Murphy, 2007; Tyler, 1990, 2004). These behaviors fall into two domains: the officer’s quality of treatment and quality of decision making toward the community member. The current problem detailed in this dissertation is that the factors which might reasonably predict such procedural justice behaviors are not being measured systematically during hiring practices and procedurally just behaviors are not being used as outcomes to evaluate police performance.

This dissertation attempts to approach a solution to this problem by identifying some characteristics of officers that may influence their use of procedurally just behaviors during routine interactions with the public. Through a HLM analysis, the results indicate that procedural justice scores varied across the officers. The type of encounter was strongly related to the level of procedural justice present during the encounter, with traffic crashes involving the most procedurally just behaviors, followed by crime incidents, both of involved significantly higher
levels of procedural justice than traffic stops. The community members’ age was the only demographic characteristic positively related to procedural justice, as older community members reported higher levels of procedural justice than younger community members. As for officer characteristics, their relationship status, degree of Conscientiousness and degree of Neuroticism were negatively related to procedural justice use. That is, procedurally just behaviors, as perceived by community members, were significantly lower for officers who reported being in a relationship, and for officers who scored higher on Conscientiousness and Neuroticism. Significant positive relationships were also found with the two parental discipline styles – corporal punishment and deprivation of privileges. Officers who experienced these disciplinary styles during childhood were more likely to behave in a procedurally just manner as an adult than officers who reported lower levels of such discipline.

The two stronger relations, Neuroticism and corporal punishment, were subjected to additional analyses to examine causal mechanisms. The results indicate that Neuroticism mediates the relationship between corporal punishment and procedural justice.

Non-significant results are also noteworthy. The personality dimensions of Extraversion, Agreeableness, and Openness were found to have no significant relationships with procedural justice. Furthermore, the parental disciplinary styles psychological control and penalty tasks and restorative behaviors were unrelated to procedural justice. The following section discusses the significant findings in relationship to the hypotheses and policy implications.

The relationship between Conscientiousness and procedural justice seems counterintuitive. Conscientiousness has been associated with being organized, persistent, motivated, and goal-oriented (McCrae & Costa, 2008). Conscientious individuals are more likely to communicate clearly, be viewed as dependable, be careful with their work, function well in unstructured situations, and be thorough and responsible individuals. Therefore, some readers might be surprised to find that individuals who rated themselves higher in this personality trait
were less likely to behave respectfully and be impartial in their decisions according to community members they encounter.

Taking a different perspective, Conscientiousness has been strongly linked to workplace performance measures, such as relating to supervisors, following rules, being hardworking, and getting things done (Black, 2000; Piedmont & Weinstein, 1998). Conscientious individuals strive to produce results. If they believe they are expected to produce a certain level of productivity, they may be more likely to take an efficiency approach to interacting with community members, such as determining the best method to getting the job done fast and effectively. In the traditional, quantity-oriented police department, these individuals know that their supervisors expect them to have frequent contacts with the public, write multiple citations and reports, and “get back on the job.” A focus on increasing the amount of work can lead to the quality of police-community interactions to suffer. Conscientious officers may more likely be the “just-the-facts” type of officer. From their viewpoint, perhaps taking the time to console a victim or explain the reasons for giving a ticket is seen as activity that reduces productivity. Also, given their interest in precision, they may prefer to spend any extra time writing up and submitting reports that are thorough, accurate and timely, rather than talking to people.

Arguably, this negative relationship between conscientious officers and their procedurally just behaviors would change if the department they work for reorients its practices and expectations for community interactions. The efforts of measuring officers’ work productivity is not the problem and does not need to be discontinued; however, the findings here suggest that agencies also need to emphasize that officers will be evaluated on the quality of their interactions with members of the community. Conscientious individuals are likely to strive to reach the goals set by their supervisors; and if they know that they are expected to be respectful, polite, and impartial, then they are more likely to act in those ways. Most importantly, officers’ behaviors must be measured and evaluated in order to hold them accountable for their behaviors. Colleagues and I have argued that the best practice to evaluate officers’ interactions
with the public is to go directly to the community member and survey them on their opinions of the encounter (Rosenbaum, Lawrence, et al, 2012). Most importantly, this survey methodology should not be kept hidden from employees; officers should know that the people they are serving are assessing them and their supervisors are watching. If officers wish to receive higher marks on their evaluations, the simple solution is to exhibit behaviors in line with procedural justice. Individual-level monitoring and feedback has yet to be implemented in American law enforcement agencies, but is easily achievable with current technology.

