

University of Missouri, St. Louis

IRL @ UMSL

Dissertations

UMSL Graduate Works

9-29-2021

Schools on the Frontlines of Governance: How the Convergence of Criminal Justice and Education Shapes Adolescent Perceptions and Behavior

Jennifer O'Neill

University of Missouri-St. Louis, jlo998@umsystem.edu

Follow this and additional works at: <https://irl.umsl.edu/dissertation>



Part of the [Criminology Commons](#), and the [Criminology and Criminal Justice Commons](#)

Recommended Citation

O'Neill, Jennifer, "Schools on the Frontlines of Governance: How the Convergence of Criminal Justice and Education Shapes Adolescent Perceptions and Behavior" (2021). *Dissertations*. 1119.

<https://irl.umsl.edu/dissertation/1119>

This Dissertation is brought to you for free and open access by the UMSL Graduate Works at IRL @ UMSL. It has been accepted for inclusion in Dissertations by an authorized administrator of IRL @ UMSL. For more information, please contact marvinh@umsl.edu.

**Schools on the Frontlines of Governance: How the Convergence of Criminal Justice
and Education Shapes Adolescent Perceptions and Behavior**

Jennifer O'Neill

M.A. Criminology and Criminal Justice, University of Missouri - St. Louis, 2018
B. S. Criminology and Criminal Justice, University of Missouri - St. Louis, 2016

A Dissertation Submitted to the Graduate School at
The University of Missouri—St. Louis in partial fulfillment of the requirements for the
degree
Doctor of Philosophy in Criminology and Criminal Justice

December 2021

Advisory Committee:

Lee Slocum, Ph.D.
Chair

Stephanie DiPietro, Ph.D.
Janet Lauritsen, Ph.D.
Kyle Thomas, Ph.D.

ABSTRACT

Theories of legal socialization posit that individuals' interactions with both nonlegal (e.g., teachers) and legal (e.g., police officers) authorities impact our broader orientation towards governance our compliance with rules and laws. Examining the process of legal socialization in adolescents is critical for understanding individuals' relationships with major institutions of social control, and further, predicting delinquency. Extant literature tends to consider legal socialization in the school and in interactions with the police as distinct processes related to offending, neglecting the potential influence of school contextual factors; and yet, because the incorporation of carceral features (e.g., exclusionary discipline, restrictive security, and enhanced presence of police) can expose youth to a convergence in criminal justice and education institutions, the school context may have a critical influence on how individuals' perceptions of authorities as procedurally just or unjust influence their beliefs concerning authorities' legitimacy, their broader assessments of fairness in American society, and in turn, their behavior.

The dissertation unifies two disparate lines of research considering individuals' perceptions of procedural justice in policing and criminalizing school environments to develop a novel theoretical model. First, the model outlines two distinct processes of legal socialization regarding the school and the criminal justice system in which youth perceptions of school personnel and police (i.e., the authority figures of each of these domains) affect youth delinquency through two different intervening mechanisms—authority legitimacy and perceptions of fairness in the US. Second, the model considers how youth exposure to a carceral school environment, as an indicator of criminal justice and school authorities' control, may condition these processes. Third, the model outlines several paths in which youth perceptions of one type of authority may influence their noncompliance or delinquency in another domain. Using individual- and school-level data from the University of Missouri- St. Louis Comprehensive School Safety Initiative, a series of path models are estimated to test the components of the theoretical argument.

The findings contribute to ongoing discourse about the utility of perceptions of procedural justice in predicting youth offending, demonstrating that the relationship is subject to many conditions, including characteristics of the school environment. In addition, the results support meaningful connections between youth perceptions and behavior in school and criminal justice domains. Perceptions of school personnel and police procedural justice can contribute to broader views of fairness in American society, and views of one type of authority can cross-over to influence perceptions of the legitimacy of another. Taken together, these findings support a theoretical and empirical approach of youth legal socialization that recognizes the convergence or overlap between institutions.

DISCLAIMER

This research was supported by Award No. 2015-CK-BX-0021 awarded by the National Institute of Justice, Office of Justice Programs, U.S. Department of Justice. The opinions, findings, and conclusions or recommendations expressed in this publications/program/exhibition are those of the author(s) and do not necessarily reflect the views of the Department of Justice.

The completion of this dissertation was supported in part through a Charles G. Huber, Jr. Endowed Dissertation Fellowship.

ACKNOWLEDGEMENTS

I am fortunate to have had the support of wonderful mentors, friends, and family throughout my graduate school career. I am even more fortunate to be able to say these people are still supporting me now, considering that I have been a true nightmare to be around during this final stretch.

First, I must thank my dissertation committee: Lee Slocum, Stephanie DiPietro, Janet Lauritsen, and Kyle Thomas. The completion of this project would not be possible without their expertise and thoughtful feedback. I could not have chosen a better group of people to guide me through this process. I am honored to have Lee serve as my dissertation chair. She is not only incredibly knowledgeable, but extremely gracious with her advice and her time. Lee endured my many frantic requests to meet, including on evenings and weekends. Much of the time, I just needed to hear her assurance that I could finish. I aspire to be half the scholar that she is.

I took my first criminological theory class from Stephanie DiPietro. I'm hooked and I have her to thank. I have tried to emulate her clear and critical approach in my own classes in the hopes that I can do for my students what she has done for me. I am so grateful for her kindness and support throughout my undergraduate and graduate studies.

Janet Lauritsen has taught me many lessons about research and life in academia. I know that I will always have more to learn from her. She is such an impressive scholar, but more than that, she is really, really cool. I'm so glad to know her.

Working with Kyle Thomas has had an invaluable influence on who I am as a scholar. He challenges me to think critically and to read everything. I appreciate every conversation that we have about theory and human nature, and they have inspired many of the research ideas that I am most excited about. He is an outstanding mentor. I cannot express how thankful I am for his support. In the throes of dissertation/pandemic/job application stress over the past year, I really came to rely on Kyle's reminders: "You will be fine, Jen."

Apart from my committee, I have been fortunate to have the help of many other faculty members. I would like to thank Finn Esbensen, my first advisor and the Principal Investigator of the UMSL CSSI project. I am lucky to have learned the ins and outs of primary data collection from a pro. I am grateful to the other members of the research team whose hard work contributed to this project. I have also received support from my fellow graduate students including Paige, Claire, Ted, Dale, Luis, and Jen. I have so much respect for their work and I am glad that we have been able to learn from one another over the years.

Special thanks to my family for their love and support. They are wonderful people. After every milestone in the program, I have made my way back to my parents' couch to recuperate. It is what I have been looking forward to most as I type up the final pages.

Finally, my deepest love and appreciation goes to my partner, Chris. He has lost just as much sleep over this dissertation as I have. Chris, thank you for your unyielding patience and for washing every dish over the last 6 months. You are an incredible person.

TABLE OF CONTENTS

Disclaimer.....	i
Acknowledgements.....	ii
Table of Contents.....	iii
Chapter One: Introduction.....	1
Current Study.....	9
Chapter Two: Theoretical Background and Relevant Literature.....	15
Procedural Justice Model of Legal Socialization.....	17
Procedural Justice in Policing.....	18
Intervening Mechanisms in the Procedural Justice Model: Legitimacy...	20
Intervening Mechanisms in the Procedural Justice Model: Social Identity...	22
Intervening Mechanisms in the Procedural Justice Model: Broader	
Perceptions of Fairness in Society?.....	23
Procedural Justice in Nonlegal Contexts.....	25
Proposed Paths in Expanded Theoretical Model:	
(1) Examining Mediating Mechanisms.....	31
School Criminalization.....	33
Presence of Police.....	36
Exclusionary Discipline.....	38
Enhanced Security.....	41
Converged Institutions and Legal Socialization.....	43
Contextual Influence on Procedural Justice Process.....	44
Institutional Environment and Legal Socialization: Moderating effects...	47
Institutional environment and legal socialization: Effect on broader	
perceptions of society.....	52
Proposed Paths in Expanded Theoretical Model:	
(2) Examining the Influence of the Carceral School Environment.....	53
Cross-Over Effects in the Procedural Justice Model.....	54
Proposed Paths in Expanded Theoretical Model:	57
(3) Examining Cross-Over Effects.....	
Summary of Theoretical and Empirical Literature.....	54
Summary of Proposed Theoretical Model and Hypotheses.....	59
Chapter Three: Methods.....	61
Data.....	67
Site Selection.....	67
Procedure.....	68
Analytic Sample for the Current Study.....	71
Measures.....	73
Dependent Variables.....	74
Independent Variables.....	76
Mediating Variables.....	77
Moderating Variable.....	80
Control Variables.....	82
Control Variables Measured at the School-Level.....	87
Analytic Strategy.....	91

Phase 1 Analyses: Multiple Mediation Models.....	94
Phase 2 Analyses: Moderating Effects of the Carceral School Environment	96
Phase 3 Analyses: Examining “Cross-Over” Effect.....	100
Chapter Four: Results.....	103
Bivariate Analysis.....	103
Phase 1 Results: Multiple Mediation.....	106
Phase 1a: Perceptions of Police and General Delinquency.....	106
Phase 1b: Perceptions of School Personnel and In-School Delinquency.....	114
Phase 2 Results: Moderating Effects of the Carceral School Environment.....	123
Phase 2a: Police Procedural Injustice and General Delinquency.....	124
Phase 2b: School Personnel Procedural Injustice and In-School Delinquency	132
Phase 3 Results: Cross-Over Effects.....	136
Phase 3a: Similarity between Perceptions of Police and School Personnel	136
Phase 3b: The Effect of Police Procedural Injustice on In-School	142
Delinquency.....	
Phase 3c: The Effect of School Personnel Procedural Injustice on General	145
Delinquency.....	
Summary of Findings.....	146
Supplementary Analyses.....	148
Property vs. Violent Delinquency.....	148
Summary of Findings: Property vs. Violent Delinquency.....	159
Schools with Majority White vs. Majority Black Student Populations.....	160
Examining Youth Attending Schools with Relatively Low CSE.....	166
Chapter 5: Discussion and Conclusion.....	171
Limitations and Directions for Future Research.....	180
References.....	185
Appendix A.....	208
Appendix B.....	210
Appendix C.....	211

CHAPTER ONE: INTRODUCTION

The careful examination of the legal socialization process has the potential to address several questions about how individuals derive meaning from interactions with authority, how we interpret the norms, rules, and laws that authorities enforce, and why we comply with—or, alternatively, deviate from—rules and social norms. The broad theoretical framework of legal socialization posits that individuals experience formative interactions with the authority figures associated with several institutions of social control, including the school and the criminal justice system. Youth perceptions of these authorities (e.g., teachers and police) may be particularly meaningful as these early interactions inform our understanding of our place in society, as well as our internalization of rule- and law-related values over time.

The various social institutions of the family, school, labor force, and criminal justice system all help to maintain order and regulation by instilling individuals with knowledge and values about their behavioral expectations. Although theorists recognize that experiences with different authorities are likely interrelated, the vast majority of extant research examines the process within a specific domain. Indeed, contemporary literature on legal socialization has been heavily focused on how individuals' perceptions of police inform delinquency or offending. Tom Tyler and colleagues (Lind & Tyler, 1988; Tyler, 1990, 2003; Fagan & Tyler, 2005; Nagin & Telep, 2017) have popularized the procedural justice model of legal socialization, and several studies have examined a process by which individuals form perceptions of police as fair or just based on their practices, and these perceptions are associated with their reported likelihood of compliance, or (in a comparatively smaller body of work) their actual reports of

compliance behavior. Tyler (1990) argues that when individuals perceive police as unfair/unjust, they engage in more offending relative to those who perceive officers as fair/just. Research on legal socialization in other domains may explore how perceptions of teachers influence school misconduct or how perceptions of parenting practices influence behavior at home, however, studies on these “nonlegal” settings are comparatively limited (Granot & Tyler, 2019). Trinkner and Cohn (2014, p. 615) call for researchers to delve into the ways individuals—and specifically, youth—develop notions of procedural justice with respect to different institutions, declaring that “Such work will go a long way toward developing a more comprehensive perspective and sophisticated understanding of legal socialization.”

The disparate threads of research exploring perceptions of authority and behavior seem to indicate that individuals experience legal socialization in parallel, unrelated processes. For instance, during adolescence, youth can have sustained interactions with both criminal justice and school authorities that influence their compliance. When interpreting authorities’ roles, “they demarcate their lives into different domains and put limits on the degree to which authority figures will be allowed to regulate their behavior” (Trinkner & Tyler, 2016, p. 428). In school, youth form perceptions of school personnel that influence their likelihood of following school rules, while in the community they may form ideas about police and their practices that influence their patterns of delinquency. This bifurcation of legal socialization is problematic for two key reasons. First, it limits our understanding of the connections between experiences in each of these domains. Individuals’ experiences with one institution can carry over to influence our perceptions of and reactions to another—a process known as “imprinting” (Soss, 2002;

see also Tyler & Trinkner, 2017). Second, approaching socialization to school and criminal justice authorities as separate fails to recognize that many schools have adopted criminalizing policies and practices in recent decades (Hirschfield, 2008; Kupchik, 2010; Simon, 2007). In response to public concerns with safety, schools across the United States have increasingly implemented practices resonant of the criminal justice system. Specifically, the use of school-police partnerships, exclusionary discipline, and an array of security practices demonstrate a discipline-orientation that subjects students to the “criminal gaze” (Shedd, 2015, p. 99). Schools have long been upheld as governing institutions charged with two purposes—educating youth on the curriculum and socializing youth to be productive citizens of society (Dewey, 1916; Simon, 2007). The introduction of policies from the criminal justice system that are focused on the monitoring and punishment ensures that part of this socialization is exposure to the criminal justice system’s control in addition to the education system’s regulation.

Considering these focal issues—the connections between youth legal socialization in different domains and policies indicative of convergence in criminal justice and education—raises several questions that are currently neglected in procedural justice frameworks. In this dissertation, I unify the disjointed literatures regarding procedural justice in schools and policing by developing and testing a novel theoretical model. The overarching goal of this research is to advance our understanding of how youth perceptions of school authorities influence school misconduct, how perceptions of police influence delinquency, and how these processes may be mutually reinforcing. In the model, I focus on the role of specific school practices that incorporate aspects of the criminal justice system into schools. These developments contribute to carceral school

environments that may facilitate important connections in youth legal socialization, and further research in this area can help identify the unintended consequences of school policies.

To introduce the theoretical model and corresponding research questions, I present relationships in several stages (see Figures 1-3).¹ Traditionally, two distinct processes are supported in theoretical and empirical procedural justice literature. Individuals formulate perceptions of the criminal justice system, including perceptions of police as procedurally just (defined as the extent to which authorities are respectful, fair or neutral in their decisions, trustworthy, and allow others a “voice”; Tyler, 1990). Perceptions of procedural *in*justice are associated with increased delinquency (Fagan & Piquero, 2007; Jackson et al., 2012; Kaiser & Reisig, 2019; Trinkner & Cohn, 2014; Tyler & Jackson, 2014). Simultaneously through school interactions, youth perceptions of school personnel procedural *in*justice are associated with increased violation of school rules (James, Bunch, & Clay-Warner, 2015; Sanches, Gouveia-Periera, & Carugati, 2012; Trinkner & Cohn, 2014). While some studies have explored the direct effect of procedural injustice on delinquency, most adopt a theoretical model that posits an indirect relationship through different intervening mechanisms (see Nagin & Telep, 2017; Walters & Bolger, 2019). In the first phase of theoretical development undertaken in this dissertation, I examine the two parallel processes where (1) perceptions of police procedural injustice relate to subsequent delinquent behavior and (2) perceptions of

¹ The theoretical model will be described in more detail in later chapters of the dissertation. I reference the figures here (and include them at the end of this chapter) to help introduce the main objectives of the theoretical model: First, to examine the role of multiple intervening mechanisms in the relationships between perceptions of authorities and behavior; Second, to explore how an environment representing the school and criminal justice system can condition legal socialization; Third, to assess relationships across institutions or “imprinting” from the criminal justice system to the school and from the school to the criminal justice system. These figures will be presented again in subsequent chapters for convenience.

school personnel procedural injustice relate to subsequent in-school delinquency and consider the extent to which these processes may be mediated by two intervening mechanisms described below.

The procedural justice framework posits that authorities and their practices effect individual behavior ultimately because they facilitate individuals' connections to the institution (Fagan & Tyler, 2005; Tyler & Trinkner, 2017). With regard to police and the criminal justice system, this connection has been conceptualized in various interrelated ways: First, the notion of police "legitimacy" has been defined to include trust in the police to ensure a fair process that benefits the individual and the community (e.g., Tyler, 1997), the belief that police are acting in an appropriate role as law enforcers that the public should follow (e.g., Sunshine & Tyler, 2003), and/or an internalized "control" or sense of obligation to follow police orders (e.g., Fagan & Tyler, 2005; Tyler & Huo, 2002). The actions of police and other authorities are "a reflection of social and individual norms concerning the legal system, its role in society as a source of formal social control, and how it should wield its authority" (Tyler & Trinkner, 2017, p.12). Broadly, when authorities are perceived as using fair and just practices, this influences individuals to accept the institution as a legitimate governing body that they have a responsibility to obey. A subarea of legal socialization research demonstrates that perceptions of legitimacy mediate the effect of police procedural justice on offending or intentions to offend (Nagin & Telep, 2017; Tyler, 2003). However, legitimacy has been conceptualized and operationalized differently. As Gau (2014, p. 201) states, "the last word on the measurement of justice and legitimacy has not yet been said," so additional

research is needed to understand how perceptions of procedural justice come to influence (non)compliance.

In another approach, police procedural justice is viewed as increasing individual's identification with the dominant social group so that they are inclined to comply with society's behavioral expectations and laws (Tafjel, 1974; Tyler & Trinkner, 2017). On one hand, to the extent that police procedures reflect society's values for social control, this can influence perceptions of legitimacy as one's belief that the police regulate individuals in a valid manner. On the other hand, procedures also "make people feel included in important social groups," discouraging them from deviating from society's standards (Bradford et al, 2014, p. 544). Multiple empirical studies demonstrate support that inclusion or identification with the state can operate as an intervening mechanism in the procedural justice model—when police are perceived as procedurally just, this activates one's investment in a social identity and they are more likely to comply (Bradford et al., 2014; Bradford et al., 2015; Sunshine & Tyler, 2003; Tyler & Blader, 2013). This backdrop of research on social identity can be interpreted as indicating another potential mediating mechanism in legal socialization—individuals' overarching perceptions of fairness in society. Following the logic that interactions with specific authorities and institutions contribute to one's understanding of their place in society and connections to the social majority (Tyler & Blader, 2003), a related (but distinct) argument suggests that perceptions of specific authority figures and their procedures may contribute to one's understanding of fairness in the larger state.

Continued research on the mediating mechanism of broader perceptions of fairness in society/the state has utility in an expanded model of legal socialization

because it underscores the potential for perceptions within one institution to influence one's behavior more generally. While criminal justice and school authorities represent two different institutions that are charged with regulating behavior, they can each be seen as exposing youth to governance. Both police and school personnel are "street-level bureaucrats" involved in formal rule systems influenced by national policies (Lipsky, 2010; see also Simon, 2007; Tyler & Trinkner, 2017). Perceptions of police and teacher procedural justice can facilitate an individual's connection to American governance by contributing to one's belief in America as a fair society. This, in turn, may encourage compliance in the school and with the law. In this dissertation both the perceived legitimacy of authorities (police and school personnel) and the degree to which one perceives the US as fair or unfair will be explored as mediating mechanisms in legal socialization. Figure 1 depicts legal socialization involving police and the criminal justice system (Panel A) and involving school personnel (Panel B), outlining several potential relationships that can explain youth noncompliance. For example, youth who perceive higher levels of police procedural injustice (e.g., report that officers are unfair) may perceive the US as unfair (i.e., indicating a weaker connection with society) and will engage in more delinquency relative to youth who perceive police as procedurally just. In addition, perceptions of police procedural injustice can influence decreased notions of police legitimacy, leading to delinquency. Similar processes are proposed concerning youth perceptions of school authorities and in-school rule violation.

The second phase of the theoretical model extends these processes to consider how school context may condition direct and indirect effects on delinquency. The theoretical foundation on legal socialization emphasizes individuals' perceptions of

authorities as symbolizing the values of an institution; fair treatment by an authority conveys that one is respected, so that even while they are subject to the authority's regulation, they can still feel involved and connected to the institution (Tyler & Trinkner, 2017). Conversely, when individuals perceive procedural injustice associated with an authority's actions, this alienates individuals so that control of behavior is weakened. Similarly, social environments can convey messages about an institution, so that characteristics of the environment may interact with one's perceptions of authorities (Radburn & Stott, 2019).

Further, consider the following question: if a specific authority can influence compliance because their practices are symbolic of an individual's place, how might this process be impacted when youth are receiving messages about the authorities and rule frameworks of the criminal justice system *and* the school in one environment? Figure 2 presents relationships in which youth exposure to environments indicative of criminal justice governance in schools may condition the relationship between perceived procedural injustice and delinquency. The research on contextual influences in the procedural justice model is underdeveloped; however, the literature (reviewed later on) posits that the presence of police, use of exclusionary discipline, and use of restrictive security may affect how criminal justice and school authorities are able to exert control over youth behavior.

Finally, the third phase of the theoretical model (Figure 3) explores the related question: how does the socialization to school authorities influence socialization to criminal justice authorities, and vice versa? For example, youth perceptions of teachers can influence their compliance with school rules; however, in this expanded framework,

perceptions of teachers' procedural justice may have a general impact on the internalization of rules and norms for society at large, including the laws enforced by the criminal justice system. Thus, perceptions of school personnel procedural injustice may promote increased in-school misconduct as well as general delinquency. This would support notions of institutional imprinting by demonstrating that representatives authorities of the criminal justice system and school contribute to larger patterns of (non)compliance (Soss, 2002; Tyler & Trinkner, 2017). In addition, the degree to which a school incorporates criminalizing policies may condition these cross-over effects or mutually reinforcing processes. Converged environments demonstrate to youth that their behavior is subject to the surveillance and punishment of multiple agents of social control.

Current Study

In sum, this dissertation seeks to develop and test a theoretical model that highlights youth experiences with the school and criminal justice system—two of society's major governing institutions. The proposed model draws connections between youth perceptions of police and school personnel procedural justice and their subsequent delinquency in order to contribute to our understanding of legal socialization as a developmental process affected by interactions with multiple social institutions. In pursuing this main objective, the study addresses general limitations in the existing theoretical and empirical literature and offers three main contributions. First, in an effort to address questions regarding the direct and indirect relationships between perceptions of procedural justice and offending, the study examines whether youth perceptions of two types of authorities predict noncompliance with these authorities' rules, and the extent to

which perceptions of illegitimacy and general unfairness in society mediate those relationships. Importantly, these processes are tested using panel data (described below) to address limitations in prior work that cannot speak to directionality (Nagin & Telep, 2017; Nagin & Telep, 2020).

Because the research examining procedural justice and its role in legal socialization is disjointed, most studies focus on perceptions of police and offending without closely examining experiences in other institutions. This presents a second notable gap in the literature regarding the potential influence of environments that convey a convergence in institutions on socialization to different types of authorities. Given the emerging literature that describes how the use of carceral, or criminalizing school policies have increased the criminal justice system's influence on the school environment, this study will address the gap by considering the extent to which carceral school environments moderate the way perceptions of distinct authorities influence delinquency. As a third contribution related to this deficiency in the research on the procedural justice model, the proposed theoretical model examines how perceptions of authorities associated with one institution (e.g., the school) relate to perceptions of legitimacy and noncompliance with the laws of another institution (e.g, the criminal justice system). By analyzing the effects of youth perceptions of school personnel on outcomes associated with the policing and criminal justice domain, and the effects of perceptions of police on school outcomes, the findings will demonstrate the potential advantages of further unifying different areas of literature.

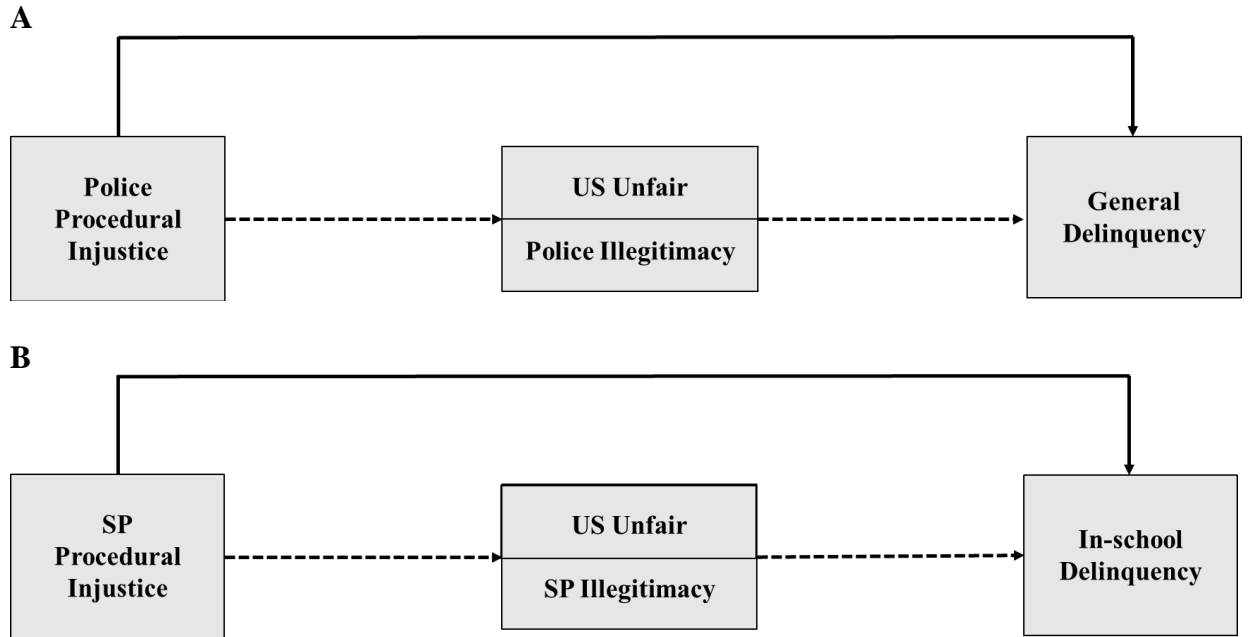
To analyze the various aspects of the theoretical model, I use data from the University of Missouri – St. Louis Comprehensive School Safety Initiative (UMSL

CSSI). UMSL CSSI includes three waves of panel data on a sample of middle- and high-school aged youth and two surveys of the middle and high school personnel. I use a sample of 2,773 students nested in 21 schools to examine how perceptions of school personnel and police at Time 1 relate to general and in-school delinquency reported at Time 2. The main analysis involves the estimation of several path models including multiple mediation and the use of multilevel modeling strategies to examine cross-level interactions. Supplementary analyses will also be conducted to assess the robustness of the theoretical model. As one example, I will estimate paths among subsamples of youth nested in schools with majority-Black populations and majority-White population to consider whether the race influences the theorized process, to address an ongoing question regarding whether the procedural justice model of behavior is invariant across race (Hagan, Shedd, & Payne, 2005; Tyler, 1990, 1994). Together, results of the analyses will speak to the extent to which youth perceptions of procedural justice predict delinquent behavior across domains. In addition, findings will indicate whether certain features of the school environment interact with perceptions of authorities to affect behavior, informing practical implications regarding police presence, exclusionary discipline, and security and surveillance procedures in schools.

The remainder of this dissertation is structured in the following manner. Chapter Two provides further review of both the theory and prior research informing this study. Then, the theoretical model is discussed in more detail, outlining the hypothesized relationships depicted in Figures 1-3. Chapter Three describes the data, sample, measures, and analytic plan. Chapter Four presents the results of the main and supplementary analyses. Finally, Chapter 5 describes the implications of these results in

the broader context of extant literature, recognizes limitations in the study, and identifies future avenues for research.

Figure 1. Phase 1 of Theoretical Model



Notes: Panel A displays a model of youth legal socialization involving the criminal justice system. Panel B displays a separate model of youth legal socialization involving the school system. The concepts of unfairness in the US and illegitimacy are distinct but displayed in one box to simplify the figure and limit the number of paths pictured. All arrows represent positive associations. SP is an abbreviation of “school personnel.”

Legend:

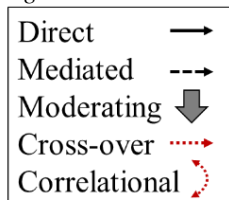
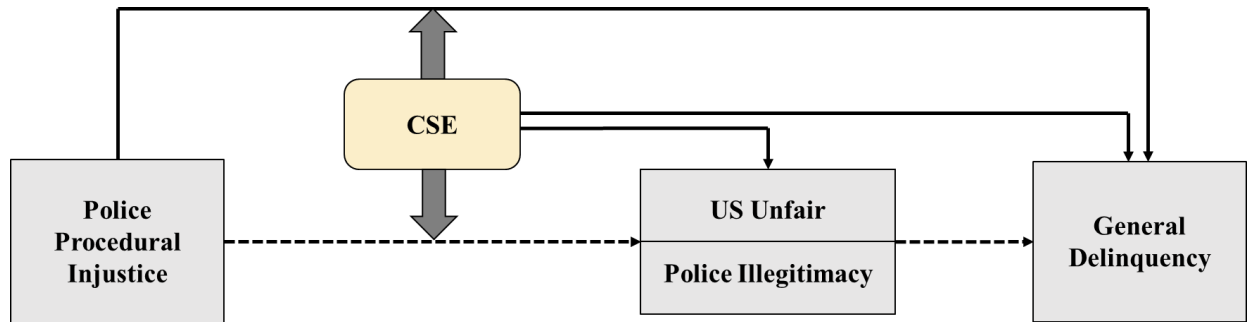
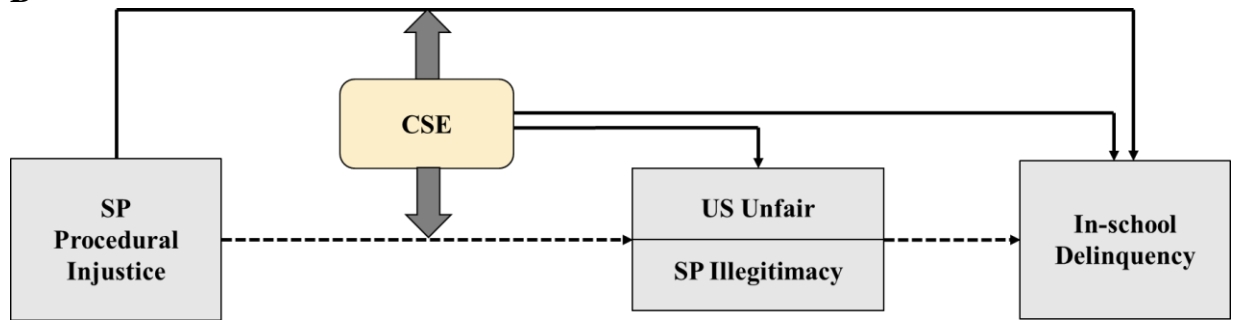


Figure 2. Phase 2 of Theoretical Model
A



B



Notes: Panel A displays a model of youth legal socialization involving the criminal justice system. Panel B displays a separate model of youth legal socialization involving the school system. The concepts of unfairness in the US and illegitimacy are distinct but displayed in one box to simplify the figure and limit the number of paths pictured. All arrows represent positive associations. SP is an abbreviation of “school personnel”; CSE is an abbreviation of “carceral school environment.”

Legend:

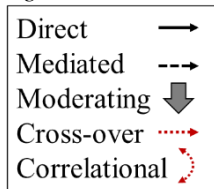
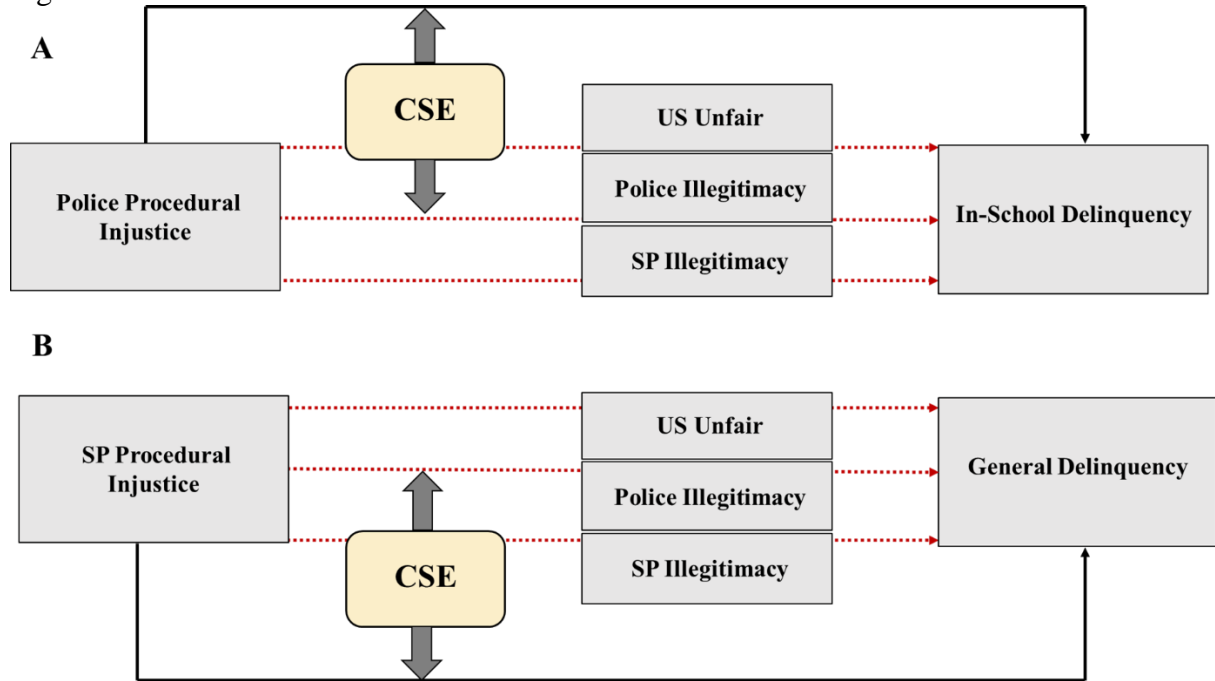
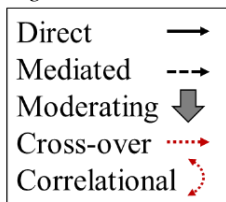


Figure 3. Phase 3 of Theoretical Model



Notes: Panel A displays a model of youth legal socialization in which perceptions of authorities in the criminal justice system influence outcomes associated with the school system. Panel B displays a model of youth legal socialization in which perceptions of authorities in the school system influence outcomes associated with the criminal justice system. Although not pictured, the theoretical model assumes that police procedural injustice and school personnel procedural injustice are correlated. All arrows represent positive associations. SP is an abbreviation of “school personnel”; CSE is an abbreviation of “carceral school environment.”

Legend:



CHAPTER TWO: THEORETICAL BACKGROUND AND RELEVANT LITERATURE

Broadly, legal socialization refers to a process through which individuals attach meaning and value to their perceptions of authority, and this impacts their internalization of norms and laws (Tapp & Levine, 1974; Tapp, 1976). As we age, we are socialized to learn the rules, norms, and laws of several societal institutions, including the family, school, labor force, and criminal justice system. Legal socialization theory posits that we develop a relationship with laws and norms by interacting with key authority figures representing them. Over the course of interactions, we define our roles relative to these authorities, and acquire “law-related values, attitudes, and reasoning capacities,” that influence one’s sense of obligation to comply (Trinkner & Tyler, 2016, p. 417; Tapp & Levine 1974). This notion of normative compliance—or adhering to rules based on an internal sense of obligation—is sometimes contrasted with arguments from deterrence theories to argue that, in general, individuals are motivated to follow rules because we trust in society’s behavioral expectations, rather than out of a fear of sanctions (Pyne, 2019; Tyler, 2006; Weber, 1964).

Tyler and Trinkner (2017) elaborate on the different forms of compliance, arguing that institutional models for regulating behavior can be based on consensual relationships between authorities and those subject to authorities’ rules, or by force and coercion. Under a consensual system of governance, rules and authorities’ enforcement practices reflect the values generally agreed upon in a democratic society. This means that rules are fair, consistently applied, and that there is a mutual respect between authorities and other individuals. The public understands and consents to the authority’s power. Alternatively,

under a coercive model, individuals are expected to comply with rules in order to avoid punitive consequences. There is an emphasis on forcing obedience, rather than building trust between the public and the institution. For example, Tyler and Trinkner (2017) consider “scared straight” programs as a coercive approach to juvenile justice where the strategy is to control delinquency by increasing fear of harsh punishments. They argue that consensual models should be more effective in motivating compliance because the theoretical literature on obedience and moral alignment suggests that when an individual perceives an authority as wielding their power fairly, this enables an institution’s ability to regulate behavior because the individual consents to, and is thus more connected to, the institution of social control (Tapp & Levine, 1977; Tyler & Trinkner, 2017; see also Flanagan, 2013). In partial support of this principle, studies have found that youth subjected to more harsh or punitive forms of parenting (e.g., Hoeve et al., 2008) or juvenile justice programs (e.g., Petrosino, Turpin-Petrosino, & Guckenburg, 2010) are more likely to reject rules and engage in problem behavior than their counterparts in more supportive environments. In systems of regulation or social control, the quality of one’s interactions with authorities carry significant weight in how an individual evaluates or values the law and their motivation to comply.

The underlying logic of legal socialization theory can be understood as consistent with social control: stronger connections or bonds to major social institutions facilitate the institution’s ability to regulate the public’s behavior (Chriss, 2007; Fagan & Tyler, 2005; Le Banc & Caplan, 1993). Essentially, authority figures are agents of social control with the power to enforce an institution’s rules. When authorities carry out rule enforcement using procedures consistent with a fair enduring process that individuals can

trust in, the authority—and the institution more broadly—is viewed as “acting in solidarity” with the public (Sunshine & Tyler, 2003, p. 162), whereas unfair procedures alienate individuals from the institution.

Although the social psychology of legal socialization and the argued responses to different models of compliance (i.e., consensual vs. coercive) has been applied to understand individuals’ interactions with an array of authorities from social control institutions, theory and empirical work typically focuses on individuals’ socialization to the rules in specific domains (Tapp 1976; Tapp & Levine 1974; Trinkner & Tyler, 2016). For instance, the quality of our interactions with police officers may be salient to our feelings of trust in the police and obligation to follow the law, while our interactions with teachers are salient to our feelings of trust in school rules governing our behavior. This dissertation primarily focuses on how the *procedural justice* model of legal socialization has influenced research on policing and schools.²

Procedural Justice Model of Legal Socialization

The procedural justice framework specifies that individuals evaluate authorities and the rules that they represent based on the perceived fairness of the authority’s decision-making and interpersonal treatment (Sunshine & Tyler, 2003; Thibaut & Walker, 1978; Tyler, 2003). This is based on the idea that procedures embodied by, for example, a police officer, symbolize how the criminal justice system operates. When officers appear to enforce the law in a fair and just manner, individuals recognize the regulatory value of the criminal justice system and are more likely to cooperate (Lind &

² Scholars have applied the procedural justice model of legal socialization to explore a range of different processes and there is substantial variation in the definitions and measurements of key concepts. As such, I consider the argument as a framework or model, rather than a specific theory and present the process as I understand it.

Tyler, 1988; Sunshine & Tyler, 2003). Conversely, when authorities such as police are perceived as unfair, inconsistent, or disrespectful they can alienate individuals from the criminal justice institution's regulation so that they feel free to deviate (Tyler & Trinkner, 2017). This process highlights important relationships among authorities' enforcement practices, the building of trust in institutions, and instillment of norms for a functioning society. As an avenue for understanding how people come to break the law, most theoretical and empirical research on procedural justice focuses on relationships with police officers. In the following section, I review the relevant work on perceptions of police procedural justice and describe the multiple mechanisms by which relationships with the police may affect (non)offending behavior as suggested by different adaptations of the theoretical framework and some empirical evidence. Then, I consider how this model has been applied to study interactions with authorities in nonlegal contexts (e.g., schools). The review of these subareas in the extant literature identifies some underdeveloped paths in the procedural justice framework, thus informing the first phase of development of the current study's theoretical model.

Procedural Justice in Policing

Police officers are recognized as “the most visible and accessible agents” of the law (Warren, 2011, p. 361), and as such, individuals consider these authority figures as symbols of the larger criminal justice system (Meares, 2016). The procedural justice model was made popular in criminology by Tom Tyler and colleagues and argues that individuals evaluate the “procedural justice” of police officers' actions according to specific criteria: whether officers are respectful, trustworthy, appear neutral or unbiased in their decision-making, and allow individuals to communicate their views (referred to

as Dignity/Respect, Trust, Neutrality, and Voice, respectively; Tyler, 1990). The model posits that procedural justice conveys messages about the criminal justice system and ultimately informs individuals' likelihood of abiding by or breaking the law. When officers use procedurally just practices, this demonstrates enforcement more consistent with a consensual system, where individuals are more likely to defer to an authority representing democratic values because they feel connected to the institution's aims and compelled to cooperate with regulatory efforts (Tyler & Trinkner, 2017). This process has been studied empirically, with multiple studies offering some degree of support that police procedural justice relates to behavior. For instance, some studies find that individuals who perceive a greater degree of police procedural justice report that they are more likely to comply with laws (using a measure of one's intentions to comply or cooperate) (Jackson et al., 2012; Tyler & Jackson, 2014). Other studies measuring self-reported offending extend upon this relationship, finding that individuals who perceive police to be relatively more just report less frequent offending than those who perceive officers as less just (Fagan & Piquero, 2007; Kaiser & Reisig, 2019; Trinkner & Cohn, 2014).

In this research, scholars distinguish between *specific* and *global* procedural justice, where specific procedural justice refers to one's perceptions of fairness over the course of a personal interaction with an officer (e.g., being stopped, arrested, or requesting service), and global procedural justice represents one's general assessment of police (Gau, 2014). Each of these components can inform behavioral outcomes in the sense that global procedural justice is shaped by specific encounters as well as vicarious experiences with the police (e.g., Harris & Jones, 2020), cultural norms (e.g., Moule et

al., 2019) and exposure to media coverage about the police (e.g., Graziano & Gauthier, 2018). At the same time, a reciprocal relationship between global perceptions of procedural justice and individuals' interpretation of specific encounters is possible. Although some studies have explicitly studied direct relationships between global or specific procedural justice on offending, most of this research follows a multi-step process outlined by Tyler and colleagues that relates perceptions of police procedural justice to behavior through a key mediator: police legitimacy (e.g., Kaiser & Reisig, 2019; Tyler, 1990, 2003, 2006; Sunshine & Tyler, 2003).

Intervening Mechanisms in the Procedural Justice Model: Legitimacy

Nagin and Telep (2017; 2020) depict a four-step schema of the process that is typically argued in Tyler's procedural justice model. Specific procedural justice (i.e., individuals' assessments from an encounter with police) influences global assessments of police officers as fair, trustworthy, neutral, and respectful, and these perceptions impact evaluations of police *legitimacy*, which in turn, impact one's likelihood of offending. Legitimacy generally refers to the degree to which individuals accept or value laws that the authority figure (e.g., police officer) represents (Tyler & Lind, 1992). The construct of legitimacy has been examined using several different definitions and measures (see Gau, 2011, 2014; Tyler, 1990). Generally, an individual's perception of police legitimacy reflects some level of an internalized obligation to follow the law consistent with the ideas of normative compliance and consensual models discussed above. Those who perceive police officers to be legitimate are arguably less likely to offend than those who perceive officers to be illegitimate (Tyler, 1990; Tyler & Trinkner, 2017).

