

The Social Control of Childhood Behavior via Criminalization or Medicalization: Why
Race Matters

DISSERTATION

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Abstract

Recent rates of school suspension and expulsion have increased more than 33 percent and nearly one in four American boys will have been suspended or expelled from school at least once by the time they reach 10th grade (Bertrand and Pan 2013). Alongside this increase in the use of suspensions and expulsions, the numbers of diagnosed cases of ADHD increased by almost 400% and prescriptions for stimulant drugs, often marketed as treatment for the growing number of behavioral and conduct disorders, have increased tenfold (Centers for Disease Control [CDC] 2012). These trends in school discipline and medically diagnosed child behavior problems provide reflective examples of how child problem behavior, and the means to control it, is socially constructed. Specifically, the ways in which society defines and manages child problem behavior do not necessarily reflect the nature of the behavior itself (Conrad 2007; Conrad and Barker 2010). Instead, definitions of behavior are often shaped by the social status of the child and the dominant attitudes of the social control institutions responsible for controlling behavior (Paternoster and Iovanni 1989; Conrad and Barker 2010).

For example, evidence suggests that increases in both the use of harsh school discipline and medical diagnoses and treatments for behavior disorders are racially patterned. As suspension rates increased from 6 percent to 15 percent for African-American boys, they remained relatively stable for White boys (Losen and Martinez

2013). On the other hand, as a growing number of behavior problems in children are falling under medical control and supervision, African-American boys are less likely to seek out and receive therapy or treatment for behavior disorders than White boys (Miller, Nigg, and Miller 2009; Morgan et al. 2013). As a result, the misbehavior of young African-American males is socially constructed in ways that are fundamentally different than those of young White males.

Despite common theoretical and conceptual histories, scholarly work examining the social construction of child behavior has been delegated to separate literatures and isolated from one another. Research rarely, if ever, considers how school punishment and therapy and/or medication for behavior problems operate as opposing or collaborative approaches to child problem behavior. In examining how the behavior problems of African-American and White children, particularly young males, are socially constructed using fundamentally different forms of social control, this dissertation addresses these gaps in the literature and initiates a conversation between criminology and medical sociology on the social construction of problem behavior.

In the first chapter, I use data from the 1979 National Longitudinal Survey of Youth, Child Survey (NLSY-C) and multinomial logistic models to consider how racial disparities in the social construction of behavior problems materialize during childhood. Findings suggest that, as rates of school punishment and the medically diagnosed behavior problems increase over time, White boys are being medicalized through the use of therapy or medication for behavior problems in childhood, while African-American boys are being criminalized through school suspensions and expulsions. Furthermore,

findings demonstrated that disparities in criminalization versus medicalization are not explained by differences in the frequency of misbehavior. Instead, African-American boys are suspended at greater levels than White boys and White boys are medicalized at greater levels than African-American boys as a result of differences in blameworthiness, perceptions of threat, and social and structural constraints.

In the second paper, I use data from the 1979 National Longitudinal Survey of Youth, Child Survey (NLSY-C) and a group-based modeling strategy to demonstrate how the social construction of child problem behavior contributes to criminalized or medicalized trajectories of social control across adolescence and young adulthood. First, school punishment during childhood increases the likelihood that a young man will follow a criminalized trajectory of social control, characterized by repeated involvement with the criminal justice system. Conversely, the use of therapy or medication for behavior problems during childhood increases the likelihood of following a medicalized social control trajectory, characterized by routine usage of therapy or psychotropic drugs to control impulsive behavior in adulthood. Finally, racial disparities in labeling in childhood contribute to racial disparities in trajectories of social control during adolescence and young adulthood, such that White males may be able to use medicalization to avoid long-term involvement with the criminal justice system. On the other hand, early school punishment increases the risk that African-American males will continue to be criminalized over the life-course.

In the third paper, I use data from the U.S. Department of Education's Office of Civil Rights and the National Center for Education Statistics and a multilevel modeling

strategy to illustrate important school-level and district-level relationships between racial composition and the use of criminalized versus medicalized forms of school discipline. Specifically, compared to other schools in their district, schools with larger African-American populations use suspension and expulsion more often and use medicalized forms of discipline less often. On the other hand, districts with larger African-American populations are more likely to criminalized school discipline and less likely to medicalize students than other districts. Finally, the school-level association between racial composition and criminalized or medicalized school discipline is moderated by district-level racial composition.