On similar note, officers may be less likely to police in a legitimate manner if their supervisors and department do not practice the same behaviors internally. Organizational legitimacy is a necessary component to implementing and creating a legitimate policing culture. Little attention has been given to the ways that organizational factors relate to the creation of professional, democratic, and fair police forces. An organization’s effectiveness in implementing procedural justice practices across its officers is intimately linked to management practices. One could hypothesize that rank and file officers would be less likely to respect, listen, and remain impartial to community members when their supervisors create an atmosphere that disrespects and ignores their own opinions. In preliminary analyses of data from 101 agencies nationwide, Rosenbaum (2014) has found that as “organizational justice” declines, sworn officers’ commitment to organizational goals and job satisfaction also drop significantly. When management and employees are not striving for the same goals, job satisfaction can dramatically decrease thus affecting any motivation for officers to give their best performance on the streets.

One potential area to improve organizational legitimacy involves the disciplinary process within a police department. The ways in which officers are disciplined and how they perceive their organization’s disciplinary practices can influence views of their organization. Officers may hold negative views of the department if they perceive the discipline system as random, excessive or generally unfair. Officers will be less committed to their work if they do not feel
supported by their supervisors. Research suggests that officers are more likely to have increased cynicism toward the public if they feel the disciplinary system of their department is unfair (Alderman & Rosenbaum, 2012). Such feelings extend to interactions with the community. Officers who believe that the system of punishment is unfair are more likely to believe that treating a community member rudely or use force against them is acceptable behavior (Rosenbaum, Cordner, et al., 2012). If handled well, the disciplinary process can be an opportunity for departments to encourage desirable behaviors from officers and model the kind of procedural justice they expect during interactions with the public. The system in place can be used as an example of how interactions with the community should occur; however, if handled inappropriately, the process could undermine employee morale and erode organizational legitimacy with the public.

The findings linking officers’ Neuroticism with their procedural justice behavior has many implications. Individuals who score highly on Neuroticism tend to be more anxious, worried, tense, and easily irritable than other members of society (John & Srivistava, 1999). They are vulnerable to stress and react to situations emotionally. At the other end of this personality continuum is emotional stability, or being able to keep a cool, level emotional state during stressful situations (Digman, 1990). Officers who are emotionally stable may be better able to make tough decisions and solve problems as they approach interactions with a calm and clear mind. As such, the observed negative linear relationship between Neuroticism and procedural justice behaviors was not surprising. What was surprising is that officers who exhibited a small degree of neurotic behaviors, such as worrying a little, being slightly nervous, or somewhat stressed, were the most likely to be respectful, polite, and impartial in their decisions – more so than individuals who were defined as having virtually no neuroticism and those who were very neurotic. This relationship may be due to the fact that neurotic individuals tend to be detail-oriented (Seibert & Kraimer, 2001). By actively identifying minor details during an unknown situation, an officer would be better equipped at reacting appropriately while at the same time
not becoming stressed or overreacting to those details. A small amount of Neuroticism could help the officer identify threats, as their anxiousness would keep them on edge and prepare them for the worse, while not letting their nervous energy take control and possibly putting them in a worse situation. This low level of nervousness could also contribute to the officer being more respectful and polite to a community member because they want to decrease any tension that may be present. An officer who is somewhat nervous or anxious would likely want to avoid increasing a community member’s emotional stress, as well as their own, and may therefore respect and assist the community member to help solve the situation.

The identification of this low, but not zero, neurotic personality level is an area worthy of additional study and one with potential implications when hiring potential recruits. One implication is that law enforcement agencies can be more confident that they are hiring individuals who are community-focused by identifying applicants who are slightly neurotic but detail-oriented individuals.\(^1\) The existence of screening tools to identify personality characteristics are already in use by many police departments (Cochrane, Tett, & Vandecreek, 2003). The more commonly used tools excel at alerting departments that an individual may be prone to have aggression, depression, schizophrenia, a deviate lifestyle, among other undesirable traits, and therefore, if hired, may pose a potential risk to the community members the department serves. As a result, departments primarily use screening exams that are oriented toward identifying psychopathologies in order to screen out inadequate candidates. In contrast, the measurement of personality characteristics could be used to identify individuals who may have a community focus. While determining psychopathological qualities is an important task and should continue in police hiring practices, efforts should be made in the future to recognize that not all relationships are linear, and small quantities of some “disorder” might be a good thing.

\(^1\) While these results suggest that the identification of this personality quality is sensitive, as too much of a neurotic personality is related to very low procedurally just behaviors, the “perfect” level of Neuroticism is yet to be determined.
As results indicate, levels of Neuroticism and Conscientiousness are related to how an officer behaves during an interaction with a community member. While this is important to police hiring practices, personality is not the only area that deserves additional research attention when attempting to identify characteristics associated with procedural justice. Future studies are necessary to continue identifying other dimensions that are linked to the interactive skills expected from police officers in contemporary times.

This study attempted to contribute to this area of research by identifying parental discipline styles that influence officers as adult employees. Prior research has established that parental discipline styles can influence children’s development and understanding of the world (Grusec & Goodnow, 1994, Hoffman, 1979, 1994). In some settings, discipline is intended to teach children that their social behaviors can be inappropriate and should be modified. Through the process of internalization, children eventually accept prosocial values as their own. Hence, this dissertation explored the relationship between childhood discipline and prosocial, justice-oriented behavior as an adult.