Although both specific and global procedural justice have been related to legitimacy, global assessments capturing individuals' general perceptions of police tend to have a stronger direct effect in empirical work (Gau, 2011, 2014; Tyler, 2006). In a sense, the level of procedural justice and legitimacy of police officers facilitate the criminal justice system's ability to exert social control and regulate behavior. If citizens' perceptions of police contribute to personal definitions of the criminal justice system as an illegitimate governing institution that is enforcing society's laws, then they do not acquire values of legal compliance and will engage in criminal behavior (Nivette, 2014; Tyler, 2006).

There is ongoing debate about how best to conceptualize this sense of obligation, with some scholars defining legitimacy to include trust in legal institutions (Tyler, 1990; Sunshine & Tyler, 2003), some arguing it reflects morals or values (Beetham, 1991; Tyler 1990), and still others argue that one may report an obligation to comply with the law due to a sense of trust or morality in some contexts, and due to fear or coercion in others (Tankebe, 2009a; Tankebe, 2013; Tyler & Trinkner, 2017). Put simply, while scholars adopting the procedural justice framework often examine legitimacy as the mechanism by which perceptions of procedural justice can influence offending, there are still several open questions regarding this process. For instance, Gau (2014) closely examined a common measure of police legitimacy adopted in criminological studies that combines individuals' reported trust in police as valid authorities and their reported sense of obligation to defer to or cooperate with police. The results of measurement analysis demonstrated these factors were distinct rather than indicative of one concept. Further, Tankebe's (2009a) work on police procedural justice in Ghana indicates that one's

reported sense of obligation to comply with police orders can be motivated by force or fear, and still, one may not indicate trust in officers or respect for them as legitimate enforcers of the law.

Intervening Mechanisms in the Procedural Justice Model: Social Identity

As an alternative mechanism to authority legitimacy, other scholars have suggested that police procedural justice may decrease offending by affecting one's "social identity" (Tajfel, 1974), or a sense of shared values regarding social control (see also Bradford et al., 2014; Jackson & Sunshine, 2007). According to some theoretical literature using the procedural justice model (identified as the group-value model of procedural justice), "one reason people care so deeply about the fairness of authorities is that fairness communicates inclusion and status within the group the authority represents [...] if they feel they are included and valued group members they are more likely to believe the group itself valid and valuable, and more likely to act in ways that support its representatives" (Bradford, 2012, p. 3; see also Tyler & Trinkner, 2017; Weber, 1978). In this way, police procedural justice can deliver messages about a citizens' status in a group both that police represent and that is subject to police authority (Bradford et al., 2014; Tyler & Blader, 2003; Tyler & Huo, 2002). This process has been tested empirically, demonstrating some support that perceptions of officers' practices relate to measures of one's identification with the dominant social group and/or community values, and that social identity is also associated with either increases in one's reported intentions to comply with officers or actual compliance (i.e., associated with decreased self-reported offending) (Bradford et al., 2014; Bradford et al., 2015; Jackson &

Sunshine, 2007; Slocum, Wiley, & Esbensen, 2016; Sunshine & Tyler, 2003; Tyler & Blader, 2013).

Because many of these studies rely on cross-sectional data or use indicators of one's *intention* to comply or deviate rather than observing offending (for exception, see Slocum, Wiley, & Esbensen, 2016), the empirical work supporting this mediated path of procedural justice to behavior is underdeveloped. Nevertheless, this backdrop of theoretical work is useful in outlining a procedural justice model of legal socialization that recognizes connections between individuals' experiences in different domains. The concept of social identity taps into an individuals' understanding of their place in society, beyond the specific institution of social control represented by police. In accordance with the framework of legal socialization that suggests interactions with different types of authorities can each contribute to larger patterns of rule- or law-compliance over time (Tyler & Trinkner, 2017), one's perceptions of police officers' behaviors can relate to one's understanding of the broader group that these officers represent (the state) as "itself valid and valuable" (Bradford, 2012, p.3). It follows that research examining the mechanism of social identity lends support to a third potential mechanism by which procedural justice influences (non)compliance: perceptions of fairness in the state/society (e.g, the US).

Intervening Mechanisms in the Procedural Justice Model: Broader Perceptions of Fairness in Society?

Slocum and colleagues (2020) offer a preliminary exploration of how perceptions of police procedural justice contribute to their assessment of fairness in society as a whole, drawing on the research on social identity and the group-value model (Bradford et

al., 2014; Loader, 2006; Tyler & Blader, 2003). Their study uses panel data from UMSL CSSI (the data set employed in the current study) on adolescents to examine how perceptions of police procedural justice at Time 1 relate to their broader evaluations of fairness in America at Time 2. In this process, perceptions of fairness in America—or “trust in the American process” – captures one’s identification with the state’s core values. Slocum and colleagues’ findings support that perceptions of police procedural justice are significantly associated with higher reports of fairness in the state, so that those who perceive lower levels of procedural justice (or greater injustice) are relatively more likely to believe the US is unfair. This study only provides preliminary evidence that procedural justice informs perceptions of fairness in society, and further research is needed to explore whether these perceptions in turn relate to individual behavior (Radburn & Stott, 2019). At this stage, there are theoretical reasons to expect that police (and other social control agents’) procedural injustice can undermine individuals’ “sense of belonging to a democratic political community” by contributing to the belief that the US is unfair, therefore alienating individuals from the law and allowing them to offend (Loader, 2006, p. 203).

To briefly highlight some of the major points in the review thus far, a substantial body of literature in criminology and other disciplines employ components of the procedural justice model of legal socialization to understand individuals’ perceptions of police and their offending. Interpretation of the procedural justice model varies considerably (Nagin & Telep, 2017), but to some extent studies have demonstrated that perceptions of police procedural injustice are positively associated with offending, albeit much of the research examines this an indirect relationship through the mechanism of

police illegitimacy (see Walters & Bolger, 2019 for meta-analysis). Some major limitations in this research include the inconsistent conceptualization and operationalization of illegitimacy and other potential intervening mechanisms, as well as the mixed approach to empirically examining the directionality of paths from procedural injustice to behavior (Nagin & Telep, 2017, 2020). Among the studies claiming to offer support of the effect of police procedural justice on offending, a substantial portion rely on cross-sectional data or measure individuals' intentions to comply with laws rather than actual behavior. In their recent review of research on the relationships between police procedural justice, illegitimacy, and compliance, Nagin and Telep (2020) conclude that they, "see a lack of evidence that these associations reflect a causal connection" (p. 2).

Additional research is necessary to examine the direct and indirect pathways between perceptions of procedural injustice and offending. In addition, these processes should be explored beyond individuals' interactions with police as the broader legal socialization framework suggests (Tapp, 1991; Tapp & Levine, 1974; Leventhal, 1980; Lind & Tyler, 1988; Weber, 1978). Compared to the work on policing, research examining the procedural justice model in other domains is limited. The next section reviews this work on individuals' socialization in contexts that are not explicitly "legal," such as the family and the school to help demonstrate how individuals' experiences with different institutions of social control may be related.

Procedural Justice in Nonlegal Contexts

As Trinkner and Tyler (2016, p. 424) explain, "people are constantly exposed to rule creation and enforcement throughout their daily lives, all of which provides them with information about their relationship with authority and rules as general social

concepts.” While the procedural justice literature tends to emphasize the formative nature of citizens’ attitudes toward police as the most accessible representatives of the law and of government, this symbolic value of authority is easily demonstrated in other institutions. Parents represent the norms and rules of the family, employers represent the norms and rules of the labor force, and school personnel represent the norms and rules of the school. In conceptualizing legal socialization as a developmental process occurring as individuals grow, adults’ attitudes toward authorities and inclination to comply may be built on their early childhood experiences with informal regulatory frameworks (Fagan & Tyler, 2005; Trinkner & Tyler, 2016; Tyler & Trinkner, 2017).

In developmental psychology and family studies, research explores how different parenting styles promote children to develop trust in their parents and to comply with rules, and conversely, which parenting practices may lead to rule-breaking and juvenile delinquency (Gray & Steinberg, 1999; Steinberg et al., 1990; Tehrani & Yamini, 2020). A limited body of work explicitly examines the procedural justice model, conceptualizing parenting practices in terms of consistent, unbiased rule enforcement, allowing the opportunity for youth to communicate their needs, and demonstrating respect and emotional support, then examining the degree to which these factors impact the likelihood that children deviate (Thomas et al., 2018; Thomas et al., 2019; Schaffer, Clark, & Jeglic, 2009). For example, Thomas and colleagues (2019) use longitudinal data on Brazilian youth ages 11-13 to examine the extent to which youth perceptions of parental procedural justice and parent legitimacy (measured as recognition that parents have a right to create and enforce rules) predict compliance with different types of rules. They find evidence that both procedural justice and legitimacy have a direct influence on

youth's reported frequency of complying with rules. These early experiences with parenting procedures may help youth to internalize expectations for authority figures so that fairness and justice facilitate the family's capacity to exert control over behavior (Tehrani & Yamini, 2020). While the family is an informal institution, schools socialize youth to a formal set of rules with delineated sanctions for deviant and delinquent behavior.

Schools have long been upheld as youths' "first, most enabling, and most enduring experience of governance in action" (Simon, 2007, p. 2019; see also Dewey, 1916). Throughout students' education, they are exposed to lessons outside of the curriculum including society's larger social-structural organization (e.g., race and class hierarchies) and the rules, norms, and laws they are to abide by. Research supports that school fairness and justice, both with regard to the general organizational climates (Tyler & Trinkner, 2017) and as exhibited by specific school practices (e.g., discipline procedures, programs; Antrobus et al., 2019; Brasof & Peterson, 2018), can impact youth's relationships with authority figures (Tyler, 1997; Gregory & Ripski, 2008) and involvement in school misconduct (Sanches, Gouveia-Pereira, Carugati, 2012; Trinkner & Cohn, 2014). Schools can offer a symbolic representation of societal values at large. While students may not explicitly view the school as a government institution, or school authorities as government agents for that matter, the experience with formal authorities can have implications for individuals' relationship to the state. For instance, several qualitative works support that students reflect on their experience in the school environment as influential in their understanding of their status in society (Ferguson, 2000; Rios, 2011; Shedd, 2015).

As an example, Shedd (2015) conducted interviews with students in the Chicago school district. She finds that black adolescents from disadvantaged majority-black neighborhoods who attended schools in wealthier areas with integrated populations interpreted differences in how school authorities treated the students as reflective of unfair racial hierarchies in society. These students considered differential treatment as indicative that the state valued them less than their white counterparts. In a similar vein, other research supports that students' perceptions of teachers' fair treatment and school disciplinary policies influences their civic engagement and attitudes toward the government (Bruch & Soss, 2018; Claes, Hooghe, & Stolle, 2009). Together, these findings bolster a key tenet of legal socialization theories—interactions with school authorities carry symbolic value regarding the larger institution's rules and the way it views individuals.

Centering focus on the procedural justice model of legal socialization, this theory posits youth perceptions of school personnel should impact their internalized expectations and obligation to comply, and therefore impact behavior. A small area of research explicitly assesses the components of the procedural justice process with respect to students' perceptions of teachers and school administrators. Tyler (1997) examined relationships between individuals' perceptions of authorities in several domains (e.g., family, work, college) and found that undergraduate students' perceptions of professors as fair and helpful impacted their willingness to accept the professor's authority, as well as their feelings of obligation to comply with school policies (i.e., professor legitimacy). Other research replicates this relationship between perceptions of teachers' procedural justice and willingness to comply with rules (Gouveia-Pereira et al., 2003; Trinkner &

Cohn, 2014) or cooperate with teachers without aggression (Nelson, Schechter, & Ben-Ari, 2004; Chory-Assad & Paulsel, 2004). That said, the process most relevant to the current dissertation's focus concerns the relationship between perceptions of authorities and *behavioral* outcomes of rule-breaking and/or delinquency, whereas the work on procedural justice in the school context tends to assess students' reports of whether they feel obligated to comply with rules or whether they are likely to follow rules rather than capturing reports of actual behavior.

There are a few exceptions to this generalization. For instance, Smetana and Bitz (1996) used cross-sectional survey data from youth in grades 5-11 to explore how perceptions of school rules and teachers' authority were associated with self-reports of misconduct. Their results indicated that perceptions of teacher legitimacy—defined as the acceptance that teachers can enforce rules regarding conventional classroom issues such as tardiness, talking back to teachers, passing notes—were negatively associated with self-reports of classroom misconduct while controlling for other factors including grades and school engagement. This study offers preliminary evidence of an associative relationship between perceptions of school authority and minor rule breaking. Gregory and Ripski's (2008) study shows a similar relationship. They rely on interview and survey data from teachers and students and measured teachers' disciplinary procedures in terms of respectfulness, focus on interpersonal relationships, and providing opportunities for students to communicate (i.e., consistent with Dignity/Respect, Trust, Voice dimensions of procedural justice). They find that support that the fairness or cooperative nature of teacher discipline is negatively associated with students' reported defiance of teachers' rules.

As a last example, James, Bunch, and Clay-Warner (2015) examine the relationships between students' perceptions of unfairness regarding both school practices and teachers' enforcement of these practices and students' reported engagement in violent school offenses. Using cross-sectional data from the 2009 School Crime Supplement of the National Crime Victimization Survey, the researchers estimate a series of logistic regressions to assess the influence of school procedural justice or fairness on student reports of two acts—bringing a weapon to school and engaging in fights on school grounds. Their findings support that students who perceive school authorities as unjust are more likely to engage in each of these offenses compared to students who view teachers and school practices as more fair, while controlling for other factors related to school engagement and adult support. These few studies can be viewed as offering a degree of support for the relationship between youth perceptions of school authorities' procedural justice and rule violation; however, because they all rely on cross-sectional data, they cannot speak to the direction of the relationship between perceptions of authority and youth behavior. In fact, many of the studies interpreted as supportive of the perceived procedural justice-compliance relationships in schools rely on outcome measures of individuals' stated likelihood of following the rules (Chory-Assad & Paulsel, 2004; Gouveia-Pereira et al., 2003) or teachers' reports of students' tendency to disrupt class (Way, 2011), rather than reports of youths' actual behavior. Additional research using longitudinal data is necessary to consider the extent to which school personnel procedural injustice predicts delinquency, and whether this effect operates indirectly through mediating mechanisms.

Considered in conjunction with the review of policing literature, the broad literature on the procedural justice model of legal socialization has multiple limitations, but one overarching deficiency motivating the current study concerns the bifurcation in research exploring individuals' experiences with police and their related offending, and individuals' experiences with school personnel and their related violation of school rules. Most of the research focuses on individuals' perceptions of police as representatives of the criminal justice system and does not consider connections to legal socialization in other domains (Granot & Tyler, 2019; Trinkner & Cohn, 2014; Trinkner & Tyler, 2016). Research that concurrently considers youth perceptions of different types of authorities can employ consistent conceptualizations of procedural justice with respect to the school and criminal justice system and examine how they relate to compliance within these institutions.

Proposed Paths in Expanded Theoretical Model:

(1) Examining Mediating Mechanisms

The current study expands upon prior work to propose a theoretical model of legal socialization involving youths' perceptions of school personnel and police, and the first phase of the theoretical model considers multiple paths indicated by prior work. Both authority legitimacy and indicators of social identity have been explored as intervening mechanisms in legal socialization. For instance, one avenue for examining the connections across legal socialization in different domains is to identify common intervening mechanisms by which perceptions of one type of authority may influence individuals' relationships with the rules to predict delinquency. The first phase of the proposed theoretical model (see Figure 1) outlines two parallel and distinct processes of

legal socialization: in accordance with the separate approaches seen in the disparate threads of literature, one component considers how perceptions of police procedural injustice influence general delinquency (i.e., noncompliance with laws), where a separate component considers how perceptions of school personnel procedural injustice influence in-school delinquency (i.e., noncompliance with school rules).

These positive relationships may also operate indirectly through the mechanisms of illegitimacy and perceptions of the US as unfair. First, legitimacy is a commonly examined mediator in policing literature (e.g., Walters & Boger, 2019) and some preliminary support suggests that it is also relevant to relationships with school authorities (Gregory & Ripski, 2008; Smetana & Bitz, 1996). Perceptions of fairness in the US may also mediate the association between procedural justice and behavior to some extent, given that one's evaluation of both police and school personnel can inform their understanding of larger social dynamics in the state (Bradford, 2012; Bruch & Soss, 2018; Kupchik & Catlaw, 2015). The concurrent examination of these indirect paths will advance our understanding of *how* individuals' attitudes toward key institutional authorities may relate to delinquency.

The paths hypothesized in this portion of the model speak to comparable processes involving the school and the criminal justice system, but the subsequent phases posit additional connections between how youth perceive teachers and police as authority figures. The literatures exploring youths' developing perceptions of school personnel procedural justice and police procedural justice as unrelated processes does not account for recent changes in schools that have increased students' exposure to police and policies reminiscent of the criminal justice system. I now turn to a review of the literature

on school criminalization to demonstrate how youth can be exposed to two institutions of social control in one environment. An extensive body of work documents the widespread implementation of school policies reminiscent of the criminal justice system including partnerships with police, exclusionary discipline, and security and surveillance practices, and describes some of the harmful effects of these policies on students.

School Criminalization

The school's function as a socializing institution has likely been altered by the implementation of crime-control policies that have shaped school environments over recent decades. In response to mounting concerns of student safety in the 1980s and 1990s, many schools adopted strict security procedures that can be categorized into three general dimensions: an increased police presence on school campuses, the use of exclusionary school discipline, and the implementation of restrictive security measures (Hirschfield, 2008; Hirschfield & Celinska, 2011; Kupchik & Monahan, 2006; Kupchik, 2010; Simon, 2007). While these practices may be directed at threats to student safety, they can be seen as introducing criminalizing, or carceral, features to the educational environment. Exposure to these practices blurs the lines between school and the criminal justice system, so that youth are forming perceptions of the procedural justice, or injustice, of each of these institutions based on their experiences in one environment.

Notably, the research and theory regarding the connections between education and the criminal justice system tends to focus on the "school-to-prison pipeline" in which students who engage in misconduct are either directly referred to the juvenile or criminal justice systems, or after experiencing punitive school discipline become disengaged, drop out, and then are more likely to offend and come into contact with the criminal justice

system (Advancement Project et al., 2010; Muniz, 2021; Rocque & Snellings, 2018; Skiba et al., 2014). Scholars have not thoroughly assessed how changes to schools may interact with adolescents' perceptions of authorities or procedural justice. Indeed, there have been calls to consider these policies outside of the school-to-prison pipeline lens so that, instead of considering youth exposure to school and the criminal justice system as steps on a timeline in one direction, we can understand how the creation of a carceral school environment impacts youth socialization (McGrew, 2016; Simmons, 2017). I detail the key legislation promoting school safety and security policies, then describe how school environments have changed in terms of police presence, their use of exclusionary discipline, and incorporation of security measures. The stated rationale behind implementing these changes, as well as the way the policies are used in practice, represent a convergence between the criminal justice and school systems where students are now viewed as "risks to be managed." (Hirschfield & Celinska, 2011, p. 8).

Two main federal acts directed the use of punitive policies in United States public schools: the Safe Schools Act (1994), and the Gun Free Schools Act (1994). The Safe Schools Act (1994) made competitive grants available to schools to help schools meet national education goals; specifically, the goal that every school in the country be free of violence and drugs and maintain a disciplined environment by the year 2000 (Gronlund, 1993). To qualify for grants under this act, schools were required to demonstrate a "serious" crime problem; therefore, many schools implemented data collection procedures to record school events that could be considered crimes. School officials were motivated to upgrade incidents and record them as more serious to demonstrate this problem (Eckland, 1999; Simon, 2007). The act also required schools to have written

policies regarding their internal discipline procedures, declaring explicit conditions for exclusionary discipline such as suspension and expulsion, and describing cooperative relationships with the police and other juvenile justice agencies in order to receive funding (Simon, 2007).

Additionally, The Gun Free Schools Act (1994) stipulated that schools receiving federal education funding must expel any student who brings a weapon to school for at least one year. This is an example of the now well-known, “zero-tolerance policy.” Zero tolerance policies predetermine a severe punishment for all offenses of a certain type, without considering the context of the offense (Skiba & Knesting, 2001). Casella (2003) demonstrates that 94 percent of schools were enforcing zero tolerance policies for weapons by the 1996-1997 school year. Records of lawsuits and news articles demonstrate the misuse or expansion of these zero tolerance policies (Losinski et al., 2014). For instance, some schools created zero-tolerance policies allowing suspension for behaviors such as fighting, and more minor acts of dress-code violations and insubordination (Skiba, 2000; Stader, 2004). In other words, although the act targeted a specific set of weapon-related behaviors among students, it incentivized schools to adopt zero tolerance discipline, creating practices for in-school and out-of-school suspensions and expulsions, and delineating automatic punitive responses for certain behaviors.

These acts appear to mark a significant shift in school safety policy as they demonstrate national incentives for adopting certain security measures and punishments during a time of piqued concern regarding shootings and school violence. To further demonstrate their influence on school environments and youth experiences, I describe the institutional trends in elevating the role of school police officers, utilizing discipline

designed to remove students who posed risks or threats, and implementing security procedures consistent with locked down institutions.

Presence of Police

Michigan adopted the first School Resource Officer (SRO) program in the late 1950s in which police officers were permanently assigned to schools with the aim to foster positive relationships between police and students. The traditionally conceived SRO model emphasized that police officers should balance three roles in schools: a law enforcer, educator, and informal counselor (Brown, 2006; Finn et al., 2005; Rich & Finn, 2001). While these programs slowly expanded in schools across the country in the following decade (Lambert & McGinty, 2002; Musu-Gillette et al., 2018), the comprehensive literature on school safety policies demonstrates that the primary goal of SRO programs eventually shifted in the 1990's. Consistent with concerns for increased juvenile crime, highly publicized school shootings, and the legislation highlighted above, schools pushed for SRO programs to maintain safe environments and respond to threatening student behaviors (Hyman & Perone, 1998; Kupchik & Monahan, 2006). In their report on school crime in safety, Musu-Gillette and colleagues (2018) explained that over 40 percent of public schools—including elementary, middle, and high schools—had SRO programs, while up to 70 percent of students in a nationally representative sample indicated their schools had SROs, security guards, or other partnerships with police departments (Musu-Gillette et al., 2017). The majority of these partnerships do not seem to have clear guidelines or agreements that explicitly delineate officers' duties (Correa & Diliberti, 2020), but school administrator reports and qualitative work suggests that in

many schools officers' roles as law enforcement are heavily prioritized over roles as educators or counselors (Curran et al., 2019; Kupchik, 2010).

The literature concerning SRO's effects on both student outcomes and school environments is mixed. Some evaluations of SRO programs conclude that SROs increase perceptions of safety and/or reduce school crime (Curran et al., 2021; Johnson et al., 2018; Owens, 2017). Other research demonstrates there are potential negative consequences of SRO programs, including increased reports of student misconduct (Weisburst, 2019; Swartz et al., 2016), diminished perceptions of support or connectedness to the school environment (Sussman, 2011; Theriot, 2016), and increases in the schools use of exclusionary discipline, such as suspensions and expulsions (Gottfredson et al., 2020; Fisher & Hennessy, 2016; Zhang, 2019). Police officers can take on an important disciplinarian role, sometimes actively responding to acts of misconduct outside of law violations (Musu-Gillette et al., 2018; Shedd, 2015). Still, other studies find that officers can have a neutral presence, having no significant impact on the schools' use of punishment (Curran et al., 2021; Na & Gottfredson, 2013) or students' perceptions of safety (Theriot & Orme, 2016). In fact, Bracy (2011) finds from interviews with students that many feel the police in their school are ineffective and unnecessary.

There is clear variation in both the implementation and consequences of school-police partnerships when considering these outcomes. The officers' roles in schools vary and there is mixed evidence on how their presence might impact the school. For instance, even when police have a restricted role, they can influence school discipline in nuanced ways. Curran and colleagues (2019) conducted a qualitative study of SROs in two large

school districts and found that, despite having an explicit agreement with law enforcement agencies that police officers would not be involved in school discipline, school personnel relied on the officers informally. As one example, administrators described asking police to lecture students who engaged in misconduct or just to be present in the room when school personnel meted out discipline. This finding underscores that one irrefutable consequence of school-police partnerships is that it increases students' exposure to police.

A critical focus of the extant literature on school criminalization has focused on how police presence in schools can lead to early criminal justice involvement for some students. Minor behaviors that were typically handled by school personnel may now warrant the attention of the officers on site, resulting in students being handcuffed and arrested for a range of acts (Kupchik, 2010). That said, the research reviewed here indicates that police can influence school environments beyond instances of direct contact or processing of students through the criminal justice system. The mere presence of officers demonstrates the influence of the criminal justice system in education. Students have regular exposure to these authority figures, in addition to school authorities, and can form beliefs about their roles and practices. This, in conjunction with the dimensions described in the following sections, contributes to an education environment that socializes youth to criminal justice control.

Exclusionary Discipline

Exclusionary discipline refers to a class of school punishments that are used to remove students from the traditional educational setting (National Clearinghouse of Supportive School Discipline, 2014). These punishments commonly include in-school

suspensions (ISS), out-of-school suspensions (OSS), expulsions, and placement in alternative schools. The use of exclusionary punishment in schools increased with the legislative standards mentioned above as schools implemented “zero tolerance” policies to remove certain behaviors, and in turn the students engaging in these behaviors, from the environment (Lyons & Drew, 2006; Simon, 2007). Because zero tolerance policies predetermine a severe punishment for all offenses falling under one category (e.g., fighting), students can experience suspension or expulsion without consideration of the context for their offense (Skiba & Knesting, 2001). For instance, one national survey found that approximately 90 percent of schools had zero tolerance policies for “weapon possession”, where the term weapon could be defined differently by each school (e.g., sharp object, toy gun) (Sheley, 2000). Zero tolerance policies and other revisions to school disciplinary codes increased the use of suspensions throughout the 1990’s and early 2000s (Rafa, 2019). Schools amended codes of conduct so that suspensions and expulsions were used to respond to fighting and a wide range of disruptive acts (Fenning et al., 2012). The U.S. Department of Education’s Civil Rights Data Collection reports that approximately 2.6 million students were suspended at least once in the 2013-2014 school year (CRDC, 2014).

The trend toward exclusionary discipline demonstrated a “get tough” approach reminiscent of criminal justice policies. Hanson (2005) shows that zero-tolerance policies in the educational environment were modeled after drug policies of the 1980s, meant to decrease problematic behaviors by meting out severe punishments that remove people from the environment. Because these disciplinary measures remove youth from the school setting, they embrace a logic of incapacitation (Hirschfield, 2008). Relatedly,

suspension and removal of disruptive students can label them as threatening or dangerous (Wald & Losen, 2003). Even further, the optics of suspension practices can resemble criminal justice responses to individuals' behavior. Ferguson (2001) describes a punishing room used for in-school suspension, likening the appearance to a prison cell. Similarly, Shedd (2015) explains the interrogation and suspension rooms used in several Chicago public schools that the students refer to as "cells." It follows that punitive practices represent another aspect of the criminalized school environment (Hirschfield, 2008)

The use of exclusionary discipline has been linked to harmful outcomes for individual students as well as the overall school climate. Students who experience suspension are more likely to feel alienated or disengaged from school (Anyon et al., 2016; Morris, 2016; Pyne, 2019), to decline in academic achievement (Arcia, 2006; Perry & Morris, 2014), and dropout (Marchbanks et al., 2015; Noltemeyer & Ward, 2015) relative to those who are not suspended. In addition, there is not clear support that exclusionary punishments deter delinquency or crime (American Psychological Association, 2008; Skiba & Rausch, 2006; Skiba et al., 2014), and several studies indicate that students may engage in increased misconduct or offending following suspensions (e.g., Hemphil et al., 2006; Raffaele-Mendez, 2003; Wolf & Kupchik, 2017). The degree to which schools implement exclusionary discipline is associated with less favorable perceptions of the school climate (Gregory, Cornell, & Fan, 2011; Losen & Martinez, 2013). For instance, students report poorer relationships with teachers compared to schools embracing more restorative strategies (Mitchell & Bradshaw, 2013). Another harmful dimension of exclusionary discipline is its role in perpetuating racial

inequalities in school experiences as black, Latinx, and indigenous students are suspended at disproportionate rates relative to white students (Triplett, Allen, & Lewis, 2014; Welsh & Little, 2018). Given this array of negative consequences, there has been a movement to reduce suspension and expulsion, instead implementing more restorative approaches to address student misconduct (Rafa, 2019). That said, these reform efforts are still inconsistent across public middle and high schools, with many districts still relying on exclusionary measures (Ritter, 2018).

Enhanced Security

A third dimension of school criminalization refers to the wide range of security measures that emphasize surveillance and restrictions in individuals' movement around school campus. These policies include the utilization of nonpolice security guards, metal detectors, drug sweeps, security cameras inside and outside of school buildings, sign-in procedures, and identification badge requirements on school grounds (Verdugo, 2002). Contemporaneous with the investment in school-police partnerships and adoption of punitive discipline, these additional security practices were part of an institutional trend in the 1990s (King & Bracy, 2019; Monahan, 2006). Even schools that had not previously reported serious issues with crime or intruders began to implement closed campus policies to demonstrate that the school was protected from external threats (Simon, 2007). The National Center for Education Statistics documented a significant upward trend in the use of metal detectors and security cameras inside and outside middle and high schools from 1999 to 2015 (Zhang, Musu-Gillette, & Oudekerk, 2016).

The rationale behind these practices is to protect students from danger and to ensure an orderly environment: Schools can keep track of intruders by requiring students

to wear ID's or uniforms and sign-in, they can prevent dangerous objects from entering school grounds using metal detectors and drug sweeps, and guards and cameras maintain persistent surveillance to both deter and respond to unsafe incidents. However, incorporating these measures allows for additional similarities between schools and criminal justice institutions. First, similar to the suspension rooms mentioned above, these security features have visual similarities to detention facilities or other total institutions. Youth are socialized to constant surveillance and restrictive regulations on their movement within the building, so that the environment may convey discipline, control, and order-maintenance more readily than safety or support (Brown, 2003). Shedd (2015; p. 99) explains that youth are at least passively aware that these measures are designed to monitor the students themselves as potential threats, and as such it becomes normalized that they are constantly subjected to the "criminal gaze".

To be sure, there is considerable variation in environmental factors—such as the community surroundings, student populations, and other aspects of the climate—that can influence the way security policies are enacted and perceived, but it is important to assess the intended and unintended effects of potentially criminalizing practices. The vast majority of school-aged youth now come to expect some degree of these security measures as normal (Casella, 2001). Regardless of how students evaluate the practices as affecting their safety at school, high-security environments convey that the institution is discipline-oriented. The administrators', teachers', and staff's ability to exercise authority and enforce order on school grounds is enhanced through an ability to monitor student behavior (Lyons & Drew, 2006). Indeed, Shedd (2015) and Rios (2011) describe similar themes in their interviews with students socialized to high-security environments: they

perceive that school authorities do not trust them and are waiting for them to violate the rules. Carceral school environments emphasize that authorities are more focused on catching and punishing acts of misconduct than student freedoms (Hirschfield & Celinska, 2011).

Converged Institutions and Legal Socialization

Taken together, police presence, exclusionary discipline, and restrictive security contribute to carceral school environments. These three dimensions increase the capacity of authorities (both school personnel and police) to monitor and punish youth behavior and reflect rigid, discipline-oriented procedures to enforce both laws and comparatively minor conduct rules in the school. Hirschfield (2008) explains that schools vary in their implementation of policies in each of these categories and that school criminalization or carceral school environments (for the purpose of this dissertation, these terms are used interchangeably) can be conceptualized as a continuum. Schools that have a more active police presence, rely on suspensions, expulsions, and related zero tolerance policies in their disciplinary regimes, and incorporate several elements of security that can be considered carceral—youth who attend these schools experience the merging of criminal justice and school social control to a greater degree. Simon (2007) similarly argues that these school practices allow agents of the criminal justice system to intensify regulation of behavior.

Given these arguments, it seems clear the convergence of the criminal justice and school systems conveyed by carceral environments may influence how youth perceive and interact with the authorities corresponding to these institutions. While some studies indicate that carceral policies can influence legal socialization (e.g., Rios, 2011; Shedd,

2015), the effect of the converged context has not been thoroughly investigated using the procedural justice framework. I argue that for youth, the school context may be pivotal in shaping the relationships between perceptions of authority, notions of authorities' legitimacy and fairness in society, and delinquent behavior. Specifically, the carceral nature of school environments may be perceived as reflecting the discipline-orientation of school personnel and police, communicating to students that they are "risks to be managed" rather than included members of the school community (Hirschfield & Celinska, 2011, p. 8). Indeed, the theoretical background on legal socialization and the procedural justice model implies that characteristics of an environment can influence the way individuals' perceptions of authority relate to their behavior (Radburn & Stott, 2019). While the empirical research examining contextual effects is considerably underdeveloped, it provides evidence to suggest that environment characteristics can moderate the effect of perceptions of procedural injustice on noncompliance. The following section first describes the theoretical basis for investigating contextual influences in the procedural justice model, and then uses the findings in prior studies to indicate potential pathways. This sets up an avenue for assessing carceral school environments in this study's expanded theoretical model.

Contextual Influence on Procedural Justice Process

Foundational contributors to procedural justice theory have acknowledged the potential for contextual variation in how individuals interpret authorities' practices and acquire the necessary values or messages to control deviant behavior (Leventhal, 1980; Leventhal, Karuza, & Fry, 1980; Lind & Tyler, 1988). Returning to the underlying logic of the procedural justice model, authority's practices are considered as meaningful

influences on behavior because they reflect the democratic values of an institution. Just procedures communicate that individuals are included members in the group the institution represents and society more generally, strengthening the institution's ability to control behavior (Tyler & Trinkner, 2017, Tyler & Blader, 2003). Consistent with this process, the environment of an institution may also communicate messages about an individuals' inclusion or status in society. Contextual characteristics of the school, workplace, or neighborhood can reinforce an authority's role in monitoring and regulating behavior.

Most of the theoretical arguments and empirical research considering how the procedural justice model may vary with context focuses on comparisons across domains, examining, for example, how the effect of perceptions of parent procedural justice on compliance with parents' rules may differ from the effect of teacher procedural justice on cooperation with school rules (Fry & Cheney, 1981; Fry & Leventhal, 1979; Tyler, 1997; Trinkner & Cohn, 2014). While I argue that differences in contexts regarding a specific type of institution (the school) can shape differences in the procedural justice model, I draw on the processes implied in this literature to demonstrate the general principle that the context in which individuals interact with authorities matters for understanding how perceptions of authorities relate to behavior.

As one useful example, Trinkner and Cohn (2014) argue that youth perceptions of procedural justice may have a different effect on their perceptions of authority legitimacy and compliance behaviors in contexts where they have close personal connections with others in the institution compared to contexts with impersonal authorities. Namely, they compare how the different criteria associated with authority

procedural justice (e.g., neutrality, voice) relate to individuals' indicated likelihood that they will comply with parents' rules, school rules, and laws. Using structural equation modeling, the authors examine the indirect effects on intentions to comply (through legitimacy) across three domains and find significant differences between the paths observed. Specifically, their results indicate that perceived neutrality is a stronger predictor of legitimacy and compliance when considered in the family or school setting, but was not as impactful with respect to police and compliance with the law. They conclude that this component of procedural justice may be more salient when youth have prolonged interactions with authorities in a more communal environment, compared to the typically more distanced relationship with police. In other words, the interactional climate of a school, or especially within a household, influences the way an authority's practices (the teacher or parent) can regulate youth compliance.

Even while studies of contextual variability in the procedural justice model, such as the example from Trinkner and Cohn (2014), tend to focus on the communal relationships implied by different domains, to some degree, the findings are consistent with the notion that perceptions of authorities can have a stronger effect on behavior in some environments compared to others. To extrapolate on this notion, when individuals are socialized in environments that signal a connection to authority figures (i.e., respected status, inclusion in the social group the authority regulates; Bradford, 2012; Tyler, 1989), the environment may interact with their perceptions of authorities' practices to strengthen the effect of procedural justice on compliance. Conversely, to the extent that an environment alienates individuals and conveys their low status, this may compound the effect of authority's procedural injustice to strengthen the effect on offending.

If we apply this theoretical lens to focus on the potential influence of the carceral school environment on youth legal socialization, two general paths are proposed. First, schools that are more carceral (i.e., schools that demonstrate a larger influence from the criminal justice system) can moderate the relationship between perceptions of police procedural injustice and delinquency, as well as the relationship between perceptions of school personnel procedural injustice and in-school delinquency. These moderation effects would be consistent with a theoretical process by which environmental factors influence individuals' connection or bond to an institution, either facilitating or attenuating an authority's ability to regulate compliance. Second, carceral school environments can have a direct effect on individuals' broader perceptions of fairness in society (a proposed mediator in the theoretical model). Carceral features in schools demonstrate that youth are subject to the control and regulation of two punitive social control agents, which may contribute to their belief that society is unfair. The following sections summarize empirical support for each of these paths to justify why they should be investigated further. Then, I present the second phase of the proposed theoretical model.

Institutional Environment and Legal Socialization: Moderating Effects

Some research in business and organization considers how the workplace context can moderate the effect of employee's perceptions of authorities on different employee outcomes. For instance, Ambrose and Schminke (2003) examine how organizational structure conditions the relationship between perceptions of supervisor procedural justice and the two outcomes of perceived organizational support and trust in the supervisor's role (consistent with some conceptualizations of legitimacy; Tyler 1990). Importantly,

these outcomes were selected as factors associated with increased employee cooperation and organizational efficiency in the wider literature (Masterson et al., 2000). They analyze questionnaire data from over 100 departments nested in 68 organizations of different service industries and find that the relationship between supervisor procedural justice and the outcomes varies significantly across organizations with different power structures. Interpersonal elements of perceived procedural justice (e.g., dignity, voice) have a stronger influence on employee's trust in supervisory decisions in workplaces with decentralized, communal power structures compared to workplaces with rigid, centralized hierarchies. When decision-making power is more discretionary and informal, interpersonal relationships with authorities are likely more important to favorable outcomes because individuals perceive that they are involved in a workplace community. Thus, authority's use of respect and communication facilitate one's connection to the workplace—consistent with a consensual model for achieving compliance (Tyler & Trinkner, 2017). On the other hand, in institutions with more formal or rigid methods of control (i.e., consistent with a coercive model), perceptions of authorities as fair are less effective in promoting compliance. In the interest of applying this relationship to predict offending or noncompliance with the law, we may consider the positive association between perceptions of fairness and compliance in the other direction, where negative perceptions of authority as unfair are associated with increase rule breaking.

Because Ambrose and Schminke's (2003) suggests that characteristics of the environment can signify whether an institution is consensual (i.e., representative of supportive relationships that allow individuals to identify with authorities) or coercive (i.e., using methods of formal control that may alienate individuals from authorities) in a

way that interacts with one's perceptions of fairness. It is possible that perceiving authorities as unfair would be linked to increased rule breaking in a consensual institution—except that the supportive environment protects against that effect. In coercive environments where individuals are less likely to identify with or feel bonded to the institution, perceiving authorities as unfair does result in increased rule breaking. That being said, we might also interpret the findings in a different way: perceptions of authorities are more impactful on behavior in consensual environments that emphasize personal bonds, whereas they are less relevant to explaining behavior in coercive environments. Using either interpretation points to a contextual effect, even if the precise nature of this conditioning is unclear.

In the context of this study on the potential role of the carceral school environment, I highlight Ambrose and Schminke's (2003) findings to indicate that the institutional environment can bolster the effect of authority procedural justice (in decentralized structures) or attenuate the effect (in centralized structures) on outcomes, perhaps by implying one's status or value in the group that authorities represent (see Tyler, 1989). Additional work on organizational contexts suggests that environment- and climate- characteristics can condition individual-level relationships between perceptions of supervisors' and colleagues' fairness and outcomes including job satisfaction, cooperation, engagement, and aggressive behaviors (Johns, 2006, 2018; Dietz et al., 2003; Ostroff et al., 2012).

Further, Johns (2008) poses the theoretical argument that physical characteristics of the workplace environment can interact with employees' perceptions of their supervisors to influence their satisfaction and productivity. For instance, spaces where

employees are under constant monitoring signals their inferiority relative to higherups, which may undermine their belief that they are valued members of the workplace community. This example suggests the environment of an institution can signify a coercive system of achieving compliance in addition to the specific actions of authority figures (Tyler & Trinkner, 2017). Together, the empirical findings and theoretical arguments regarding organizational context can inform our understanding of how legal socialization may operate differently in schools with depending on carceral environments. In less carceral environments, the supportive structure might protect against the negative consequences of perceiving specific authority figures as unfair or unjust. In more carceral environments, the effect of perceptions of procedural injustice, including seemingly unfair decision-making and treatment, on delinquency may be exacerbated by an environmental “display of dominance and control,” so that either the school or the criminal justice system is less effective in regulating behavior (Tyler & Trinkner, 2017, p. 37).

Contextual variation consistent with a moderating effect is also suggested by some research in the policing literature; however, this work primarily examines how police procedural justice may have different effects based on cultural context. Tankebe and colleagues (Bottoms & Tankebe, 2012; Tankebe, 2009a, 2009b; Tankebe et al., 2016) have tested the relationship between perceptions of police and cooperation with officers in Ghana, focusing on how the historical context of violence and police brutality can condition the process to produce different relationships than observed in other countries. Tankebe (2009b), for example, demonstrates that citizens of Ghana may indicate a strong sense of obligation to follow police directives (consistent with some

conceptualizations of legitimacy), while also expressing support for vigilantism. This suggests that, contrary to many legal socialization theories, police legitimacy does not promote an internalized value for following the law. However, Tankebe explains that the history of police brutality and the normalized expectation of lethal force can simultaneously coerce a sense of obligated compliance from the public, as well as demonstrate that the police and broader criminal justice institution does not serve the needs of the people. In environments (in this case, cultural contexts) that communicate to individuals they are undervalued or of low status relative to punitive authorities, the relationships between perceptions of police, intervening mechanisms, and law-abiding behavior (or, at least, support for law violation) may unfold differently compared to environments conveying different messages, as suggested by comparisons between processes observed in Ghana and American or European contexts (see also Tankebe et al., 2016).

While I recognize that variation in school environments is substantively different from differences in historical or cultural context, I discuss this literature to propose a theoretical process in which school environments emphasizing dimensions of criminal justice and school authorities' control over youth behavior might also condition the effects of perceived procedural justice on compliance. A large body of literature supports the meaningful impact of various aspects of the school environment in predicting student misconduct and delinquency (see Gottfredson, 2001; Johnson, 2009, Reaves et al, 2018 for review). Further, school environmental features have been shown to moderate individual-level processes related to youth problem behavior in criminological (e.g., Payne, 2008) and psychological research (Hughes et al., 2005). Carceral school

environments may shape authorities' capacity to regulate youth behavior because the extent to which a school incorporates features emphasizing punitive methods of control may alienate youth from the institution (Lyons & Drew, 2006; Tyler & Trinkner, 2017), further contributing the effect of perceived procedural injustice on behavior.

Institutional Environment and Legal Socialization: Effect on Broader Perceptions of Society

Another potential path by which an institutional environment can influence legal socialization is by directly affecting individuals' perceptions of fairness in society.