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Dedicated to Tilly

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Fields of Study

Major Field: Sociology

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Chapter 1: Introduction

In his book *Visions of Social Control*, Stanley Cohen (1985) defines social control as “the organized ways in which society responds to behavior and people it regards as deviant, problematic, worrying, threatening, troublesome, or undesirable in some way or another (pg.1). In the United States, decisions regarding social control have increasingly been left up to two dominant institutions: the criminal justice and medical/healthcare systems (Conrad 1992a, 1992b; Medina and McCranie 2011; Zola 1972). Indeed, over the past half-century, these two systems have come to shape and define an increasingly wide scope of American behavior, both public and private (Conrad 2007; Simon 2007). Criminologists and medical sociologists have referred to these respective processes as the criminalization and medicalization of social control.

Nowhere have these models of social control become more apparent than among America’s school-aged children. Public schools have adopted the surveillance (metal detectors and random searches), supervision (school resource officers and police officers in school), and punishment and deterrence (zero tolerance policies) measures of the criminal justice system as part of the routine educational setting (Hirschfield 2008a; Kupchik 2010; Lyons and Drew 2006; Simon 2007). Consequently, the number of children experiencing punitive or exclusionary discipline such as school suspension

or expulsion has increased significantly. More than a quarter of all American boys have been suspended or expelled from school at least once during their elementary or secondary school careers (Bertrand and Pan 2013). As the use of suspensions and expulsions becomes more common, the number of American children being diagnosed and treated for behavior disorders has also increased at unprecedented rates. For example, the number of diagnosed cases of ADHD increased by almost 400% and prescriptions for stimulant drugs, often marketed as treatment for the growing number of behavioral and conduct disorders, have increased tenfold (Centers for Disease Control [CDC] 2012; Setlik, Bond, and Ho 2009).

As these trends unfold, mounting evidence suggests that increases in both the use of harsh school discipline and medical diagnoses and treatments for behavior disorders are racially patterned. Over the past thirty years, the suspension rate for African-American boys increased from 6% to 15%, while remaining relatively stable for White boys (Losen and Martinez 2013). On the other hand, as a growing number of behavior problems in children are falling under medical control and supervision, African-American boys remain less likely to seek out and receive therapy or treatment for behavior disorders than White boys (Miller, Nigg, and Miller 2009; Morgan et al. 2013). Further, when African-American boys are finally provided with therapy or medication, it tends to be only when behavior problems are extremely severe and frequent (Miller, Nigg, and Miller 2009).

These changes in the social construction of child behavior have important implications for the life-chances of American children. For example, scholars argue

that exclusionary school punishment may set the stage for life-course trajectories characterized by routine and repeated contact with the criminal justice system (Hirschfield 2008; Kupchik 2010). On the other hand, the medicalization of childhood misbehavior has changed the ways in which schools, parents, and even the court systems have had to manage unruly and disruptive children (Conrad 2007; Medina and McCranie 2011). For many children, early childhood therapy and medication establishes the medical or mental health systems as the primary social control institutions throughout the life-course (Conrad 2007).

This dissertation furthers our understanding of social control and the social construction of child behavior in several ways. Importantly, I push the criminological and medical sociological literatures regarding social control and the social construction of behavior problems to “speak” to one another about the ways in which different institutions of social control define and manage similar behavior problems. Despite earlier calls for such a conversation (e.g. Bernburg 2009; Timmermans and Gabe 2002), there has been limited research that considers both criminalized and medicalized approaches to social control. By incorporating features of criminology and medical sociology, this dissertation examines racial inequalities in criminalized school discipline versus the use of therapy and medication over the life-course and across multiple units of analysis, including individuals, schools, and school districts. I use this introduction to lay out my approach for bringing together criminology and medical sociology to provide a more comprehensive approach to how we envision social control in the United States (Cohen 1985).

Racial Disparities in the Social Construction of Child Behavior Problems

In Chapter 2, I argue that the recent processes of criminalization and medicalization of child problem behavior reflect racial inequalities in the criminal justice and health care systems. For example, in the criminal justice system, perceptions of blameworthiness and dangerousness influence the sentencing decisions of judges and juries (Steffensmeier, Ulmer, and Kramer 1998). Because African-Americans are more likely to be considered culpable for their actions than White males and therefore more threatening to society, they are more likely than Whites to get harsh sentences for similar offenses (Steffensmeier, Ulmer, and Kramer 1998). On the other hand, because White families are more familiar and trusting of the mental health system, and thus have increased access to new information and technology, they are more likely to use therapy and medication when it is seen as potentially helpful (Bailey et al. 2010; Bussing et al. 2012; Davison and Ford 2000).