The results show that depriving privileges as a form of punishment is associated with procedurally just behaviors as an adult. Aspects of depriving privileges include being grounded, having activities restricted, or having things taken away. This parental disciplinary dimension is heavily focused on behavioral control. Inadequate behavioral control has been associated with externalized behavior problems in adolescents (Barber, 1996; Barber, et al., 1994; Baumrind, 1971, 1991; Loeber & Dishion, 1984; Maccoby & Martin, 1983; McCord, 1979; Olweus, 1980; Patterson & Stouthamer-Loeber, 1984). Problem behaviors develop because children raised in under-controlled environments are not likely to foster self-regulation and are more likely to be impulsive, reckless, and aggressive while at the same time taking risks and violating social norms. Therefore, it is not surprising that officers who were raised in an environment that controlled their behaviors are found to be respectful and polite in the police academy and work environment. While growing up, these individuals learned that acting out or misbehaving would
result in negative consequences. The policing field is a very controlling environment, one where officers are expected to continually follow specific rules and behave to a certain standard. The individuals who were disciplined through depriving privileges know that when they misbehave, that is to say break rules or disregard a supervisor, it is likely they will be disciplined. As a result, these officers remain on their best behaviors and treat others respectfully and with dignity. They were raised in a controlling environment and therefore understand what is expected of them in the controlling environment of police work.

Based on the literature that has associated corporal punishment with negative effects later in life (Becker, 1964; Gershoff, 2002a, 2002b; Hoeve, et al., 2009; Patterson, 1982; Straus, 1994, 1996; Straus, Sugarman, & Giles-Sims, 1997), I hypothesized that this style of discipline would be negatively related to officers’ tendency to be polite, respectful, and supportive. Results found a significant relationship, but in the opposite direction predicted. Specifically, officers who were disciplined through corporal punishment as a child were much more likely to act in a procedurally just manner than officers without this type of disciplinary history, according to community members with whom they interacted. Other scholars have found positive outcomes in using corporal punishment as long as the actions were reasonable and not abusive or neglectful (Baumrind, 1996a, 1996b; Baumrind, Larzelere, & Cowan, 2002; Canadian Paediatric Society, 1996; Larzelere, 1996, 2000). Unfortunately, this study did not measure the severity of the childhood punishment or whether the officer felt that it was appropriate for their misbehavior, but instead only focused on the frequency of such discipline. Possibly, although this is unknown, the corporal punishment was, on the whole, fair and consistent. As Larzelere (1996) found, more positive outcomes were determined when corporal punishment was conducted by parents who were positively involved in their child’s lives, were motivated more by child-oriented outcomes than by parent-oriented outcomes, did not increase the child’s fear of discipline, followed through with warnings to the child, did not use psychological control, and eventually moved away from physical punishments and instead applied deprivation of privileges as a
punishment as the child grew older. Whether one or more of these conditions was present in the current sample remains unknown and could be the subject of future research on police-community interactions.

One way of drilling down to better understand the punishment-procedural justice relationship is to look at the role of the personality trait Neuroticism. This study conducted further analysis to determine whether Neuroticism mediated the relationship between corporal punishment and procedural justice behaviors. Results indicate that when controlling for other characteristics, corporal punishment was strongly associated with procedural justice behaviors; however, it was also strongly associated with neuroticism, which, at high levels, is detrimental to procedural justice behaviors. As such, officers who experienced corporal punishment were more likely to behave respectfully, unless their personality included high levels of Neuroticism. Such results indicate that measuring just a single domain, such as personality, is insufficient to identify police candidates who will behave in a procedurally just manner. Many variable domains should be examined to identify those officers who are most likely to treat community members fairly and respectfully. This study has identified some potential avenues that could be pursued in the future. Personality dimensions of Neuroticism and Conscientiousness as well as the parental discipline styles of corporal punishment and deprivation of privileges show promise, but more research is needed. There is a plethora of other background characteristics or personal beliefs and attitudes that may prove to be important in predicting procedurally just behaviors.

8.1 Limitations

While every effort was made to hold this study to the highest scientific standards, some limitations are worth mentioning. As the data used for this study were collected separately for the National Police Research Platform (Rosenbaum, Cordner, et al., 2012), analyses were restricted to the items and dimensions measured. While the dimensions of personality and procedural justice are in line with decades of research, this limitation is most restraining to the
parental disciplinary measures. The measures from Straus and Fauchier’s (2011) *Manual for the Dimensions of Discipline Inventory* that the NPRP utilized were solely on the frequency of disciplinary actions. The consistency and severity of the punishments were not measured, two components that have been shown to be very important in child-rearing (Baumrind, 1996b; Canadian Paediatric Society, 1996; Glueck & Glueck, 1950; Grusec & Goodnow, 1994; Parke & Deur, 1972). This raises a question of construct validity. It is unknown what exactly is being measured through the parental discipline dimensions. While the frequency of such events is accounted for, the measures do not represent how consistent or punitive the discipline events were. Future research should focus on these important aspects of parenting when assessing life outcomes.