Trinkner and Tyler (2016, p. 427) argue that police or teacher procedures have a meaningful impact on individual behavior because, "Beyond the simple application of rules, the actions of legal authorities communicate broader socially relevant information to subordinates" (see also Justice & Meares, 2014). The literature on school context similarly indicates that characteristics of the environment or climate communicate messages about society's values. Bruch and Soss (2018, p. 39), for instance, argue that both the actions of school personnel and general practices observed in schools "can operate in ways that teach consequential political lessons." They find that perceptions of schools' disciplinary regimes and experience with exclusionary discipline influence later reports of trust in government and civic engagement (see also Guillaume et al., 2015). Qualitative research on students' perceptions of school security and punitive policies also reflects that youth may interpret unfair school experiences as evidence of greater injustice in American society including persistent racial discrimination and blocked opportunities (Morris, 2016; Rios, 2011; Shedd, 2015).

Youths' overarching perceptions of fairness is a potential mechanism by which perceptions of police and school personnel affect behavior (Bradford et al., 2014; Jackson & Sunshine, 2007; Slocum et al., 2020). It follows that, to the extent an environment influences an individual to have less favorable attitudes regarding fairness in the larger state, it may shape the legal socialization process. The current study will consider both the potential moderating influence of the carceral school environment and the direct effect on evaluations of fairness in the second phase of the proposed theoretical model.

Proposed Paths in Expanded Theoretical Model:

(2) Examining the Influence of the Carceral School Environment

I build upon the two parallel processes outlined in the first phase of the theoretical model to assess how the carceral school environment may shape the processes of legal socialization involving two institutions (see Figure 2). For example, the model posits that the carceral school environment *strengthens* the positive effect of police procedural injustice on intervening mechanisms and general delinquency. A similar moderating relationship is proposed involving perceptions of school personnel and in-school delinquency. Put another way, in cases in which youth attending different schools perceive similar levels of injustice from either police or school personnel, the model predicts that those attending schools with more carceral features (e.g., with a more active police presence, increased use of exclusionary discipline, more security) will engage in more delinquency than those in less carceral environments. As another potential path, the model suggests that environment will have a direct effect on the way youth perceive the fairness in society, so that those socialized to converged systems of control believe that the US is generally more unfair than those attending other schools.

Tests of these complex relationships will contribute to our understanding of the procedural justice model by identifying how environmental context can shape key processes, and, more pointedly, the specific focus on the carceral school environment as an indicator of converged systems of social control represents another avenue for understanding the connections between youth legal socialization is different domains. In the following section, I present how theoretical discussions of legal socialization as a developmental process informed by individuals' interactions across institutions imply more direct connections between individuals' interactions with the school and criminal justice system. This informs additional pathways in the third and final phase of the proposed model.

Cross-Over Effects in the Procedural Justice Model

Carceral school environments blur the lines between the authorities of different domains, and thus provide a fruitful avenue for exploring connections between youth perceptions of procedural justice and compliance using an expanded model of legal socialization. Schools, as “powerful sites of experiential learning” that typically serve as an individuals' introduction to formal authorities and governing institutions, simultaneously socialize youth to the norms and rules of education and the laws of the criminal justice system (Bruch & Soss, 2018, p.36; see also Tyler & Trinkner, 2017). Throughout the review, I have noted that prior research on procedural justice and the legal socialization process examines individuals' experiences within distinct domains: for instance, how perceptions of police procedural injustice predict increases in offending or decreases in cooperation with police or how perceptions of teacher procedural injustice are associated with misbehavior at school. The underlying premise of this distinction is

that individual socialization to the various institutions of social control occurs in different environments; however, this premise is called into question by the implementation of criminalizing policies in schools.

I have presented two approaches thus far for developing the procedural justice model of legal socialization and testing several relationships. First, considering consistent intervening mechanisms by which perceptions of different authorities may predict delinquency, then, investigating the role of carceral school environments in these processes. Still, each of these approaches focuses on paths between individuals' perceptions of a specific type of authority and subsequent (non)compliance with that authority's rules. The third phase of theoretical model examines how perceptions of school personnel, police, general delinquency, and in-school delinquency may be interrelated by proposing multiple "cross-over effects" in which experiences with one type of authority can contribute to behavior in other domains.

The process by which, for example, perceptions of police procedural injustice increase police illegitimacy which increases offending is grounded in the idea that one's view of an authority figure can facilitate their connection to a normative framework and control their behavior (Tapp & Levine, 1974; Lind & Tyler, 1988; Tyler, 1990; Tyler & Trinkner, 2017). While this process is typically examined within a particular domain or institution, this review of the extant literature supports that youth experiences with police and school personnel may overlap. First, theoretical work considering the developmental process of legal socialization argues that one gradually acquires values for following the rules of several of society's major institutions (e.g., the family, school, criminal justice system; Fagan & Tyler, 2005; Lind & Tyler, 1988; Trinkner & Tyler, 2016; Tyler &

Trinkner, 2017). This implies that perceptions of school authorities and their procedures can inform one's approach to relationships with legal authorities, such as the police. While discussed as if these interactions occur at different stages of development, we know that youth can form meaningful perceptions about police and school personnel simultaneously. Second, as schools adopt criminal justice practices, youth are introduced to police and school personnel as formal authority figures in the same environment, further promoting the idea that perceptions of each type of authority can be interrelated. Indeed, theoretical work in education and adolescent development considers how authority operates in adult-youth relationships and identifies connections between youth experiences in different domains (e.g., Baumrind, 1966; Bronfenbrenner, 1979). There is some empirical support that youth perceptions of parents and guardians can inform their interactions with more formal authority figures such as teachers and school administrators (Bingham, 2004; Kearney & Plax, 1992; Nihart et al., 2005), and that perceptions of school authorities may influence perceptions of authorities in extra-curriculars including clubs and after school programming (Deutsch & Jones, 2008; Hirsch, 2005)

Research in political science and public affairs demonstrates support that individual's experiences within one domain, can influence their perceptions of authorities and practices in other institutions (Bruch & Soss, 2018; Soss, 1999, 2002) through a mechanism termed "imprinting". As one example, Soss (2002) conducts a comparative case study of individuals' interactions with the US welfare system involving in depth interviews and ethnographic observations of individuals involved with several agencies of local and federal government. He finds that individual's experience with authorities in

welfare agencies, including their perspective of fair and respectful treatment and the overall process, remain salient when they engage with other institutions. Individuals' positive or negative experiences with welfare staff and their applications then shaped their expectations regarding other bureaucratic agencies and local politics. Perceptions of negative treatment in one agency could shape one's evaluation of other programs and authority figures and lead to disengagement. These findings informed theoretical and empirical research on how "policy feedback" from structured interactions with governing institutions informs our expectations of interactions in other domains (e.g., Larsen, 2018; Moynihan & Soss, 2014). For example, individuals who perceive unjust practices in schools extrapolate from these experiences to expect political marginalization and report distrust of democratic processes (Bruch & Soss, 2016; see also Soss & Jacobs, 2009).

Taken together, these areas of research on youth-authority relations and institutional imprinting each support the notion that youth may generalize from their experiences with school personnel to inform their views of police, or conversely, apply their perceptions of police to expect similar treatment from school personnel. In terms of the current focus on the procedural justice framework, this suggests that perceiving one type of authority as unfair or unjust may carry over to another domain, so that youth consider other types of authority illegitimate and are less likely to comply with the rules they represent.

Proposed Paths in Expanded Theoretical Model:

(3) Examining Cross-Over Effects

This phase of the theoretical model proposes that youths' perceptions of police and school personnel can "cross-over" to influence experiences in other domains; put

simply, I consider whether perceptions of school personnel are related to experiences with police, and vice versa (see Figure 3). The first potential cross-over effect concerns the similarity in individuals' perceptions of police and school personnel. Theoretical arguments concerning legal socialization over the life course note that individuals experience structured interactions with authorities first in the family, then in the school, then in other institutions such as the criminal justice system, and that each of these experiences can inform one's general understanding of the authorities and rule frameworks that we are governed by (Trinkner & Tyler, 2017). Instead of considering these interactions in a linear format, I consider that youth are likely forming meaningful perceptions regarding police and school personnel at the same time. I examine whether youth express similar perceptions of procedural justice related to each authority, as similarity might indicate a more generalized perspective.

The other two cross-over effects build on this notion by considering how perceptions of procedural justice relate to the perceptual and behavioral outcomes associated with a different authority. Specifically, perceptions of police procedural injustice may be associated with increased perceptions of *school personnel* illegitimacy, in addition perceptions of fairness in the US and police illegitimacy, and perceptions of police can be associated with in-school delinquency directly or through these three mediating mechanisms. Similarly, perceptions of school personnel procedural injustice can increase *police* illegitimacy and influence general delinquency. Each of these paths will be explored as direct relationships, as well as indirect paths operating through the mechanisms of perceptions of illegitimacy and the US as unfair.

Moreover, to the extent that individuals' perceptions of different authority figures influence their approach to compliance in other domains, these cross-over effects should be even more prevalent in environments where police and school personnel are closely associated. The incorporation of carceral policies in schools can convey that school personnel and police have similar punitive orientations (Hirschfield & Celinska, 2011; Shedd, 2015). This indicates that youth perceptions of school personnel and police in terms of procedural justice may be more highly correlated in schools with carceral environments. Then, because carceral school environments emphasize the control of these two types of authority, the theoretical framework suggests that positive associations between, for example, police procedural justice and in-school delinquency should be stronger among individuals in carceral schools consistent with the relationships proposed in the second phase of the model.

Summary of Theoretical and Empirical Literature

Two prominent bodies of literature inform this dissertation: the research developing and testing the procedural justice model of legal socialization and the research on school criminalization. Most studies of the procedural justice model focus on individuals' perceptions of police, police legitimacy, and their offending behavior and neglect individuals' experiences in contexts such as the school. Even though the broader legal socialization framework recognizes that individuals' experiences with one institution can inform their experiences with others, scholars tend to discuss these connections as occurring at different stages in the life course: e.g., youth are socialized to the rule frameworks of the family, then the school, then the law (Tyler & Trinkner, 2017). On the other hand, the research on school criminalization has so far failed to

explore how school-police partnerships, exclusionary discipline, and security policies may influence the processes outlined by the procedural justice theoretical framework. Instead, scholars tend to study the consequences of these policies using the school-to-prison pipeline metaphor. McGrew (2016) and Simmons (2017) note that research can advance our understanding of criminalizing policies by pushing beyond the metaphor to incorporate other theories of delinquency (e.g., procedural justice theory) and explore complexities in how youth are socialized to the criminal justice system through their schools.

With these issues in mind, I propose a theoretical model that considers the effects of youths' concurrent socialization to the authorities and rule frameworks of the school and the criminal justice system. The development and testing of this model addresses limitations in the research using Tyler's (1990) procedural justice framework and proposes several new paths among individuals' perceptions of procedural justice associated with school authorities and police, perceptions of legitimacy, broader evaluations of fairness in society, and delinquency.

In developing such a model and considering its applicability to different populations of youth, one last issue to consider is how legal socialization processes may vary based on race. Importantly, Tyler (1990,1994) and colleagues argue that the procedural justice model offers a general explanation of (non)compliance that should be invariant across races and ethnicities. Multiple empirical tests indicate an invariant relationship (e.g., Nuno, 2018; Wolfe et al., 2016). That said, given the centrality of race to discussions of individuals' relationships with police (Kumlin, 2004; Sampson & Bartusch, 1998; Tyler & Waslak, 2004) and experiences of criminalizing school policies

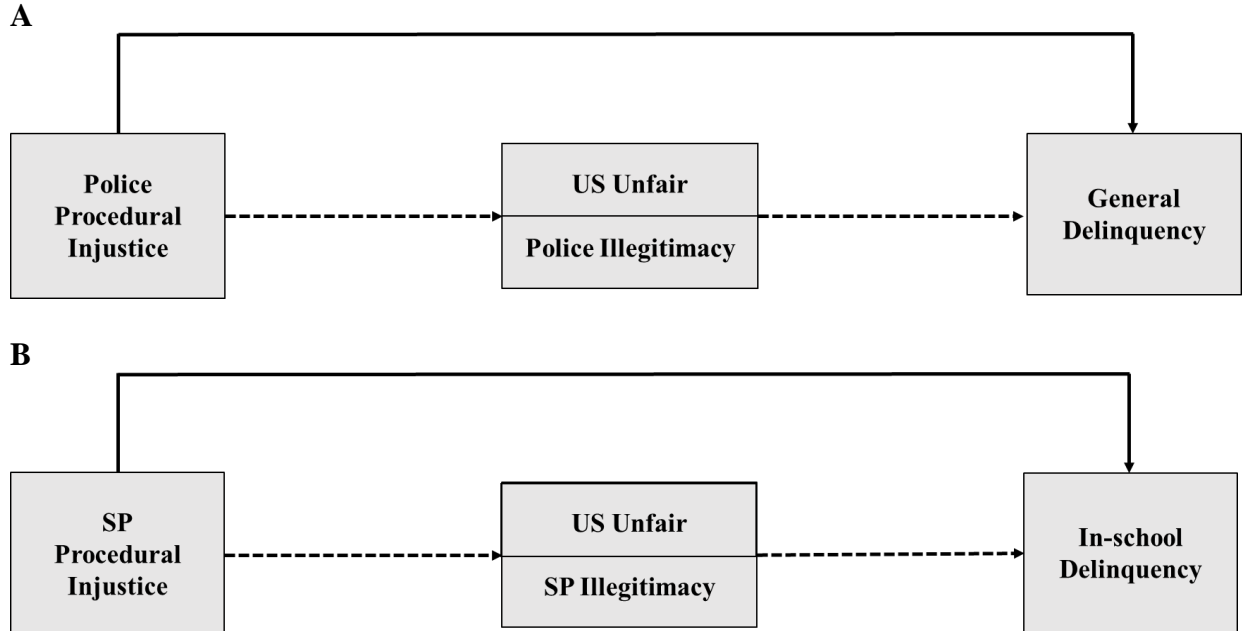
(e.g., Kupchik & Monahan, 2006; Skiba et al., 2011; Welsh & Little, 2018), as well as the extensive literature documenting race differences in the nature and interpretations of school and police-related experiences (e.g., Brown & Benedict, 2002; Rios, 2011; Shedd, 2015; Weitzer & Tuch, 2004), race cannot be ignored in theoretical discussions of legal socialization. Therefore, after testing the various paths outlined in the three phases of the theoretical model (and summarized below), I will examine the possibility that aspects of the proposed process may differ between schools with majority-black and -white student populations as a robustness check.

Summary of Proposed Theoretical Model and Hypotheses

The foundation of literature on legal socialization indicates that youth experience socialization to school rules and the laws of the criminal justice system in parallel processes: (1) Youth form perceptions of police procedural justice where higher levels of injustice can lead to increases in delinquency. (2) Youth form perceptions of school personnel procedural justice where higher levels of injustice (e.g., unfair, disrespectful treatment) can lead to increases in school misconduct. The model of youth legal socialization proposed in the current study expands upon these paths in three phases. Figure 1 presents the first phase of the theoretical model. Panel A presents the hypothesized relationships between perceptions of police procedural injustice and general delinquency. The solid black arrow indicates a direct positive relationship where individuals perceiving a greater degree of procedural injustice are predicted to engage in more delinquency relative to others. The dashed black arrow indicates two potential indirect pathways. Perceptions of procedural injustice should increase perceptions of

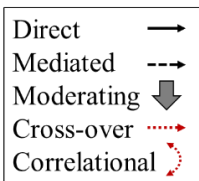
illegitimacy and unfairness in the US, in turn, increasing delinquency. Comparable paths are proposed in Panel B regarding school authorities and in-school delinquency.

Figure 1. Phase 1 of Theoretical Model



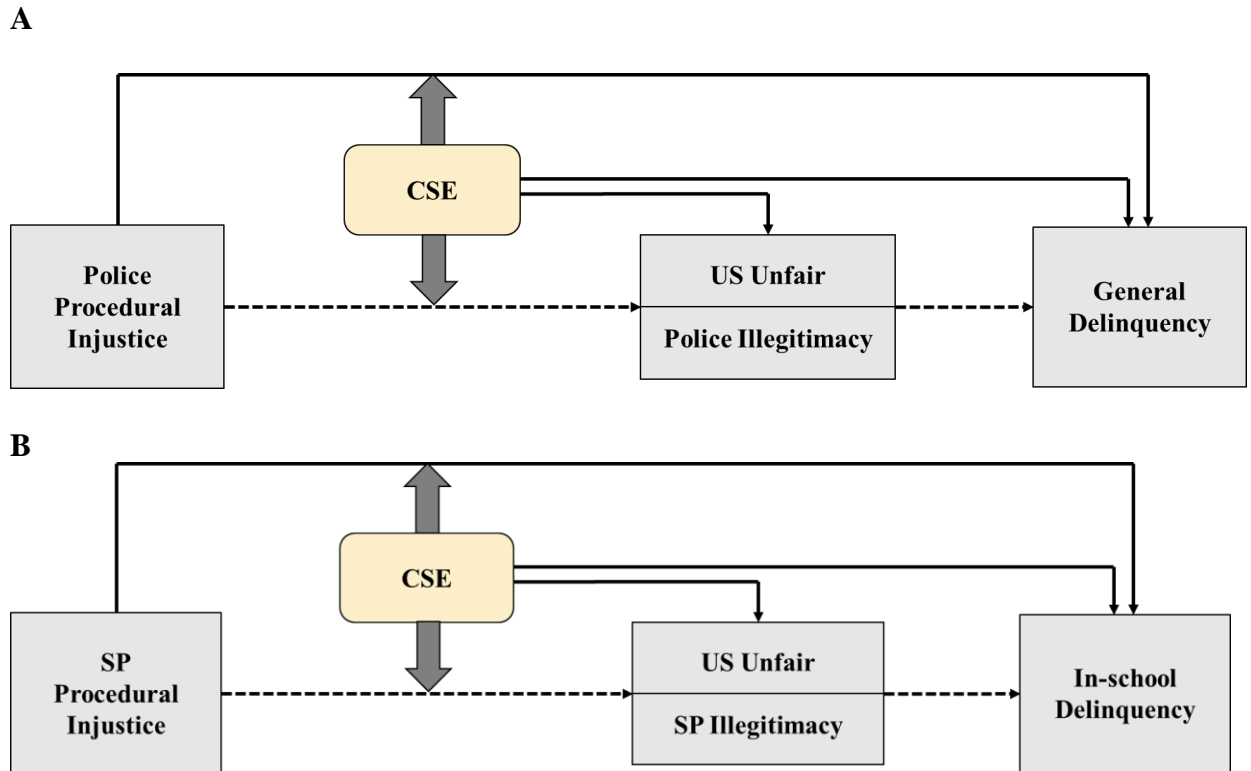
Notes: Panel A displays a model of youth legal socialization involving the criminal justice system. Panel B displays a separate model of youth legal socialization involving the school system. The concepts of unfairness in the US and illegitimacy are distinct but displayed in one box to simplify the figure and limit the number of paths pictured. All arrows represent positive associations. SP is an abbreviation of “school personnel.”

Legend:



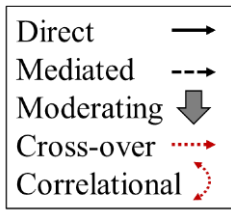
The second phase of the theoretical model is illustrated in Figure 2. The carceral school environment is examined as an indicator of the criminal justice system’s encroaching influence on schools. I hypothesize that the degree to which schools reflect carceral features will moderate (indicated by gray block arrow) the direct and indirect pathways discussed in the first phase of the theoretical model. For instance, the positive relationship between police procedural injustice and general delinquency should be stronger in schools with more carceral environments. In addition, the carceral school environment may directly increase individuals’ perceptions of the US as unfair.

Figure 2. Phase 2 of Theoretical Model



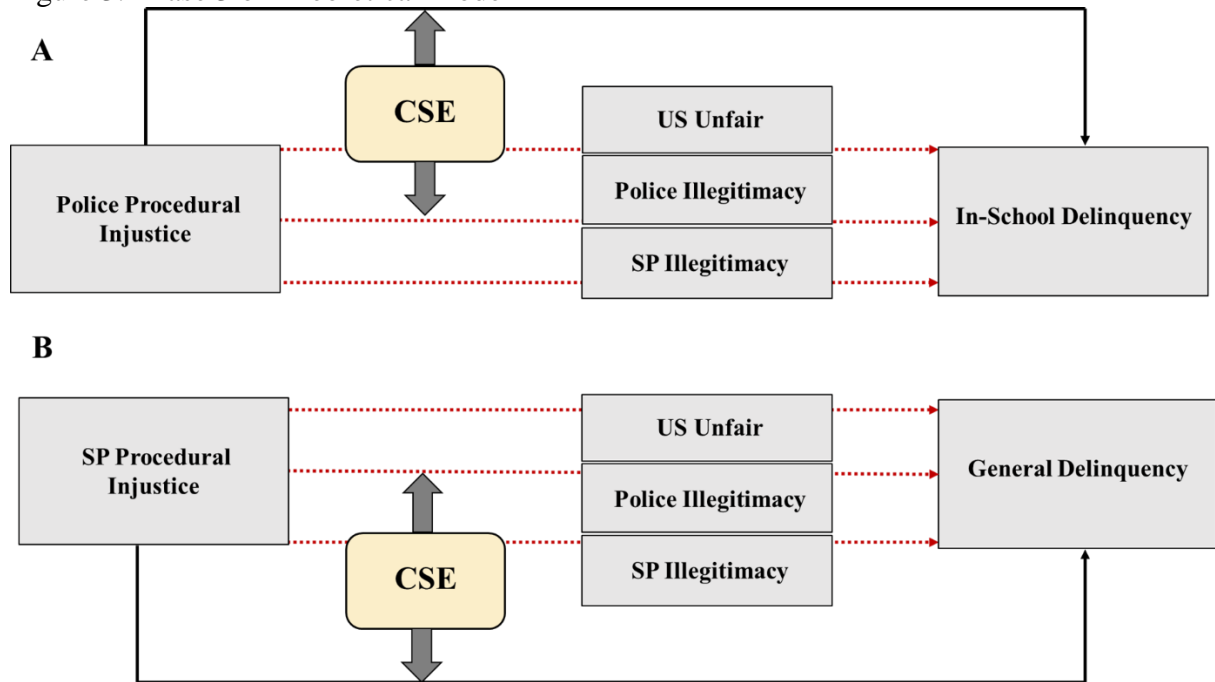
Notes: Panel A displays a model of youth legal socialization involving the criminal justice system. Panel B displays a separate model of youth legal socialization involving the school system. The concepts of unfairness in the US and illegitimacy are distinct but displayed in one box to simplify the figure and limit the number of paths pictured. All arrows represent positive associations. SP is an abbreviation of “school personnel”; CSE is an abbreviation of “carceral school environment.”

Legend:

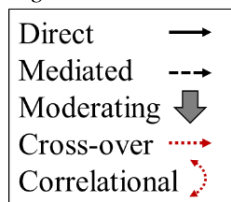


The third phase of the theoretical model unifies the key processes outlined in earlier phases, to consider whether perceptions of police procedural injustice “cross-over” to predict in-school delinquency, and perceptions of school personnel procedural injustice predict general delinquency (indicated by red dashed lines). I expect the carceral school environment to moderate these cross-over effects in addition to the paths outlined in the second phase of the model.

Figure 3. Phase 3 of Theoretical Model



Legend:



This approach provides a direction for theoretical development that bridges the literatures on police procedural justice and school criminalization. Examining the nuanced paths proposed in the model can advance our understanding of perceptions of procedural injustice as a predictor of delinquency and offending, including our knowledge of mediating and moderating factors. In addition, exploring these relationships can inform how the carceral school environment, and the policies contributing to this convergence of the criminal justice and school systems, and how this may affect youth compliance. The next chapter describes the data, measures, and analytic strategy that will be used to test the model.

CHAPTER THREE: METHODS

To examine the theoretical model, this study uses data from the University of Missouri- St. Louis Comprehensive School Safety Initiative (UMSL CSSI). UMSL CSSI is a large school-based data collection effort designed to investigate the causes and consequences of school violence (see Esbensen et al., 2020 for review of project and procedures). The project involved multiple components, two of which will be employed in this study. First, the project includes a three-wave panel study of two cohorts of middle school students in a Midwestern metro-area (see McCuddy et al., 2017). Second, two questionnaires were administered to the personnel of the participating schools—one during the first wave of data collection when student respondents were attending middle school, and one during the third wave of data collection when the respondents were in high school (see O’Neill et al., 2017). Together, these data sources provide information on the key factors involved in the theoretical model: adolescent perceptions of both police and school personnel, self-reported delinquent behavior, and characteristics of the school environment.

In addition to including the required measures for analysis, these data are well-suited to the current project because the panel structure allows for the examination of directional processes. As previously noted, a substantial portion of the research using the procedural justice framework is cross-sectional, and thus unable to preserve temporal order and draw conclusions on causal processes (see Nagin & Telep, 2017). Through use of the UMSL CSSI data, this study is able to build on prior literature by assessing how adolescent perceptions of authorities relate to subsequent noncompliance (i.e., delinquent behavior), while also exploring new pathways related to the convergence of institutions.

The following section provides an overview of the UMSL CSSI data and the analytic sample used in this study, a description of measures, and the plan for analysis.

Data

Site Selection

UMSL CSSI includes a sample of 6 school districts, including 12 middle schools and 9 high schools, in St. Louis County, MO. The research team used a purposive sampling design to recruit districts that varied in geographical location and socioeconomic status, in order to include schools with different contexts, access to resources, and student populations (Esbensen et al., 2020).³ For example, three of the six districts are located in the northern portion of the county and three are located in the southern portion of the county. In addition to the location of the districts, the colloquial terms of “North County” and “South County” often coincide with differences in the region’s racial composition (e.g., majority black vs majority white) and economic class. Similar to many rust-belt cities in the US, the organization of St. Louis is influenced by a historical context involving practices of residential red-lining, white flight from communities, and other processes resulting in a higher concentration of black residents and structural disadvantage in North County relative to a lower concentration of black residents (and higher concentration of white residents) and significantly less structural disadvantage in South County (Bumpers 2018; Gordon 2008). In addition, crime and violence are unequally distributed with comparatively higher crime rates and more hot spots located in the northern regions (e.g., Kochel, 2018).

³ Representatives of 23 out of the county’s 60 districts were contacted for participation in the study and ultimately six agreed to participate.

These spatial patterns are noteworthy in that the inclusion of three North County districts and three South County districts in the sample coincides with variation in school and neighborhood contexts, as well as the racial composition and socioeconomic statuses of student populations. For instance, in the North County districts, over 80% of the students are eligible for free or reduced lunch in two districts, and over 70% are eligible in the third (an indicator of students' socioeconomic status; Harwell & LeBeau, 2010)⁴. In the South County districts, over 60% of students are eligible for free or reduced lunch in one district, with less than 40% eligible in the remaining two. School-level characteristics are presented in more detail in Appendix A to highlight the differences between North and South County schools, as well as highlight how many factors (including student race and CSE) overlap.

Procedure

The six participating school districts included 12 middle schools with students in grades 6, 7, and 8. The study design involved administering questionnaires to two cohorts of students: one 7th grade cohort (surveyed in the 7th, 8th, and 9th grades) and one 8th grade cohort (surveyed in the 8th, 9th, and 10th grades). The first wave of data collection occurred in 2017. Researchers delivered parental consent forms to social studies teachers in the participating middle schools. Teachers were compensated for their efforts in distributing forms and encouraging their students to return them. They received \$2 per returned form, regardless of whether parents granted or denied consent and were offered

⁴ These district level figures for percent eligible for free or reduced lunch are reported from 2014 (3 years prior to data collection) to give an idea of the socioeconomic statuses of students and the variation between districts. During data collection, many schools located in North County had qualified for federal funding that allowed for an expansion in the free/reduced lunch program. Administrative data now reflects that 100% of students are eligible for free or reduced lunch prices in these schools during the years of 2017-2019.

additional financial incentives based on the percentage of returned forms in their class. In addition, students were informed that they would receive \$5 upon completion of the questionnaire. Of the 4,719 7th and 8th grade students eligible to participate in the study, 3,664 (77.6%) returned forms providing parental consent. Researchers visited each school to collect parental consent forms, gain assent from eligible students, administer an online questionnaire using the Qualtrics survey platform, and then give each participant \$5. When possible, members of the research team made several return visits to each school to ensure that students with parental consent who were absent on initial survey days were able to participate. In total, 3,640 (77.1% of those eligible, 99.3% of those with consent) completed questionnaires during Wave 1.

The second wave of surveys were administered the following year in spring 2018 (when the students were in 8th and 9th grade) using similar procedures. At Wave 2, the students were surveyed in the 12 middle schools that were initially sampled, as well 9 high schools in the participating districts. When possible, students who had moved out of the participating districts were surveyed in their current middle and high schools.⁵ During Wave 2, 3,165 (86.9% of those surveyed in Wave 1) completed a questionnaire. The final wave of surveys was administered in the winter and spring of 2019, when most of the students were attending the 9 high schools included in the initial sample. During this third and final wave of data collection, 2,753 (75.6% of Wave 1 respondents) were surveyed. Overall, 2,681 students participated in all three waves of the study. The analysis of sample differences in Wave 1 measures suggests that the 959 respondents lost due to

⁵ In Wave 2, the research team was able to contact and survey 69 of the Wave 1 respondents who had transferred to schools outside of the 6 districts included in the original sample. During Wave 3, the research team was able to administer the survey to 83 of the students who had transferred to schools outside of the original districts.

attrition were slightly older (mean age of 13.2 compared to 13.1, $p < .001$), and a higher proportion were male (49.3% compared to 45.6%, $p < .05$) and black (53.9% compared to 38.0%, $p < .001$) compared to those who remained in the study across all three waves. In addition, analytic comparisons using a general delinquency variety scale show that those who attrited engaged in significantly higher levels of delinquency during Wave 1 compared to those retained (mean of 1.2 compared to .91, $p < .001$). Relatedly, the research staff was unable to collect any information about students who might have been expelled between waves of data collection. This means that respondents who were likely the most delinquent in the sampled districts may be excluded from analyses. The differences in delinquency levels are consistent with issues in other studies using panel data (Brame & Paternoster, 2003), but this is an important limitation to note.⁶

In addition to the student survey, the UMSL CSSI study involved a survey of school personnel regarding school policies and environment, as well as their perceptions and experiences related to school safety. In Wave 1, the research team distributed links to anonymous electronic surveys to the principals of each of the 12 participating middle schools. The principals were then responsible for distributing the link to all other administrators, teachers, and staff that had regular contact with students. This process was then repeated during Wave 3 of the student survey, but with the personnel of the 9 high schools. The research team did not have access to information on the number of personnel who received the survey in each school, therefore response rates could not be

⁶ Expulsion and contact with the criminal justice system for offenses are endogenous factors in the processes outlined by the current theoretical model. Because I am unable to assess students who may have been expelled this may mean my findings are less applicable to youth involved in more serious forms of delinquency, and relatedly those who have the most direct experience with exclusionary practices of the CSE. I include this issue in the limitations section of Chapter 5.

calculated. Members of the research team attempted to increase participation in the personnel survey by repeatedly prompting administrators to distribute the link to the survey remind others to participate; however, contacting the staff was ultimately up to the discretion of the principals. 409 middle school personnel were surveyed during Wave 1 and the number of responses from each school ranged from 16 to 53 (mean = 34). During Wave 3, 354 high school personnel were surveyed and the number of responses from each school ranged from 10 to 75 (mean = 39). Additional information about the school personnel surveys is presented in Appendix B.

Analytic Sample for the Current Study

Although the UMSL CSSI student survey component includes three waves of information on respondents, only two time points will be used for the current study. To adequately tests the main processes of the theoretical model, the data must include respondents' perceptions of police and school personnel procedural justice during one time point, respondent behavior during a later time point, and information on the carceral school environment. The structure of the student survey is such that respondents attend *at least* two different schools (a middle and high school) over the course of the study: The younger cohort attended middle school during Waves 1 and 2 and high school in Wave 3, while the older cohort attended middle school during Wave 1 and then transitioned to high school for Waves 2 and 3.

Given the focus on the school environment, it is important to limit the sample to those students who remained in the same school over at least two time points to both preserve directionality in the relationship between perceptions of authorities and behavior, as well as focus on the potential influence of respondents' school environments

without allowing for experiences in another school to confound the analysis of different relationships. To accomplish this, I pool the samples from the two cohorts and restrict the analytic sample to respondents who provide two consecutive waves of data within the same school. Specifically, only those student respondents from the younger cohort who attended the same middle school in 7th and 8th grade (i.e., Waves 1 and 2; N = 1,524), and those from the older cohort who attended the same high school in 9th and 10th grade (i.e., Waves 2 and 3; N = 1,249) were included in the pooled sample. Time 1 includes information from respondents in 7th and 9th grade, while Time 2 includes information from respondents in 8th and 10th grade. This results in a sample of 2,773 respondents (before accounting for cases missing on individual variables) nested in 21 schools.

While this was deemed the appropriate strategy for addressing the key research aims of this study, it presents some limitations worth calling attention to. First, it may reduce the generalizability of the sample by omitting cases where respondents moved or transferred schools. Prior work offers some support that residential and school mobility can be risk factors for delinquency because they present potential stressors or indicate other issues (e.g., family financial instability) (Coleman & Hagell, 2007; Gasper, DeLuca, & Estacion, 2010). This suggests that there are substantive differences in delinquent behavior between those respondents who remained in the same school environment across two time points and those who moved. Indeed, Appendix C provides more detailed information on missing data, including that those excluded from the pooled analytic sample were significantly more delinquent during Time 1 than those remaining in the sample. As a related implication of the sample strategy, analyses will not include observations measured during the transition to high school (i.e., 8th to 9th grade). Extant

work in education and developmental psychology highlights the high school transition as a formative time for adolescent development (see Benner, 2011), but the findings of the current study will not be able to speak to how legal socialization may be affected during this time. Lastly, pooling the data so that Time 1 corresponds to different waves for each of the cohorts poses a limitation regarding the temporal ordering of one of the proposed relationships involving youth perceptions of fairness in the US. The student questionnaire only included measures of perceptions of fairness in the US during Waves 2 and 3, meaning that this variable is measured during Time 2 in the pooled sample. This presents some issues regarding the temporal ordering for one hypothesized mediation process, which will be discussed in more detail below. Ultimately, these limitations are considered necessary tradeoffs to allow for the examination of the main research questions.

Measures

The majority of the measures used in this study are captured at the individual-level, using data from the UMSL CSSI student questionnaires. The one exception, a school-level indicator of the carceral school environment, was created using data from the school personnel questionnaire. Both questionnaires were adapted from instruments used in the National Evaluation of Gang Resistance Education and Training (GREAT) Program, which sought similar information on student and school personnel perceptions, attitudes, and experiences related to school safety. The measures used in the current study were adapted from the GREAT Evaluation (see Esbensen et al., 2012 for an overview), unless another source is explicitly mentioned in the description. Table 1 presents descriptive information on these measures.

Dependent Variables

Two dependent variables capture youths' self-reported behavior during Time 2. First, I describe the items included in each measure, then explain my approach for creating scales. A measure of *general delinquency* was created to capture participation in a range of minor, property, and violent delinquent offenses over the last 6 months (leading up to the date of completing the survey). Respondents indicated whether or not they had engaged in 12 delinquent acts over the recall period, with some of the behaviors including avoiding paying for things, damaging property, stealing something worth under or over \$50, attacking someone with a weapon, and using a weapon or force to get money or things from people ($\alpha = .81$). Overall, responses are highly skewed because a substantial portion of the sample is nondelinquent, with 63.8% reporting that they had not engaged in any of the general delinquent acts at Time 2.

An additional 11-items refer to *in-school delinquency*, or delinquent acts that specifically occurred on school grounds. This variable more directly captures youths' noncompliance with school rules. As some examples, youth were asked if they had ever skipped classes without an excuse, damaged property at school, stolen something worth under or over \$50 at school, or hit someone at school ($\alpha = .76$). These items were also highly skewed—71.7% of respondents indicated that they had not engaged in any in-school delinquency at Time 2.

Noting these measurement properties, I used Item Response Theory (IRT) scaling methods to create general delinquency and in-school delinquency measures (Osgood, McMorris, & Portenza, 2002).⁷ IRT methods allow for the discrete values on

⁷ The IRT delinquency scales are used in the main analyses, but descriptive statistics are also reported for variety scales of general and in-school delinquency in Table 1 because these measures are more intuitive.

delinquency items to be combined on a shared latent characteristic—in this case, an individual’s latent level of delinquency.⁸ This strategy is advantageous for creating measures with skewed items (see Haynie & Osgood, 2005) and allows for regression models that are suited for continuous dependent variables, such as the path models described in more detail in the Analytic Strategy section. In addition, measures that reflect levels of delinquent behavior, comprising a range of acts, are consistent with prior work drawing on the procedural justice theoretical framework. Based on Tyler’s (1990) and others’ work, the theorized process should relate to noncompliance or rule breaking in general, rather than focusing on specific crime types.⁹

One potential limitation of the delinquency variables concerns potential overlap in the measures. The structure of the questionnaire presents respondents with a series of questions about their delinquency (used to create the general delinquency measure), then the following section refers to several of these behaviors that specifically occurred at school. Consequently, the general offending measure may include incidents that occurred on school grounds and in other contexts. Indeed, general delinquency and in-school delinquency are highly correlated ($r=.68$, $p<.001$). I focus on these two delinquency outcomes in order to draw a connection between a specific type of authority and the rules that authority enforces. Perceptions of police should theoretically relate to delinquent

⁸ For the main analyses, path models are estimated using structural equation modeling (SEM) commands in Stata. Although SEM strategies allow one to examine the structure of latent traits while assessing relationships between latent variables, I chose to construct latent variables using IRT methods prior to estimating the main analytic models. This is because I limit my approach to path models and exploring the other capabilities of SEM posed challenges in model convergence. This is discussed in more detail in the analytic strategy section.

⁹ While Tyler (1990; Tyler & Trinkner, 2017) describes his procedural justice theory as applying to general offending or delinquency, supplementary analyses were performed that focused on violent and property offenses as separate outcomes as a robustness check. These results speak to whether the observed relationships were driven by certain types of behavior. They are presented in Chapter 4.

behavior reflecting noncompliance with the law, while perceptions of school personnel relate to rule-breaking in school. On one hand, these are not mutually exclusive categories (i.e., youth can break the law in school) so it is at least logical that the general delinquency measure may capture some behaviors that occurred in-school. On the other hand, this poses some methodological challenges because the measures are too highly associated to estimate a model that simultaneously predicts both outcomes (described in more detail in the Analytic Strategy section). Also, youth may fail to report in-school acts because they already reported the behavior in response to general delinquency questions earlier in the survey. I note how this limitation may affect interpretation of the findings in the Discussion chapter.

Independent Variables

The two main independent variables capture youth perceptions of authority figures in terms of their procedural justice. During Time 1, youth were asked to indicate their level of agreement with several statements about their attitudes toward the police with response options ranging from 1=Strongly disagree to 5=Strongly agree. Three-items capturing statements consistent with global perceptions of police procedural justice were included: Police treat people fairly, Police officers are honest, and Police officers are respectful toward people like me. These statements correspond to the key aspects of police interpersonal treatment and decision-making that are typically considered in procedural justice measures. Fair treatment and honesty indicate some level of neutrality and trustworthiness in their approach to enforcing laws, while expecting officers to be respectful maps onto the notion that just police recognize citizens' dignity (Slocum & Wiley, 2018; Tyler, 1990; Webb & Marshall, 1995). These items loaded on one factor.

They were each reverse-coded and averaged into a scale ($\alpha = .90$) ranging from 1 to 5, where higher values indicate that youth perceive greater levels of *police procedural injustice*.

Youth also reported their perceptions of school personnel in terms of procedural justice during Time 1. Youth indicated their level of agreement (1= Strongly disagree, 5=Strongly agree) with four statements: School rules are fair, School rules are consistently enforced at my school, Teachers treat students with respect, Teachers treat students fairly. Consistent with the police procedural injustice measure, the statements reflect perceptions of school authorities' treatment of students as well as their approach to enforcing rules. Factor analysis support that the items load onto one factor. They were each reverse-coded and averaged into a scale ($\alpha = .76$) ranging from 1 to 5, where higher values indicate that youth perceive greater levels of *school personnel procedural injustice*.

Mediating Variables

In addition to positing direct effects of the main independent variables on delinquency outcomes, the theoretical model also includes indirect effects of perceptions of authorities on delinquency through youths' beliefs in legitimacy and perceptions of US fairness. First, youth perceptions of each type of authorities' legitimacy are captured using single-item measures from Time 1. Youth were asked to indicate their level of agreement (1=Strongly disagree to 5=Strongly agree) with the statement: You should do what the police tell you to do even if you disagree. This statement indicates whether one feels that they must comply with police officers' directives, which has been conceived as an indicator of police legitimacy in extant research (Tyler, 1990). The item was reverse

coded so that higher scores indicate that youth perceive a greater level of *police illegitimacy*.¹⁰ Importantly, as Chapter 2 reviews, there are several conceptualizations of police legitimacy. One may indicate that they must comply, not because they believe that officers have a socially agreed upon right to give orders to the public, but because they feel coerced or fearful (e.g., Tankebe, 2009a). While this may be a limited measure of perceptions of legitimacy, it demonstrates some consistency with prior work using the procedural justice theoretical framework and is a construct frequently invoked as a potential mediating mechanism. Therefore, it was necessary to include both perceptions of police illegitimacy and perceptions of school personnel illegitimacy as measures in the current study.

Another single-item measure captures youths' level of agreement with the statement: You should do what teachers, principals, and other adults at school tell you to do even if you disagree. The item was reverse coded so that higher values indicate that youth perceive greater levels of *school personnel illegitimacy*. Research that explicitly applies the procedural justice framework to school relationships—and relatedly, considers how illegitimacy may mediate the effect of procedural injustice on school misconduct—is scant. I opted to use a measure of school personnel legitimacy that was consistent with the police legitimacy measure so that my analyses help speak to comparable legal socialization processes with respect to different types of authorities.

A third variable captures broad perceptions of fairness in the US. As mentioned

¹⁰ The measures of potential mediating variables were reverse coded to reflect *illegitimacy* and perceptions of the US as *unfair* to facilitate interpretation of the analyses. Models aim to consider how perceptions of procedural injustice may predict increased delinquent behavior. Measuring mediating mechanisms so that they relate to the outcomes in the same direction (i.e., positive association) clarifies the discussion of analyses and findings.

above, this measure was only included in the questionnaire during Time 2 (i.e., Waves 2 and 3). Three items were adapted from Flanagan et al.'s (2007) "Belief in America as a Just Society" measure. Youth indicated their level of agreement (1=Strongly disagree, 5=Strongly agree) with the following statements: Basically, people in America get fair treatment no matter who they are; In America, you have an equal chance, no matter where you come from or what race you are; America is a fair society where everyone has a chance to get ahead. The responses load onto one factor and had reasonable reliability ($\alpha = .88$). They were reverse coded and averaged into a 3-item scale to represent the degree to which one perceives the *US as Unfair*. Individuals with higher scores on the scale have unfavorable views of fairness in the US.

Prior descriptions of this measure note that it captures one's "Trust in the American Promise" of a fair society (Slocum et al., 2020). In this case, it reflects distrust of the idea that the general social dynamics operating in the state are fair. Beyond the legitimacy of two types of institutions (e.g., criminal justice system, education), youth perceptions of the procedural injustice of authorities may indirectly influence delinquent behavior by diminishing one's overarching belief in fairness in society. Ideally, perceptions of the US as unfair would be measured during Time 1 like the other proposed mediators (illegitimacy), to ensure that youths' perceptions of fairness precede their reported delinquent behavior. Because the design of the instrument and availability of measures prevent this option, the analytic models estimating mediation will consider the indirect association of perceptions of procedural injustice with delinquency, through perceptions of the US as unfair measured during Time 2.