Different methodologies have been proposed to increase reliability and validity in parental discipline research, including longitudinal designs. The NPRP used a retrospective approach, asking adults to recall their experiences as a child, which can produce imperfect and unreliable recollection; however, Brewin, Andrews, and Gotlib (1993) advise that concerns about the reliability of such reporting are often exaggerated. Accuracy of recall of early events depends largely on the characteristics of the event being recalled; that is, memorable or frequent events are more likely to be recalled correctly. Brewin and colleagues emphasize that questioning a respondent about the frequency of specific events rather than the specific details of the event(s) is a solution to improving retrospective recall. The NPRP ensured that questions regarding parental discipline were phrased in this manner when collecting data from recruits. Furthermore, given that parental discipline events are often memorable and frequent, and given that the officers in the study were only in their 20s when asked to recall these events, there should be less concern about these data.

There has been much research on how community level information may affect how residents view the police. When controlling for variables such as past victimization, fear of crime, quality of life, community culture/disorder, and informal collective security, several studies
have found that the effects of demographic characteristics on attitudes toward the police become non-significant (Cao, Frank, & Cullen, 1996; Correia, Reisig, & Lovrich, 1996; Ren, et al., 2005; Schafer, Huebner, & Bynum, 2003). Community-level information was excluded from the HLM analysis in this study. While this could potentially affect the results, it is unlikely. All of the officers from this study were recent graduates of the training academy and were still under a probation period when the data were collected. As such, they were patrolling districts of the city that have been designated for new officers. These training districts are all very similar to each other: each has high levels of crime and is mostly racially and socially homogeneous where factors such as fear of crime, socioeconomic status, and victimizations are likely invariant across the officers of this sample.

Other limitations involve aspects of the sample used. Foremost, the sample of officers from this study had been selected and hired by the Chicago Police Department. As such, they were already considered the “best” from the applicant pool, leading to those who were poor candidates to be dropped and therefore not included in this study. This may limit the variability of the sample by having individuals with higher or more extreme scores being excluded. If such individual were included, results may have be stronger or different relationships may have been found.

Data from the sample of officers used in this study come solely from Chicago, Illinois, a large metropolitan city with a unique history of police-community relations. As such, the ability to generalize to other officers and police departments may not be possible. Similarly, the limited number of contacts within officers may result in procedural justice scores that are unrepresentative of the officer’s true behaviors. Future research should attempt to obtain a more representative sample of police officers in today’s field from a multitude of agency types. Furthermore, the sample of officers used in this study was small. While data only came from 172 officers, the A-priori power analysis indicated a minimum needed sample size of 151 and the observed power was .87 at the .05 probability level, a respectable level.
These limitations should be kept in mind when reviewing the results of this study. Future studies should attempt to obtain larger, random, and more representative samples of officers.

8.2 Conclusion

Close to four decades of research have shown that treating community members equally, fairly, and courteously improves relations and increases partnerships with the community in the fight against crime and disorder. When community members view an authority as legitimate (as a result of aspects of procedural and distributive justice), those individuals are more likely to cooperate with the rules, laws, and requests from that authority (Tyler, 2003). Police officers who are considered legitimate authorities will be more effective at achieving their goals within a community and trusted police departments have the public support needed to address crime and disorder.

The pursuit of legitimacy in policing can be done in many ways and settings. This dissertation called for more attention to identifying and hiring the types of individuals who will most likely practice procedurally just behaviors. There is currently a sizable knowledge gap in the research literature regarding the identification of officers who are likely to behave in a procedurally just manner when interacting with community members. This gap exists not because scholars have ignored making such distinctions but because of the lack of measurement for key constructs that embody the community policing and procedural justice models. The current approaches to testing and screening severely limit the type of scholarship that can emerge because the theoretical constructs and measures are inadequate for understanding contemporary policing. Police departments have continually focused on using screening tools that identify psychopathologies as opposed to measuring personality or other attitudes that are more likely to predict legitimacy behaviors. They have used internal measures of officer success and productivity instead of focusing on evaluations by community members. They have used quantitative aspects of police work (activity measures) instead of assessing the
quality of interactions between officers and community members. Much of this problem can be resolved by allowing the community to have a voice in officer performance evaluations. Through community surveys and other means, departments can learn how specific officers fall on the continuums of community treatment and quality of decision making. These data can be used to both hold officers accountable for a new set of performance metrics, while at the same time, allow researchers to advance our knowledge of factors that predict success in police-community interactions.

While necessary, just measuring aspects of officers’ procedural justice through community surveys is not enough to create a legitimate police force. These data should be used to build new accountability systems and new research findings. Along with internal paradigm shifts toward organizational legitimacy, agencies will also be able to hire new recruits who are likely to exhibit such community-oriented behaviors. As more research identifies characteristics other than psychopathologies, screening tools with specific measured dimensions can be developed to screen-in community-oriented individuals. With the hiring of officers who exhibit high quality in their decisions concerning the treatment of the people they serve, the relationships between the community and the police will grow stronger, benefiting efforts to reduce crime and disorder.
CITED LITERATURE


Dantzker, M. L. (2010). *Differences in pre-employment screening protocols used and reasons for their use between police and clinical psychologists*. Ann Arbor, MI: UMI.


Horst, P. (1941). The role of the predictor variables which are independent of the criterion. *Social Science Research Council, 48*, 431-436.


APPENDICES

APPENDIX A

Pearson r correlations of variables

<table>
<thead>
<tr>
<th>TABLE A.1 Pearson’s r Matrix of Procedural Justice and Police-Community Interaction Covariates/Predictors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
</tr>
<tr>
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</tr>
<tr>
<td>Procedural Justice at interaction</td>
</tr>
<tr>
<td>Community Member Gender</td>
</tr>
<tr>
<td>Community Member Age</td>
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<tr>
<td>Community Member African American</td>
</tr>
<tr>
<td>Crime Report</td>
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<td>Traffic Accident</td>
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\( t = p < .10, * = p < .05, ** = p < .01, *** = p < .001 \)
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<td>Average PJ Score</td>
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<td>-0.04</td>
<td>-0.06</td>
<td>-0.01</td>
<td>0.02</td>
<td>0.05</td>
<td>0.06</td>
<td>0.01</td>
<td>-0.00</td>
<td>-0.09</td>
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<td>*</td>
<td>**</td>
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<td>***</td>
<td>0.11</td>
<td>0.01</td>
<td>-0.02</td>
<td>0.15</td>
<td>*</td>
<td>0.16</td>
<td>t</td>
<td>0.07</td>
<td>0.04</td>
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<td>0.14</td>
<td>0.03</td>
<td>-0.04</td>
<td>0.11</td>
<td>-0.15</td>
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<td>0.11</td>
<td>0.06</td>
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<td>-0.00</td>
<td>-0.07</td>
<td>-0.03</td>
<td>-0.06</td>
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<td>-0.12</td>
<td>-0.07</td>
<td>0.08</td>
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<td>-0.01</td>
<td>0.00</td>
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<tr>
<td>Education (5)</td>
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<td>**</td>
<td>-0.30</td>
<td>0.13</td>
<td>0.15</td>
<td>0.06</td>
<td>-0.04</td>
<td>0.24</td>
<td>*</td>
<td>0.02</td>
<td>0.04</td>
<td>0.03</td>
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</tr>
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<td>0.12</td>
<td>-0.20</td>
<td>*</td>
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<td>-0.09</td>
<td>0.05</td>
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<td>0.01</td>
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<td>-0.06</td>
<td>0.28</td>
<td>**</td>
<td>0.08</td>
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<td>0.11</td>
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<td>0.64</td>
<td>***</td>
<td>0.24</td>
<td>**</td>
<td>-0.04</td>
<td>-0.06</td>
<td>0.06</td>
<td>-0.22</td>
<td>**</td>
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<td>0.31</td>
<td>***</td>
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<td>-0.05</td>
<td>0.05</td>
<td>-0.16</td>
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<td>***</td>
<td>0.33</td>
<td>***</td>
<td>-0.06</td>
<td>-0.04</td>
<td>0.08</td>
<td>-0.06</td>
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<td>Neuroticism (11)</td>
<td>1</td>
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<td>**</td>
<td>0.14</td>
<td>*</td>
<td>0.11</td>
<td>-0.04</td>
<td>0.18</td>
<td>*</td>
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<td>0.11</td>
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<td>**</td>
<td>0.14</td>
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</tbody>
</table>

\* = p < .10, * = p < .05, ** = p < .01, *** = p < .001


APPENDIX B

Predictor Relationships with Procedural Justice

Relationship of Extraversion and Procedural Justice

### Table B.1 Relation of Extraversion to Procedural Justice Behaviors

<table>
<thead>
<tr>
<th>Fixed Effect</th>
<th>Coefficient</th>
<th>SE</th>
<th>t Ratio</th>
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<tbody>
<tr>
<td>Mean Procedural Justice</td>
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</tr>
<tr>
<td>Extraversion</td>
<td>0.67</td>
<td>0.60</td>
<td>1.11</td>
</tr>
<tr>
<td>Extraversion Squared</td>
<td>-0.09</td>
<td>0.08</td>
<td>-1.12</td>
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</table>

<table>
<thead>
<tr>
<th>Fixed Effect</th>
<th>Coefficient</th>
<th>SE</th>
<th>t Ratio</th>
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<tbody>
<tr>
<td>Mean Procedural Justice</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Extraversion</td>
<td>-2.09</td>
<td>3.48</td>
<td>-0.60</td>
</tr>
<tr>
<td>Extraversion Squared</td>
<td>0.69</td>
<td>0.97</td>
<td>0.72</td>
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<td>Extraversion Cubed</td>
<td>-0.07</td>
<td>0.09</td>
<td>-0.83</td>
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</table>

Results after controlling for encounter type, community member’s age, gender, and race, officer’s age, gender, race, education, relationship status, previous officer, previous military experience and personality and parental discipline styles.