Moderating Variable

A measure of the carceral school environment was created at the school-level using data from the school personnel questionnaires. These questionnaires included items on three categories of school policies or practices: the presence of police, the use of exclusionary discipline, and the use of security practices. School criminalization can be conceptualized as operating along a continuum, where schools that adopt more of these practices, or implement them to a higher degree, are considered more criminalizing (Hirschfield, 2008). Consistent with this argument, I create an index measure of the *Carceral School Environment* to capture the extent that school environments use policies reminiscent of the criminal justice system (i.e., are more carceral). Items capturing police presence, exclusionary discipline, and security were recoded into dichotomous variables, and summed into a single index so that higher values indicate a greater influence of the criminal justice system on a school environment.

First, the school personnel questionnaire includes two items that indicate how active police are in the school.¹¹ Personnel were asked their level of agreement (1=Strongly disagree, 5=Strongly agree) with these statements: The police often respond to my school to handle delinquency problems; The police often respond to my school to handle gang-related violence. Responses of agree or strongly agree were recoded to equal 1 to distinguish schools with a more active police presence, while other response options were equal to 0. Second, personnel responded to 3 items referring to their school's use of exclusionary discipline. Personnel were presented with the disciplinary measures in-

¹¹ A third questionnaire item asks personnel whether police officers are assigned to their school. This item was not included as an indicator of police presence because every school in the sample had partnerships with police departments during the study. The schools differ in the degree to which police are actively responding to student behaviors.

school suspension, out-of-school suspension, and expulsion and asked to indicate whether they were 1=Not used, 2=Used, or 3=Used often in the school. Responses were recoded to equal 1 if personnel indicated these policies were used often to distinguish the schools that mete out these punishments frequently. Responses were recoded to equal 0 if they were not used or used. Third, personnel indicated whether their school used 8 different types of security or surveillance practices (0=No, 1=Yes, 2=Don't Know). These practices include security guards, school staff supervising the hallways, metal detectors, locked entrance and exit doors during the school day, a sign-in requirement, locker checks, a requirement that students wear identification badges, and one or more security cameras monitoring the school. Responses of "Don't know" were treated as missing.

The binary indicators corresponding to these three types of school practices were summed under the assumption that the incorporation of each of these practices contributes to a more carceral environment. Then, the scores reported by the respondents in each school were averaged to create one mean-score indicating the carceral environment of the 21 schools.¹² Index measures using similar indicators of security and police presence have been employed in past research in this area (Bachman et al., 2011; Bruch & Soss, 2018; Mowen & Freng, 2019). These studies have omitted measures of exclusionary discipline from the index measure, sometimes exploring students' experience with suspension and other punishments as a separate variable (e.g., Bruch &

¹² Notably, the Time point at which these school-level measures are captured differs for students in the younger and older cohort. The younger cohort remains in the same middle school during Waves 1 and 2, so the school-level variable of the carceral school environment was created using responses to the school personnel questionnaire administered to all 12 middle schools during Wave 1. The older cohort remains in the same high school during Waves 2 and 3, so the carceral school environment measure was created using responses to the school personnel questionnaire that was administered during Wave 3. Because the data were pooled to reflect Times 1 (i.e., Wave 1 of data on the younger cohort, Wave 2 of data on the older cohort) and 2, the analyses assume that the school environment measure is a relatively constant indicator of the school context over two years.

Soss, 2018); however, I include exclusionary discipline in the index in order to consider the use of these punishments as a characteristic influencing the school *environment*, which is supported by theoretical arguments on criminalizing school structures (Hirschfield, 2008; Hirschfield & Celinska, 2011; Ramey, 2015). Youths' individual experiences with school punishment are included as control variables conceptually distinct from the punitiveness demonstrated in the environment. The majority of the literature relating the different dimensions of the carceral environment is theoretical in nature and the operationalization of the construct is underdeveloped. I maintain that the use of an index measure combining dimensions of carceral policies commonly explored in the literature is suitable for the current study, as I am offering an initial exploration of the CSE's role in procedural justice related processes but acknowledge that future work is necessary to develop the measure further.

Control Variables

A robust set of control variables are included in analyses to help isolate key relationships between youth perceptions of authority figures and delinquency. All the variables described in this section were measured at Time 1. In addition, for all control variables measured using scales, individual responses were included if they provided valid information on at least half the items.

First, I include measures of respondents' prior police contact and school punishment experiences. In the procedural justice framework, personal experiences with authorities' enforcing the rules may inform one's global perceptions of police or school personnel, which then in turn influence compliance or delinquency (see Gau, 2014); however, alternative theories of delinquency (e.g., labeling theories; Lemert, 1951) argue

that personal contact with police officers can lead to increased offending due to the negative stigma of being a delinquent. This relationship has received support in empirical work (Wiley & Esbensen, 2016; Wiley, Slocum, & Esbensen, 2013). Analyses control for an indicator of *police contact*. Youth were asked whether they had ever been stopped for questioning by a police officer and if they had ever been arrested. Responses to these two items were used to create a binary indicator =1 if youth had been either questioned or arrested. In addition, a *Family experience with police measure* was included to capture vicarious experiences with police contact. Youth indicated their level of agreement with the statement “My friends or family members have told me about bad experiences they have had with the police.”

Experience with school punishment is relevant because it can lead to increased rule-breaking and/or delinquency (Mowen, Brent, & Boman, 2020). Youth were asked whether they had ever been sent to the principal’s office or given a detention, and whether they had ever been given an in-school or out-of-school suspension. A binary indicator of *school punishment*=1 if youth responded affirmatively to either of these questions.

To capture youths’ relationship to the school, a scale measure of *school commitment* and a single-item indicator of *grades* were included. One’s school commitment reflects their level of investment in the school as a generally pro-social institution that can control delinquent behavior (Hirschi, 1969; Payne et al., 2003). Several studies note that school commitment, as well as academic performance, are associated with reduced problem behaviors including offending (e.g., Hirschfield & Gasper, 2011; Maguin & Loeber, 1996). School commitment was measured using a 5-

item scale ($\alpha = .70$) averaging students reported level of agreement to statements such as, “In general, I like school,” or “I usually finish my homework.” A single item captures grades. Students indicated whether they were closest to an A, B, C, D, or F student. These response options ranged from 1 to 5, so the item was reverse coded so that a higher value reflects higher grades.

The family operates as another institution of social control where parents regulate youth behavior. The extent to which parents supervise their children has been consistently linked to decreased delinquency (see Racz & McMahon, 2011 for review). *Parental monitoring* is measured using an averaged scale of youth responses to three items ($\alpha = .75$). As an example, youth were asked to report their level of agreement (1=Strongly disagree, 5=Strongly agree) with statements such as: My parents know where I am when I am not at home.

Other well-supported covariates of delinquency include individuals’ associations with delinquent peers (McGloin & Thomas, 2019) and support for delinquent attitudes or norms (Carson, 2013; Rebellon et al., 2014). A measure of *delinquent peers* was created by averaging responses to nine items ($\alpha = .86$). Respondents were asked, “During the last year, how many of your current friends have done the following?” and presented with several behaviors and experiences including stealing something worth more or less than \$50, attacking someone with a weapon, or being arrested. The response options ranged from 1=None of them to 5=All of them, so that higher values on this scale indicate that a youth has a larger proportion of friends involved in delinquent behaviors. Youth’s personal *delinquent attitudes* were measured using an averaged scale of responses to 8 items. Respondents indicated their level of agreement (1=Strongly disagree, 5=Strongly

agree) with various statements that indicate support of attitudes consistent with delinquent acts. For example, the statements included, “It’s okay to steal something from someone who is rich and can easily replace it” and “It’s okay to beat up someone if they hit you first.” Higher values on this measure indicate that one holds attitudes, or subscribes to norms or beliefs, that are consistent with delinquency.

I include two measures to capture youth experiences with victimization, as victimization often overlaps with delinquent behavior (Jennings et al., 2012), and may influence perceptions about authority figures if they have had to rely on police or school personnel for help (Miller, 2008; Wolfe et al., 2016). Respondents were asked whether they had experienced different types of victimization at or around school in the past 6 months including: being attacked or threatened on the way to or from school, having things stolen at school, being attacked or threatened at school. The responses were combined in a three-item variety scale indicating *victimization in-school* ($\alpha = .32$). A later section in the survey asked respondents whether they had experienced four types of victimization specifically when they were “not at school.” These items referring to being hit by someone, having someone use a weapon or force to get money or things from you, being attacked with a weapon by someone seriously trying to hurt you, and having things stolen were combined in a four-item variety scale to indicate *victimization out of school* ($\alpha = .46$).

In addition, a measure of youth *impulsivity* is included as an individual-level characteristic or trait that has been found to consistently predict delinquent behavior (Gottfredson & Hirschi, 1990; Vogel & Barton, 2013). Impulsivity was measured using a three-item scale that averages respondents’ reported level of agreement with statements

such as “I often act without stopping to think” ($\alpha = .47$). Although the items show relatively low internal consistency in this sample, this scale was included as a measure consistent with items in Grasmick and colleagues (1993) instrument and several other survey measures of impulsivity (Esbensen et al., 2012).

School disorder and *neighborhood disorder* were controlled for as meaningful indicators of context. Perceptions of disorder and crime in the school (Gottfredson et al., 2005) and in the community (Zimmerman & Messner, 2011) have been identified as risk-factors for youth delinquency. Respondents were presented with several issues that may affect their school or neighborhood and asked to indicate whether these issues were 1=Not a problem, 2=Somewhat of a problem, or 3=A big problem. A measure of school disorder was created by averaging responses to statements regarding six problems, including, “Students beating up or threatening other students at your school” ($\alpha = .80$). The neighborhood disorder measure averages responses to 5 items related to issues such as poorly kept buildings or gangs in the neighborhood ($\alpha = .83$). On each of these measures, higher values indicate that youth perceive greater levels of disorder.

Finally, the analyses control for youth demographic information including age, race, gender, and family structure. To reduce missing data, in cases where respondents did not provide information on these items during Time 1, their responses from the most recent waves were imputed.¹³ For example, *Age* is measured using a single item and if a respondent did not indicate their age during Wave 1, one year was subtracted from their reported age the following year. The respondents range from age 10 to 17 during Time 1,

¹³ Other control variables were considered, but ultimately excluded if over 5% of the information was missing in the pooled sample of 2,773 cases. For instance, a measure of youths’ parents’ education was examined as a potential indicator of socioeconomic status, but over 6% of the cases had missing data on this measure even after imputing values from the most recent wave.

with an average age of 13.5 years old. Race is measured using four binary indicators of whether a respondent is *black* (37.3%), *white* (42.4%), *Hispanic* (3.5%), or some *other* racial or ethnic identity (16.8%). Respondents who identified that they were bi- or multi-racial were included in this other category. *Male* is a binary indicator of whether youth identify as male (45.7%). *Single parent household*=1 if youth reside in a house with a single parent (22.7%), and=0 if they report an alternate family structure.

Control Variables Measured at the School-Level

Except for the carceral school environment, each of the variables described were measured at the individual level (i.e., level one variables). To account for many of the structural differences in the sampled schools, analyses also include school-level control variables adapted from publicly available data from the Missouri Department of Education (MDOE). The information on middle schools in the sample was retrieved from 2017 MDOE reports (Time 1, when all respondents attended middle schools) and the information on high schools was retrieved from 2019 reports when the respondents were all in high school. The *student to teacher ratio* reflects how many students are present in the school relative to classroom teachers. *Suspension rates* capture the number of suspensions of ten or more consecutive days over the academic year divided by the number of enrolled students. The proportional *Attendance rate* captures what percentage of the enrolled students are meeting the target of attending school 90 percent of the time. *Percent eligible for free/reduced lunch* can be considered a proxy measure for the general socioeconomic status of students in the school, given that students' household income typically must fall below a certain threshold to receive lunches at a reduced price. Together, these indicators from administrative data can capture relevant differences in the

school characteristics and average student populations that may relate to some of the proposed processes.

To capture variation in school safety, I also created a school-level measure by aggregating students' individual-level responses to questions about their risk of victimization at school. Students were asked how likely it was that they would be attacked or threatened on their way to or from school, be attacked or threatened at school, or have their things stolen at school, with response options ranging from 1=Not at all likely to 5=Very likely. These responses were averaged into a 3-item scale ($\alpha = .76$). Then, group-level means were calculated to indicate the average perceived risk of crime at each school. In some stages of the analyses (described in more detail below) the key independent variables were also aggregated to the school-level to include as level two controls. Specifically, perceptions of police procedural injustice, police illegitimacy, school personnel procedural injustice, school personnel illegitimacy, and perceptions of unfairness in the US were aggregated to the school-level. Group-level means were calculated using the level one measures for each of the 21 schools. Table 2 presents descriptive statistics for these school-level control variables.

Table 1. Descriptive Statistics (N= 2,773)

	Mean (%)	SD	Range	% Missing ¹
Dependent Variables (T2)				
General delinquency	-.003	.73	-.51 - 2.98	2.31
In-school delinquency	-.01	.63	-.38 - 3.07	2.85
Variety scale - General delinquency	.85	1.68	0-12	4.32
Variety scale - In-school delinquency	.50	1.18	0-11	5.70
Independent Variables (T1)				
Police procedural injustice	2.78	1.09	1-5	1.37
SP procedural injustice	2.69	.82	1-5	3.20
Mediating Variables				
Police illegitimacy (T1)	2.16	1.03	1-5	.78
School personnel illegitimacy (T1)	2.30	1.01	1-5	.94
US as Unfair (T2)	3.41	1.01	1-5	7.14
Moderating Variable				
Carceral school environment ²	5.93	1.12	0-13	0
Control Variables (T1)				
Police contact	21.20	---	0-1	1.91
Family experiences with police	3.15	1.30	1-5	.87
School punishment	41.47	---	0-1	2.60
School commitment	3.82	.69	1-5	.29
Grades	4.08	.80	1-5	.29
Parental monitoring	4.42	.67	1-5	.29
Delinquent peers	1.23	.41	1-5	.40
Delinquent attitudes	2.35	.80	1-5	.40
Impulsivity	2.81	.79	1-5	.47
Victimization in-school	.26	.54	0-3	1.77
Victimization out of school	.30	.65	0-4	2.45
School disorder	1.70	.49	1-3	.22
Neighborhood disorder	1.50	.54	1-3	.32
Age	13.54	1.15	10-17	0
Male	45.83	---	0-1	0
White	42.84	---	0-1	0
Black	37.58	---	0-1	0
Hispanic	3.28	---	0-1	0
Other	16.30	---	0-1	0

Single parent household	22.72	---	0-1	0
Older cohort	45.04	---	0-1	0

Notes: ¹Percent missing is calculated based on the 2,773 cases with two consecutive waves of data collected in the same school

²The moderating variable of carceral school environment is measured at T1 for the younger cohort and T2 for the older cohort

SP is an abbreviation for “school personnel”

Table 2. Descriptive Statistics Continued: Group-level Means
(Individual N = 2,773; Group N = 21)

	Mean	SD	Range
School-Level Control Variables			
Student to teacher ratio	17.00	1.87	11-21
Suspension rates	3.73	5.24	0-24
Attendance	82.27	10.40	0-100
% Eligible for Free/Reduced lunch	61.49	35.77	0-100
Perceived risk of crime (T1)	1.80	.20	1-5
Police procedural injustice (T1)	2.75	.60	1-5
SP procedural injustice (T1)	2.69	.24	1-5
Police illegitimacy (T1)	2.16	.30	1-5
School personnel illegitimacy (T1)	2.30	.22	1-5
US as unfair (T2)	3.41	.15	1-5

Notes: SP is an abbreviation for “school personnel”

Analytic Strategy

The main objective of the study is to test a theoretical model of youth legal socialization that first examines two parallel processes, and then allows for meaningful connections between these processes. The three phases of the theoretical model outline direct paths between youth perceptions of police procedural injustice and delinquency and youth perceptions of school personnel procedural injustice and in-school delinquency, indirect paths through mediating variables, and the moderating influence of carceral school environments. Given these many nuanced processes, I estimate path models using the Structural Equation Modeling (SEM) commands available *Stata v. 14*.

Path analysis expands on the capabilities of many multiple regression strategies to allow for the estimation of more complicated relationships (Streiner, 2005). This method allows for the specification of structural relationships involving both directional and nondirectional paths and lends itself to developing theoretical models and identifying the mechanisms of relationships (Kline, 2005; Nunkoo & Ramkisoon, 2011). Path models can include several direct and indirect paths between the independent variable and outcome in one model in a manner that is easy to interpret. One aim of this study is to address limitations in the extant work on legal socialization by testing directional relationships between youth perceptions of authority figures and their subsequent noncompliance or delinquency using panel data, for example the effect of police procedural injustice on general delinquency. Using path models, I am able to estimate parameters for the direct effect of police procedural injustice on delinquency, the indirect effects through multiple mediating variables, and the total effects in one model. Prior work indicates that legitimacy is an important mediator (e.g., Walters & Boger, 2019) in

procedural justice processes, but there is some preliminary evidence to suggest that perceptions of authority contribute to a broader understanding of social dynamics in the country as well (e.g., Bradford, 2012); thus, the simultaneous estimation of multiple indirect pathways can help us to examine the role of different theoretical mechanisms.

In addition, multi-level relationships can be examined using the generalized structural equation modeling strategies. In Stata, the “gsem” commands allow for path models to be estimated in which the individual-level independent, dependent, and control variables are treated as nested in groups (e.g., schools) at level two. The variance is partitioned between levels one and two to produce estimates with reliable standard errors (Huber, 2014). Given the nested structure of the data and the theoretical interest in both individual- and school-level measures, I will estimate generalized structural equation models that specify variables at levels one and two so that I can interpret the within-school effects of perceptions of procedural injustice on delinquency.

Pursuing this analytic strategy has many strengths, but it is important to note that testing the complex phases of the theoretical model introduced some methodological challenges. Given that the model outlines processes that occur in multiple domains, involves the examination of multiple mediating mechanisms, and proposes conditional effects of the school environment, it was necessary to proceed with analyses in a piecemeal fashion that correspond to three phases (the figures illustrating these paths are included after with the description of each step in the analyses below). To be clear, while I use SEM methods to pursue path analyses, I do not pursue a model-building approach consistent with some SEM strategies (Huber, 2014). I prioritized two features in each of the analyses: (1) the simultaneous estimation of direct and indirect paths, including all

control variables in each path and (2) the estimation of robust standard errors clustered within the 21 schools in order to counter the violated assumption of independent observations. This meant that some of the beneficial strategies of SEM could not be pursued (i.e., the models would not converge). First, in path models estimated with clustered standard errors, only one goodness of fit statistic can be computed—the coefficient of determination (CD). The CD is analogous to the R^2 of the full model, with values closer to 1 indicating a better fit (Huber, 2014). The analyses focus on interpreting the parameter estimates for the paths included in each phase of the theoretical model, rather than comparing several goodness of fit statistics across models.

Second, although some SEMs can be estimated with full information maximum likelihood methods that allow for the retention of more cases, models that specified this option failed to converge. Instead, I used the pooled analytic sample ($N=2,773$) to estimate the model using maximum likelihood, and additional cases are excluded from models through listwise deletion when information is missing on one of the variables involved in the regression. Although alternative strategies, such as multiple imputation, may allow for the retaining of more cases in analyses, the patterns of missing data demonstrate that there are only two measures where over 5% of the analytic sample is missing data (see Table 1). These measures include a dependent variable (in-school delinquency) and a potential mediator (perceptions of the US as unfair), and thus are critical measures in the analysis. In accordance with the methodological recommendation to use complete case analysis rather than imputation when considering key variables (see Graham, 2009), I conclude that listwise deletion is more suitable for this study.

I acknowledge that listwise deletion can bias the results of analyses in cases where data are not missing completely at random and that this is a meaningful limitation; however, other methods of handling missing data such as multiple imputation can introduce bias as well (see Pepinsky, 2018). This study focuses on taking important steps to develop an expanded model of legal socialization that involves youth interactions in multiple domains, and future steps including the testing of these relationships on different, more generalizable samples will be necessary. Appendix C provides a detailed comparison between the sample of individuals who attended the same school for two consecutive years ($N=2,773$), and a more restricted sample computed based on the cases that include data on every measure ($N=2,256$). That said, because the analysis involves multiple steps involving different variables (e.g., some models focus on relationships specific to the school domain), the sample size reported for each model varies based on the measures included in the regression (sample ranges from 2,339 to 2,392).

Phase 1 Analyses: Multiple Mediation Models

The first step in the analysis is to estimate legal socialization as two parallel and separate processes in accordance with prior literature. First, I estimate a single-level path model examining the individual-level relationship between youth perceptions of police and delinquent behavior, with clustered standard errors to recognize correlation within schools (Figure 1, Panel A)¹⁴. A baseline model estimates the direct effect of police procedural injustice on delinquency with control variables including police illegitimacy

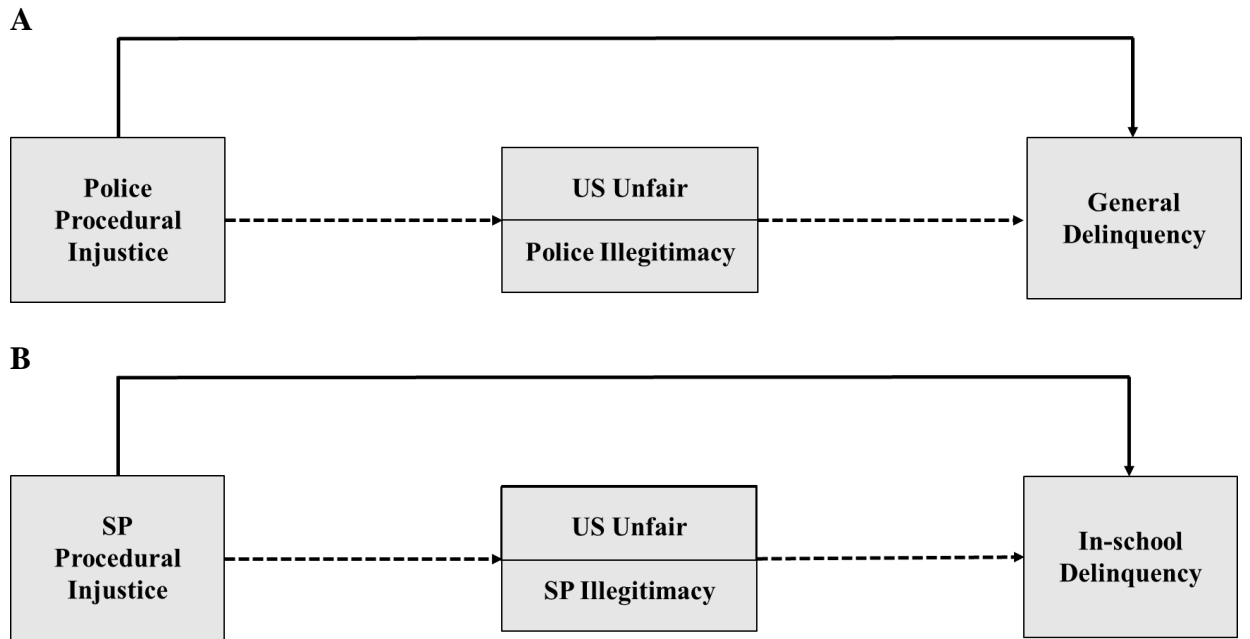
¹⁴ In the interest of model efficiency, phases one and three of the analyses involve single-level path models with robust clustered standard errors. While the data are structured such that individuals are nested in schools, these analyses are focused on indirect pathways between level one variables. In contrast, I employ a strategy more suited to multilevel relationships in phase 2 analyses using the generalized structural equation model command in Stata.

and perceptions of US unfairness. A subsequent model simultaneously estimates the direct effect of perceptions of police procedural injustice (T1) on general delinquency (T2), as well as indirect pathways through the mediators of police illegitimacy and perceptions of the US as unfair.¹⁵ The mediators are included in the same model to recognize that one indirect path can be conditional on alternative indirect paths (Preacher & Hayes, 2008). The results will estimate how much of the effect of police procedural injustice moves through police illegitimacy and perceptions of the US as unfair and I present and interpret the specific indirect, direct, and total effects.

Following a similar process, separate path models are estimated examining youth perceptions of school personnel and behavior (Figure 1, Panel B). A baseline model estimates the direct effect of school personnel procedural injustice on in-school delinquency, with school personnel illegitimacy and US unfairness included among the control variables. Then, a subsequent model allows for a direct relationship between perceptions of school personnel procedural injustice and in-school delinquency, as well as indirect paths through school personnel illegitimacy and perceptions of the US as unfair.

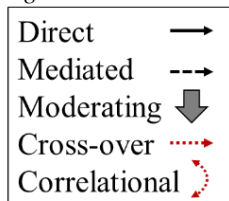
¹⁵ The endogenous mediators of legitimacy and US fairness are presented in a single box in the two models outlined in Figure 1 to simplify the figure. These measures are included in path models as distinct variables.

Figure 1. Phase 1 of Theoretical Model



Notes: Panel A displays a model of youth legal socialization involving the criminal justice system. Panel B displays a separate model of youth legal socialization involving the school system. The concepts of unfairness in the US and illegitimacy are distinct but displayed in one box to simplify the figure and limit the number of paths pictured. All arrows represent positive associations. SP is an abbreviation of “school personnel.”

Legend:



Phase 2 Analyses: Moderating Effects of the Carceral School Environment

In the second phase of the analyses, I examine whether the CSE moderates individual-level relationships between procedural injustice and delinquency. Starting with Panel A of Figure 2, I estimate a multi-level model using the “gsem” command in Stata, where individual-level measures are identified as level one variables and school-level measures, including CSE and aggregated measures of procedural injustice, illegitimacy, and perceptions of the US as unfair, are specified as level two variables. Consistent with

the random coefficient regression strategy, level one variables are centered at group-level means (i.e., school means), and level two variables are grand mean-centered (using the averages from the analytic sample; Preacher, Zhang, & Zyphur, 2016; Raudenbush & Bryk, 2002). The grand mean-centering of level-two variables in multilevel models is a widely accepted practice. It involves a relatively simple transformation that only affects the intercept in a model so that it has a more intuitive interpretation: the expected outcome when explanatory variables are held at their means (Paccagnella, 2006; Raudenbush & Bryk, 2002). Group mean-centering, on the other hand, has been the subject of some debate in extant literature (see Bell, Jones, & Fairbrother, 2018; Kelley et al., 2017). Group mean-centering affects the parameter estimates produced by a statistical model because it transforms the level-one measures to indicate the level of departure from the level-two group average. In the current study, group mean-centered measures of, for example, police procedural injustice represent how an individual's perceptions of police compare to the average perceptions of those in their school. In these data, students' measures, including the key independent and dependent variables, are more similar within schools than between schools, and high collinearity among individual observations in a school can create imprecise estimates (Bell, Jones, & Fairbrother, 2018). Group mean-centering allows for the separation of within- and between- school effects. After centering, the estimate of police procedural injustice on delinquency can be interpreted to reflect how perceiving police as unfair *relative to other students in one's school* influences delinquency. This can be advantageous in models considering contextual effects, like the one that I propose, because it allows one to observe how a relationship varies across different schools (Paccagnella, 2006). Opponents of group mean-centering

highlight that because this transformation changes parameter estimates, one can find dramatically different relationships in centered- and un-centered models, leading to incorrect interpretations. To address this concern, I estimate phase 2 analyses with un-centered variables and note any substantive changes in the estimates in the Results chapter.

The first model includes the direct and mediating paths from Phase 1, now with the additional school-level control variables and CSE. I interpret the main direct effects of police procedural injustice and CSE on police illegitimacy, unfairness in the US, and general delinquency. The backdrop of theoretical literature suggests that individuals in more carceral environments will have lower perceptions of fairness in society (e.g., Bruch & Soss, 2018) and report higher levels of delinquency (e.g., Raffaele-Mendez, 2003; Weisburst, 2019; Wolf & Kupchik, 2017).

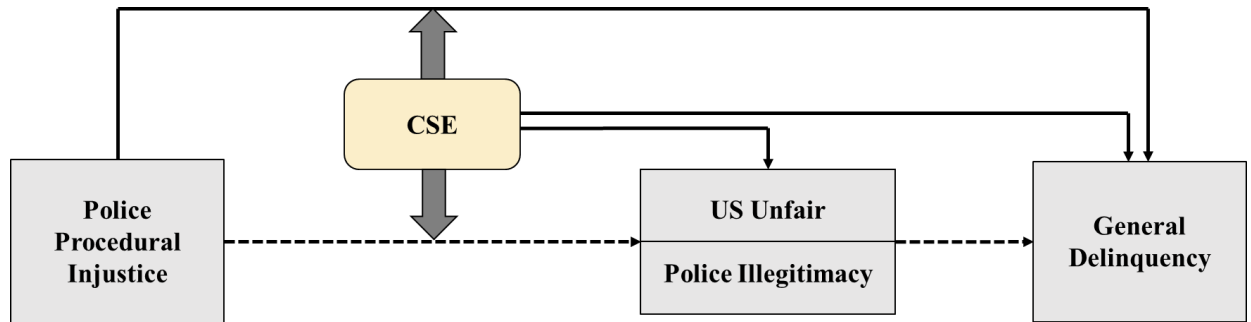
Then, this model is estimated with the added cross-level interaction between individual-level police procedural injustice and school-level CSE (Police procedural injustice*CSE). The interaction term is added to each path, allowing for the CSE to moderate the direct effect of police procedural injustice on illegitimacy, perceptions of unfairness in the US, and general delinquency. A statistically significant association between the interaction and delinquency indicates that a direct relationship between police procedural injustice and delinquency changes when the effects are allowed to vary across schools. A positive interaction suggests that the relationship between police procedural injustice and delinquency is stronger (i.e., the slope is steeper) in schools with more carceral environments compared to schools with less carceral environments. Relatedly, a positive significant association between the interaction and the endogenous

variables of police illegitimacy or unfairness in the US indicates that the association between procedural injustice and either mediator is stronger in more carceral environments. In addition, I compute the specific indirect effects of the interaction term on delinquency through each of the mediators.

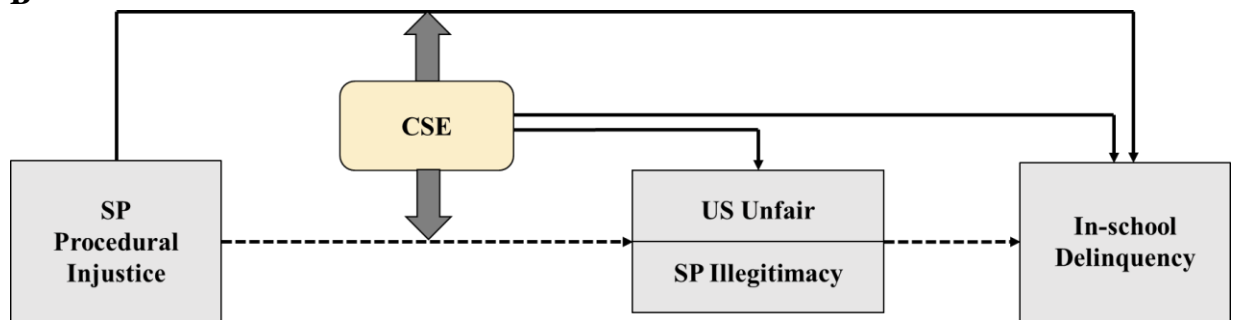
These models will be replicated using the school-related measures of procedural injustice, illegitimacy, and in-school delinquency in place of the police-related measures, in accordance with Panel B of Figure 2.

Figure 2. Phase 2 of Theoretical Model

A

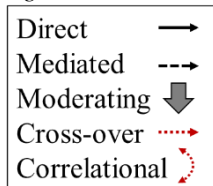


B



Notes: Panel A displays a model of youth legal socialization involving the criminal justice system. Panel B displays a separate model of youth legal socialization involving the school system. The concepts of unfairness in the US and illegitimacy are distinct but displayed in one box to simplify the figure and limit the number of paths pictured. All arrows represent positive associations. SP is an abbreviation of “school personnel”; CSE is an abbreviation of “carceral school environment.”

Legend:



Phase 3 Analyses: Examining “Cross-Over” Effects

The final phase of the theoretical model combines the relationships in each domain to further explore how convergence or overlap between the criminal justice system and schools may influence relationships among individual perceptions of authority figures and different behavioral outcomes. Figure 3 of the theoretical model includes three associations (depicted by red dashed arrows) that represent how

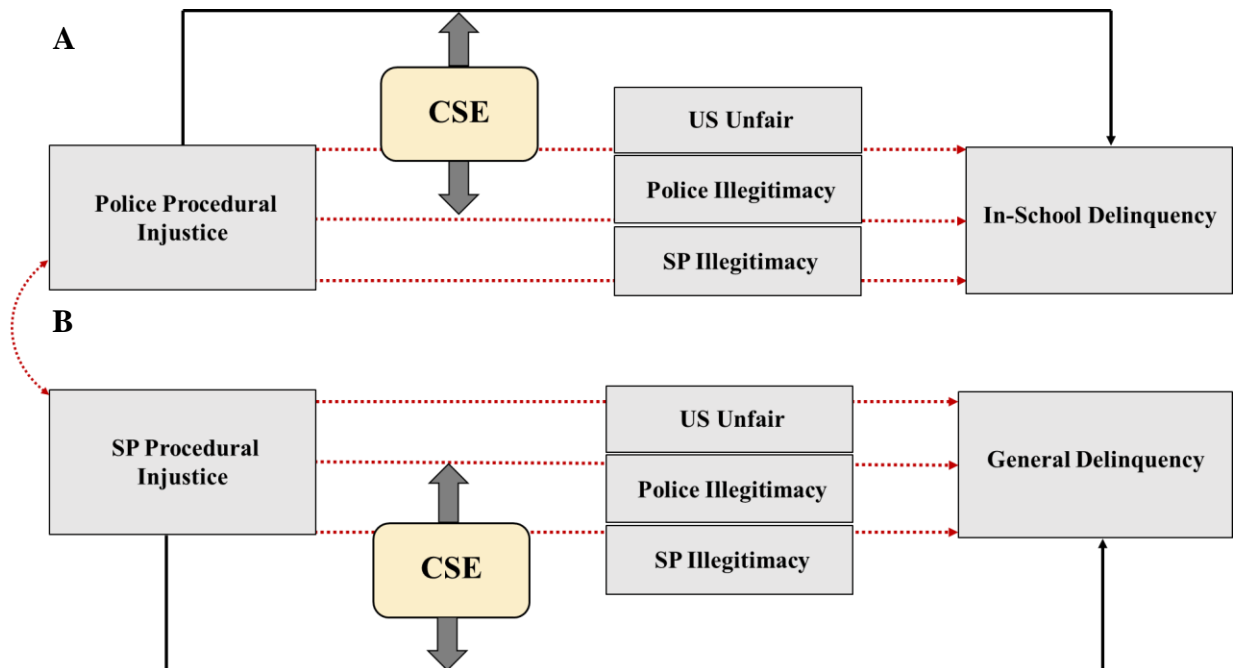
individuals' interactions with different authorities may be related. First, a two-headed arrow between police procedural injustice and school personnel procedural injustice represents the potential similarity between individuals' perceptions of these two types of authorities. I use descriptive analyses to consider the relationship between these measures, and to determine whether individuals perceive these authorities more similarly when they attend more carceral schools. I present correlation matrices and factor analyses that include the individual items from police procedural injustice, school personnel procedural injustice, police illegitimacy, and school personnel illegitimacy.

Ideally, to investigate the remaining two cross-over effects depicted in Figure 3, the domain-specific models in Phases 1 and 2 would be combined into a complex model involving several paths that simultaneously predict both general and in-school delinquency at Time 2. That said, there are substantial challenges involved when estimating an expanded model with two dependent variables. First, given the sheer number of paths, a multi-level model cannot be estimated that specifies level-one and level-two variables. In addition, because control variables would need to be included in each path, I risk overwhelming the model with control variables. Lastly, error covariance between the two delinquency outcomes cannot be specified in models in which standard errors are clustered by school, and there is considerable overlap in these measures. After considering these limitations, I opted to examine Phase 3 in a piecewise fashion using single-level paths with clustered standard errors.

To examine the second cross-over effect, I estimate the direct effect of police procedural injustice on in-school delinquency, and the indirect effect through three mediators: perceptions of the US as unfair, of police illegitimacy, and school personnel

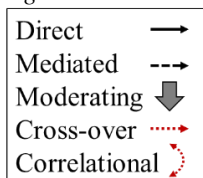
illegitimacy. Each path controls for all of the individual- and school-level control variables, including perceptions of school personnel procedural injustice. An additional model will be estimated that includes the interaction between police procedural injustice and CSE to consider whether CSE moderates these paths. I take a similar approach to examine the third cross over effect, but now focusing on the relationship between school personnel procedural injustice, the three mediators, and general delinquency.

Figure 3. Phase 3 of Theoretical Model



Notes: All arrows demonstrating direct and indirect relationships represent positive associations. SP is an abbreviation for “school personnel”; CSE is an abbreviation for “Carceral School Environment.” For simplicity, some of the proposed paths are not pictured. Specifically, the theory supports that CSE will moderate the indirect pathway from procedural injustice to delinquency through US Unfair, Police Illegitimacy, and SP Illegitimacy in each domain (Panels A and B). In addition, CSE may have a direct effect on US Unfair, In-school Delinquency, and General Delinquency.

Legend:



CHAPTER FOUR: RESULTS

Bivariate Analysis

Before proceeding to the main phases of analyses, I assessed bivariate associations among the measures. Table 3 presents a correlation matrix of the key dependent and independent variables, including the proposed mediating and moderating variables.¹⁶ The correlation coefficients offer some preliminary evidence of relationships consistent with the theoretical model. For instance, perceptions of police procedural injustice are positively and significantly associated with perceptions of police illegitimacy and the US as unfair, and with general delinquency. In a similar manner, perceptions of school personnel procedural injustice are positively and significantly associated with school personnel illegitimacy, perceptions of the US as unfair, and with in-school delinquency. The level-two carceral school environment measure is positively associated with both delinquency outcomes. Broader perceptions of fairness in the US seem to be related to perceptions of both police ($r=.28, p<.001$) and school personnel procedural injustice ($r=.21, p<.001$) as predicted, and has a very low correlation with general ($r=.06, p<.01$) and in-school delinquency ($r=.04, p<.05$).

Notably, perceptions of police are correlated with in-school delinquency and perceptions of school personnel are correlated with general delinquency, indicating that legal socialization processes associated with these different domains may overlap. Indeed, perceptions of police and school personnel appear to be highly related—the correlation coefficient for the procedural injustice measures and illegitimacy measures $=.49$ ($p<.001$). This in itself is an important finding. On average, individuals' assessments

¹⁶ The correlations among the full set of measures (including controls) were also assessed, but they are omitted from the matrix to reduce the size of the table.

of these distinct authority figures are related. Cross-domain correlations indicate some provisional support for an overarching argument of the proposed theoretical model: youth perceptions of police and school personnel as authority figures should be examined as related, given that views of either figure could contribute to a more general orientation toward rule-enforcing authorities in society. The next steps in the analytic plan will examine these associations using more rigorous methods, offering a more nuanced look at these relationships.

Table 3. Correlation Matrix Including Key Independent and Dependent Variables (N = 2,773)

	General delinquency (T2)	In-school delinquency (T2)	Police procedural injustice (T1)	SP procedural injustice (T1)	Police illegitimacy (T1)	SP illegitimacy (T1)	US unfair (T2)	CSE
General delinquency (T2)	1.00							
In-school delinquency (T2)	.68***	1.00						
Police procedural injustice (T1)	.22***	.20***	1.00					
SP procedural injustice (T1)	.23***	.21***	.49***	1.00				
Police illegitimacy (T1)	.17***	.14***	.47***	.32***	1.00			
SP illegitimacy (T1)	.16***	.13***	.32***	.46***	.49***	1.00		
US unfair (T2)	.06**	.04*	.28***	.21***	.13***	.14***	1.00	
CSE	.15***	.13***	.38***	.16***	.21***	.07***	.06**	1.00

Notes: *p<.05; **p<.01; ***p<.001; SP is an abbreviation for School Personnel, CSE is an abbreviation for Carceral School Environment

Phase 1 Results: Multiple Mediation

The first phase of the theoretical model outlines mediation processes in which individuals' perceptions of procedural justice influence their compliance with rules or laws *through* perceptions of authority legitimacy or the fairness of society more broadly. First (Phase 1a), I estimate path models focusing on the relationship between police procedural injustice and general delinquency, assuming that one's level of general delinquency corresponds to their noncompliance with the laws represented by police officers. Second (Phase 1b), I examine the effect of school personnel procedural injustice on the dependent variable of in-school delinquency.

Phase 1a: Perceptions of Police and General Delinquency

Table 4 reports the results of the baseline model estimating the effect of youth perceptions of police procedural injustice at Time 1 on self-reported general delinquency at Time 2 ($N=2,367$; $CD=.244$).¹⁷ The first finding of note is that perceptions of procedural injustice are not significantly related to delinquent behavior and the coefficient is not in the expected direction ($\beta=-.038$). Although many scholars developing procedural justice theory have argued that perceptions of procedural justice can shape behavior, this insignificant relationship is consistent with some prior work that does not find evidence of a *direct* effect on noncompliance (see Nagin & Telep, 2017; Nagin & Telep, 2020). Police illegitimacy is associated with increased delinquency ($\beta=.030$, $p<.05$), while the coefficient for perceptions of the US as unfair does not reach statistical significance. Many of the control variables are related to delinquency in directions

¹⁷ For Tables 4-7, I include the estimated parameters for all of the control variables in each path and discuss key relationships between control variables, the mediating variables, and dependent variables. Given the extensive list of controls, I omit their effects in subsequent tables. Control variables are always included in each path, even if not presented in the tables.

consistent with those supported in prior work. At the individual-level, police contact, experience with school punishment, exposure to delinquent peers, delinquent attitudes, victimization in- and outside of school, and neighborhood disorder are significantly associated with increased delinquent behavior, while higher levels of school commitment and parental monitoring are associated with decreased delinquency. In addition, male and black students engage in more delinquency than their counterparts. Importantly, the effect sizes of many of these control variables are much larger in magnitude than those for the key variables of interest to the theoretical model (e.g., For delinquent peers, $\beta=.152$, $p<.001$; For victimization in-school, $\beta=.109$, $p<.001$). Two of the school-level control variables reach significance: students attending schools with higher rates of suspension in the sample report a lower level of delinquent behavior, while those attending schools where a greater proportion of the student population are eligible for free or reduced lunch report higher levels of delinquency.

Table 4.

Phase 1a: Baseline Model Predicting General Delinquency (N=2,392)

Direct Effects on General Delinquency				
	<i>b</i>	SE	<i>z</i>	β
Police procedural injustice	-0.025	0.021	-1.18	-0.038
Police illegitimacy	0.021*	0.010	2.18	0.030
US as unfair	0.008	0.012	0.69	0.012
Police contact	0.149***	0.041	3.65	---
Family experiences with police	0.014	0.009	1.54	0.025
School punishment	0.097***	0.027	3.62	---
School commitment	-0.064**	0.025	-2.6	-0.062
Grades	0.033	0.021	1.59	0.037
Parental monitoring	-0.071**	0.026	-2.76	-0.065
Delinquent peers	0.280***	0.052	5.34	0.152
Delinquent attitudes	0.133***	0.020	6.59	0.147
Impulsivity	0.029	0.020	1.47	0.031
Victimization in-school	0.146***	0.031	4.69	0.109
Victimization out of school	0.067**	0.024	2.85	0.059
School disorder	-0.009	0.036	-0.25	-0.006
Neighborhood disorder	0.067***	0.019	3.47	0.050
Age	-0.047	0.026	-1.85	-0.076
Male	0.054*	0.027	-1.99	---
Black	0.092*	0.036	2.52	---
Hispanic	-0.065	0.036	-1.83	---
Other	-0.026	0.031	-0.86	---
Single parent household	-0.013	0.030	-0.42	---
Cohort	0.040	0.068	0.58	---
Student to teacher ratio	0.014	0.010	1.42	0.036
Suspension rates	-0.009*	0.004	-2	-0.065
Attendance	0.001	0.003	0.36	0.016
% Eligible free/reduced lunch	0.001*	0.001	2	0.066
Perceived risk of crime	0.075	0.074	1.01	0.021
Equation Level Goodness of Fit				
	R^2			
Overall	.243			

Notes: *b* represents unstandardized coefficients; SE represents robust clustered standard errors; β represents standardized parameter estimates; ****p*<.001; ***p*<.01; **p*<.05

A subsequent model including multiple mediation processes was estimated in order to assess whether accounting for both police illegitimacy and perceptions of US fairness can explain the potential relationship between police procedural injustice and behavior ($N=2,392$; $CD = .499$). The results of this model are reported in Table 5. First, we see that police procedural injustice is a significant predictor of police illegitimacy ($\beta=.407$, $p<.001$). It is worth noting that this effect persists while accounting for several relationships with control variables. For instance, hearing about a family member's negative experience with police, holding delinquent attitudes, and attending a school with a higher percentage of students eligible for free and reduced lunch are associated with increased perceptions of police illegitimacy, while males, those with increased school commitment, or increased parental monitoring are more likely to perceive lower levels of illegitimacy (i.e., view police as more legitimate).

Increases in police procedural injustice also predict increased perceptions of the US as unfair ($\beta=.293$, $p<.001$). Similar to the relationships observed with illegitimacy, male students and those reporting higher school commitment are significantly less likely to consider the US unfair (i.e., have higher scores on perceptual measure of unfairness). In addition, increases in impulsivity are associated with decreased perceptions in unfairness, while reports of higher grades and experience with in-school victimization predict higher perceptions of unfairness. Overall, the relationships among police procedural injustice and the two proposed mediators are consistent with theoretical expectations: individuals who perceive greater levels of injustice from police also consider police to be less legitimate (more illegitimate) and American society to be less fair (more unfair).

Turning to direct effects on general delinquency, police procedural injustice is not directly associated with delinquency, just as was seen in the baseline model. Only the proposed mediator of police illegitimacy is significantly associated with delinquent behavior, and the effect is quite small. Interpreting the standardized parameter estimate, a one standard deviation increase in police illegitimacy is associated with a .030 standard deviation increase in levels of delinquency at Time 2 ($p < .05$). Although the coefficient for US as unfair is in the expected positive direction, it does not reach statistical significance. Several of the control variables are significant predictors of the outcome. Based on the standardized coefficients, exposure to delinquent peers, personal delinquent attitudes, and experience with in-school victimization have larger effects on subsequent levels of delinquency compared to the other predictors in the model.

The specific indirect effects of police procedural justice were calculated with respect to each of the proposed mechanisms. The results indicate a small significant indirect effect of police procedural injustice on general delinquency through police illegitimacy ($\beta = .011$, $p < .05$), but the path through perceptions of fairness in the US does not reach significance. This indicates, some level of support for the relationship proposed in prior literature on procedural justice theories in which procedural justice can influence offending via perceptions of legitimacy; however, the effect size is quite small. In contrast, broader perceptions of unfair dynamics in US society are not related to subsequent levels of delinquent behavior. Taken together with equation-level goodness of fit statistics, the findings suggest that perceptions of police procedural injustice may be valid for understanding individuals' perceptions of illegitimacy and US fairness, while potentially less relevant for predicting levels of delinquency.

The analyses conducted to test Phase 1 of the theoretical model have thus far been domain-specific. That is, the models regress general delinquent behavior on perceptual measures related to police officers, without including individual perceptions of school personnel procedural injustice and illegitimacy. This approach is consistent with prior work that tends to focus on compliance with one type of authority. As I have argued throughout, the domain-specific approach can be limiting to our understanding of procedural justice as youth are likely forming perceptions about multiple authorities simultaneously, which may influence how procedural injustice relates to delinquent behavior. Therefore, the models described in this section were also estimated including school personnel procedural injustice and school personnel illegitimacy as control variables. Importantly, the parameter estimates from multiple mediation analyses *including the school personnel control variables* indicate that the small indirect effect of police procedural injustice through police illegitimacy is no longer significant, while the other observed relationships remain consistent. Put simply, police procedural injustice does not have a direct or indirect effect on delinquency through either of the proposed mediators when considering youth perceptions of school personnel. This is likely due to the relatively high correlation among police and school personnel procedural injustice ($r=.49, p<.001$) and police and school personnel illegitimacy ($r=.49, p<.001$). This relationship is discussed further in the section on Phase 3 analyses below, but I include this here to note that the mediated path between police procedural injustice and general delinquency does not persist when including indicators of youth perceptions of school personnel.

Table 5.

Phase 1a: Estimating Multiple Mediation Paths in Policing Models (N=2,392)

Direct Effects on Police Illegitimacy				
	<i>b</i>	SE	<i>z</i>	β
Police procedural injustice	.379***	.033	11.61	.407
Police contact	.037	.043	.86	---
Family experiences with police	-.03*6	.016	-2.32	-.047
School punishment	-.054	.036	-1.50	---
School commitment	-.128***	.028	-4.57	-.088
Grades	.025	.031	.80	.020
Parental monitoring	-.190***	.033	-5.76	-.122
Delinquent peers	-.036	.052	-.69	-.014
Delinquent attitudes	.118***	.033	3.62	.092
Impulsivity	-.008	.028	-.28	-.006
Victimization in-school	-.029	.034	-.85	-.015
Victimization out of school	.018	.026	.68	.011
School disorder	-.001	.045	-.03	-.001
Neighborhood disorder	-.027	.033	-.82	-.014
Age	.024	.030	.78	.027
Male	-.085*	.035	-2.39	---
Black	-.026	.067	-.39	---
Hispanic	.062	.131	.47	---
Other	.084	.070	1.20	---
Single parent household	-.066	.035	-1.86	---
Cohort	.146	.098	1.49	---
Student to teacher ratio	-.013	.016	-.81	-.024
Suspension rates	-.004	.008	-.43	-.019
Attendance	.007	.005	1.31	.072
% Eligible free/reduced lunch	.003***	.001	3.24	.111
Perceived risk of crime	-.164	.132	-1.24	-.032
Direct Effects on US Unfair				
	<i>b</i>	SE	<i>z</i>	β
Police procedural injustice	.275***	.024	11.35	.293
Police contact	.014	.055	.25	---
Family experiences with police	.030*	.015	1.97	.038
School punishment	-.014	.043	-.32	---
School commitment	-.144***	.040	-3.59	-.098
Grades	.139***	.024	5.81	.109
Parental monitoring	.052	.039	1.34	.033
Delinquent peers	.018	.053	.34	.007
Delinquent attitudes	.000	.031	-.01	.000
Impulsivity	-.082**	.029	-2.81	-.063
Victimization in-school	.120**	.043	2.75	.063

Victimization out of school	-.017	.033	-.53	-.011
School disorder	-.016	.045	-.36	-.008
Neighborhood disorder	-.068	.055	-1.24	-.036
Age	.002	.035	.05	---
Male	-.253***	.043	-5.86	---
Black	-.062	.057	-1.09	---
Hispanic	.102	.111	.92	---
Other	.083	.048	1.73	---
Single parent household	.040	.056	.71	---
Cohort	.033	.116	.28	---
Student to teacher ratio	.006	.019	.29	.010
Suspension rates	.000	.006	-.08	-.002
Attendance	.002	.004	.54	.020
% Eligible free/reduced lunch	.000	.001	.08	.002
Perceived risk of crime	.037	.192	.19	.007

Direct Effects on General Delinquency

	<i>b</i>	SE	<i>z</i>	β
Police procedural injustice	-.025	.021	-1.18	-.038
Police illegitimacy	.021*	.010	2.18	.030
US as unfair	.008	.012	.69	.012
Police contact	.149***	.041	3.65	---
Family experiences with police	.014	.009	1.54	.025
School punishment	.097***	.027	3.62	---
School commitment	-.064**	.025	-2.6	-.062
Grades	.033	.021	1.59	.037
Parental monitoring	-.071**	.026	-2.76	-.065
Delinquent peers	.280***	.052	5.34	.152
Delinquent attitudes	.133***	.020	6.59	.147
Impulsivity	.029	.020	1.47	.031
Victimization in-school	.146***	.031	4.69	.109
Victimization out of school	.067**	.024	2.85	.059
School disorder	-.009	.036	-.25	-.006
Neighborhood disorder	.067**	.019	3.47	.050
Age	-.047	.026	-1.85	---
Male	.054*	.027	-1.99	---
Black	.092*	.036	2.52	---
Hispanic	-.065	.036	-1.83	---
Other	-.026	.031	-.86	---
Single parent household	-.013	.030	-.42	---
Cohort	.040	.068	.58	---
Student to teacher ratio	.014	.010	1.42	.036
Suspension rates	-.009*	.004	-2	-.065
Attendance	.001	.003	.36	.016
% Eligible free/reduced lunch	.001*	.001	2	.066

Perceived risk of crime	.075	.074	1.01	.021
Indirect Effects of Police Procedural Injustice on General Delinquency				
	<i>b</i>	SE	<i>z</i>	β
Through Police illegitimacy	.008*	.004	2.26	.011
Through US as unfair	.002	.003	.70	.003
Total Effects on General Delinquency				
	<i>b</i>	SE	<i>z</i>	β
Police procedural injustice	-.015	.020	-.74	-.023
Equation Level Goodness of Fit				
	R^2			
Predicting police illegitimacy	.273			
Predicting US as unfair	.134			
Predicting general delinquency	.243			
Overall	.499			

Notes: *b* represents unstandardized coefficients; SE represents robust clustered standard errors; β represents standardized parameter estimates; ****p*<.001; ***p*<.01; **p*<.05

Phase 1b: Perceptions of School Personnel and In-School Delinquency

Table 6 reports the results of the baseline path model regressing levels of in-school delinquency (Time 2) on students' perceptions of school personnel procedural injustice (Time 1), school personnel illegitimacy (Time 1), reports of unfairness in the US (Time 2), and control variables (N=2,367; CD = .185). The parameter estimates demonstrate that school personnel procedural injustice, illegitimacy, and perceptions of the US as unfair are *not* significantly associated with respondents' levels of in-school delinquent behavior at Time 2. Similar to the baseline model estimated with respect to policing, perceptions of procedural justice do not have a direct effect on in-school delinquency, the class of noncompliant behavior logically associated with school authorities. School personnel illegitimacy also has a nonsignificant association with delinquency, in contrast to the policing model. Instead, several control variables

measured at Time 1 are better predictors of in-school offending. First, police contact, school punishment, exposure to delinquent peers, personal delinquent attitudes, and in-school victimization are each significantly associated with increased delinquent behavior. In addition, male students engage in higher levels of in-school delinquency compared to females, on average. Only parental monitoring emerges as a significant protective factor for delinquency in this model. Interestingly, none of the school-level characteristics are significantly associated with students' in-school delinquent behavior, whereas percent eligible for free and reduced lunch and school suspension rates were associated with general delinquency in prior models.

Table 6.

Phase 1b: Baseline Model Predicting In-School Delinquency (N=2,367)

Direct Effects on In-school Delinquency				
	<i>b</i>	SE	<i>z</i>	β
SP procedural injustice	.018	.016	1.14	.023
SP illegitimacy	.007	.013	.53	.011
US unfair	-.012	.014	-.86	-.019
Police contact	.106**	.041	2.62	---
Family experiences with police	.003	.009	.29	.005
School punishment	.128***	.030	4.24	---
School commitment	-.020	.024	-.85	-.022
Grades	-.007	.014	-.53	-.009
Parental monitoring	-.060*	.027	-2.21	-.062
Delinquent peers	.135**	.046	2.96	.084
Delinquent attitudes	.088***	.016	5.54	.111
Impulsivity	.021	.017	1.24	.026
Victimization in-school	.153***	.029	5.21	.130
Victimization out of school	.031	.028	1.1	.031
School disorder	.020	.050	.4	.015
Neighborhood disorder	.002	.035	.06	.002
Age	-.013	.016	-.82	---
Male	.079**	.026	-3.04	---
Black	.043	.041	1.04	---
Hispanic	-.062	.040	-1.55	---
Other	-.026	.031	-.82	---
Single parent household	-.012	.031	-.4	---
Cohort	-.022	.062	-.36	---
Student to teacher ratio	.015	.015	.99	.043
Suspension rates	-.005	.005	-1.14	-.045
Attendance	.000	.002	.14	.005
% Eligible free/reduced lunch	.001	.001	1.23	.067
Perceived risk of crime	.135	.099	1.36	.042
Equation Level Goodness of Fit				
	R^2			
Overall	.184			

Notes: *b* represents unstandardized coefficients; SE represents robust clustered standard errors; β represents standardized parameter estimates; *** $p < .001$; ** $p < .01$; * $p < .05$

With these baseline relationships in mind, a second model was estimated including two indirect pathways from school personnel procedural injustice at Time 1 to levels of in-school delinquency at Time 2: one through school personnel illegitimacy, and one through perceptions of the US as unfair. Although a direct effect of procedural injustice on delinquency was not observed, it is possible that indirect effects through these proposed mediators persist. Plus, testing the theoretical model with respect to school authorities can further our understanding of the applicability of procedural justice theories of (non)compliance beyond relationships with police.

The results of the multiple mediation model examining indirect pathways from school personnel procedural injustice to in-school delinquency are depicted in Table 7 (N=2,367; CD=.456). First, I want to highlight the direct effects of school personnel procedural injustice on school personnel illegitimacy and perceptions of the US as unfair. Interpreting the standardized coefficients, the findings suggest that on average, a one standard deviation increase in perceived procedural injustice is associated with a .322 standard deviation increase in illegitimacy ($p < .001$). In addition, increases in procedural injustice are associated with a .148 standard deviation increase in US unfair. Individuals who perceive teachers, school administrators, and staff as fair and just, are more likely to consider them legitimate and to assess the US as more fair, relative to those who view teachers as unjust. The observed relationships indicate support for one aspect of the theoretical model: perceptions of procedural injustice related to either type of authority inform one's perceptions of the authority's illegitimacy, as well as contribute to an overall assessment of fairness in the US. This reinforces the notion that youths'

interactions with formal authority figures can shape the way they understand broader social dynamics.

Several of the control variables were also related to these proposed mediators in ways that are consistent with those observed in the policing models. Beginning with direct effects on school personnel illegitimacy, increases in school commitment are associated with decreased perceptions of illegitimacy ($\beta = -.191$, $p < .001$), while individuals who reported higher grades on average also indicated perceptions of personnel as more illegitimate ($\beta = .044$, $p < .001$). The same directional relationships with these controls were observed for unfairness in the US ($\beta = -.095$, $p < .001$; $\beta = .103$, $p < .001$, respectively). Also consistent with the policing models, males report lower perceptions of illegitimacy ($\beta = -.045$, $p < .01$) and US unfairness ($\beta = -.139$, $p < .001$) compared to females, on average; increases in delinquent attitudes are associated with higher perceptions of illegitimacy ($\beta = .143$, $p < .001$); and those that are more impulsive report lower perceptions of unfairness in the US ($\beta = -.072$, $p < .001$), while individuals who have experienced more victimization in-school report that the US is more unfair ($\beta = .048$, $p < .05$).

The control variables' relationships with the two proposed mediators observed in the school domain differ from the police-focused analyses in a few key ways. First, while in-school victimization was not significantly related to police illegitimacy, increases in in-school victimization are significantly associated with decreased perceptions of school personnel illegitimacy ($\beta = -.041$, $p < .05$). Stated more clearly, on average, individuals who were victimized view teachers as more legitimate. Perhaps, these youth felt supported by teachers after negative school experiences, and this contributes to a more positive assessment of school personnel as authorities. In addition, on average, students whose

race/ethnicity was reported as “other” reported significantly higher perceptions of both school personnel illegitimacy ($\beta=.042$, $p<.05$) and unfairness in the US compared ($\beta=.067$, $p<0.001$) to white students. This highlights some nuanced relationships in which racial or ethnic minorities may have more negative perceptions of authority and less favorable of society.

Now focusing on the direct effects on in-school delinquency, the parameter estimates indicate that neither school personnel procedural injustice, nor either of the proposed mediating variables, are significantly associated with students’ levels of in-school delinquency at Time 2. Only control variables emerge as significant predictors. The standardized coefficients indicate that one’s prior experiences with school punishment ($\beta =.101$, $p<.001$) and in-school victimization ($\beta=.130$, $p<.001$) are the strongest covariates with delinquency in the model, while the measures indicating police contact, delinquent peers, delinquent attitudes, and gender are also significantly associated with the outcome. Finally, both of the indirect pathways from school personnel procedural injustice to in-school delinquency are nonsignificant.

Table 7

Phase 1b: Estimating Multiple Mediation Paths in School Models (N=2,367)

Direct Effects on SP Illegitimacy				
	<i>b</i>	SE	<i>z</i>	β
SP procedural injustice	.390***	.028	13.79	.322
Police contact	.053	.043	1.23	---
Family experiences with police	-.008	.018	-.45	-.011
School punishment	-.027	.044	-.61	---
School commitment	-.278***	.037	-7.43	-.191
Grades	.054*	.027	2.01	.044
Parental monitoring	-.055	.036	-1.55	-.036
Delinquent peers	.007	.048	.14	.003
Delinquent attitudes	.180***	.037	4.86	.143
Impulsivity	-.033	.024	-1.36	-.026
Victimization in-school	-.076*	.036	-2.09	-.041
Victimization out of school	.005	.046	.11	.003
School disorder	-.091	.062	-1.46	-.044
Neighborhood disorder	-.044	.064	-.68	-.023
Age	.017	.030	.55	.019
Male	-.091**	.032	-2.89	---
Black	-.008	.064	-.13	---
Hispanic	.076	.102	.74	---
Other	.113*	.050	2.26	---
Single parent household	-.070	.040	-1.74	---
Cohort	.114	.104	1.1	---
Student to teacher ratio	.025	.024	1.04	.046
Suspension rates	.002	.005	.38	.010
Attendance	-.001	.004	-.16	-.007
% Eligible free/reduced lunch	.001	.002	.41	.025
Perceived risk of crime	-.066	.193	-.34	-.013
Direct Effects on US as Unfair				
	<i>b</i>	SE	<i>z</i>	β
SP procedural injustice	.183***	.041	4.45	.148
Police contact	.025	.054	.46	---
Family experiences with police	.039*	.017	2.36	.050
School punishment	-.023	.048	-.47	-.011
School commitment	-.141***	.040	-3.49	-.095
Grades	.132***	.025	5.22	.103
Parental monitoring	.044	.038	1.15	.028
Delinquent peers	.070	.060	1.17	.027
Delinquent attitudes	.020	.027	.72	.015
Impulsivity	-.095**	.031	-3.07	-.072
Victimization in-school	.093*	.040	2.34	.048

Victimization out of school	.000	.033	.01	.000
School disorder	-.075	.044	-1.7	-.036
Neighborhood disorder	-.022	.057	-.39	-.012
Age	-.007	.033	-.23	-.008
Male	-.283***	.052	-5.4	---
Black	.071	.051	1.4	---
Hispanic	.123	.106	1.16	---
Other	.183**	.053	3.45	---
Single parent household	.050	.056	.89	---
Cohort	.149	.101	1.48	---
Student to teacher ratio	-.006	.016	-.35	-.011
Suspension rates	.004	.006	.59	.018
Attendance	.006	.004	1.51	.063
% Eligible free/reduced lunch	.002*	.001	2.5	.063
Perceived risk of crime	.136	.188	.72	.026

Direct Effects on In-school Delinquency				
	<i>b</i>	SE	<i>z</i>	β
SP procedural injustice	.018	.016	1.14	.023
SP illegitimacy	.007	.013	.53	.011
US as unfair	-.012	.014	-.86	-.019
Police contact	.106**	.041	2.62	---
Family experiences with police	.003	.009	.29	.005
School punishment	.128***	.030	4.24	---
School commitment	-.020	.024	-.85	-.022
Grades	-.007	.014	-.53	-.009
Parental monitoring	-.060*	.027	-2.21	-.062
Delinquent peers	.135**	.046	2.96	.084
Delinquent attitudes	.088***	.016	5.54	.111
Impulsivity	.021	.017	1.24	.026
Victimization in-school	.153***	.029	5.21	.130
Victimization out of school	.031	.028	1.10	.031
School disorder	.020	.050	.40	.015
Neighborhood disorder	.002	.035	.06	.002
Age	-.013	.016	-.82	-.024
Male	.079**	.026	-3.04	---
Black	.043	.041	1.04	---
Hispanic	-.062	.040	-1.55	---
Other	-.026	.031	-.82	---
Single parent household	-.012	.031	-.40	---
Cohort	-.022	.062	-.36	---
Student to teacher ratio	.015	.015	.99	.043
Suspension rates	-.005	.005	-1.14	-.045
Attendance	.000	.002	.14	.005
% Eligible free/reduced lunch	.001	.001	1.23	.067

Perceived risk of crime	.135	.099	1.36	.042
Indirect Effects of SP Procedural Injustice on In-school Delinquency				
	<i>b</i>	SE	<i>z</i>	β
Through SP illegitimacy	.003	.005	.53	.004
Through US unfair	-.002	.002	-.89	-.003
Total Effects on In-school Delinquency				
	<i>b</i>	SE	<i>z</i>	β
Total	.018	.015	1.24	.024
Equation Level Goodness of Fit				
	R^2			
Predicting SP illegitimacy	.281			
Predicting US as unfair	.098			
Predicting in-school delinquency	.184			
Overall	.456			

Notes: *b* represents unstandardized coefficients; SE represents robust clustered standard errors; β represents standardized parameter estimates; *** $p < .001$; ** $p < .01$; * $p < .05$

Overall, the results of this model indicate that, although school personnel procedural injustice relates to illegitimacy and notions of fairness in the US, these variables are not valid predictors of students' compliance with school authorities in these analyses. Indeed, when considering the R^2 values of each of the equations in the path model, most of the explained variance can be attributed to the equation estimating effects on school personnel illegitimacy rather than the behavioral outcome. Consistent with the approach taken in the policing models described above, these analyses were repeated with the added control variables of perceptions of *police* procedural injustice and illegitimacy. There were two substantive changes to the results.

First, police illegitimacy has a positive and significant association with school personnel illegitimacy ($\beta = .387$, $p < .001$), again underscoring that students' reported perceptions of these two authority figures are related. Second, police procedural injustice

has a positive and significant association perceptions of unfairness in the US ($\beta=.285$, $p<.001$), and the effect of school personnel procedural injustice on unfairness is no longer significant. In other words, when analyses are limited to paths in a specific domain (e.g., the effect of perceptions of school personnel on in-school delinquency), the findings support that individuals who view teachers as unfair or unjust are more likely to consider society unfair. However, when their views of the police are considered, police perceptions emerge as a stronger predictor of perceptions of fairness in the US. This may indicate that police officers are viewed as more representative of US governance or more closely tied to overarching social dynamics compared to school personnel.

Phase 2 Results: Moderating Effects of the Carceral School Environment

The second phase of the theoretical model considers how the school-level characteristic of a carceral school environment may condition some of the paths between perceptions of procedural injustice and delinquency. Once again, the analyses proceed in two parts: first, introducing the CSE measure to a model predicting general delinquency (i.e., policing domain), then to a similar model predicting in-school delinquency (i.e., school domain). Because the CSE represents an aspect of the convergence between the criminal justice system and the school, the model focusing on the independent variables of police procedural injustice and illegitimacy will still include school personnel procedural injustice and illegitimacy as control variables, and vice versa. The models described in this section were estimated as generalized SEMs with standard errors clustered by school. The individual-level variables (i.e., level one) include procedural injustice, illegitimacy, delinquency, and the several controls mentioned above, while CSE and the school structural characteristics described above (e.g., student-to-teacher ratio,

suspension rates, % eligible for free and reduced lunch) are school-level variables. In addition, school-level measures of the key independent variables were computed and included in the models. The individual-level variables were group mean-centered so that the parameter estimates can be interpreted as *within school effects*, while the school-level variables were grand mean-centered so that estimates can be interpreted as *between school effects*.

Phase 2a: Police Procedural Injustice and General Delinquency

I examine the influence of the CSE in the theoretical model by estimating a multi-level generalized SEM with the same direct and indirect paths proposed in Phase 1a with the additional variables of CSE, school-level police procedural injustice and school-level perceptions of unfairness in the US. Then, a model was estimated that included the interaction between police procedural injustice and CSE (the product term Police Procedural Injustice *CSE) in each path. Just as the model portrayed in Figure 2, I consider whether the interaction term has a direct effect on delinquency (Police Procedural Injustice *CSE → General Delinquency), an indirect effect through police illegitimacy (Police Procedural Injustice *CSE → Police Illegitimacy → General Delinquency), and/or through US Unfair (Police Procedural Injustice *CSE → US Unfair → General Delinquency). The interaction terms were added to the paths in a stepwise fashion, to observe whether different effects emerged when estimating a model limited to the path predicting illegitimacy, US Unfair, or General Delinquency. There were no substantive differences in the findings of these separate models and a full model including the interaction term in each path. Table 8 presents the main effects of police procedural injustice and CSE on general delinquency and both mediators, as well as the

results of a model that includes the interaction term in each path simultaneously
(N=2,339; CD=.588, .590 respectively).

Table 8.

Phase 2a: Estimating Cross-level Interaction in Policing Models (N=2339)

Direct Effects on Police Illegitimacy								
Main Effects					Interaction Effects			
	<i>b</i>	SE	<i>z</i>	β	<i>b</i>	SE	<i>z</i>	β
Police Procedural Injustice	.309***	.032	9.57	.334	.451***	.073	6.22	.487
CSE	.016	.008	1.84	.020	.091**	.032	2.78	.115
Police Procedural Injustice*CSE	---	---	---	---	-.025*	.011	-2.28	-.204
Direct Effects on US as Unfair								
Main Effects					Interaction Effects			
	<i>b</i>	SE	<i>z</i>	β	<i>b</i>	SE	<i>z</i>	β
Police Procedural Injustice	.266***	.030	8.85	.283	.363***	.102	3.56	.387
CSE	-.007	.008	-.84	-.008	.045	.049	.92	.056
Police Procedural Injustice*CSE	---	---	---	---	-.017	.016	-1.08	-.138
Direct Effects on General Delinquency								
Main Effects					Interaction Effects			
	<i>b</i>	SE	<i>z</i>	β	<i>b</i>	SE	<i>z</i>	β
Police procedural injustice	-.035	.023	-1.52	-.053	-.167**	.056	-3.01	-.255
CSE	.047***	.008	5.77	.084	-.023	.031	-.72	-.040
Police Procedural Injustice *CSE	---	---	---	---	.023*	.010	2.25	.267
Indirect Effects on General Delinquency								
Main Effects					Interaction Effects			
	<i>b</i>	SE	<i>z</i>	β	<i>b</i>	SE	<i>z</i>	β
Police Procedural Injustice*CSE through Police illegitimacy	---	---	---	---	-.0004	.0004	-.92	-.001
Police Procedural Injustice*CSE through US as unfair	---	---	---	---	-.0002	.0002	-.68	-.0001
Total Effects on General Delinquency								
Main Effects					Interaction Effects			
	<i>b</i>	SE	<i>z</i>	β	<i>b</i>	SE	<i>z</i>	β
Police procedural injustice	-.028	.022	-1.26	-.042	-.156**	.058	-2.67	-.238

CSE	.047***	.008	5.78	.084	-.021	.032	-.65	-.037
Police Procedural Injustice*CSE	---	---	---	---	.023*	.011	2.14	.260

Equation Level Goodness of Fit								
	R^2				R^2			
Predicting police illegitimacy	.391				.392			
Predicting US unfair	.147				.146			
Predicting general delinquency	.248				.250			
Overall	.588				.590			

Notes: *b* represents unstandardized coefficients; SE represents robust clustered standard errors; β represents standardized parameter estimates;
 *** $p < .001$; ** $p < .01$; * $p < .05$

CSE is not significantly related to perceptions of police illegitimacy or of unfairness in the US. In other words, there is no evidence to suggest youth attending schools with more carceral practices report significantly different levels of illegitimacy or unfairness relative to the average perceptions of those in less carceral environments. That said, the CSE is positively and significantly associated with individuals' levels of general delinquency: On average, youth attending schools with higher scores on the CSE index report slightly higher levels of general delinquency ($\beta=.084$, $p<.001$). While this is a small positive effect, this directional relationship has some support in prior work; carceral features such as harsh discipline and active police presence have been linked to increased student delinquency (Raffaele-Mendez, 2003; Swartz et al., 2016; Weisburst, 2019; Wolf & Kupchik, 2017), perhaps because schools located in areas with higher delinquency tend to be more likely to incorporate carceral policies (e.g., Kupchik & Ward, 2014), or because punitive policies increase detachment or alienation (Sussman, 2011; Theriot, 2016) so that compliance with rules is less likely.

Similar to the results of the single-level models in Phase 1, perceptions of police procedural injustice are positively associated with both mediators. Individuals who indicate that they perceive greater levels of police procedural injustice are more likely to report that they perceive police as more illegitimate and the US as more unfair. Put another way, those who feel that police are less just are more likely to view police as less legitimate authorities and consider society less fair. The main effect of police procedural injustice on delinquency is negative and nonsignificant.

After adding the interaction term to each of the equations in the model, some evidence of a moderating influence was observed. First, the interaction term (Police

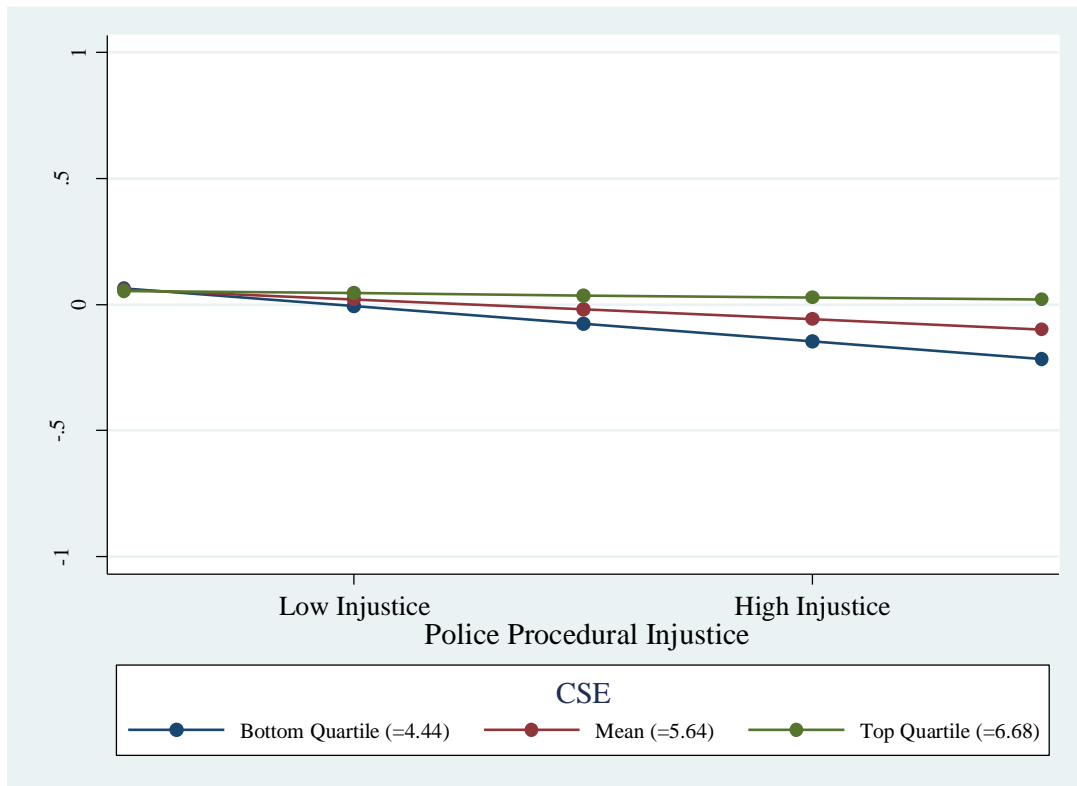
Procedural Injustice x CSE) was significantly associated with police illegitimacy ($\beta = -.204, p < .05$). While perceiving greater levels of procedural injustice is associated with perceiving the police as more illegitimate, this effect is *weakened* in more carceral school environments. This means that perceiving injustice is more impactful on assessments of police legitimacy in less carceral schools than in more carceral schools.

Initially, I expected that the positive relationship between procedural injustice and illegitimacy would be stronger in more carceral environments because the presence of criminal justice policies and practices might amplify perceptions that police were unfair or crossing the boundaries of respected authority, ultimately leading youth to think they were less legitimate. That being said, the finding that the association between procedural injustice and illegitimacy is weaker among those exposed to highly carceral school environments has some theoretical support as well. Some studies demonstrate that perceived injustice from police is more impactful among those who do not have a lot of personal or vicarious experiences with police officers. Most of this work concerns comparisons across race. For example, in their cross-sectional study of a youth sample, Hagan and colleagues (2005) found support that contact with the criminal justice system had a stronger association with negative perceptions of police among white individuals, compared to black and Latinx individuals. Similarly, Dennison and Finkedley (2020) find that unfair police contact was more likely to increase depressive symptoms and drug use for white individuals than for black individuals. While these race comparisons may be different than comparing more and less carceral schools, it is important to note that highly carceral schools are more likely to have majority-black populations in this sample, so race and the CSE are related. Also, the interpretation of race differences in these

studies tends to focus on how white and black individuals have different expectations regarding police contact. This could be applicable in explaining the effect of carceral school environments, because in less carceral environments youth might have less information about and exposure to police, so that any negative perceptions are more salient and impactful. This finding is considered in more detail in the following chapter.

In addition to this interaction effect on illegitimacy, I find that the interaction term (Police Procedural Injustice x CSE) has a direct effect on general delinquency ($\beta = .203^*$, $p < .05$). The positive association is somewhat unclear, given that the main effect of police procedural injustice on delinquency is negative. To further probe the interaction effects, I plot the marginal effects of police procedural injustice on general delinquency at specific scores on the CSE index in Figure 4.

Figure 4. Effect of Interaction between Police Procedural Injustice and CSE on Delinquency (N=2,339)



For reference, the y-axis presents variation in the latent trait capturing levels of delinquency which ranges from -.51 to 2.98, with individuals' averaging around 0 on this measure (see descriptive information in Table 1). This is a relatively nondelinquent sample of middle and high school students so, although the interaction effect is statistically significant, the effect on delinquent behavior is small in magnitude. When all of the control variables are held at their means, the blue line is the slope between police procedural injustice at Time 1 and individuals' levels of general delinquency at Time 2 in a school with relatively low CSE (i.e., in the bottom quartile on the CSE index =4.44). Four middle schools fall in this quartile. Among individuals' who attend these less carceral schools, those who perceive relatively higher procedural injustice from police are predicted to engage in lower levels of delinquency relative to those who do not view police as unjust, controlling for the indirect paths in the model. In comparison, the green line shows the effect of police procedural injustice on delinquency in a school that scores in the top quartile on the CSE measure (=6.68). Three middle schools and one high school have CSE scores at or above this value. Among individuals that attend highly carceral schools, the slope of police procedural injustice on delinquency is relatively flat.¹⁸

Overall, this is a puzzling finding that is not consistent with the procedural justice theories. Prior analyses indicate that police procedural injustice has a non-significant effect on delinquent behavior. And yet, when controlling for the indirect effects of police

¹⁸ Phase 2a and 2b analyses were also conducted using uncentered variables. The results of these models were mostly consistent with those reported here, with one exception. In the policing model, the negative effect of the cross-level interaction (Police Procedural Injustice X CSE) on general delinquency was marginally significant ($p < .07$). rather than significant at $p < .05$. The main effects of these predictors were not substantively different.

procedural injustice on delinquency via illegitimacy and perceived unfairness of the US, for individuals attending schools with few carceral characteristics, perceiving police as unfair or unjust may be linked to lower levels of delinquent behavior. This further bolsters the idea that police procedural injustice does not necessarily have a positive causal effect on individuals' noncompliance with the law, thus challenging one of the paths proposed by procedural justice theories. In addition, the findings indicate perceptions of high injustice, relative to others in one's school, may have a *negative* impact on delinquency when accounting for the small positive effect through illegitimacy. I devote more explanation to these countervailing effects after pursuing supplementary analyses that can help understand this pattern. The finding indicates that further research is necessary to understand how youth exposed to different environments perceive police, and the effect of perceiving high levels of procedural injustice. Specifically, how can we understand the group of youth who do not seem to have much contact with carceral practices, at least through their school environments, but evaluate police as very unfair or unjust compared to other students in their school?

Phase 2b: School Personnel Procedural Injustice and In-School Delinquency

The same procedure described above was followed to assess how the CSE may condition relationships among school personnel procedural injustice, proposed mediators, and in-school delinquency. Table 9 presents the results of a model estimating the main effects of school personnel procedural injustice and the CSE on school personnel illegitimacy, US unfairness, and in-school delinquency ($CD=.518$), as well as for the model including the interaction term School Personnel Procedural Injustice x CSE ($CD = .519$).

Table 9.

Phase 2b: Estimating Cross-level Interaction in School Models (N=2,339)

Direct Effects on School Personnel Illegitimacy								
Main Effects					Interaction Effects			
	<i>b</i>	SE	<i>z</i>	β	<i>b</i>	SE	<i>z</i>	β
SP Procedural Injustice	.313***	.025	12.60	.252	.312***	.024	12.76	.252
CSE	-.009	.006	-1.35	-.011	-.009	.007	-1.31	-.011
SP Procedural Injustice*CSE	---	---	---	---	.018	.015	1.21	.019
Direct Effects on US as Unfair								
Main Effects					Interaction Effects			
	<i>b</i>	SE	<i>z</i>	β	<i>b</i>	SE	<i>z</i>	β
SP Procedural Injustice	.057	.049	1.17	.045	.058	.050	1.18	.045
CSE	-.004	.005	-.83	-.005	-.004	.005	-.89	-.005
SP Procedural Injustice*CSE	---	---	---	---	-.022	.033	-.66	-.021
Direct Effects on In-school Delinquency								
Main Effects					Interaction Effects			
	<i>b</i>	SE	<i>z</i>	β	<i>b</i>	SE	<i>z</i>	β
SP Procedural injustice	.023	.022	1.03	.029	.023	.022	1.04	.030
CSE	.007*	.003	2.28	.014	.007*	.003	2.34	.014
SP Procedural injustice *CSE	---	---	---	---	-.013	.013	-1.00	-.021
Indirect Effects on In-school Delinquency								
Main Effects					Interaction Effects			
	<i>b</i>	SE	<i>z</i>	β	<i>b</i>	SE	<i>z</i>	β
SP Procedural Injustice*CSE through School Personnel illegitimacy	---	---	---	---	.0001	.0002	.35	.0001
SP Procedural Injustice*CSE through US unfair	---	---	---	---	.0001	.0003	.33	.0001

Total Effects on In-school Delinquency								
	Main Effects				Interaction Effects			
	<i>b</i>	SE	<i>z</i>	β	<i>b</i>	SE	<i>z</i>	β
SP Procedural injustice	.024	.021	1.15	.031	.024	.021	1.15	.031
CSE	.005	.004	1.29	.011	.005	.004	1.27	.010
SP Procedural Injustice*CSE	---	---	---	---	-.013	.013	-.99	-.020
Equation Level Goodness of Fit								
	R^2				R^2			
Predicting school personnel illegitimacy	.380				.380			
Predicting US unfair	.126				.126			
Predicting in-school delinquency	.135				.136			
Overall	.518				.519			

Notes: *b* represents unstandardized coefficients; SE represents robust clustered standard errors; β represents standardized parameter estimates; ****p*<.001; ***p*<.01; **p*<.05

Beginning with the main effects, the CSE is not significantly associated with changes in school personnel illegitimacy or perceptions of fairness in the US. In this model, the main effect of school personnel procedural injustice on US unfairness is nonsignificant as well. As mentioned above, this is likely due to the inclusion of perceptions of police as control variables in the model. Although the CSE is not associated with either of the proposed mediators, it does have a small significant effect on in-school delinquency. Specifically, a one standard deviation increase in the CSE index is associated with a .014 ($p < .05$) standard deviation increase in students' levels of in-school delinquency. Although minimal, the direct effect is consistent with expectations as well as the observed relationship between CSE and general delinquency.

In the model including the interaction term, there is no evidence to suggest that the CSE conditions the proposed relationships to in-school delinquency. The interaction is not significantly associated with school personnel illegitimacy, perceptions of fairness in the US, or with in-school delinquency either directly or indirectly. In conjunction with the previously reported findings of models predicting in-school delinquency, the lack of moderation observed further indicates that school personnel procedural injustice may not be a relevant predictor of individuals' levels of in-school delinquency reported in the following year, regardless of environmental conditions that may extend authorities' ability to monitor and punish behavior. It is important to reiterate here the differences in Phase 2 analytical models: There was some evidence that the CSE conditions relationships among police procedural injustice and general delinquency, but not the association between perceptions of school personnel and in-school delinquency. These

findings are revisited in the Discussion section to note how they contribute to the literature.

Phase 3 Results: Cross-Over Effects

The final phase of the theoretical model combines the relationships in each domain to further explore how convergence or overlap between the criminal justice system and schools may influence relationships among individual perceptions of authority figures and different behavioral outcomes. Figure 3 of the theoretical model includes three associations (depicted by red dashed arrows) that represent how individuals' interactions with different authorities may be related. First, a two-headed arrow between police procedural injustice and school personnel procedural injustice represents the potential similarity between individuals' perceptions of these two types of authorities. I use descriptive analyses to consider the relationship between these measures, and to determine whether individuals perceive these authorities more similarly when they attend more carceral schools.

A second cross-over effect is proposed from perceptions of police procedural injustice to in-school delinquent behavior, including indirect paths through police illegitimacy, school personnel illegitimacy, and unfairness in the US. Conversely, a third cross-over effect is proposed from school personnel procedural injustice to general delinquency, including the same three mediating variables. I examine these relationships in the following three sections.

Phase 3a: Similarity between Perceptions of Police and School Personnel

As previously reported in the results, individuals' perceptions of police and school personnel are highly correlated. Indeed, in the domain-specific analyses conducted in

Phase 1, the inclusion of school personnel procedural injustice and illegitimacy measures in the models focused on policing substantially altered the parameter estimates. Although the theoretical model proposes similarities between perceptions of *procedural injustice*, the illegitimacy measures used in these data are also relevant to consider, given the characteristics observed in these analyses and the close relationship between these theoretical constructs. Table 10 presents correlation matrices of the scale measures for school personnel procedural injustice, school personnel illegitimacy, police procedural injustice, and police illegitimacy. The first panel of the table depicts the correlations for these measures using the full analytic sample (N=2,773). In subsequent panels of the table, I display the correlations among subsamples calculated using the CSE index measure. The first panel includes correlations among individuals who attend schools with relatively low CSE, or schools with CSE index scores in the bottom 25% (CSE<4.44; N=577); the second panel includes correlations for those attending schools with CSE measures in the middle two quartiles (4.44<CSE≤6.68; N=1,643); the last panel includes correlations for those attending schools with CSE scores in top 25% or with highly carceral environments (CSE>6.68; N=553).

Table 10.