* = p < .05, ** = p < .01, *** = p < .001
Relationship of Neuroticism and Procedural Justice

Table B.2 Relation of Neuroticism to Procedural Justice Behaviors

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<tbody>
<tr>
<td>Mean Procedural Justice</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Neuroticism</td>
<td>0.68</td>
<td>0.31</td>
<td>2.19*</td>
</tr>
<tr>
<td>Neuroticism Squared</td>
<td>-0.20</td>
<td>0.06</td>
<td>-3.11**</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Fixed Effect</th>
<th>Coefficient</th>
<th>SE</th>
<th>t Ratio</th>
</tr>
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<tbody>
<tr>
<td>Mean Procedural Justice</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Neuroticism</td>
<td>0.49</td>
<td>1.24</td>
<td>0.39</td>
</tr>
<tr>
<td>Neuroticism Squared</td>
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<td>0.56</td>
<td>-0.19</td>
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<tr>
<td>Neuroticism Cubed</td>
<td>-0.01</td>
<td>0.08</td>
<td>-0.17</td>
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</table>

Results after controlling for encounter type, community member’s age, gender, and race, officer’s age, gender, race, education, relationship status, previous officer, previous military experience and personality and parental discipline styles.

*p < .10, * = p < .05, ** = p < .01, *** = p < .001
APPENDIX B (continued)

Relationship of Agreeableness and Procedural Justice

<table>
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<th>Table B.3 Relation of Agreeableness to Procedural Justice Behaviors</th>
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<td>Fixed Effect</td>
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</tr>
<tr>
<td>Mean Procedural Justice</td>
</tr>
<tr>
<td>Agreeableness</td>
</tr>
<tr>
<td>Agreeableness Squared</td>
</tr>
</tbody>
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<table>
<thead>
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<th>Coefficient</th>
<th>SE</th>
<th>t Ratio</th>
</tr>
</thead>
<tbody>
<tr>
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<td></td>
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<td>Agreeableness</td>
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<td>Agreeableness Squared</td>
<td>0.39</td>
<td>1.28</td>
<td>0.31</td>
</tr>
<tr>
<td>Agreeableness Cubed</td>
<td>-0.04</td>
<td>0.11</td>
<td>-0.35</td>
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</table>

Results after controlling for encounter type, community member’s age, gender, and race, officer’s age, gender, race, education, relationship status, previous officer, previous military experience and personality and parental discipline styles.

\[ t = p < .10, \ast = p < .05, \ast\ast = p < .01, \ast\ast\ast = p < .001 \]
APPENDIX B (continued)

**Relationship of Openness and Procedural Justice**

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<tbody>
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<td>0.78</td>
<td>0.90</td>
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<td>Openness Squared</td>
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<td>0.10</td>
<td>-0.82</td>
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<table>
<thead>
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<th>Fixed Effect</th>
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<th>t Ratio</th>
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<tbody>
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</tr>
<tr>
<td>Openness</td>
<td>5.81</td>
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<td>0.72</td>
</tr>
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<td>Openness Squared</td>
<td>-1.42</td>
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<tr>
<td>Openness Cubed</td>
<td>0.11</td>
<td>0.18</td>
<td>0.64</td>
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</table>

Results after controlling for encounter type, community member’s age, gender, and race, officer’s age, gender, race, education, relationship status, previous officer, previous military experience and personality and parental discipline styles.

\* = p < .10, \*\* = p < .05, \*\*\* = p < .01, \*\*\*\* = p < .001
### Relationship of Conscientiousness and Procedural Justice

#### Table B.5 Relation of Conscientiousness to Procedural Justice Behaviors

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<tbody>
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<td></td>
<td></td>
</tr>
<tr>
<td>Conscientiousness</td>
<td>0.07</td>
<td>0.51</td>
<td>0.15</td>
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<td>Conscientiousness Squared</td>
<td>-0.03</td>
<td>0.07</td>
<td>-0.51</td>
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<table>
<thead>
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<th>SE</th>
<th>t Ratio</th>
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<tbody>
<tr>
<td>Mean Procedural Justice</td>
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</tr>
<tr>
<td>Conscientiousness</td>
<td>-1.12</td>
<td>3.75</td>
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<tr>
<td>Conscientiousness Squared</td>
<td>0.29</td>
<td>1.04</td>
<td>0.27</td>
</tr>
<tr>
<td>Conscientiousness Cubed</td>
<td>-0.03</td>
<td>0.09</td>
<td>-0.30</td>
</tr>
</tbody>
</table>

Results after controlling for encounter type, community member’s age, gender, and race, officer’s age, gender, race, education, relationship status, previous officer, previous military experience and personality and parental discipline styles.