Phase 3a: Correlation Matrices of Police and School Personnel Perception

Correlations in the Full Sample (N=2,773)				
	I	II	III	IV
I. Police Procedural Injustice	---	---	---	---
II. SP Procedural Injustice	.493***	---	---	---
III. Police Illegitimacy	.474***	.320***	---	---
IV. SP Illegitimacy	.325***	.464***	.494***	---
Correlations in Schools with Relatively Low CSE (N=577)				
	I	II	III	IV
I. Police Procedural Injustice	---	---	---	---
II. SP Procedural Injustice	.535***	---	---	---
III. Police Illegitimacy	.560***	.348***	---	---
IV. SP Illegitimacy	.448***	.495***	.513***	---
Correlations in Schools with Relatively Moderate CSE (N=1,643)				
	I	II	III	IV
I. Police Procedural Injustice	---	---	---	---
II. SP Procedural Injustice	.471***	---	---	---
III. Police Illegitimacy	.431***	.274***	---	---
IV. SP Illegitimacy	.292***	.439***	.463***	---
Correlations in Schools with Relatively High CSE (N=553)				
	I	II	III	IV
I. Police Procedural Injustice	---	---	---	---
II. SP Procedural Injustice	.473***	---	---	---
III. Police Illegitimacy	.402***	.359***	---	---
IV. SP Illegitimacy	.304***	.495***	.536***	---

Notes: Subsamples were created using quartiles of the CSE measure. “Relatively High CSE” includes individuals attending schools with CSE measures in the bottom quartile. “Relatively Moderate CSE” includes individuals attending schools with CSE measures in the second and third quartiles. “Relatively High CSE” refers to a sample of individuals attending schools that scored in the top 25% on the CSE Index.

These descriptive statistics suggest that, when using measures of procedural injustice and illegitimacy consistent with prior work, there are significant correlations among respondents’ perceptions of school personnel and police. In fact, these positive correlations are slightly higher (i.e., larger in magnitude) in the subsample attending schools with low CSE compared to those attending schools with moderate or high CSE.

This pattern is contrary with the initial expectation that individuals may experience more similar perceptions of police and school personnel when they attend schools with more carceral environments. In earlier chapters, I described how carceral characteristics may signify the convergence of criminal justice and education institutions in a way that allows adolescents to generalize their perceptions of a specific authority type to other authority figures. Instead, these findings indicate that individuals in this sample generally report similarities in their views of police and school personnel and, if anything the correlation is slightly lower among those who attend schools that are high in CSE.

Given the substantive correlation among these measures, I probe the similarity further by assessing the individual items contributing to the procedural injustice and illegitimacy measures for school personnel and police. While procedural injustice and illegitimacy are distinct theoretical constructs that are measured separately in the main analyses, they each capture dimensions of individuals' assessments of authority figures. I conducted factor analyses involving 9 items—four school personnel procedural injustice items, three police procedural injustice items, 1 police illegitimacy item, 1 school personnel illegitimacy items—to assess whether individuals' perceptions of police and school personnel were indicators of some overarching latent construct for one's perception of authority more generally. Table 11 presents four factor analyses. The first panel shows the factor analyses using the full sample. While two factors emerge with Eigenvalues >1, it is clear from the loadings on factor one that the many of the items referring to school personnel load well with items referring to police. Subsequent panels present the factor loadings estimated when using subsamples calculated based on CSE. Once again, the expectation that perceptions of these authorities might be more similar

among those attending highly carceral schools is not supported. In fact, the individual factor loadings and alpha ($=.87$) for those attending schools with low CSE are higher than among those attending schools with high CSE ($\alpha=.83$). These are small differences to speculate about, but one potential explanation might be that individuals in low CSE are extrapolating from their experiences with school personnel to inform their perceptions of police because they have less exposure to the criminal justice system compared to those who attend high CSE.

Table 11. Phase 3a: Factor Analyses for Police and School Personnel Perceptual Measures

Police and SP Procedural Injustice and Illegitimacy (N=2,773)				
	Factor loadings			Alpha
	Factor 1 (E=4.404)	Factor 2 (E=1.052)	Factor 3 (E=.561)	$=.851$
Police treat people fairly	.837	-.455	-.218	
Police are honest	.844	-.468	-.155	
Police are respectful toward people like me	.695	-.212	.027	
You should do what the police tell you to do even if you disagree	.598	-.169	.400	
Teachers treat students fairly	.806	.474	-.222	
School rules are fair	.646	.175	.077	
Teachers treat students with respect	.799	.509	-.171	
School rules are consistently enforced at my school	.472	.156	.179	
You should do what teachers, principals, and other adults at this school tell you even if you disagree	.554	.114	.460	
Police and SP Procedural Injustice and Illegitimacy (Low CSE; N=577)				
	Factor loadings			Alpha
	Factor 1 (E=4.454)	Factor 2 (E=.970)	Factor 3 (E=.384)	$=.865$
Police treat people fairly	.754	.333	-.291	
Police are honest	.795	.352	-.215	
If you treat police with respect, they will treat you with respect	.663	.220	.049	

You should do what the police tell you to do even if you disagree	.643	.362	.181
Teachers treat students fairly	.793	-.510	-.136
School rules are fair	.687	-.163	.179
Teachers treat students with respect	.811	-.496	-.103
School rules are consistently enforced at my school	.558	-.119	.213
You should do what teachers, principals, and other adults at this school tell you even if you disagree	.659	.097	.329

Police and SP Procedural Injustice and Illegitimacy (Moderate CSE; N=1,643)

	Factor loadings			Alpha
	Factor 1 (E=4.404)	Factor 2 (E=1.051)	Factor 3 (E=.561)	=.851
Police treat people fairly	.837	-.455	-.218	
Police are honest	.844	-.468	-.155	
Police officers are respectful toward people like me	.695	-.212	.027	
You should do what the police tell you to do even if you disagree	.598	-.169	.399	
Teachers treat students fairly	.806	.474	-.222	
School rules are fair	.646	.175	.077	
Teachers treat students with respect	.799	.509	-.171	
School rules are consistently enforced at my school	.472	.156	.179	
You should do what teachers, principals, and other adults at this school tell you even if you disagree	.554	.114	.460	

Police and SP Procedural Injustice and Illegitimacy (High CSE; N=553)

	Factor loadings			Alpha
	Factor 1 (E=3.926)	Factor 2 (E=.815)	Factor 3 (E=.458)	=.831
Police treat people fairly	.732	-.419	-.177	
Police are honest	.726	-.412	.010	
Police are respectful toward people like me	.659	-.349	.022	
You should do what the police tell you to do even if you disagree	.586	.023	.422	
Teachers treat students fairly	.768	.331	-.213	
School rules are fair	.594	.122	-.162	
Teachers treat students with respect	.743	.389	-.198	
School rules are consistently enforced at my school	.490	.120	.065	

You should do what teachers, principals, and other adults at this school tell you even if you disagree	.663	.240	.365
--	------	------	------

Overall, in subsamples attending schools with low, moderate, or high values on the CSE index, two of the school personnel items (Teachers treat students fairly, Teachers treat students with respect) have high factor loadings with the indicators of police perceptions, lending further support to the idea that individuals' perceptions of these different authority figures are related and reflect a fair amount of agreement. Indeed, in the subsamples reflecting low CSE and high CSE, only one factor has an Eigenvalue greater than one. Together, these results may indicate that perceptions of police and school personnel can be indicative of a more general construct, with the caveat that the differences in the factor loadings may be affected by the reduced sample sizes in these groups.

Phase 3b: The Effect of Police Procedural Injustice on In-School Delinquency

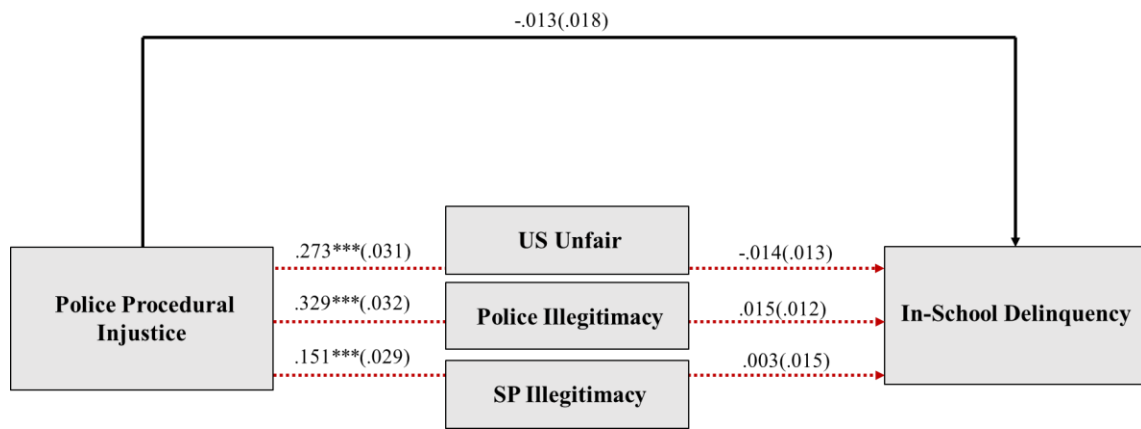
First, I estimate a model regressing the outcome of *in-school delinquency* on perceptions of *police* procedural injustice. Consistent with the paths depicted in Figure 3 of the theoretical model, I estimate the direct effect of police procedural injustice on in-school delinquency, and indirect paths through perceptions of the US as unfair, police illegitimacy, and school personnel illegitimacy. CSE and school structural characteristics (e.g., attendance, suspension rates) were included as controls variables in each path (N=2,339; CD = .565).¹⁹ Figure 5 presents the standardized coefficient estimates and

¹⁹ Phase 3 of the theoretical model (illustrated in Figure 3) initially included the CSE as a moderating influence on direct paths between procedural injustice and delinquency, as well as indirect paths through each of the three mediators. Additional models were estimated including the interaction term in each of the paths. No moderating effect was detected. The parameters for the interaction terms were insignificant in

robust standard errors for each of the key variables. These results do not support a significant relationship between individuals' perceptions of police procedural injustice at Time 1 and levels of in-school delinquency at Time 2, either directly or indirectly through any of the three mediators. Although prior analyses demonstrated some support that higher perceptions of procedural injustice from police officers are associated with increased general delinquency through police illegitimacy; it seems that perceptions of police do not “cross-over” to influence delinquency in the school domain. However, the findings do suggest a cross-over association with school personnel illegitimacy.

Figure 5.

Phase 3b: Estimating “Cross-Over” Effects from Police Procedural Injustice to In-School Delinquency (N=2,339)



Indirect Effects of Police Procedural Injustice on In-School Delinquency:

Total: .002 (.005)

Specific Effect Through US Unfair: $-.002$ (.003)

Specific Effect Through Police Illegitimacy: .002 (.004)

Specific Effect Through SP Illegitimacy: .0003 (.002)

Notes: These analyses correspond to Figure 3, Panel A of the theoretical model. Standardized coefficients and robust standard errors are presented for each effect. SP is an abbreviation for “school personnel.”

* $p < .05$; ** $p < .01$; *** $p < .001$

each path of the model predicting in-school delinquency and general delinquency. For the sake of space, and the fact that the conditioning effect of the CSE was a main focus of Phase 2 analyses, these results are not presented here. They are available upon request.

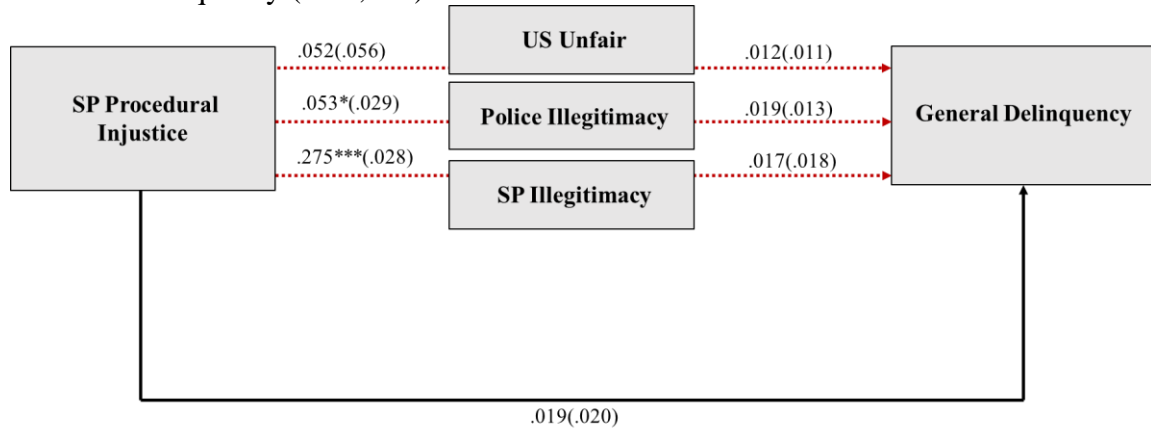
Consistent with the findings presented in earlier phases of the analyses, individuals who perceive higher levels of procedural injustice from police officers also indicate that US society is less fair (i.e., more unfair), and the police are less legitimate (i.e., more illegitimate), compared to those who report lower levels of procedural injustice. Additionally, these analyses tested the association between police procedural injustice and *school personnel* illegitimacy in order to consider how procedural injustice from a specific type of authority may contribute to general perceptions of illegitimacy from different types of authority figures. Even when controlling for the association between police procedural injustice and police illegitimacy, I find that individuals' perceptions of police procedural injustice are positively associated with perceptions of school personnel illegitimacy. As we might expect, the coefficients indicate that the magnitude of police procedural injustice's effect is greater on police illegitimacy ($\beta=.329$, $p<.001$) than school personnel illegitimacy ($\beta = .151$, $p<.001$). Together, these findings underscore the relationship between individuals' perceptions of police and school personnel. Despite the fact that perceptions of police procedural injustice are not associated with behavior that is explicitly limited to the school domain, it is noteworthy that individuals' assessment of police and school authorities as unfair or illegitimate overlap. This may indicate support for an "imprinting" process, in which youth experiences interacting with the authorities of one institution can carry over to inform their outlook on the authorities in another institution (Soss, 2002).

Phase 3c: The Effect of School Personnel Procedural Injustice on General Delinquency

In a separate model, I estimated the effect of school personnel procedural injustice on general delinquency, through the mediators of perceptions of fairness in the US, and police and school personnel illegitimacy (N=2,339; CD= .595). Figure 6 presents the parameter estimates for these relationships. Again, I do not find evidence supporting a relationship between perceptions of school personnel procedural injustice and delinquent behavior, but the results do support that increases in school personnel procedural injustice are associated with increases in school personnel illegitimacy, as well as police illegitimacy. The positive relationship between procedural justice and legitimacy hypothesized by Tyler and other procedural justice theorists seems to be applicable across domains.

Figure 6.

Phase 3c: Estimating “Cross-Over” Effects from School Personnel Procedural Injustice to General Delinquency (N=2,339)



Indirect Effects of School Personnel Procedural Injustice on General Delinquency

Total: $.013 (.006)$

Specific Effect Through US Unfair: $.001(.001)$

Specific Effect Through Police Illegitimacy: $.001(.001)$

Specific Effect through SP Illegitimacy: $.004(.006)$

Notes: These analyses correspond to Figure 3, Panel B of the theoretical model. Standardized coefficients and robust standard errors are presented for each effect. SP is an abbreviation for “school personnel.”

* $p < .05$; ** $p < .01$; *** $p < .001$

Summary of Findings

Each phase of the analyses corresponds to a key component of the current theoretical model, testing relationships that are either explicitly argued in common adaptations of procedural justice theories, or exploring newly proposed processes. Phase 1 analyses demonstrated that perceptions of procedural injustice contribute to perceptions of illegitimacy, both when focusing on police officers and school personnel. In addition, increases in perceived levels of *police* procedural injustice during Time 1 are associated with increased perceptions of unfairness in the US at Time 2, indicating that youths’ views of police can influence their understanding of broader dynamics in the country. That said, the relationship between perceptions of procedural injustice and delinquent

behavior was less pronounced. Although analyses support an indirect path from police procedural injustice to general delinquency through police illegitimacy (while direct and total effects were nonsignificant), school personnel procedural injustice does not predict in-school delinquency in these data.

The Phase 2 analyses considering the influence of the CSE demonstrated some interesting relationships that were contrary to expectations. Models including cross-level interactions indicate that individuals who report having higher perceptions of police procedural injustice relative to others in their school are more likely to engage in *less* general delinquency, but this negative effect is weakened in more carceral schools. So, while procedural justice theories tend to predict that increased perceptions of procedural injustice lead to increased delinquency, these results find a negative association among those who attend schools with fewer carceral policies.

Finally, the results of Phase 3 highlight that perceptions of specific types of authority can overlap. Multiple factor analyses show that measures of perceptions of police and school personnel are relatively consistent and may be considered indicators of the respondents' more general assessments of authority figures. Indeed, perceptions of police procedural injustice are associated with school personnel illegitimacy, even when controlling for the path from police procedural injustice to police illegitimacy. This "cross-over" path persists when considering the effect of school personnel procedural injustice on police illegitimacy. The results did not support a relationship between police procedural injustice and in-school delinquency or school personnel procedural injustice and general delinquency.

When considering the main findings from each phase, one conclusion is that perceptions of procedural injustice are not very consistent predictors of increased delinquency or noncompliance as has been suggested by prior (mostly cross-sectional) research on policing (e.g, Jackson et al., 2012; Tyler & Jackson, 2014; Sunshine & Tyler, 2003) and schools (Chory-Assad & Paulsel, 2004; Gouveia-Pereira et al., 2003; Way, 2011). This is especially noteworthy given the finding that, among some individuals who are not frequently exposed to elements of the criminal justice system in their schools, viewing the police as less just may be associated with *decreased* offending. At this stage, the meaning behind this interaction is unclear and additional analyses are needed. The following section presents supplemental analyses to help clarify the main findings.

SUPPLEMENTARY ANALYSES

The supplementary analyses involved the exploration of three questions. First, I examine whether the main results differ when predicting delinquency related to different crime types. Second, I examine whether the main results differ among schools with majority-black and majority-white populations. Third, I pursue descriptive analyses in an effort to better understand the finding of countervailing effects of police procedural injustice in low CSE. Where Phase 2 analyses demonstrated some evidence that perceptions of police procedural injustice can decrease subsequent levels of delinquency when controlling for a positive path through illegitimacy, additional information is necessary to interpret why this effect may occur.

Property vs. Violent Delinquency

While the theoretical model proposed several paths between perceptions of authorities and general levels of delinquency, it is also beneficial to consider whether the

effect of procedural injustice differs based on the type of offending. There has been mixed research on this subject. Tom Tyler and colleagues (1990; Tyler & Trinkner, 2017), as the main proponents of procedural justice theories in criminology, describe perceptions of authorities as informing general compliance with rules or laws. However, some empirical work focuses on the relationship between procedural injustice and individuals' expressed support for violent norms (e.g., Jackson et al., 2013; Slocum & Wiley, 2016), while others have considered effects on white collar offenses such as tax law violations (Murphy, 2005; Murphy, Bradford, & Jackson, 2016). The results of the main analyses indicate some support that police procedural injustice is associated with self-reported delinquency; specifically, police procedural injustice can have a small positive effect on general delinquency through police illegitimacy. Next, I examine each phase of the theoretical model using more specific behavioral outcomes based on crime type.

I use IRT scaling methods to create four new Time 2 delinquency measures, using an approach consistent to that described in the measures section of Chapter 3. Youth indicated whether or not they engaged in a range of delinquent acts in the past 6 months. *General property delinquency* is comprised of youth self-reports of four acts of property delinquency during Time 2: purposely damaging or destroying property, stealing or attempting to steal something worth more than \$50, stealing something or trying to steal something worth less than \$50, and going into a building to steal something. *In-school property delinquency* captures these same four acts, with the exception that individuals report engaging in them at school. *General violent delinquency* includes four acts: hitting someone with the idea of hurting them, attacking someone with a weapon, using a weapon or force to get money or things from people, and being involved in gang fights. *In-school*

violent delinquency is a similar measure, capturing these acts that occurred in school. Using these typological outcomes, I repeat the analyses from phases 1, 2, and 3 focusing on relationships within the criminal justice/policing and school domains.²⁰

	Mean	SD	Range
General Property Delinquency	-.02	.61	-.29 – 2.47
General Violent Delinquency	-.03	.57	-.27 – 2.72
In-school Property Delinquency	-.05	.48	-.23 – 2.80
In-school Violent Delinquency	-.08	.47	-.23 – 2.46

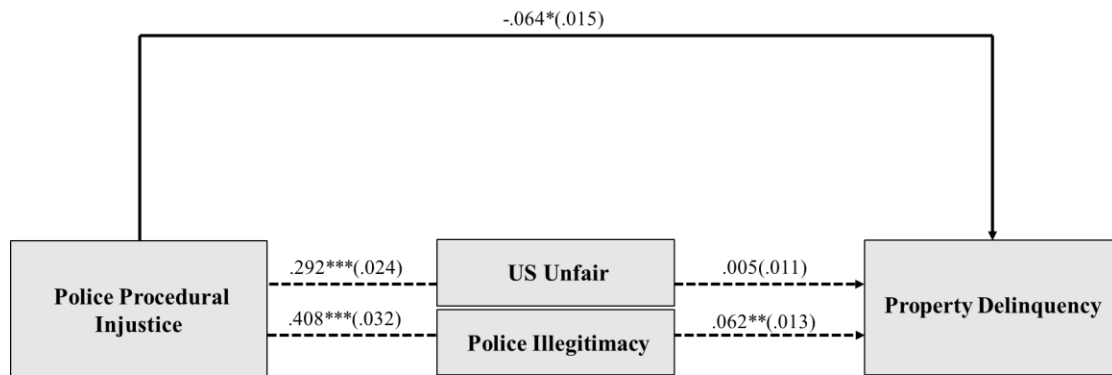
First, I want to highlight that the path models examining the effect of school personnel procedural injustice on youths' levels of violent and property delinquency were remarkably consistent with the main findings. Put simply, the findings did not indicate that youth perceptions of school personnel procedural injustice were associated with subsequent levels of property delinquency in-school or violent delinquency in-school, either through direct or indirect paths. Similarly, I did not find evidence that these nonsignificant associations varied in schools with more carceral environments, or that school personnel procedural injustice has a cross over effect on general violent or property offenses.

²⁰ In the interest of space, I will focus this discussion of supplementary analyses on the findings that differ, or introduce nuance to, the conclusions of the main analyses outlined in the previous section. I discuss consistency in the findings and then devote more attention to presenting path analyses that indicate differences in how these procedural justice processes operate. The full results of models predicting property and violent delinquency outcomes are available on request.

There were, however, notable differences in the policing path models estimating the effect of police procedural injustice on levels of general property delinquency and violent delinquency. The parameter estimates from these models indicate that many of the effects of police procedural injustice are driven by an association with property, rather than violent, offenses. Phase 1a path models considering indirect paths to property offenses are presented in Figure 7 below.

Figure 7.

Phase 1a Supplementary Analyses: Estimating Multiple Mediation Paths Predicting Property Delinquency (N=2,392)



Indirect Effects of Police Procedural Injustice on Property Delinquency:

Total: $.027^{*}(.006)$

Specific Effect Through US Unfair: $.001(.003)$

Specific Effect Through Police Illegitimacy: $.020^{**}(.005)$

Notes: These analyses correspond to Figure 1, Panel A of the theoretical model, now with the outcome of property delinquency. Standardized coefficients and robust standard errors are presented for each effect.

* $p < .05$; ** $p < .01$; *** $p < .001$.

Using the initial multiple mediation models estimating the effect of perceptions of police on general delinquency, I concluded that police procedural injustice has a positive association with each of the proposed mediators and a small indirect path to general delinquency through police illegitimacy, but the direct effect is negative and nonsignificant. After estimating separate models predicting property and violent

delinquency, it appears that police procedural injustice's effect on behavior is driven by property offenses: police procedural injustice has a specific indirect effect on property delinquency through police illegitimacy ($\beta=.020$, $p<.01$). This is still a small effect size, but it is a stronger association than observed in the full model ($\beta=.011$, $p<.05$). In addition, I observe a significant direct association between police procedural injustice and property delinquency that suggests, when controlling for the positive indirect path through police illegitimacy, increases in police procedural injustice can predict decreases in property delinquency. In contrast, the path model predicting violent delinquency (not presented here) does not provide evidence that police procedural justice has a significant effect on levels of violence, either directly or indirectly.

Taken together, these findings indicate that police procedural injustice can have countervailing effects on property offenses, which are typically considered more minor delinquent acts compared to violent offenses. First, we see a path consistent with prior work using the procedural justice framework to explain noncompliance. Individuals' views of the police as unfair or unjust are associated with reduced perceptions of police legitimacy (i.e., increases in illegitimacy). In turn, viewing the police as illegitimate authorities weakens an individuals' sense of normative compliance so that they are more likely to engage in property offenses compared to those who hold police as legitimate. When controlling for this effect, however, there is evidence of a second path where individuals who perceive police as unjust are predicted to engage in lower levels of property delinquency compared to those who perceive police more favorably. In other words, police procedural injustice can lead to an increase in delinquency when operating via one's notions of police officers as authorities that they are obligated to obey, while

having an opposite effect when not operating through legitimacy. The explanation for this negative direct association is unclear, it may act through an indirect mechanism that I do not account for. It is worth exploring further, and I will revisit the negative relationship after presenting the remaining supplementary analyses.

Next, I estimated multilevel models including the interaction between the level two CSE variable and level one police procedural injustice on property delinquency and violent delinquency. Table 13 presents the results of a model estimating the main direct and indirect effects of police procedural injustice and CSE on property delinquency ($N=2,339$; $CD=.5552$), as well as a model including the interaction in each path ($CD=.553$). While they are omitted from the table, all of the control variables were included in each path. I want to call attention to the interaction effect on property delinquency. Consistent with the findings reported in the main Phase 2a analyses, the parameter estimate for the direct effect of police procedural injustice on property delinquency is in the negative direction, while the effect of the interaction term is positive and significant ($\beta=.015$, $p<.05$). Figure 8 plots the interaction effect. In less carceral schools, individuals with relatively higher perceptions of police procedural injustice are predicted to engage in slightly lower levels of property offending compared to other students in their schools who view police more favorably. In more carceral environments, the slope between police procedural injustice and property offending is relatively flat.

Table 13.

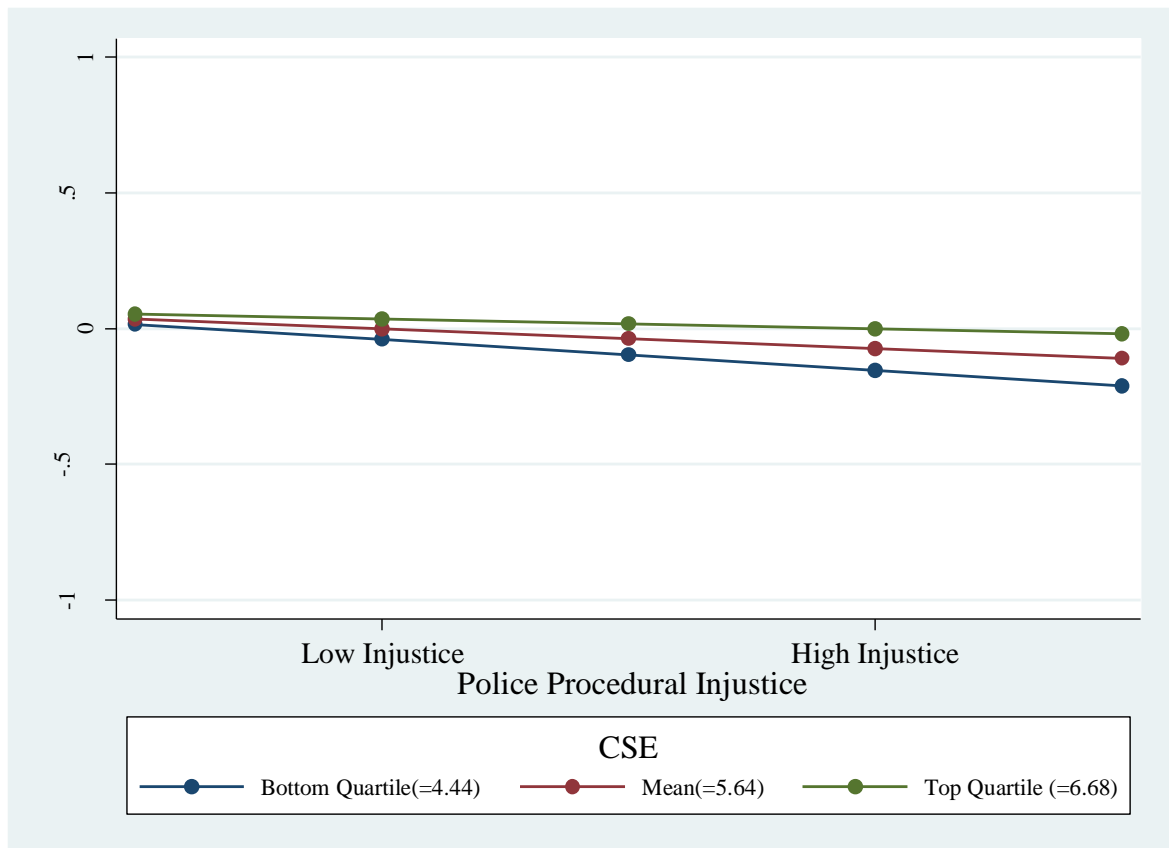
Phase 2b: Supplementary Analyses Estimating Cross-level Interaction in Policing Models Predicting *Property Delinquency* (N=2,340)

Direct Effects on Police Illegitimacy								
	Main Effects				Interaction Effects			
	<i>b</i>	SE	<i>z</i>	β	<i>b</i>	SE	<i>z</i>	β
Police Procedural Injustice	.310***	.032	9.59	.334	.452***	.072	6.28	.489
CSE	.015	.009	1.74	.019	.091**	.032	2.78	.114
Police Procedural Injustice*CSE	---	---	---	---	-.025*	.011	-2.30	-.204
Direct Effects on US as Unfair								
	Main Effects				Interaction Effects			
	<i>b</i>	SE	<i>z</i>	β	<i>b</i>	SE	<i>z</i>	β
Police Procedural Injustice	.265***	.030	8.83	.283	.362***	.102	3.55	.385
CSE	-.006	.008	-.67	-.007	.046	.049	.93	.057
Police Procedural Injustice*CSE	---	---	---	---	-.017	.016	-1.07	-.136
Direct Effects on Property Delinquency								
	Main Effects				Interaction Effects			
	<i>b</i>	SE	<i>z</i>	β	<i>b</i>	SE	<i>z</i>	β
Police procedural injustice	-.032	.018	-1.81	-.059	-.123**	.047	-2.61	-.224
CSE	.055***	.007	7.97	.117	.007	.028	.26	.015
Police Procedural Injustice *CSE	---	---	---	---	.016*	.007	2.05	.217
Indirect Effects on Property Delinquency								
	Main Effects				Interaction Effects			
	<i>b</i>	SE	<i>z</i>	β	<i>b</i>	SE	<i>z</i>	β
Police Procedural Injustice*CSE through Police illegitimacy	---	---	---	---	-.001	.001	-1.59	-.001
Police Procedural Injustice*CSE through US as unfair	---	---	---	---	-.0001	.0002	-.41	-.001
Total Effects on Property Delinquency								
	Main Effects				Interaction Effects			
	<i>b</i>	SE	<i>z</i>	β	<i>b</i>	SE	<i>z</i>	β

	<i>b</i>	SE	<i>z</i>	β	<i>b</i>	SE	<i>z</i>	β
Police procedural injustice	-.018	.018	-1.02	-.033	-.100*	.046	-2.18	-.182
CSE	.056***	.007	7.81	.118	.008	.028	.28	.017
Police Procedural Injustice*CSE	---	---	---	---	.015	.008	1.79	.206
Equation Level Goodness of Fit								
	R^2				R^2			
Predicting police illegitimacy	.392				.393			
Predicting US unfair	.146				.146			
Predicting property delinquency	.178				.179			
Overall	.552				.553			

Notes: *b* represents unstandardized coefficients; SE represents robust clustered standard errors; β represents standardized parameter estimates; ****p*<.001; ***p*<.01; **p*<.05

Figure 8. Effect of Interaction between Police Procedural Injustice and CSE on *Property Delinquency* (N=2,339)



In models predicting violent delinquency, the main effects of police procedural injustice and CSE, as well as the interaction effect on levels of violence were nonsignificant (results not pictured). Again, this supports conclusion that the previously observed relationships were driven by an association between perceptions of police and property offenses.

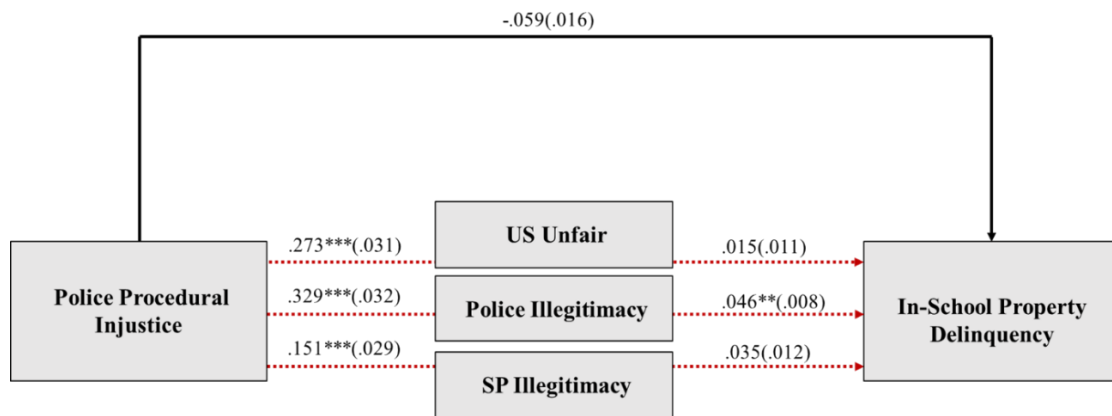
Finally, I estimate the cross-over effects of police procedural injustice on in-school property delinquency and violent delinquency. For reference, the main Phase 3 path models did not support a significant path, either direct or indirect, between perceptions of police procedural injustice and in-school delinquency. The models predicting in-school violent delinquency demonstrate consistent results: Although police procedural injustice has a positive effect on perceptions of school personnel illegitimacy, indicating some cross-domain effects concerning youth perceptions of distinct authority figures, perceptions of police do not relate to in-school violent behavior (results not pictured).

When I limit the analyses to predicting in-school property offending, I do find evidence of a small cross-over effect on behavior. The results of this path model are depicted in Figure 9. Increases in police procedural injustice are significantly associated with increases in police illegitimacy ($\beta=.329$, $p<.001$), and increases in police illegitimacy have a small direct effect on individuals' levels of property offending at Time 2 ($\beta=.046$, $p<.01$). The specific indirect effect of police procedural injustice on in-school property delinquency via illegitimacy is positive and significant ($\beta=.016$, $p<.01$). In other words, individuals who perceive police as unfair or unjust are more likely to consider them illegitimate, and this can be associated with increases in property

offending on school grounds. Perceptions of police can indirectly relate to noncompliance with school rules, at least for these more minor property offenses. This path is consistent with the one observed for general levels of property delinquency, although the direct negative association of police procedural injustice on property offenses in-school does not reach significance.

Figure 9.

Phase 3b Supplementary Analyses: Estimating “Cross-Over” Effects from Police Procedural Injustice to In-School Property Delinquency (N=2,339)



Indirect Effects of Police Procedural Injustice on In-School Property Delinquency:

Total: $.017(.004)$

Specific Effect Through US Unfair: $.002(.003)$

Specific Effect Through Police Illegitimacy: $.016^{**}(.002)$

Specific Effect Through SP Illegitimacy: $-.002(.002)$

Notes: These analyses correspond to Figure 3, Panel A of the theoretical model, now with the outcome of In-school property delinquency. Standardized coefficients and robust standard errors are presented for each effect. * $p < .05$; ** $p < .01$; *** $p < .001$.

Summary of Findings: Property vs. Violent Delinquency²¹

Through each phase of the analyses focused on types of delinquency, I consistently find that the major conclusions regarding school personnel procedural injustice and in-school delinquency do not differ when focusing on specific types of delinquent acts: Overall, perceptions of school personnel as fair or just do not seem to have a significant impact on delinquent behavior. On the other hand, the effects of police procedural injustice on behavior appear to be limited to property offenses, where models predicting violent delinquency show nonsignificant paths. This is an interesting finding that indicates, at least in these data, perceptions of police have a greater association with more minor types of delinquency than serious violent acts. Indeed, given the results of the cross-over models, police procedural injustice can relate to both general levels of property offending and property offending in schools.

Still, two characteristics of this relationship are worth restating. First, in every model supporting an effect of police procedural injustice on property delinquency, the effect is small in magnitude. Although perceptions of police may have important consequences for youths' relationships to authorities and understanding of the world, they are not strong predictors of behavior. Second, the direction of any effect on delinquency is not straightforward. Perceptions of police seem to have countervailing effects where they may relate to increases in delinquency via illegitimacy but decrease delinquency through some other mechanism. I observe these effects again in the next two sets of

²¹ While I report the analyses focused on violent and property offenses, I also estimated these models using measures of serious and minor delinquency. I used IRT scaling methods to identify serious offenses by their estimated difficulty parameter. These "serious" and "minor" scales were mostly consistent with the violent and property scales, with the exception that the offense of hitting someone was more similar to minor offenses. The models predicting these typological scales demonstrated consistent results with those reported, where the relationship between police procedural injustice and offending seems to be driven by levels of minor (or mostly property) delinquency.

supplementary analyses and I am able to explore more potential reasons for this relationship, first considering the effect of race and then introducing some descriptive analyses.

Schools with Majority White vs. Majority Black Student Populations

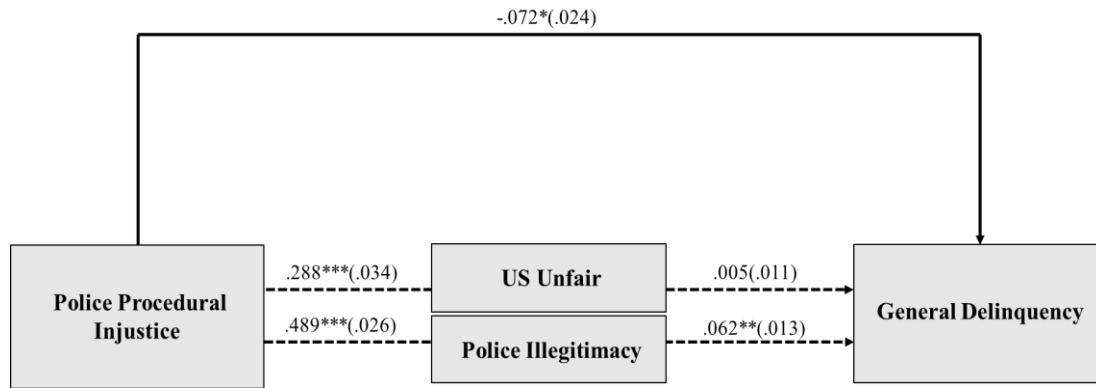
As a second question, I considered whether the proposed relationships differ among a subsample of students attending schools with a majority-white population and those attending schools with a majority-black population. The question of racial differences in perceptions of procedural injustice and the impact of these perceptions on delinquency is raised repeatedly in extant literature. While some scholars maintain that the processes posited by the procedural justice theoretical framework should be racially invariant (Lind & Tyler, 1988; Tyler, 1990, 1994; Wolfe et al., 2016), others have found preliminary evidence to suggest that perceptions of police procedural injustice can have different impacts for black and white individuals (e.g., Dennison & Finkedly, 2020; Fine et al., 2003; Hagan et al, 2005; Jones, 2014). While investigating nuanced relationships between race, procedural justice, and behavior is outside the scope of the current dissertation, I must acknowledge that the school effects of interest in this study likely overlap with race. The UMSL CSSI data include schools from two areas of St. Louis County. South County neighborhoods and schools have majority white students and a lower concentration of poverty and crime. These also tend to be the schools with lower scores on the CSE index. In comparison, North County schools have majority black student populations, a higher concentration of poverty and crime, and tend to have higher scores on the CSE (See Appendix A).

Given that there is relatively little variation in race within-schools (due to the segregated nature of communities and schools in the data), I could not perform analyses using subsamples divided by the race of individual students. I created two subsamples of individuals who attend schools with a majority-white student population (N=1,348; 10 schools) and with a majority-black student population (N=1,044; 11 schools). I then estimate the multiple mediation models from the Phase 1 analyses using these subsamples to assess whether the direct and indirect effects of procedural injustice on delinquency differ based on the race of the student population. I limit this supplementary exploration of race to single-level path models focused on mediation because, as alluded to above, many of the school-level characteristics vary more between majority-white and majority-black schools than within these groups.

The multiple mediation models were estimated using the same approach reported in the Phase 1 analyses: First, I estimate the association between police procedural injustice and general delinquency including a direct path and an indirect path through perceptions of fairness in the US and through police illegitimacy. The control variables were included in each path. Figures 10 and 11 illustrate the results of these path models among majority-white schools and majority-black schools, respectively.

Figure 10.

Phase 1a Supplementary Analyses: Estimating Multiple Mediation Paths from Police Procedural Injustice to General Delinquency in a Subsample of Majority White Schools (N=1,348, 10 schools)



Indirect Effects of Police Procedural Injustice on General Delinquency

Total: $.032^{*}(.010)$

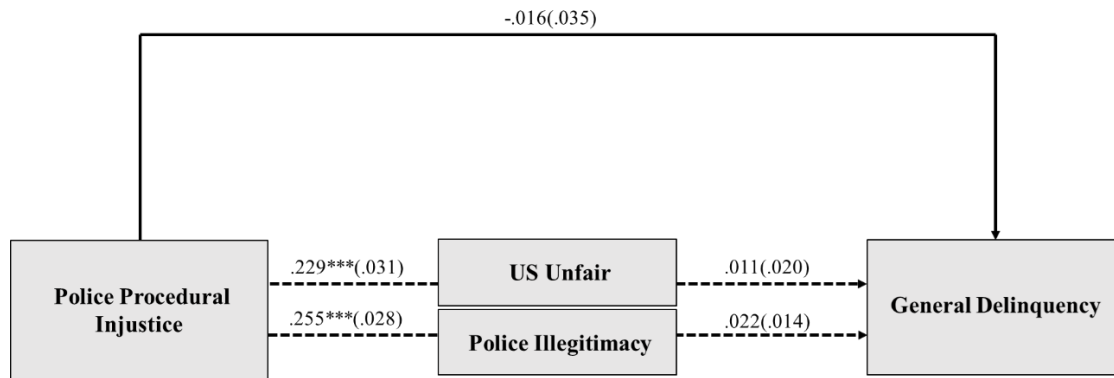
Specific Effect Through Police Illegitimacy: $.025^{*}(.007)$

Specific Effect Through US Unfair: $.006(.004)$

Notes: These analyses correspond to Figure 1, Panel A of the theoretical model. Standardized coefficients and robust standard errors are presented for each effect. * $p < .05$; ** $p < .01$; *** $p < .001$.

Figure 11.

Phase 1a Supplementary Analyses: Estimating Multiple Mediation Paths from Police Procedural Injustice to General Delinquency in a Subsample of Majority Black Schools (N=1,044, 11 schools)



Indirect Effects of Police Procedural Injustice on General Delinquency

Total: -.007(.032)

Specific Effect Through Police Illegitimacy: .005(.004)

Specific Effect Through US Unfair: .002(.005)

Notes: These analyses correspond to Figure 1, Panel A of the theoretical model. Standardized coefficients and robust standard errors are presented for each effect. * $p < .05$; ** $p < .01$; *** $p < .001$.