\( p < .10, \ast = p < .05, \ast\ast = p < .01, \ast\ast\ast = p < .001 \)
APPENDIX B (continued)

Relationship of Corporal Punishment and Procedural Justice

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<th>t Ratio</th>
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<tbody>
<tr>
<td>Mean Procedural Justice</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Corporal Punishment</td>
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<td>0.73</td>
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<tr>
<td>Corporal Punishment Squared</td>
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<td>0.05</td>
<td>0.11</td>
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<tr>
<td>Corporal Punishment Cubed</td>
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<td>0.86</td>
<td>-0.97</td>
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<tr>
<td>Corporal Punishment Cubed</td>
<td>-0.06</td>
<td>0.05</td>
<td>-1.24</td>
</tr>
</tbody>
</table>

Results after controlling for encounter type, community member’s age, gender, and race, officer’s age, gender, race, education, relationship status, previous officer, previous military experience and personality and parental discipline styles.

\( p < .10, \ast = p < .05, \ast\ast = p < .01, \ast\ast\ast = p < .001 \)
APPENDIX B (continued)

**Table B.7 Relation of Psychological Control to Procedural Justice Behaviors**

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</thead>
<tbody>
<tr>
<td>Mean Procedural Justice</td>
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<tr>
<td>Psychological Control</td>
<td>0.21</td>
<td>0.40</td>
<td>0.52</td>
</tr>
<tr>
<td>Psychological Control Squared</td>
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<td>0.09</td>
<td>-0.86</td>
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<table>
<thead>
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<th>Fixed Effect</th>
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<th>SE</th>
<th>t Ratio</th>
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<tbody>
<tr>
<td>Mean Procedural Justice</td>
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<td></td>
</tr>
<tr>
<td>Psychological Control</td>
<td>-1.52</td>
<td>1.84</td>
<td>-0.83</td>
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<tr>
<td>Psychological Control Squared</td>
<td>0.73</td>
<td>0.87</td>
<td>0.84</td>
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<td>Psychological Control Cubed</td>
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<td>-0.92</td>
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</table>

Results after controlling for encounter type, community member’s age, gender, and race, officer’s age, gender, race, education, relationship status, previous officer, previous military experience and personality and parental discipline styles.

* = p < .05, ** = p < .01, *** = p < .001
Table B.8 Relation of Deprivation of Privileges to Procedural Justice Behaviors

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<th>Fixed Effect</th>
<th>Coefficient</th>
<th>SE</th>
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<tbody>
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<td>Mean Procedural Justice</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Deprivation of Privileges</td>
<td>0.12</td>
<td>0.39</td>
<td>0.31</td>
</tr>
<tr>
<td>Deprivation of Privileges Squared</td>
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<td>0.07</td>
<td>-0.06</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
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<th>Coefficient</th>
<th>SE</th>
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<tbody>
<tr>
<td>Mean Procedural Justice</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Deprivation of Privileges</td>
<td>1.60</td>
<td>1.85</td>
<td>0.87</td>
</tr>
<tr>
<td>Deprivation of Privileges Squared</td>
<td>-0.60</td>
<td>0.71</td>
<td>-0.85</td>
</tr>
<tr>
<td>Deprivation of Privileges Cubed</td>
<td>0.08</td>
<td>0.09</td>
<td>0.87</td>
</tr>
</tbody>
</table>

Results after controlling for encounter type, community member’s age, gender, and race, officer’s age, gender, race, education, relationship status, previous officer, previous military experience and personality and parental discipline styles.

\* = p < .10, \*\* = p < .05, \*\*\* = p < .001
APPENDIX B (continued)

Relationship of Penalty Tasks and Restorative Behaviors and Procedural Justice

Table B.9 Relation of Penalty Tasks and Restorative Behaviors to Procedural Justice Behaviors

<table>
<thead>
<tr>
<th>Fixed Effect</th>
<th>Coefficient</th>
<th>SE</th>
<th>t Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean Procedural Justice</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tasks and Restore</td>
<td>-0.22</td>
<td>0.42</td>
<td>-0.52</td>
</tr>
<tr>
<td>Tasks and Restore Squared</td>
<td>0.03</td>
<td>0.08</td>
<td>0.38</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Fixed Effect</th>
<th>Coefficient</th>
<th>SE</th>
<th>t Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean Procedural Justice</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tasks and Restore</td>
<td>-3.28</td>
<td>2.22</td>
<td>-1.48</td>
</tr>
<tr>
<td>Tasks and Restore Squared</td>
<td>1.20</td>
<td>0.84</td>
<td>1.44</td>
</tr>
<tr>
<td>Tasks and Restore Cubed</td>
<td>-0.14</td>
<td>0.10</td>
<td>-1.41</td>
</tr>
</tbody>
</table>

Results after controlling for encounter type, community member’s age, gender, and race, officer’s age, gender, race, education, relationship status, previous officer, previous military experience and personality and parental discipline styles.

\( p < .10, * = p < .05, ** = p < .01, *** = p < .001 \)
APPENDIX C

Propensity scoring analysis to control for confounding effects

Table C.1 Frequency Distribution of Dichotomized Corporal Punishment

<table>
<thead>
<tr>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low = 0</td>
<td>76</td>
</tr>
<tr>
<td>High = 1</td>
<td>96</td>
</tr>
<tr>
<td>Total</td>
<td>172</td>
</tr>
</tbody>
</table>

Table C.2 Confounding Analysis

<table>
<thead>
<tr>
<th>Variable</th>
<th>Unstandardized Beta Coefficient</th>
<th>Standard Error</th>
<th>t value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intercept</td>
<td>2.38</td>
<td>1.42</td>
<td>1.68†</td>
</tr>
<tr>
<td>Gender</td>
<td>-0.00</td>
<td>0.20</td>
<td>-0.01</td>
</tr>
<tr>
<td>Age</td>
<td>-0.00</td>
<td>0.03</td>
<td>-0.12</td>
</tr>
<tr>
<td>Relationship</td>
<td>-0.15</td>
<td>0.11</td>
<td>-1.43</td>
</tr>
<tr>
<td>Education</td>
<td>0.00</td>
<td>0.04</td>
<td>0.07</td>
</tr>
<tr>
<td>Minority</td>
<td>0.14</td>
<td>0.25</td>
<td>0.58</td>
</tr>
<tr>
<td>Military</td>
<td>0.16</td>
<td>0.25</td>
<td>0.63</td>
</tr>
<tr>
<td>Previous Officer</td>
<td>0.12</td>
<td>0.16</td>
<td>0.76</td>
</tr>
<tr>
<td>Conscientiousness</td>
<td>-0.01</td>
<td>0.21</td>
<td>-0.07</td>
</tr>
<tr>
<td>Deprivation of Privileges</td>
<td>0.21</td>
<td>0.13</td>
<td>1.57</td>
</tr>
<tr>
<td>Neuroticism</td>
<td>0.49</td>
<td>0.61</td>
<td>0.81</td>
</tr>
<tr>
<td>Neuroticism²</td>
<td>-0.13</td>
<td>0.19</td>
<td>-0.58</td>
</tr>
<tr>
<td>Propensity Scores of covariates on Corporal Punishment</td>
<td>-0.62</td>
<td>1.48</td>
<td>-0.42</td>
</tr>
<tr>
<td>Corporal Punishment (1 = High, 0 = Low)</td>
<td>0.25</td>
<td>0.93</td>
<td>2.73**</td>
</tr>
</tbody>
</table>

F 1.86*  
d.f. 159  
R² 0.13

† = p < .10, * = p < .05, ** = p < .01, *** = p < .001
CURRICULUM VITAE

DANIEL S. LAWRENCE

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SPECIALIZED KNOWLEDGE

- Survey Research Methodology  
- Data Management
- Survey Questionnaire Design  
- Data Analysis
- Criminal History Records Analysis and Management  
- Multi-Model Research
- Cross-sectional and Longitudinal design
- Research on police recruits and training
- Research on police-community interactions, legitimacy, & procedural justice

EDUCATION

2014  Ph.D.  University of Illinois at Chicago – Criminology, Law and Justice  
- Concentration in Survey Research Methodology
  Dissertation:  Predicting Procedural Justice Behavior: Examining Personality and Parental Discipline in New Officers
  Committee:  Dennis Rosenbaum (Chair); George Karabatsos; William McCarty; Paul Schewe; Rick Tanksley

2011  M.A  University of Illinois at Chicago – Criminology, Law and Justice

2009  B.S.  Northeastern University – Criminal Justice  
- Minor in Anthropology

POSITIONS


8/2010 - Present  University of Illinois at Chicago, Center for Research in Law and Justice (CRLJ)  
  – Project Manager


9/2013  CRA, Inc – Police Training Evaluator

1/2006 – 4/2009  American Investigative Services – Staff Investigator


PUBLICATIONS


**Teaching Experience**

- CLJ 261 – Research Methods II
- CLJ 345 – Police in Society
- CLJ 399 – Independent Studies
Presentations


Academic Honors and Awards

2013 University of Illinois at Chicago - The Michael D. Maltz Distinguished Graduate Student Award; awarded by the Criminology, Law, and Justice Department

2009 Northeastern University – Dean’s List (2005, 2007, 2009), *Cum Laude* graduate

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