Each of the path models provide support that perceptions of police procedural justice relate to individuals' understanding of fairness in society and of police legitimacy. For youth attending either majority-white or majority-black schools, viewing the police as unjust is linked to a more negative perception of fairness in larger society and of police officers as authority figures that we are obligated to obey. The effect size of police procedural injustice on police illegitimacy in schools with majority-White populations is relatively large ($\beta = .489$, $p < .001$). This indicates that negative perceptions of police may be more impactful for individuals in these schools. In fact, the findings support that police procedural injustice also has a small positive effect on general delinquency via perceptions of police illegitimacy ($\beta = .025$, $p < .05$). In comparison, this indirect pathway is nonsignificant for individuals attending majority-Black schools.

Similar findings are reported in prior work investigating race differences in the consequences of police contact. For instance, Slocum and Wiley (2018) compared the effects of contact with police officers among Black, White, and Latinx youth using panel data. They find some evidence that the relationship between police contact and negative outcomes can vary by race. Specifically, neutral contact with police officers (encounters that were perceived as neither positive nor negative) was associated with increases in youth support for delinquent norms on average, but this association was strongest for white youth and weakest for black youth. This pattern seems consistent with that observed here: negative perceptions of police have a positive effect on delinquent behavior for those in majority-white schools, while these perceptions are less impactful in majority-black schools.

This may be explained by individuals' different expectations for police contact. Jones (2014) notes that when compared to White individuals, Black individuals are more likely to express police contact as a normative expectation. This may be due to personal or vicarious experiences or cultural messages, but they are more likely to expect encounters with officers and to consider police as less fair or just. This can explain why negative experiences are less impactful. In comparison, for white individuals perceived injustice may register as more consequential for their views of police legitimacy and for compliance behavior. While my analyses focus on global perceptions of officers rather than youth reactions to a specific encounter, a similar process may be at play. Youth attending majority-white schools (who are, therefore, more likely be white themselves) may not have cultural expectations regarding police treatment, so that when they do consider police

behavior to be unfair or unjust, it has a larger impact on their notions of police as legitimate authority figures. This may translate to an effect on compliance.

Another difference to note in these models concerns the direct effect of police procedural injustice on delinquency. In the subsample of majority-white schools, I again observe a negative association between police procedural injustice and delinquency ($\beta = -.072$, $p < .05$). While this association is in the same direction in the analyses of majority-black schools, the coefficient is nonsignificant. It is not surprising that these models again show the countervailing effects of police procedural injustice, given that earlier analyses identified the negative association as more likely in less carceral schools. These schools incorporating fewer carceral policies also tend to be majority-white schools.

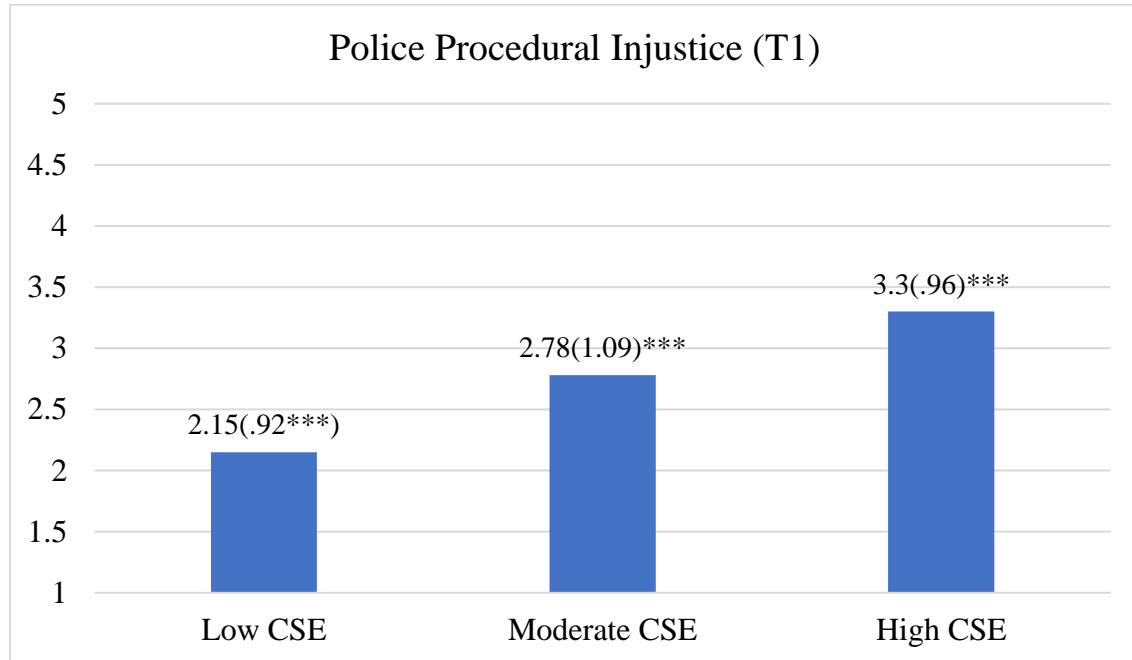
While paths between police procedural injustice and delinquency are in two different directions, I believe the literature on individuals' different expectations for police is relevant to the interpretation of both effects. This area of research indicates that perceptions of unfair police treatment can be more consequential for white youth (or those who do not have negative expectations). On one hand, those consequences might include a negative impact on perceptions of police illegitimacy, indirectly affecting behavior; on the other hand, these consequences might include decreasing delinquency if youth are basing their perceptions of injustice based on some stand-out experience that makes the threat of police punishment more salient. Youth attending mostly-white, low carceral schools may have relatively low exposure to police officers, and thus, rare experiences evaluated as highly unjust could have a deterrent effect on future delinquency. There is some support for this relationship in Tankebe's (2009a, 2009b, 2013) which suggests that some may be more likely to comply out of fear or coercion.

To be clear, while I draw on theoretical arguments and empirical work to interpret this relationship (e.g., Jones, 2014; Hagan et al., 2005; Slocum & Wiley, 2018), this negative association was unexpected and I am merely speculating at this stage. In order to help identify future directions for exploring the complex effects of police procedural injustice, the next set of analyses takes a descriptive look at those individuals for which the negative direct effect on behavior is most apparent. I consider youth who are attending majority-white schools with relatively low scores on the CSE index to help identify characteristics that might be associated with higher perceptions of police procedural injustice in these environments.

Examining Youth Attending Schools with Relatively Low CSE

Using the subsamples created based on quartiles of the CSE measure, 577 students attend schools that are relatively low on the CSE index ($CSE < 4.44$). This includes students attending four middle schools in the sample. In comparison, there are 1,643 students nested in 5 middle schools and 8 high schools in the subsample of those attending moderately carceral schools ($4.44 < CSE \leq 6.68$), and 553 students nested in 3 middle schools and one high school in the subsample of those attending highly carceral schools ($CSE > 6.68$). First, is important to consider how perceptions of police procedural injustice vary between these groups. Figure 12 presents the group means and standard deviations of police procedural injustice in each of these subsamples.

Figure 12. Police Procedural Injustice in Low, Moderate, and High CSE



Notes: *** Denotes significant differences between subsamples ($p < .001$)

Within schools with relatively low CSE scores, the average report of police procedural injustice is 2.15 on a measure in which scores closer to 1 indicate general agreement with statements such as “Police officers are honest” and “Police officers treat people fairly.” In other words, the average student in low carceral environments does not view police as procedurally unjust. Indeed, the average perception of police procedural injustice in low CSE is significantly lower than perceptions in moderate or high CSEs. The simultaneous positive effect of police procedural injustice on delinquency through illegitimacy and negative direct effect on delinquency may indicate two countervailing processes among students attending majority white schools that do not incorporate many criminal justice practices. On the one hand, students who perceive the police as unjust (i.e., report *relatively* high levels of police procedural injustice compared to the other students

who tend to view police as just) may feel that police are illegitimate authorities and feel less obligated to comply with them, resulting in delinquent behavior. However, once this path is controlled, there remains a direct negative countervailing effect of procedural injustice on delinquency that does not operate via illegitimacy, but through some mechanism unaccounted for in the model. As suggested above, this mechanism may be a deterrence factor, where stand-out experiences of negative treatment are associated with decreases in delinquency. There is some preliminary evidence that points to this possibility. I assessed the correlations between the police procedural injustice measure and other relevant covariates at Time 1 including levels of delinquency, police contact, family experiences with police, school punishment, and grades. These correlations are presented in Table 14.

Table 14. Correlation Matrix of Police Procedural Injustice and Covariates
Correlations in Schools with Relatively Low CSE (N=577)

	I.	II.	III.	IV.	V.
I. Police Procedural Injustice					
II. General Delinquency	.250***				
III. Police Contact	.207***	.285***			
IV. Family Experiences with Police	.269***	.262***	.219***		
V. School Punishment	.280***	.323***	.229***	.201***	
VI. Grades	-.216***	-.192***	-.193***	-.188***	-.277***

Correlations in Schools with Relatively High CSE (N=553)					
	I.	II.	III.	IV.	V.
I. Police Procedural Injustice					
II. General Delinquency	.195***				
III. Police Contact	.145***	.389***			
IV. Family Experiences with Police	.103***	.181***	.176***		
V. School Punishment	.120***	.173***	.261***	.148***	
VI. Grades	-.058	-.0144***	-.153***	-.030	-.216***

Notes: Subsamples were created using quartiles of the CSE measure. "Relatively High CSE" includes individuals attending schools with CSE measures in the bottom quartile. "Relatively Moderate CSE" includes individuals attending schools with CSE measures in the second and third quartiles. "Relatively Low CSE" refers to a sample of individuals attending schools that scored in the top 25% on the CSE Index. *p<.05; **p<.01; ***p<.001

When comparing across subsamples, it seems that these measures are more highly correlated among those attending less carceral schools compared to highly carceral schools. In schools where students have less direct exposure to the police, the youth who view the police as unjust may be more likely to have prior police contact. While this prior police contact may have a positive effect on delinquency via negative perceptions of the police and police legitimacy, at the same time it might suppress delinquency because these youth have experienced discipline or police contact and are deterred from crime. It is possible that less carceral schools are characterized by more supportive environments that can better

respond to students who engage in delinquency so that they do not persist in offending, whereas in more carceral schools we do not see this decrease in offending. These are preliminary explanations at this stage and future work will be necessary to understand these relationships using robust analyses.

CHAPTER 5: DISCUSSION AND CONCLUSION

Research spanning across multiple disciplines examines how interactions with authority figures in different domains can inform one's relationship to norms, rules, and laws (Tapp & Levine, 1974; Tapp, 1976; Tyler & Trinkner, 2017). The procedural justice theoretical framework is commonly applied to explore a core process in which (1) individuals evaluate authorities in terms of fairness, honesty, respect, and trustworthiness, (2) perceptions of higher levels of procedural justice lead us to consider authority figures as "legitimate" representatives of rules, and (3) consequently, we are more likely to comply with those rules (e.g., Tyler, 1990; Nagin & Tyler, 2017). In criminology, most research considers how individuals' perceptions of police officers—as the most visible representatives of the law—inform notions of authority legitimacy and relate to offending. And yet, the basis of the theoretical framework is to describe compliance with various authority figures, including nonlegal authorities such as teachers and other school personnel. Even though the theory is discussed as a general framework applicable across multiple institutions or domains, comparatively little work examines how perceptions of school personnel operate in the procedural justice model (Tyler & Trinkner, 2017).

The overarching goal of the current study was to bridge the literatures on police procedural justice and school environments to explore a model of legal socialization that recognizes youths' formative interactions in multiple domains. This is especially prudent given that changes in school practices have introduced features of the criminal justice system to education. Youth experiences with police and school personnel can converge in these environments. I take meaningful steps in developing an expanded theoretical model for understanding the impact of youth perceptions of police and school personnel.

Additionally, this study addresses key limitations in prior tests of procedural justice processes by analyzing directional paths using panel data, considering multiple theoretical mechanisms in the relationship, and considering how the relationships may be impacted by school context.

Although procedural justice theories typically outline a process in which relatively high perceptions of injustice predict increased delinquency, I only find some conditional evidence of this effect. To be fair, much of the research has moved on from the expectation of a direct causal relationship between perceptions of authority treatment and offending, and instead proposed that procedural justice operates through authority legitimacy (e.g., Tyler & Lind, 1992; Tyler, 1990; Walters & Bolger, 2019), individuals' social identities (Bradford et al., 2014; Bradford et al., 2015; Jackson & Sunshine, 2007), or another mechanism that indicates a bond to the institutions governing society (Slocum, Wiley, & Esbensen, 2016; Tyler & Blader, 2013). When considering the results from each stage of the analyses, I find evidence that youth perceptions of *police* procedural injustice can be associated with increased levels of general delinquency through the mediator of police illegitimacy. The indirect association is relatively small and is driven by an effect on property delinquency, rather than more serious violent offenses. In addition, this path does not reach statistical significance in supplementary analyses focused on schools with majority-black populations (which also tend to have more carceral environments).

This suggests that the mediated path is influenced by school context. Negative views of the police have greater consequences for perceptions of legitimacy, and delinquent behavior by way of legitimacy, for youth attending majority-white, low

carceral schools where interactions with police officers and exposure to other carceral practices are less normative. In addition, analyses focused on perceptions of school authorities do not find support that individuals' perceptions of school personnel procedural injustice influence in-school delinquency. Like police procedural injustice, views of teachers as unfair were associated with perceptions of illegitimacy, but they did not have a direct or indirect effect on behavior.

Together, these findings contribute to recent work challenging the utility in considering perceptions of authorities as predictors of delinquent behavior (see Augustyn, 2015; Kaiser & Reisig, 2019; Nagin & Telep, 2020). First, perceptions related to teachers and administrators are not significantly associated with youths' reported levels of compliance at school. It appears that this path—key in many procedural justice models of compliance—less applicable to understanding delinquency in the school domain. However, the effect of procedural justice on legitimacy does bear out when focusing on school relationships (Gregory & Ripski, 2008; Smetana & Bitz, 1996). While *police* procedural injustice is associated with delinquency in some limited circumstances, the results indicate meaningful conditions in this path related to the school environment.

I develop the expanded theoretical model to key test paths consistent with a procedural justice framework in the school and criminal justice domain. Beyond the dual exploration of these paths, I sought to identify meaningful connections in how perceptions of distinct types of authority influence youth. Extant literature on legal socialization highlights the importance of individuals' interactions with major social institutions including the school (e.g., Trinkner & Cohn, 2014; Trinkner & Tyler, 2016), the criminal justice system (e.g., Mazerolle et al., 2013), and local government (e.g.,

Justice & Meares, 2021; Soss, 2002). Therefore, another component of the theoretical model involved considering how individuals' assessments of police and school personnel may each contribute to their understanding of fairness and justice beyond a particular domain. The results of path analyses support that youths' assessments of either police or school personnel as unfair contribute to more negative views of the US at Time 2. This is an important finding in that it bolsters the notion that youth may consider formal authorities as representatives of larger systems (Meares, 2016; Tapp & Levine, 1977), so that those who perceive poor treatment are more likely to perceive other dynamics in society as unfair. While some models find an effect of school personnel procedural injustice on perceptions of the US as unfair, this effect is reduced to nonsignificance when perceptions of police are controlled for. This indicates that perceptions of school personnel and police are related, but that youths' views of police are more impactful on their views of fairness in the country. This is consistent with past characterizations of police as the most visible representatives of formal governance (e.g., Warren, 2011), seemingly more so than teachers or school administrators.

This relationship has notable implications moving forward. In some areas of research, it is commonplace to assess the effects of one's interactions with police or with teachers within their respective domains (Trinkner & Tyler, 2017). It is a meaningful finding that perceptions of either type of authority can predict subsequent perceptions of fairness in the US, even while controlling for the effect of procedural injustice on legitimacy and a robust set of covariates. This promotes the need to further examine connections between youths' experiences in different institutions. This construct of "US fairness" or "Trust in the American Promise" has been linked to other perceptual and

behavior outcomes such as voting (Bruch & Soss, 2018), volunteering (Lodewijkx et al., 2008), other forms of civic engagement (Sherrod, 2007), and a positive sense of social identity (Flanagan et al., 2007). To the degree that formative interactions with police and school personnel can represent the values of a fair and just society, authorities may have an impact on these related outcomes as well.

A related finding concerns the overlap between youth perceptions of police and school personnel. Procedural injustice and illegitimacy related to each authority type were highly correlated in these data and several analyses demonstrate the associations among the four measures, including factor analyses and path models estimating cross-domain effects. It is telling that individuals who view police as unfair or unjust are significantly more likely to consider *school personnel* illegitimate authorities, even when controlling for the relatively strong relationship between police procedural injustice and *police* illegitimacy. The reverse is true when considering the association between school personnel procedural injustice and police illegitimacy. I highlight these meaningful relationships as evidence of an “imprinting” process where interactions with one type of authority can then inform one’s perspective of another (Soss, 2002). This is consistent with the above finding, where specific judgements about teachers and police then influence more general views about the country. This can inform directions for theoretical development and future research on how youth may generalize their views of one type of authority figure, and perhaps their expectations of fair treatment and their sense of obligation to cooperate with orders and rules. For example, perception of police and school personnel as unfair may compound to impact outcomes such as legal cynicism (Gifford & Reisig, 2019; Moule et al., 2019).

This notion of exploring connections between domains also prompted the inclusion of CSE in the theoretical model. Analytic models assessing the potential moderating effect of the CSE resulted in findings contrary to expectation. Some threads of theoretical research suggested that carceral features may exacerbate the effects of negative perceptions of authorities on outcomes, essentially compounding perceptions of unjust authorities so that they had a stronger effect on behavior; however, the results demonstrate evidence of an opposite effect concerning youth perceptions of police, illegitimacy, and general delinquency.

First, while individuals who perceive high levels of police injustice relative to other students in their schools are more likely to view police as illegitimate, procedural injustice has a greater impact on perceptions of legitimacy in low CSE. This relationship may be weaker in more carceral schools because students have more normative expectations of interactions with officers. As such, even when police are perceived negatively (e.g., unfair, disrespectful), these youth have a larger experiential base and this unfair treatment may be consistent with expectations (Hagan et al., 2005). In her field research on routine police encounters among young black men, Jones (2014) reports that men expressed feelings of resignation to unfair treatment. They may come to expect police behavior indicative of procedural injustice given that contact with officers is normalized. By comparison, those in less carceral environments may have limited experience with police. When they perceive police as violating their expectations for fair and just treatment, it has a stronger effect on perceptions of legitimacy (see also Dennison & Finkedly, 2020).

Relatedly, this interaction effect may be due to the operationalization of legitimacy in this study. Legitimacy typically refers to individuals' feelings of obligation to obey an authority figure, and while this obligation is theoretical based in normative or moral alignment, the measure used may not capture this (see Tankebe & Bottoms, 2010). The implications of this measure are described more in the limitations section below, but I note it here to consider that individuals in more carceral environments regularly encounter police at school and are subject to other formal controls in the environment (e.g., security measures, searches) that may be coercive. Put simply, they indicate that they must obey officers, not due to moral alignment, but from other motivations. In this sense, procedural justice would be less relevant for predicting "legitimacy."

The findings also demonstrate that the CSE can condition the effect of police procedural injustice on delinquency. While there was no evidence of a direct effect on delinquency when considering between-individual relationships across the full sample, isolating within-school effects shows that police procedural injustice has a negative effect on delinquency in schools with low CSE. When comparing youth in low CSE, those who have relatively high perceptions of injustice report lower levels of delinquency. Importantly, this negative association is found when controlling for the path between police procedural injustice and illegitimacy, demonstrating that perceptions of police have countervailing effects. The negative association is not observed in more carceral schools.

Once again, this indicates that perceived injustice operates differently for those who may have different expectations for police behavior or levels of exposure to police. In environments where youth, on average, have more favorable perceptions of police and

are not used to carceral school policies, perceiving high levels of procedural injustice has consequences for compliance behavior. I can only speculate on the reasons the relationship observed in less carceral environments is *negative*, where viewing police as highly unjust relative to the perceptions of other students in one's school is associated with decreased levels of delinquency. It could be that this perceived injustice taps into a view of police as highly punitive, and this deters individuals from crime.

Overall, the analyses demonstrate many nuanced relationships, but I will highlight the following key takeaways: First, tests of the directional effects of procedural injustice using longitudinal data indicate while perceptions of procedural injustice may inform perceptions of fairness in the US, and notions of legitimacy, the effect on delinquency is less consistent. Other robust tests of these paths lead to similar conclusions (e.g., Kaiser & Reisig, 2019) and it is an important contribution of this study that my findings consider both police and school personnel procedural injustice. Of course, authorities should strive to act in ways that are fair, respectful, and trustworthy, regardless of the effect of procedural justice on offending. In addition to moral and ethical motivations procedural justice of police and teachers may relate to other positive outcomes including contributing to social identities (Bradford, Murphy, & Jackson, 2014; Tyler & Blader, 2013), increasing bonds and attachment to institutions (Vieno et al., 2005), whereas negative interactions with authorities can suppress civic engagement (Lerman & Weaver, 2014; Soss & Weaver, 2017).

Second, I find support for multiple relationships that underscore the meaningful connections between youths' experiences in different domains. Individuals' views of police and school personnel are highly related, and both contribute to perceptions of

fairness in broader society. Although these connections are referenced in foundational theories of legal socialization and procedural justice, more empirical work is needed to highlight the effects of interactions with one type of authority on experiences with other authorities (Granot & Tyler, 2019; Trinkner & Cohn, 2014). Research that focuses on relationships within a single institution—such as the school or the criminal justice system—may be omitting factors that have a meaningful influence on the outcomes of interest: For example, both police and school personnel procedural injustice are associated with youth perceptions of police legitimacy.

Third, the evidence that relationships in the procedural justice model operate differently according to school context seems to support that the consequences of perceptions of police differ based on youth expectations or level of experience with officers. Some youth may have limited personal or vicarious experiences with police, so that any unjust treatment dramatically contrasts with their expectations and thus leads to decreased perceptions of legitimacy. For others who are socialized to criminal justice practices in their school environment, even procedural *in*justice may meet normative expectations. Typically, the literature describing these variant processes focuses on how procedural justices' impact varies depending on the race of individuals (Dennison & Finkedly, 2020; Fine et al., 2003; Hagan et al., 2005; Slocum & Wiley, 2018). Race is also highly related to the CSE, as carceral characteristics tend to be concentrated in schools with majority-black populations (Kupchik & Ward, 2014; Payne & Welch, 2010; Welch & Payne, 2010). It follows that race dynamics (e.g., the history of overpolicing and discrimination against racial minorities, cultural beliefs, vicarious experiences) and

youth's level of experience in carceral environments may shape expectations in ways that affect the paths posited in procedural justice theories.

The uneven distribution of carceral practices in majority-Black and -White schools should not be overlooked as a characteristic of the data. If the conditioning effects of the CSE are in fact due to different normative expectations for police officers, it is worth considering what it means that some youth attending carceral school environments may come to expect procedural injustice as “normal” and whether this can have implications for outcomes beyond delinquency, such as school disengagement or alienation (Morris, 2016; Shedd, 2015; Hascher & Hadjar, 2018), reduced civic participation (Kupchik & Catlaw, 2015) or psychosocial outcomes such as feelings of powerlessness (e.g., Bracy, 2011; Jones, 2014). The conclusions of the current study indicate that integrating threads of research on race variance in legal socialization and on socialization to criminalizing environments will benefit theoretical development and help to identify the impact of some of these school practices (McGrew, 2016; Simmons, 2017).

Limitations and Directions for Future Research

While this study offers important advancements on prior work, there are some limitations that should be considered when interpreting the findings. The dataset used for analyses offers many strengths, but also some weaknesses that may be addressed in future research developing this theoretical model. It was important to use panel data to test directional paths where much of the prior work on police procedural justice, legitimacy, and offending is cross-sectional in nature. Given the theoretical focus on youths' simultaneous socialization in the school and criminal justice domains, it was

advantageous to choose a school-based sample that included the necessary measures. The instrument's inclusion of similar constructs of procedural justice and legitimacy referring to police and school personnel allowed for the examination of legal socialization processes in different domains—a major contribution of the proposed theoretical model. That said, because the sample is limited to middle and high schools in St. Louis County, these data cannot be considered representative of other populations.

Relatedly, the representativeness of the sample was further limited due to missing data. A common issue in panel data involves the attrition of respondents who are more likely to be delinquent than those retained. Comparisons of the analytic and full samples at Wave 1 showed evidence of attrition bias to this effect. In addition, some of the respondents who were unable to be re-surveyed in later Waves of data collection could have been expelled, but no information on expulsion was available to the research team. Because these factors (i.e., delinquency and expulsion) are both relevant to the research questions examined in this study, it is possible that some of the findings would be affected in analyses that included more delinquent youth. Additional research in this area should strive to test the theoretical model using more representative data samples to address these limitations.

There were also some limitations related to specific measures. The instrument included items to measure respondent's general levels of self-reported delinquency in which youth indicated how often they engaged in different types of offenses, as well as additional items that specifically referred to delinquency occurring on school grounds. The inclusion of in-school delinquency items is relatively rare, much of the work considering procedural justice and school behavior focuses on experiences with school

punishment or noncompliance with teachers' instructions (e.g., Way, 2011) rather than delinquent acts. Despite this advantage, the structure of the instrument allowed for individuals' in school delinquent acts to be counted in their responses to general delinquency questions. The analyses are not able to completely distinguish between delinquency that occurs out of school (which may be more directly associated with compliance with the laws represented by police officers) and acts that occur in school (which are subject to school authorities). This poses some theoretical and methodological challenges. Specifically, a more robust analysis of cross-over effects that allowed for the estimation of effects on in-school and out of school delinquency simultaneously was not possible in these data given the high correlations between both dependent variables.

In addition, authority legitimacy was measured using single-item indicators that may have a limited interpretation. Respondents indicated their level of agreement with the statement(s): You should do what the police [teachers, principals, and other adults at school] tell you to do even if you disagree. Extant work has considered the implications of operationalizing legitimacy in such a way that captures obedience, but not necessarily normative alignment or a sense of moral obligations (Tankebe, 2009a, Tankebe, 2013; Tyler & Trinkner, 2017). For instance, Tankebe and Bottom (2010) explain how some may express that they "should" listen to authority figures because of an awareness of mistreatment and punitive consequences for disobedience. The legitimacy measures employed in this study were consistent with many past operationalizations; however, continued work developing measures, perhaps considering multiple factors underlying this construct, may benefit our interpretation of the relationship between perceptions of different types of authority and legitimacy.

Finally, it was a notable finding that school context appears to have a conditioning influence on individual-level legal socialization processes. This relationship should be explored using more rigorous multilevel modeling methods and data with more variation at the school-level. At this initial stage of developing a novel theoretical model, it was critical to explore the role of the carceral school environment. Given the complexity of the paths being examined, I had to rely on single-level path models for many stages of the analyses. The models that do estimate multi-level relationships included a limited number of level-two variables. Although the data were structured such that individual respondents were nested in schools, there was limited variation at the school-level. There are only 21 schools included and schools located in North and South County were relatively homogeneous. The current findings can inform future directions in research that may be able to better tease out how school-level characteristics interact with perceptions of authorities using datasets including more school variation. Specifically, it would be beneficial to further explore the effects of the carceral school environment examining the separate dimensions of police presence, exclusionary discipline, and restrictive security.

Despite these limitations to the data and analytic strategy, this study makes important advancements in legal socialization research by challenging and expanding upon relationships commonly explored using the procedural justice model, as well as demonstrating the connections between youth experiences with authorities from different institutions. Beyond demonstrating evidence of the specific processes described throughout this discussion, the findings lend support to the overarching idea that we must take a broader approach when considering adolescents' formative perceptions of authority. This provides several avenues for future research, for example, to examine

whether individuals who experience greater convergence in the criminal justice and education systems through carceral school environments express different normative expectations for interactions with authorities compared to those with less experience with police. Continued research in this area should strive to further examine how youth interactions with police and school authority figures may not only shape views of criminal justice and education but can “teach alternative lessons about the nature of government” (Soss, 1999, p.363).

REFERENCES

- Advancement Project. (2010). *Test, punish, and push out: How “zero tolerance” and high-stakes testing funnel youth into the school-to-prison pipeline*.
https://b3cdn.net/advancement/d05cb2181a4545db07_r2im6cage.pdf
- Allison, P. D. (2012). *Handling missing data by maximum likelihood*. Cary, NC: SAS Global Forum.
- Ambrose, M. L., & Schminke, M. (2003). Organization structure as a moderator of the relationship between procedural justice, interactional justice, perceived organizational support, and supervisory trust. *Journal of Applied Psychology*, 88(2), 295.
- Amemiya, J., Fine, A., & Wang, M. T. (2020). Trust and discipline: Adolescents’ institutional and teacher trust predict classroom behavioral engagement following teacher discipline. *Child Development*, 91(2), 661-678.
- American Psychological Association Zero Tolerance Task Force. (2008). Are zero tolerance policies effective in the schools? An evidentiary review and recommendations. Washington, DC: American Psychological Association.
- Antrobus, E., Bennett, S., Mazerolle, L., & Eggins, E. (2019). Parental and student perceptions of procedural justice and legitimacy in the context of truancy: Results from a randomized field trial. *Australian & New Zealand Journal of Criminology*, 52(4), 534-557.
- Anyon, Y., Zhang, D., & Hazel, C. (2016). Race, exclusionary discipline, and connectedness to adults in secondary schools. *American Journal of Community Psychology*, 57(3-4), 342-352.
- Arcia, E. (2006). Achievement and enrollment status of suspended students: Outcomes in a large, multicultural school district. *Education and Urban Society*, 38(3), 359-369.
- Augustyn, M. B. (2015). The (ir) relevance of procedural justice in the pathways to crime. *Law and Human Behavior*, 39(4), 388.
- Bachman, R., Randolph, A., & Brown, B. L. (2011). Predicting perceptions of fear at school and going to and from school for African American and White students: The effects of school security measures. *Youth & Society*, 43(2), 705-726.
- Baumrind, D. (1996). The discipline controversy revisited. *Family relations*, 405-414.
- Beetham, D. (1991). *The legitimation of power*. London: Macmillan.

- Beger, R. R. (2002). Expansion of police power in public schools and the vanishing rights of students. *Social Justice*, 29(87-88), 119-130.
- Bell, A., Jones, K., & Fairbrother, M. (2018). Understanding and misunderstanding group mean centering: a commentary on Kelley et al.'s dangerous practice. *Quality & quantity*, 52(5), 2031-2036.
- Benner, A. D. (2011). The transition to high school: Current knowledge, future directions. *Educational Psychology Review*, 23(3), 299.
- Bingham, C. (2004). Let's treat authority relationally. *Counterpoints*, 259, 23-37.
- Bottoms, A., & Tankebe, J. (2012). Beyond procedural justice: A dialogic approach to legitimacy in criminal justice. *The Journal of Criminal Law and Criminology*, 119-170.
- Bowditch, C. (1993). Getting rid of troublemakers: High school disciplinary procedures and the production of dropouts. *Social Problems*, 40(4), 493-509.
- Bracy, N. L. (2011). Student perceptions of high-security school environments. *Youth & Society*, 43(1), 365-395.
- Bradford, B. (2012). Policing and social identity: Procedural justice, inclusion and cooperation between police and public. *Policing and Society*, 24(1), 22-43.
- Bradford, B., Hohl, K., Jackson, J., & MacQueen, S. (2015). Obeying the rules of the road: Procedural justice, social identity, and normative compliance. *Journal of Contemporary Criminal Justice*, 31(2), 171-191.
- Bradford, B., Murphy, K., & Jackson, J. (2014). Officers as mirrors: Policing, procedural justice and the (re) production of social identity. *British Journal of Criminology*, 54(4), 527-550.
- Brame, R., & Paternoster, R. (2003). Missing data problems in criminological research: Two case studies. *Journal of Quantitative Criminology*, 19(1), 55-78.
- Brasof, M., & Peterson, K. (2018). Creating procedural justice and legitimate authority within school discipline systems through youth court. *Psychology in the Schools*, 55(7), 832-849.
- Bronfenbrenner, U. (1979). Contexts of child rearing: Problems and prospects. *American psychologist*, 34(10), 844.
- Brooks, K., Schiraldi, V., & Ziedenberg, J. (1999). *School house hype: Two years later*. San Francisco, CA: Center on Juvenile and Criminal Justice.

- Brooks, R. R. W. (2000). Fear and fairness in the city: Criminal enforcement and perceptions of fairness in minority communities. *Southern California Law Review*, 73, 1219–1270.
- Brown, B. (2006). Understanding and assessing school police officers: A conceptual and methodological comment. *Journal of Criminal Justice*, 34(6), 591-604.
- Brown, B., & Benedict, W. R. (2002). Perceptions of the police: Past findings, methodological issues, conceptual issues and policy implications. *Policing: An International Journal of Police Strategies & Management*, 25(3), 543-580.
- Brown, E. R. (2003). Freedom for some, discipline for “others”: The structure of inequity in education. In Saltman, K.J., & Gabbard, D. A. (Eds.) *Education as enforcement: The militarization and corporatization of schools*, 127-152.
- Browne, J. A. (2005). *Education on lockdown: The schoolhouse to jailhouse track*. Washington, DC: Advancement Project.
- Bruch, S. K., & Soss, J. (2016). Learning Where We Stand: How School Experiences Matter for Civic Marginalization and Political Inequality. *Washington Center for Equitable Growth*.
- Bruch, S. K., & Soss, J. (2018). Schooling as a formative political experience: Authority relations and the education of citizens. *Perspectives on Politics*, 16(1), 36-57.
- Brunson, R. K. (2007). “Police don't like black people”: African-American young men's accumulated police experiences. *Criminology & Public Policy*, 6(1), 71-101.
- Bumpers, E. L. (2018). A Tale of two Cities: A Divide of White and Black Non-Unification. In #BRokenPromises, Black Deaths, & Blue Ribbons (pp. 47-54). Brill Sense.
- Carrino, C. B. (2016). Gatekeepers to success: Missouri's exclusionary approach to school discipline. *Washington University Journal of Law & Policy*, 52, 171.
- Carson, D. C. (2013). Perceptions of prosocial and delinquent peer behavior and the effect on delinquent attitudes: A longitudinal study. *Journal of Criminal Justice*, 41(3), 151-161.
- Casella, R. (2001). *At zero tolerance: Punishment, prevention, and school violence*. New York: Peter Lang.
- Casella, R. (2003). Zero tolerance policy in schools: Rationale, consequences, and alternatives. *Teachers College Record*.

- Chory-Assad, R. M., & Paulsel, M. L. (2004). Classroom justice: Student aggression and resistance as reactions to perceived unfairness. *Communication Education*, 53(3), 253-273.
- Chriss, J. J. (2007). The functions of the social bond. *The Sociological Quarterly*, 48(4), 689-712.
- Claes, E., Hooghe, M., & Stolle, D. (2009). The political socialization of adolescents in Canada: Differential effects of civic education on visible minorities. *Canadian Journal of Political Science*, 613-636.
- Coleman, J. C., Coleman, J., & Hagell, A. (Eds.). (2007). *Adolescence, risk and resilience: Against the odds* (Vol. 3). John Wiley & Sons.
- Connell, N. M. (2018). Fear of crime at school: Understanding student perceptions of safety as function of historical context. *Youth Violence and Juvenile Justice*, 16(2), 124-136.
- Correa, S., & Diliberti, M. (2020). Policies Outlining the Role of Sworn Law Enforcement Officers in Public Schools. Data Point. NCES 2020-027. *National Center for Education Statistics*.
- Costenbader, V. K., & Markson, S. (1994). School suspension: A survey of current policies and practices. *NASSP Bulletin*, 78(564), 103-107.
- Costenbader, V., & Markson, S. (1998). School suspension: A study with secondary school students. *Journal of School Psychology*, 36(1), 59-82.
- Curran, F. C. (2016). Estimating the effect of state zero tolerance laws on exclusionary discipline, racial discipline gaps, and student behavior. *Educational Evaluation and Policy Analysis*, 38(4), 647-668.
- Curran, F. C., Fisher, B. W., Viano, S., & Kupchik, A. (2019). Why and when do school resource officers engage in school discipline? The role of context in shaping disciplinary involvement. *American Journal of Education*, 126(1), 33-63.
- Curran, F. C., Viano, S., Kupchik, A., & Fisher, B. W. (2021). Do interactions with school resource officers predict students' likelihood of being disciplined and feelings of safety? Mixed-methods evidence from two school districts. *Educational Evaluation and Policy Analysis*, 43(2).
- Dennison, C. R., & Finkeldey, J. G. (2020). Self-reported experiences and consequences of unfair treatment by police. *Criminology*.
- Deutsch, N. L., & Jones, J. N. (2008). "Show me an ounce of respect" respect and authority in adult-youth relationships in after-school programs. *Journal of Adolescent Research*, 23(6), 667-688.

- Dewey, J. (1916). *Democracy and education*. New York, NY: Macmillan.
- Dietz, J., Robinson, S. L., Folger, R., Baron, R. A., & Schulz, M. (2003). The impact of community violence and an organization's procedural justice climate on workplace aggression. *Academy of Management Journal*, 46(3), 317-326.
- Eckland, T. N. (1999). The safe schools act: Legal and ADR responses to violence in schools. *The Urban Lawyer*, 309-328.
- Esbensen, F. A., Peterson, D., Taylor, T. J., & Osgood, D. W. (2012). Results from a multi-site evaluation of the GREAT program. *Justice Quarterly*, 29(1), 125-151.
- Esbensen, F. A., Wiley, S. A., McCuddy, T., Doherty, E. E., Slocum, L. A., Taylor, T. J., Thomas, K. J., & Vogel, M. (2020). *University of Missouri – St. Louis Comprehensive School Safety Initiative*. U.S. Department of Justice Program's National Criminal Justice Reference Service.
- Fagan, J., & Piquero, A. R. (2007). Rational choice and developmental influences on recidivism among adolescent felony offenders. *Journal of Empirical Legal Studies*, 4(4), 715-748.
- Fagan, J., & Tyler, T. R. (2005). Legal socialization of children and adolescents. *Social justice research*, 18(3), 217-241.
- Fenning, P. A., Pulaski, S., Gomez, M., Morello, M., Maciel, L., Maroney, E., Schmidt, A., Dahlvig, K., McArdle, L., Morello, T., Wilson, R. & Maltese, R. (2012). Call to action: A critical need for designing alternatives to suspension and expulsion. *Journal of School Violence*, 11(2), 105-117.
- Ferguson, A. A. (2001). *Bad boys: Public schools in the making of black masculinity*. Ann Arbor, MI: University of Michigan Press.
- Fine, M., Freudenberg, N., Payne, Y., Perkins, T., Smith, K., & Wanzer, K. (2003). "Anything can happen with police around": Urban youth evaluate strategies of surveillance in public places. *Journal of Social Issues*, 59(1), 141-158.
- Finn, P., Shively, M., McDevitt, J., Lassiter, W., & Rich, T. (2005). Comparison of Program Activities and Lessons Learned among 19 School Resource Officer (SRO) Programs. Document Number 209272. *US Department of Justice*.
- Fisher, B. W., & Hennessy, E. A. (2016). School resource officers and exclusionary discipline in US high schools: A systematic review and meta-analysis. *Adolescent Research Review*, 1(3), 217-233.
- Flanagan, C. A. (2013). *Teenage citizens: The political theories of the young*. Cambridge, MI: Harvard University Press.

- Flanagan, C. A., Cumsille, P., Gill, S., & Galloway, L. S. (2007). School and community climates and civic commitments: Patterns for ethnic minority and majority students. *Journal of educational psychology*, 99(2), 421.
- Flanagan, C. A., Syvertsen, A. K., & Stout, M. D. (2007). Civic Measurement Models: Tapping Adolescents' Civic Engagement. CIRCLE Working Paper 55. *Center for Information and Research on Civic Learning and Engagement (CIRCLE)*.
- Fry, W. R., & Cheney, G. (1981). Perceptions of procedural fairness as a function of distributive preference. In *annual meeting of the Midwestern Psychological Association, Detroit*.
- Fry, W. R., & Leventhal, G. S. (1979, March). Cross-situational procedural preferences: A comparison of allocation preferences and equity across different social settings. In *annual meeting of the Southeastern Psychological Association, Washington, DC*.
- Gasper, J., DeLuca, S., & Estacion, A. (2010). Coming and going: Explaining the effects of residential and school mobility on adolescent delinquency. *Social Science Research*, 39(3), 459-476.
- Gastic, B. (2011). Metal detectors and feeling safe at school. *Education and urban society*, 43(4), 486-498.
- Gau, J. M. (2011). The convergent and discriminant validity of procedural justice and police legitimacy: An empirical test of core theoretical propositions. *Journal of Criminal Justice*, 39(6), 489-498.
- Gau, J. M. (2014). Procedural justice and police legitimacy: A test of measurement and structure. *American Journal of Criminal Justice*, 39(2), 187-205.
- Gauthier, J. F., & Graziano, L. M. (2018). News media consumption and attitudes about police: In search of theoretical orientation and advancement. *Journal of Crime and Justice*, 41(5), 504-520.
- Gordon, Colin. 2008. *Mapping Decline: St. Louis and the Fate of the American City*. Philadelphia, PA: University of Pennsylvania Press.
- Gottfredson, D. C. (2001). *Schools and delinquency*. New York, NY: Cambridge University Press.
- Gottfredson, D. C., Crosse, S., Tang, Z., Bauer, E. L., Harmon, M. A., Hagen, C. A., & Greene, A. D. (2020). Effects of school resource officers on school crime and responses to school crime. *Criminology & Public Policy*, 19(3), 905-940.
- Gottfredson, G. D., Gottfredson, D. C., Payne, A. A., & Gottfredson, N. C. (2005). School climate predictors of school disorder: results from a national study of

- delinquency prevention in schools. *Journal of Research in Crime and Delinquency*, 42(4), 412–444.
- Gottfredson, M. R., & Hirschi, T. (1990). *A general theory of crime*. Stanford, CA: Stanford University Press.
- Gouveia-Pereira, M., Vala, J., Palmonari, A., & Rubini, M. (2003). School experience, relational justice and legitimation of institutional. *European Journal of Psychology of Education*, 18(3), 309-325.
- Graham, J. W. (2009). Missing data analysis: Making it work in the real world. *Annual review of psychology*, 60, 549-576.
- Granot, Y., & Tyler, T. R. (2019). Adolescent cognition and procedural justice: Broadening the impact of research findings on policy and practice. *Social and Personality Psychology Compass*, 13(10).
- Grasmick, H. G., Tittle, C. R., Bursik, Jr, R. J., & Arneklev, B. J. (1993). Testing the core empirical implications of Gottfredson and Hirschi's general theory of crime. *Journal of Research in Crime and Delinquency*, 30(1), 5–29.
- Gray, M. R., & Steinberg, L. (1999). Unpacking authoritative parenting: Reassessing a multidimensional construct. *Journal of Marriage and the Family*, 574-587.
- Greenberg, J., & Alge, B. J. (1998). Aggressive reactions to workplace injustice. In R. W. Griffin, A. O'Leary-Kelly, & J. M. Collins (Eds.), *Monographs in organizational behavior and industrial relations*, Vol. 23, Parts A & B. *Dysfunctional behavior in organizations: Violent and deviant behavior* (p. 83–117)
- Gregory, A., & Ripski, M. B. (2008). Adolescent trust in teachers: Implications for behavior in the high school classroom. *School Psychology Review*, 37(3), 337-353.
- Gregory, A., Cornell, D., & Fan, X. (2011). The relationship of school structure and support to suspension rates for Black and White high school students. *American Educational Research Journal*, 48(4), 904-934.
- Gronlund, L. E. (1993). Understanding the national goals. ERIC Clearinghouse.
- Guillaume, C., Jagers, R., & Rivas-Drake, D. (2015). Middle school as a developmental niche for civic engagement. *American Journal of Community Psychology*, 56(3-4), 321-331.
- Gun-Free Schools Act 1994* (20 U.S.C. Chapter 70, Sec. 8921).

- Hagan, J., Shedd, C., & Payne, M. R. (2005). Race, ethnicity, and youth perceptions of criminal injustice. *American Sociological Review*, 70(3), 381-407.
- Hanson, A. L. (2005). Have Zero Tolerance School Discipline Policies Turned into a Nightmare-The American Dream's Promise of Equal Educational Opportunity Grounded in Brown v. Board of Education. *UC Davis Journal of Juvenile Law & Policy*, 9, 289.
- Harris, J. W., & Jones, M. S. (2020). Shaping youths' perceptions and attitudes toward the police: Differences in direct and vicarious encounters with police. *Journal of Criminal Justice*, 67, 101674.
- Harwell, M., & LeBeau, B. (2010). Student eligibility for a free lunch as an SES measure in education research. *Educational Researcher*, 39(2), 120-131.
- Hascher, T., & Hadjar, A. (2018). School alienation—Theoretical approaches and educational research. *Educational Research*, 60(2), 171-188.
- Haynie, D. L., & Osgood, D. W. (2005). Reconsidering peers and delinquency: How do peers matter?. *Social Forces*, 84(2), 1109-1130.
- Hemphill, S. A., Toumbourou, J. W., Herrenkohl, T. I., McMorris, B. J., & Catalano, R. F. (2006). The effect of school suspensions and arrests on subsequent adolescent antisocial behavior in Australia and the United States. *Journal of Adolescent Health*, 39(5), 736-744.
- Hirsch, B. J. (2005). *A place to call home: After-school programs for urban youth*. Teachers College Press.
- Hirschfield, P. J. (2008). Preparing for prison? The criminalization of school discipline in the USA. *Theoretical Criminology*, 12(1), 79-101.
- Hirschfield, P. J., & Celinska, K. (2011). Beyond fear: Sociological perspectives on the criminalization of school discipline. *Sociology Compass*, 5(1), 1-12.
- Hirschfield, P. J., & Gasper, J. (2011). The relationship between school engagement and delinquency in late childhood and early adolescence. *Journal of Youth and Adolescence*, 40(1), 3-22.
- Hirschi, T. (1969). *Causes of delinquency*. Berkeley: University of California Press.
- Hoeve, M., Blokland, A., Dubas, J. S., Loeber, R., Gerris, J. R., & Van der Laan, P. H. (2008). Trajectories of delinquency and parenting styles. *Journal of Abnormal Child Psychology*, 36(2), 223-235.
- Huber, C. (2014). Introduction to structural equation modeling using Stata. *California Association for Institutional Research*.

- Hughes, J. N., Cavell, T. A., Meehan, B. T., Zhang, D., & Collie, C. (2005). Adverse school context moderates the outcomes of selective interventions for aggressive children. *Journal of Consulting and Clinical Psychology, 73*(4), 731.
- Hyman, I. A., & Perone, D. C. (1998). The other side of school violence: Educator policies and practices that may contribute to student misbehavior. *Journal of School Psychology, 36*(1), 7-27.
- Jackson, J., & Sunshine, J. (2007). Public confidence in policing: A neo-Durkheimian perspective. *British Journal of Criminology, 47*(2), 214-233.
- Jackson, J., Bradford, B., Hough, M., Myhill, A., Quinton, P., & Tyler, T. R. (2012). Why do people comply with the law? Legitimacy and the influence of legal institutions. *British Journal of Criminology, 52*(6), 1051-1071.
- James, K., Bunch, J., & Clay-Warner, J. (2015). Perceived injustice and school violence: An application of general strain theory. *Youth Violence and Juvenile Justice, 13*(2), 169-189.
- Jennings, W. G., Piquero, A. R., & Reingle, J. M. (2012). On the overlap between victimization and offending: A review of the literature. *Aggression and Violent behavior, 17*(1), 16-26.
- Johns, G. (2006). The essential impact of context on organizational behavior. *Academy of Management Review, 31*(2), 386-408.
- Johns, G. (2018). Advances in the treatment of context in organizational research. *Annual Review of Organizational Psychology and Organizational Behavior, 5*, 21-46.
- Johnson, D., Wilson, D. B., Maguire, E. R., & Lowrey-Kinberg, B. V. (2017). Race and perceptions of police: Experimental results on the impact of procedural (in) justice. *Justice Quarterly, 34*(7), 1184-1212.
- Johnson, I. M. (1999). School violence: The effectiveness of a school resource officer program in a southern city. *Journal of Criminal Justice, 27*(2), 173-192.
- Johnson, S. L. (2009). Improving the school environment to reduce school violence: A review of the literature. *Journal of School Health, 79*(10), 451-465.
- Johnson, S. L., Bottiani, J., Waasdorp, T. E., & Bradshaw, C. P. (2018). Surveillance or safekeeping? How school security officer and camera presence influence students' perceptions of safety, equity, and support. *Journal of Adolescent Health, 63*(6), 732-738.

- Jones, N. (2014). "The regular routine": Proactive policing and adolescent development among young, poor black men. *New directions for child and adolescent development*, 2014(143), 33-54.
- Jones, Nikki. 2014. "The regular routine": Proactive policing and adolescent development among young, poor black men. *New Directions for Child and Adolescent Development* 143:33–54.
- Justice, B. & Meares, T.L. (2021). Does the law recognize legal socialization?. *Journal of Social Issues*, 77: 462-483.
- Justice, B., & Meares, T. L. (2014). How the criminal justice system educates citizens. *The ANNALS of the American Academy of Political and Social Science*, 651(1), 159-177.
- Kaiser, K., & Reisig, M. D. (2019). Legal socialization and self-reported criminal offending: The role of procedural justice and legal orientations. *Journal of Quantitative Criminology*, 35(1), 135-154.
- Kane, R. J. (2005). Compromised police legitimacy as a predictor of violent crime in structurally disadvantaged communities. *Criminology*, 43(2), 469-498.
- Kearney, P., & Plax, T. G. (1992). Student resistance to control. *Power in the classroom: Communication, control, and concern*, 85-100.
- Kelley, J., Evans, M. D. R., Lowman, J., & Lykes, V. (2017). Group-mean-centering independent variables in multi-level models is dangerous. *Quality & Quantity*, 51(1), 261-283.
- King, S., & Bracy, N. L. (2019). School security in the post-Columbine era: Trends, consequences, and future directions. *Journal of Contemporary Criminal justice*, 35(3), 274-295.
- Kline, R. (2005). *Principles and practices of structural equation modeling* (2n ed.). New York: Guilford Press.
- Kochel, T. R. (2018). Police legitimacy and resident cooperation in crime hotspots: effects of victimisation risk and collective efficacy. *Policing and Society*, 28(3), 251-270.
- Kumlin, S. (2004). The personal and the political. In *The personal and the political: How personal welfare state experiences affect political trust and ideology* (pp. 3-19). Palgrave Macmillan, New York.
- Kupchik, A. (2010). *Homeroom security: School discipline in an age of fear* (Vol. 6). New York: NYU Press.

- Kupchik, A. (2020). Beyond the low-hanging fruit: Reducing racial inequality by rethinking school safety efforts. *Sociological Forum*, 35(3), 813-821.
- Kupchik, A., & Catlaw, T. J. (2015). Discipline and participation: The long-term effects of suspension and school security on the political and civic engagement of youth. *Youth & Society*, 47(1), 95-124.
- Kupchik, A., & Monahan, T. (2006). The new American school: preparation for post-industrial discipline. *British Journal of Sociology of Education*, 27(5), 617-631.
- Kupchik, A., & Ward, G. (2014). Race, poverty, and exclusionary school security: An empirical analysis of US elementary, middle, and high schools. *Youth Violence and Juvenile Justice*, 12(4), 332-354.
- LaFree, G. (1998). *Losing legitimacy: Street crime and the decline of institutions in America*. Boulder: Westview.
- Lambert, R. D., & McGinty, D. (2002). Law enforcement officers in schools: setting priorities. *Journal of Educational Administration*, 40(3), 257-273.
- Larsen, E. G. (2019). Policy feedback effects on mass publics: A quantitative review. *Policy studies journal*, 47(2), 372-394.
- Le Blanc, M., & Caplan, A. (1993). Theoretical formalization, a necessity: The example of Hirschi's bonding theory. In Adler, F., & Laufer, W. S. (eds.) *New Directions in Criminological Theory. Advances in criminological theory*, 4, 237-336.
- Lemert, E. M. (1951). *Social pathology*. New York, NY: McGraw-Hill.
- Lerman, A. E., & Weaver, V. (2014). Staying out of sight? Concentrated policing and local political action. *The ANNALS of the American Academy of Political and Social Science*, 651(1), 202-219.
- Lind, E. A., & Tyler, T. R. (1988). *The social psychology of procedural justice*. New York, NY: Springer Science & Business Media.
- Loader, I. (2006). Policing, recognition, and belonging. *The Annals of the American Academy of Political and Social Science*, 605(1), 201-221.
- Lodewijckx, H. F., Kersten, G. L., & Van Zomeren, M. (2008). Dual pathways to engage in 'silent marches' against violence: Moral outrage, moral cleansing and modes of identification. *Journal of Community & Applied Social Psychology*, 18(3), 153-167.
- Losen, D. J., & Martinez, T. E. (2013). Out of school and off track: The overuse of suspensions in American middle and high schools. *UCLA: The Civil Rights Project*.

- Losinski, M. L., Katsiyannis, A., & Ryan, J. B. (2014). Recent case law regarding functional behavioral assessments: Implications for practice. *Intervention in School and Clinic, 49*(4), 251-254.
- Lyons, W. B. T., & Drew, J. (2006). *Punishing schools: Fear and citizenship in American public education*. Ann Arbor, MI: University of Michigan Press.
- Maguin, E., & Loeber, R. (1996). Academic performance and delinquency. *Crime and justice, 20*, 145-264.
- Marchbanks III, M. P., Blake, J. J., Booth, E. A., Carmichael, D., Seibert, A. L., & Fabelo, T. (2015). The economic effects of exclusionary discipline on grade retention and high school dropout. *Closing the school discipline gap: Equitable remedies for excessive exclusion, 59-74*.
- Masterson, S. S., Lewis, K., Goldman, B. M., & Taylor, M. S. (2000). Integrating justice and social exchange: The differing effects of fair procedures and treatment on work relationships. *Academy of Management journal, 43*(4), 738-748.
- Mazerolle, L., Bennett, S., Davis, J., Sargeant, E., & Manning, M. (2013). Procedural justice and police legitimacy: A systematic review of the research evidence. *Journal of experimental criminology, 9*(3), 245-274.
- McCuddy, T., Esbensen, F. A., Wiley, S. A., Doherty, E. E., Slocum, L. A., Vogel, M., Thomas, K., Taylor, T. J., Gerlomes, J., & O'Neill, J. (July, 2017). "University of Missouri-St. Louis Comprehensive School Safety Initiative Report to Participating Schools: Student Survey Results."
- McGloin, J. M., & Thomas, K. J. (2019). Peer influence and delinquency. *Annual Review of Criminology, 2*, 241-264.
- McGrew, K. (2016). The dangers of pipeline thinking: How the school-to-prison pipeline metaphor squeezes out complexity. *Educational Theory, 66*(3), 341-367.
- Meares, T. (2016). Policing and procedural justice: shaping citizens' identities to increase democratic participation. *Northwestern University Law Review, 111*(6), 1525-1535.
- Miller, J. (2008). *Getting played: African American girls, urban inequality, and gendered violence* (Vol. 9). NYU Press.
- Mitchell, M. M., & Bradshaw, C. P. (2013). Examining classroom influences on student perceptions of school climate: The role of classroom management and exclusionary discipline strategies. *Journal of School Psychology, 51*(5), 599-610.

- Monahan, T. (Ed.). (2006). *Surveillance and security: Technological politics and power in everyday life*. Taylor & Francis.
- Morris, M. (2016). *Pushout: The criminalization of Black girls in schools*. New York, NY: The New Press.
- Moule Jr, R. K., Burruss, G. W., Gifford, F. E., Parry, M. M., & Fox, B. (2019). Legal socialization and subcultural norms: Examining linkages between perceptions of procedural justice, legal cynicism, and the code of the street. *Journal of Criminal Justice*, 61, 26-39.
- Mowen, T. J., & Freng, A. (2019). Is more necessarily better? School security and perceptions of safety among students and parents in the United States. *American Journal of Criminal Justice*, 44(3), 376-394.
- Mowen, T. J., Brent, J. J., & Boman IV, J. H. (2020). The effect of school discipline on offending across time. *Justice Quarterly*, 37(4), 739-760.
- Mowen, T., & Brent, J. (2016). School discipline as a turning point: The cumulative effect of suspension on arrest. *Journal of Research in Crime and Delinquency*, 53(5), 628-653.
- Moynihan, D. P., & Soss, J. (2014). Policy feedback and the politics of administration. *Public administration review*, 74(3), 320-332.
- Muñiz, J. O. (2021). Exclusionary Discipline Policies, School-Police Partnerships, Surveillance Technologies and Disproportionality: A Review of the School to Prison Pipeline Literature. *The Urban Review*, 1-26.
- Murphy, K. (2005). Regulating more effectively: The relationship between procedural justice, legitimacy, and tax non-compliance. *Journal of law and Society*, 32(4), 562-589.
- Murphy, K. (2015). Does procedural justice matter to youth? Comparing adults' and youths' willingness to collaborate with police. *Policing and society*, 25(1), 53-76.
- Murphy, K., Bradford, B., & Jackson, J. (2016). Motivating compliance behavior among offenders: procedural justice or deterrence?. *Criminal Justice and Behavior*, 43(1), 102-118.
- Musu-Gillette, L., De Brey, C., McFarland, J., Hussar, W., Sonnenberg, W., & Wilkinson-Flicker, S. (2017). Status and Trends in the Education of Racial and Ethnic Groups 2017. NCES 2017-051. *National Center for Education Statistics*.
- Musu-Gillette, L., Zhang, A., Wang, K., Zhang, J., Kemp, J., Diliberti, M., & Oudekerk, B. A. (2018). Indicators of school crime and safety: 2017.

- Na, C., & Gottfredson, D. C. (2013). Police officers in schools: Effects on school crime and the processing of offending behaviors. *Justice Quarterly*, 30(4), 619-650.
- Nagin, D. S., & Telep, C. W. (2017). Procedural justice and legal compliance. *Annual Review of Law and Social Science*, 13, 5-28.
- Nagin, D. S., & Telep, C. W. (2020). Procedural justice and legal compliance: A revisionist perspective. *Criminology & Public Policy*, 19(3), 761-786.
- Nalla, M. K., & Gurinskaya, A. (2020). Introduction to the special issue: legitimacy and procedural justice issues in criminal justice. *International Journal of Comparative and Applied Criminal Justice*, 44(1-2), 3-5.
- National Clearinghouse on Supportive School Discipline (2017). Exclusionary Discipline.
- Naumann, S. E., & Bennett, N. (2000). A case for procedural justice climate: Development and test of a multilevel model. *Academy of Management journal*, 43(5), 881-889.
- Nelson, N., Shechter, D., & Ben-Ari, R. (2014). Procedural justice and conflict management at school. *Negotiation Journal*, 30(4), 393-419.
- Nihart, T., Michelle Lersch, K., Sellers, C. S., & Mieczkowski, T. (2005). Kids, Cops, Parents and Teachers: Exploring Juvenile Attitudes Toward Authority Figures. *Western Criminology Review*, 6(1).
- Nivette, A. (2014). Legitimacy and crime: Theorizing the role of the state in cross-national criminological theory. *Theoretical Criminology*, 18(1), 93-111.
- Noltemeyer, A. L., Ward, R. M., & McLoughlin, C. (2015). Relationship between school suspension and student outcomes: A meta-analysis. *School Psychology Review*, 44(2), 224-240.
- Nunkoo, R., & Ramkissoon, H. (2012). Structural equation modelling and regression analysis in tourism research. *Current Issues in Tourism*, 15(8), 777-802.
- Nuño, L. E. (2018). Hispanics' perceived procedural justice, legitimacy, and willingness to cooperate with the police. *Police Practice and research*, 19(2), 153-167.
- O'Neill, J., Esbensen, F. A., Doherty, E. E., Slocum, L. A., Vogel, M., Thomas, K., J., Wiley, S. A., Taylor, T. J., McCuddy, T. M., & Gerlomes, J. (July, 2017). "University of Missouri-St. Louis Comprehensive School Safety Initiative Report to Participating Schools: School Personnel Survey Results."

- Osgood, D. W., McMorris, B. J., & Potenza, M. T. (2002). Analyzing multiple-item measures of crime and deviance I: Item response theory scaling. *Journal of Quantitative Criminology*, 18(3), 267-296.
- Ostroff, C., Kinicki, A. J., & Muhammad, R. S. (2012). Organizational culture and climate. *Handbook of Psychology, Second Edition*, 12.
- Owens, E. G. (2017). Testing the school-to-prison pipeline. *Journal of Policy Analysis and Management*, 36(1), 11-37.
- Paccagnella, O. (2006). Centering or not centering in multilevel models? The role of the group mean and the assessment of group effects. *Evaluation review*, 30(1), 66-85.
- Payne, A. A. & Welch, K. (2010). Modeling the effects of racial threat on punitive and restorative school discipline practices. *Criminology*, 48(4), 1019-1062.
- Payne, A. A. (2008). A multilevel analysis of the relationships among communal school organization, student bonding, and delinquency. *Journal of Research in Crime and Delinquency*, 45(4), 429-455.
- Pearman, F. A., Curran, F. C., Fisher, B., & Gardella, J. (2019). Are achievement gaps related to discipline gaps? Evidence from national data. *Aera Open*, 5(4).
- Pepinsky, T. B. (2018). A note on listwise deletion versus multiple imputation. *Political Analysis*, 26(4), 480-488.
- Perry, B. L., & Morris, E. W. (2014). Suspending progress: Collateral consequences of exclusionary punishment in public schools. *American Sociological Review*, 79(6), 1067-1087.
- Petrosino, A., Turpin-Petrosino, C., & Guckenburg, S. (2010). Formal system processing of juveniles: Effects on delinquency. *Campbell Systematic Reviews*, 6(1), 1-88.
- Piquero, A. R., Fagan, J., Mulvey, E. P., Steinberg, L., & Odgers, C. (2005). Developmental trajectories of legal socialization among serious adolescent offenders. *The Journal of Criminal Law & Criminology*, 96(1), 267.
- Preacher, K. J., Zhang, Z., & Zyphur, M. J. (2016). Multilevel structural equation models for assessing moderation within and across levels of analysis. *Psychological Methods*, 21(2), 189.
- Pyne, J. (2019). Suspended attitudes: Exclusion and emotional disengagement from school. *Sociology of Education*, 92(1), 59-82.

- Racz, S. J., & McMahon, R. J. (2011). The relationship between parental knowledge and monitoring and child and adolescent conduct problems: A 10-year update. *Clinical Child and Family Psychology Review*, 14(4), 377-398.
- Radburn, M., & Stott, C. (2019). The social psychological processes of 'procedural justice': Concepts, critiques and opportunities. *Criminology & Criminal Justice*, 19(4), 421-438.
- Rafa, A. (2019). Policy Analysis: The Status of School Discipline in State Policy. *Education Commission of the States*.
- Raffaele Mendez, L. (2003). Predictors of suspension and negative school outcomes: A longitudinal investigation. *New directions for youth development*, 2003(99), 17-33.
- Ramey, D. M. (2015). The social structure of criminalized and medicalized school discipline. *Sociology of Education*, 88(3), 181-201.
- Ramey, D. M. (2018). The social construction of child social control via criminalization and medicalization: Why race matters. *Sociological Forum*, 33(1), 139-164.
- Raudenbush, S. W., & Bryk, A. S. (2002). *Hierarchical linear models: Applications and data analysis methods* (Vol. 1). Sage Publications.
- Reaves, S., McMahon, S. D., Duffy, S. N., & Ruiz, L. (2018). The test of time: A meta-analytic review of the relation between school climate and problem behavior. *Aggression and Violent Behavior*, 39, 100-108.
- Rebellon, C. J., Manasse, M. E., Van Gundy, K. T., & Cohn, E. S. (2014). Rationalizing delinquency: A longitudinal test of the reciprocal relationship between delinquent attitudes and behavior. *Social Psychology Quarterly*, 77(4), 361-386.
- Rich, T., & Finn, P. (2001). School COP: A software package for enhancing school safety. *Cambridge, MA: Abt Associates*.
- Riley, R., & Reno, J. (1999). 1998 Annual report on school safety. Washington, DC: *Departments of Education and Justice*.
- Rios, V. M. (2011). *Punished: Policing the lives of Black and Latino boys*. New York, NY: New York University Press.
- Ritter, G. W. (2018). Reviewing the progress of school discipline reform. *Peabody Journal of Education*, 93(2), 133-138.
- Rocque, M. (2011). Racial disparities in the criminal justice system and perceptions of legitimacy: A theoretical linkage. *Race and Justice*, 1(3), 292-315.

- Rocque, M. (2018). The prison school: Educational inequality and school discipline in the age of mass incarceration. *Journal of Criminal Justice Education*, 29(3), 476-479.
- Rocque, M., & Snellings, Q. (2018). The new disciplinology: Research, theory, and remaining puzzles on the school-to-prison pipeline. *Journal of Criminal Justice*, 59, 3-11.
- Roth, R. (2012). *American homicide*. Cambridge, MA: Harvard University Press.
- Safe Schools Act 1994* (103rd Congress HR 2455).
- Sampson, R. J., & Bartusch, D. J. (1998). Legal cynicism and (subcultural?) tolerance of deviance: The neighborhood context of racial differences. *Law and Society Review*, 777-804.
- Sanches, C., Gouveia-Pereira, M., & Carugati, F. (2012). Justice judgements, school failure, and adolescent deviant behaviour. *British Journal of Educational Psychology*, 82(4), 606-621.
- Schreck, C. J., & Miller, J. M. (2003). Sources of fear of crime at school: What is the relative contribution of disorder, individual characteristics, and school security? *Journal of School Violence*, 2(4), 57-79.
- Schuck, A. M., Rosenbaum, D. P., & Hawkins, D. F. (2008). The influence of race/ethnicity, social class, and neighborhood context on residents' attitudes toward the police. *Police Quarterly*, 11(4), 496-519.
- Schuiteman, J. G. (2001). Second Annual Evaluation of DCJS Funded School Resource Officer Programs. Report of the Department of Criminal Justice Services, Fiscal Year 1999-2000.
- Servoss, T. J., & Finn, J. D. (2014). School security: For whom and with what results? *Leadership and Policy in Schools*, 13(1), 61-92.
- Shah, N. (2012). 'Restorative practices': Discipline but different. *Education Week*, 32(8), 14-15.
- Shedd, C. (2015). *Unequal city: Race, schools, and perceptions of injustice*. New York, NY: Russell Sage Foundation.
- Sheley, J. F. (2000). Controlling violence: What schools are doing. In *Preventing school violence: Plenary papers of the 1999 Conference on Criminal Justice Research and Evaluation—Enhancing policy and practice through research* (Vol. 2, pp. 37-57).

- Sherrod, L. (2007). Civic engagement as an expression of positive youth development. *Approaches to positive youth development, 1*, 59-74.
- Simmons, L. (2017). *The prison school: Educational inequality and school discipline in the age of mass incarceration*. Univ of California Press.
- Simon, J. (2007). *Governing through crime: How the war on crime transformed American democracy and created a culture of fear*. New York, NY: Oxford University Press.
- Simson, D. (2014). Exclusion, punishment, racism, and our schools: A critical race theory perspective on school discipline. *UCLA Law Review 61*(2), 505- 563.
- Skiba, R. J. (2000). Zero-tolerance, zero evidence: An analysis of school discipline practice. Bloomington: Indiana University Education Policy Center.
- Skiba, R. J., & Rausch, M. K. (2006). Zero tolerance, suspension, and expulsion: Questions of equity and effectiveness. In C. M. Evertson & C. S. Weinstein (Eds.), *Handbook of classroom management: Research, practice, and contemporary issues* (pp. 1063– 1089). Lawrence Erlbaum Associates.
- Skiba, R. J., Arredondo, M. I., & Williams, N. T. (2014). More than a metaphor: The contribution of exclusionary discipline to a school-to-prison pipeline. *Equity & Excellence in Education 47*(4), 546-564.
- Skiba, R. J., Chung, C. G., Trachok, M., Baker, T. L., Sheya, A., & Hughes, R. L. (2014). Parsing disciplinary disproportionality: Contributions of infraction, student, and school characteristics to out-of-school suspension and expulsion. *American Educational Research Journal, 51*(4), 640-670.
- Skiba, R. J., Horner, R. H., Chung, C. G., Rausch, M. K., May, S. L., & Tobin, T. (2011). Race is not neutral: A national investigation of African American and Latino disproportionality in school discipline. *School Psychology Review, 40*(1), 85-107.
- Skiba, R. J., Michael, R. S., Nardo, A. C., & Peterson, R. L. (2002). The color of discipline: Sources of racial and gender disproportionality in school punishment. *The Urban Review, 34*(4), 317-342.
- Skiba, R., & Knesting, K. (2001). Chapter 1, zero tolerance, zero evidence: An analysis of school disciplinary practice. *New Directions for youth development. Zero tolerance: Can suspension and expulsion keep school safe*, 92.
- Slocum, L. A., & Wiley, S. A. (2018). “Experience of the expected?” Race and ethnicity differences in the effects of police contact on youth. *Criminology, 56*(2), 402-432.

- Slocum, L. A., Dan-Irabor, D., and Wiley, S. A. (2020). The Consequences of Criminal Justice Contact for Youth's Civic Orientation. Paper presented at the annual meeting of the Western Society of Criminology in Honolulu, Hawaii.
- Smetana, J. G., & Bitz, B. (1996). Adolescents' conceptions of teachers' authority and their relations to rule violations in school. *Child Development*, 67(3), 1153-1172.
- Soss, J. (1999). Lessons of welfare: Policy design, political learning, and political action. *American Political Science Review*, 93(2), 363-380.
- Soss, J. (2002). *Unwanted claims: The politics of participation in the US welfare system*. University of Michigan Press.
- Soss, J., & Jacobs, L. R. (2009). The place of inequality: Non-participation in the American polity. *Political Science Quarterly*, 124(1), 95-125.
- Soss, J., & Weaver, V. (2017). Police are our government: Politics, political science, and the policing of race–class subjugated communities. *Annual Review of Political Science*, 20, 565-591.
- Stader, D. L. (2004). Zero-tolerance as public policy: The good, the bad, and the ugly. *The Clearing House*, 78, 62–66.
- Steinberg, L. (1990). Authoritative parenting and adolescent adjustment across varied ecological niches. National Center on Effective Secondary Schools. Madison, WI.
- Streiner, D. L. (2005). Finding our way: an introduction to path analysis. *The Canadian Journal of Psychiatry*, 50(2), 115-122.
- Sunshine, J., & Tyler, T. R. (2003). The role of procedural justice and legitimacy in shaping public support for policing. *Law & Society Review*, 37(3), 513-548.
- Sussman, A. (2011). Learning in lockdown: School police, race, and the limits of law. *UCLA Law Review*, 59, 788.
- Swartz, K., Osborne, D. L., Dawson-Edwards, C., & Higgins, G. E. (2016). Policing schools: Examining the impact of place management activities on school violence. *American Journal of Criminal Justice*, 41(3), 465-483.
- Sweeten, G. (2012). Scaling criminal offending. *Journal of Quantitative Criminology*, 28(3), 533-557.
- Tajfel, H. (1974). Social identity and intergroup behaviour. *Social Science Information*, 13(2), 65-93.
- Tankebe, J. (2009a). Public cooperation with the police in Ghana: Does procedural fairness matter?. *Criminology*, 47(4), 1265-1293.

- Tankebe, J. (2009b). Self-help, policing, and procedural justice: Ghanaian vigilantism and the rule of law. *Law & society review*, 43(2), 245-270.
- Tankebe, J. (2013). Viewing things differently: The dimensions of public perceptions of police legitimacy. *Criminology*, 51(1), 103-135.
- Tankebe, J., Reisig, M. D., & Wang, X. (2016). A multidimensional model of police legitimacy: A cross-cultural assessment. *Law and Human Behavior*, 40(1), 11.
- Tapp, J. L. (1976). Psychology and the law: An overture. *Annual Review of Psychology*, 27(1), 359-404.
- Tapp, J. L., & Levine, F. J. (1974). Legal socialization: Strategies for an ethical legality. *Stanford Law Review*, 27(1), 1-72.
- Tapp, J. L., & Levine, F. J. (Eds.). (1977). *Law, justice, and the individual in society: Psychological and legal issues* (p. 311). New York: Holt, Rinehart and Winston.
- Taylor, R. B., Wyant, B. R., & Lockwood, B. (2015). Variable links within perceived police legitimacy?: Fairness and effectiveness across races and places. *Social Science Research*, 49, 234-248.
- Tehrani, H. D., & Yamini, S. (2020). Parenting practices, self-control and anti-social behaviors: Meta-analytic structural equation modeling. *Journal of Criminal Justice*, 68.
- Theriot, M. T. (2016). The impact of school resource officer interaction on students' feelings about school and school police. *Crime & Delinquency*, 62(4), 446-469.
- Theriot, M. T., & Orme, J. G. (2016). School resource officers and students' feelings of safety at school. *Youth Violence and Juvenile Justice*, 14(2), 130-146.
- Thibaut, J., & Walker, L. (1978). A theory of procedure. *California Law Review*, 66, 541.
- Thomas, K. J., Rodrigues, H., de Oliveira, R. T., & Mangino, A. A. (2019). What predicts pre-adolescent compliance with family rules? A longitudinal analysis of parental discipline, procedural justice, and legitimacy evaluations. *Journal of Youth and Adolescence*, 1-15.
- Thomas, K., Rodrigues, H., Gomes, A. M. M., de Oliveira, R. T., Piccirillo, D., & de Brito, R. C. (2018). Parental Legitimacy, procedural justice, and compliance with parental rules among Brazilian preadolescents. *International Journal of Child, Youth and Family Studies*, 9(3), 21-46.
- Trinkner, R., & Cohn, E. S. (2014). Putting the "social" back in legal socialization: Procedural justice, legitimacy, and cynicism in legal and nonlegal authorities. *Law and Human Behavior*, 38(6), 602-617.

- Trinkner, R., & Tyler, T. R. (2016). Legal socialization: Coercion versus consent in an era of mistrust. *Annual Review of Law and Social Science*, 12, 417-439.
- Triplett, N. P., Allen, A., & Lewis, C. W. (2014). Zero tolerance, school shootings, and the post-Brown quest for equity in discipline policy: An examination of how urban minorities are punished for white suburban violence. *The Journal of Negro Education*, 83(3), 352-370.
- Tyler, T. R. (1984). The role of perceived injustice in defendants' evaluations of their courtroom experience. *Law and Society Review*, 51-74.
- Tyler, T. R. (1990). *Why people obey the law*. New Haven, CT: Yale University Press.
- Tyler, T. R. (1994). Governing and diversity: the effect of fair decisionmaking procedures on the legitimacy of government. *Law & Society Review*, 28, 809.
- Tyler, T. R. (1997). The psychology of legitimacy: A relational perspective on voluntary deference to authorities. *Personality and Social Psychology Review*, 1(4), 323-345.
- Tyler, T. R. (2003). Procedural justice, legitimacy, and the effective rule of law. *Crime and justice*, 30, 283-357.
- Tyler, T. R. (2006). Psychological perspectives on legitimacy and legitimation. *Annu. Rev. Psychol.*, 57, 375-400.
- Tyler, T. R. (2011). Trust and legitimacy: Policing in the USA and Europe. *European Journal of Criminology*, 8(4), 254-266.
- Tyler, T. R., & Blader, S. L. (2003). The group engagement model: Procedural justice, social identity, and cooperative behavior. *Personality and Social Psychology Review*, 7(4), 349-361.
- Tyler, T. R., & Huo, Y. (2002). *Trust in the law: Encouraging public cooperation with the police and courts*. Russell Sage Foundation.
- Tyler, T. R., & Jackson, J. (2014). Popular legitimacy and the exercise of legal authority: Motivating compliance, cooperation, and engagement. *Psychology, Public Policy, and Law*, 20(1), 78.
- Tyler, T. R., & Lind, E. A. (1992). A relational model of authority in groups. *Advances in Experimental Social Psychology*, 25, 115-191.
- Tyler, T. R., & Trinkner, R. (2017). *Why children follow rules: Legal socialization and the development of legitimacy*. Oxford University Press.

- Tyler, T. R., & Wakslak, C. J. (2004). Profiling and police legitimacy: Procedural justice, attributions of motive, and acceptance of police authority. *Criminology*, 42(2), 253-282.
- U.S. Department of Education Office of Civil Rights. (2014). Civil rights data collection: Data snapshot (school discipline).
- Verdugo, R. R. (2002). Race-ethnicity, social class, and zero-tolerance policies: The cultural and structural wars. *Education and Urban Society*, 35(1), 50-75.
- Vieno, A., Perkins, D. D., Smith, T. M., & Santinello, M. (2005). Democratic school climate and sense of community in school: A multilevel analysis. *American journal of community psychology*, 36(3-4), 327-341.
- Vogel, M., & Barton, M. S. (2013). Impulsivity, school context, and school misconduct. *Youth and Society*, 45(4), 455-479.
- Wald, J., & Losen, D. J. (2003). Defining and redirecting a school-to-prison pipeline. *New Directions for Youth Development*, 2003(99), 9-15.
- Walters, G. D., & Bolger, P. C. (2019). Procedural justice perceptions, legitimacy beliefs, and compliance with the law: A meta-analysis. *Journal of Experimental Criminology*, 15(3), 341-372.
- Warren, P. Y. (2011). Perceptions of police disrespect during vehicle stops: A race-based analysis. *Crime & Delinquency*, 57(3), 356-376.
- Way, S. M. (2011). School discipline and disruptive classroom behavior: The moderating effects of student perceptions. *The Sociological Quarterly*, 52(3), 346-375.
- Webb, V. J., & Marshall, C. E. (1995). The relative importance of race and ethnicity on citizen attitudes toward the police. *American Journal of Police*.
- Weber, M. (1978). *Economy and society: An outline of interpretive sociology* (Vol. 1). Univ of California Press.
- Weisburst, E. K. (2019). Patrolling public schools: The impact of funding for school police on student discipline and long-term education outcomes. *Journal of Policy Analysis and Management*, 38(2), 338-365.
- Weitzer, R., & Tuch, S. A. (2004). Race and perceptions of police misconduct. *Social problems*, 51(3), 305-325.
- Welch, K., & Payne, A. A. (2010). Racial threat and punitive school discipline. *Social Problems*, 57(1), 25-48.

- Welsh, R. O., & Little, S. (2018). The school discipline dilemma: A comprehensive review of disparities and alternative approaches. *Review of Educational Research*, 88(5), 752-794.
- Wiley, S. A., & Esbensen, F. A. (2016). The effect of police contact: Does official intervention result in deviance amplification?. *Crime & Delinquency*, 62(3), 283-307.
- Wiley, S. A., Slocum, L. A., & Esbensen, F. A. (2013). The unintended consequences of being stopped or arrested: An exploration of the labeling mechanisms through which police contact leads to subsequent delinquency. *Criminology*, 51(4), 927-966.
- Wolf, K. C., & Kupchik, A. (2017). School suspensions and adverse experiences in adulthood. *Justice Quarterly*, 34(3), 407-430.
- Wolfe, S. E., Nix, J., Kaminski, R., & Rojek, J. (2016). Is the effect of procedural justice on police legitimacy invariant? Testing the generality of procedural justice and competing antecedents of legitimacy. *Journal of Quantitative Criminology*, 32(2), 253-282.
- Zhang, A., Musu-Gillette, L., & Oudekerk, B. A. (2016). Indicators of School Crime and Safety: 2015. NCES 2016-079/NCJ 249758. *National Center for Education Statistics*.
- Zhang, G. (2019). The effects of a school policing program on crime, discipline, and disorder: A quasi-experimental evaluation. *American Journal of Criminal Justice*, 44(1), 45-62.
- Zimmerman, G. M., & Messner, S. F. (2011). Neighborhood context and nonlinear peer effects on adolescent violent crime. *Criminology*, 49(3), 873-903.

APPENDICES

Appendix A. Comparing School-Level Measures Across North and South County Schools

N	School Type	CSE	% White	% Black	% Hispanic	% Other	Student to teacher ratio	Suspension rates	% Eligible Free/reduced lunch*	Perceived risk of crime
North County (N=1,221)										
86	MS	6.04	0.00	86.04	1.16	12.79	19.00	.80	97.50	1.83
66	MS	6.17	1.51	83.33	1.52	13.64	14.00	.90	99.80	2.08
112	MS	5.72	0.89	83.04	0.00	16.07	15.00	.30	100.00	1.98
224	MS	7.29	12.50	65.20	3.13	19.20	15.00	7.80	100.00	1.86
157	MS	6.90	2.55	74.52	4.46	18.47	15.00	9.40	100.00	2.14
29	MS	8.30	0.00	82.76	0.00	17.24	11.00	16.10	100.00	2.14
143	HS	8.68	0.00	83.22	0.00	16.78	19.00	.90	99.30	1.93
97	HS	5.00	0.00	86.60	0.00	13.40	19.00	3.40	99.90	1.90
88	HS	5.56	3.41	76.14	3.41	17.05	17.00	15.00	100.00	1.99
175	HS	6.68	14.29	62.86	2.86	20.00	19.00	13.60	100.00	1.77
44	HS	6.62	4.54	84.10	4.55	6.82	16.00	23.70	100.00	1.84
South County (N=1,552)										
99	MS	4.67	56.57	10.10	4.04	29.29	19.00	1.90	67.20	1.55
174	MS	4.44	74.71	6.90	4.60	13.79	17.00	.70	27.00	1.59
146	MS	4.13	72.60	7.53	6.16	13.70	17.00	.50	40.70	2.00
164	MS	4.19	74.39	6.71	2.44	16.46	15.00	.70	43.40	1.77
108	MS	4.25	72.22	8.33	2.78	16.67	15.00	.20	29.10	1.68
159	MS	4.00	82.39	5.03	2.52	10.06	16.00	.20	14.30	1.45

64	HS	6.10	48.44	14.06	3.12	34.38	21.00	.60	64.3	1.29
115	HS	4.52	71.30	13.04	7.83	7.83	20.00	1.90	33.00	2.01
218	HS	5.43	67.43	5.05	5.96	21.56	17.00	1.00	28.30	1.71
304	HS	5.65	79.02	6.56	2.95	11.48	18.00	.90	15.90	1.67

Appendix B. Descriptive Information from School Personnel Surveys

	N	Female	Male	White	Black	Hispanic	Other	Teachers	Admin.	Other
MS										
<i>1</i>	37	65.6	34.4	34.4	65.6	0.0	0.0	94.1	2.9	3.0
<i>2</i>	40	79.0	21.0	43.2	40.5	0.0	16.2	86.8	5.3	7.9
<i>3</i>	22	60.0	40.0	95.0	0.0	0.0	5.0	90.5	0.0	9.5
<i>4</i>	40	77.1	22.9	97.1	0.0	2.9	0.0	100.0	0.0	0.0
<i>5</i>	53	70.2	29.8	95.7	2.1	0.0	2.13	81.3	4.2	14.5
<i>6</i>	28	82.1	17.9	100.0	0.0	0.0	0.0	85.7	7.1	7.2
<i>7</i>	44	69.1	31.0	100.0	0.0	0.0	0.0	90.1	4.7	5.2
<i>8</i>	20	89.5	10.5	100.0	0.0	0.0	0.0	84.2	0.0	15.8
<i>9</i>	25	87.5	63.0	41.7	54.2	4.2	0.0	83.3	4.2	12.5
<i>10</i>	50	63.0	37.0	77.8	15.6	0.0	6.7	83.0	2.1	14.9
<i>11</i>	34	83.3	16.7	79.3	13.8	0.0	6.9	83.9	3.2	12.9
<i>12</i>	16	80.0	20.0	93.3	6.7	0.0	0.0	73.3	0.0	26.67
MS N = 409										
HS										
<i>1</i>	51	60.9	39.1	40.9	43.2	2.3	13.6	75.6	8.9	15.5
<i>2</i>	17	75.0	25.0	93.8	0.0	0.0	6.3	75.0	0.0	25.0
<i>3</i>	45	73.0	27.0	100.0	0.0	0.0	0.0	73.7	0.0	26.3
<i>4</i>	75	71.9	28.1	94.2	1.6	1.6	1.6	84.4	1.6	14.07
<i>5</i>	73	67.8	32.2	100.0	0.0	0.0	0.0	84.8	1.7	13.6
<i>6</i>	10	77.8	22.2	77.8	11.1	0.0	11.1	77.8	0.0	22.2
<i>7</i>	24	71.4	28.6	75.0	10.0	0.0	15.0	85.0	5.0	10.0
<i>8</i>	38	68.6	31.4	76.5	14.7	2.9	5.9	80.0	2.9	17.1
<i>9</i>	21	66.7	33.3	66.7	26.7	0.0	6.7	76.5	5.9	17.7
HS N = 354										
Total N = 763										

Notes: MS is an abbreviation for “middle schools,” HS is an abbreviation for “high schools”

Appendix C. Missing Data Analysis: Comparing Three Samples¹

	(1) Sample from Waves 1 and 2		(2) Analytic Sample: Attended Same School for 2 Consecutive Waves N= 2,773		(3) Analytic Sample: Listwise Deletion Using All Variables N=2,256	
	Mean (%)	SD	Mean (%)	SD	Mean (%)	SD
Time 1 Variables						
General delinquency	.89	1.60	.84*	1.55	.78*	1.42
Police procedural injustice	2.83	1.09	2.75*	1.08	2.72*	1.07
SP procedural injustice	2.71	.82	2.69*	.82	2.66*	.82
Police illegitimacy	2.20	1.04	2.16*	1.03	2.12*	1.01
SP illegitimacy	2.32	1.01	2.30*	1.01	2.27*	1.00
Police contact	23.09	---	21.62*	---	21.68*	---
School punishment	45.13	---	42.58*	---	42.33*	---
School commitment	3.80	.70	3.82*	.69	3.85*	.68
Grades	4.03	.82	4.08*	.80	4.11*	.80
Parental monitoring	4.41	.68	4.42*	.67	4.45*	.64
Delinquent peers	1.24	.41	1.23*	.41	1.22*	.38
Delinquent attitudes	2.39	.80	2.35*	.80	2.33*	.79
Impulsivity	2.82	.78	2.81*	.79	2.80*	.78
School disorder	1.72	.49	1.70*	.49	1.69*	.49
Neighborhood disorder	1.52	.54	1.50*	.54	1.50*	.54
Age	13.55	1.15	13.54	1.15	13.51	1.14
Male	46.32	---	45.83	---	45.17	---
White	37.65	---	42.84*	---	44.19*	---
Black	42.27	---	37.58*	---	36.13*	---
Hispanic	3.31	---	3.28	---	3.19	---
Other	16.75	---	16.30	---	16.49	---
Single parent household	24.59	---	22.72*	---	22.25*	---

Notes: ¹The three samples compared are (1) the sample of cases available in which the younger cohort completed the survey during Wave 1 and the older cohort completed the survey during Wave 2 to create Time 1 measures comparable to those used in analyses; (2) the analytic sample computed based on the available cases in which the younger cohort completed surveys during Waves 1 and 2 and the older cohort completed surveys during Waves 2 and 3; (3) the analytic sample that omits all cases with missing information on any of the variables listed in the Measures section in Chapter 4.

SP is an abbreviation for "school personnel". Only Time 1 measures were used for comparisons

*denotes significant differences ($p < .05$) between the sample and excluded cases