When it comes to the problem behavior of young males, many of these same factors influence the decision to punish or use therapy or medication to control behavior problems. For example, perceptions of African-American males as crime-prone and less trustworthy extends well into childhood, as young African-American boys are often denied the same benefit of doubt that young White boys have when they misbehave (Rios 2011; Soung 2011). These preconceived notions of blame and threat influence the decisions of teachers and administrators to punish or not to punish (Ferguson 2000; Skiba et al. 2013). Similar decisions regarding the use of therapy or medication are

influenced by both perceptions of culpability and threat, as well as perceptions of available mental health services. For example, African-American parents are less willing to blame biological or psychological causes for their child's misbehavior (Bussing et al. 2012; Miller, Nigg, and Miller 2009). Moreover, African-American families are less trusting than White families of the healthcare system and more apprehensive regarding disorders like ADHD (Bailey et al. 2010; Shavers et al. 2000).

In light of these different visions regarding problem behavior and social control, I consider how race influences the social construction of child misbehavior over an extended period of time, net of the frequency or severity of behavior. Using twenty-two years of panel data on a sample of young African-American and White males, I propose that, as the criminalization and medicalization of children's behavior increases over time, there are racial disparities in school punishment and the use of therapy or medication for behavior problems. Further, I argue that these disparities are not explained by the frequency of behavior problems evidenced by African-American boys and White boys? Finally, I argue that the criminalization and/or medicalization of young White and Black boys' have increased at different rates.

Childhood Labels and Trajectories of Social Control

Chapter 3 examines the consequences of school suspension and therapy or medication during childhood on individuals' long-term experiences with both the criminal justice system and the mental health system. Despite the ways in which school

punishment and therapy and medication for behavior problems during childhood may set the stage for racial disparities in the adult criminal justice and mental health systems, scholars have yet to test these connections empirically. Specifically, it remains unclear whether racial differences in experiences of school punishment and the use of therapy or medication contributes to racial disparities in long-term involvement in the criminal justice and mental health systems as adults. Moreover, we are limited in our understanding of whether racial disparities in the social construction of child problem behavior reflect and contribute to racial disparities in the criminal justice system versus the use of mental health services as adults.

In Chapter 3, I conceptualize contact with the criminal justice system and the use of mental health services during adolescence and young adulthood as two separate trajectories of social control during adolescence and young adulthood. I then use group-based modeling techniques to test how race, punishment, and therapy or medication during childhood influence the likelihood of following different life-course trajectories of social control. The use of group-based models allows me to overcome some of the earlier limitations on the long-term consequences of either school punishment or therapy and treatment by examining long-term patterns of social control, as opposed to shorter term effects on behavior or academic performance. Further, by examining punishment and therapy or medication simultaneously, I can compare and contrast the long-term implications of these dominant forms of social construction in childhood.

In Chapter 3, I argue that African-American and White males with similar behavior problems during childhood follow different trajectories of social control during young

adulthood, characterized by repeated and routine contact with the criminal justice and mental health systems respectively. Furthermore, school punishment increases the likelihood of following a life-course trajectory characterized by further criminalization, including conviction, probation, and even incarceration. However, the use of therapy or medication for behavior problems during childhood influences the likelihood of following a different trajectory of social control characterized by visits to mental health professionals and the use of psychotropic drugs to control behavior. Finally, racial disparities in labeling in childhood contribute to racial disparities in trajectories of social control during adolescence and young adulthood such that, unlike African-American males, White males who misbehave during childhood are able to escape long-term involvement with the criminal justice system through medicalization.

The Criminalization and Medicalization of School Discipline

Chapter 4 shifts the focus from the individual experiences of African-American and White males to the ways in which schools contribute to the criminalization and medicalization of social control through the implementation of difference disciplinary policies. Specifically, through the use of harsh school discipline measures, schools criminalize social control using a disciplinary philosophy and strategies rooted in the American criminal justice system (Simon 2007). Meanwhile, schools can medicalize their social control strategies by enrolling children in programs established by federal laws that consider medically diagnosed behavior disorders in the disciplinary process (Kim, Losen, and Hewitt 2010).

Schools are important socializing institutions. As such, the ways in which schools define and manage deviant behavior reflects and influences the larger community's approach when it comes to child problem behavior (Cohen 1985). The use of school suspension and expulsion, which exclude deviant children from the classroom and brands them as troublemakers, reflects society's negative attitudes toward children they view as criminal and responsible for their behavior, thus in need of strict social control (Hirschfield 2008a). On the other hand, when schools consider underlying behavior disorders in the disciplinary process, it represents a willingness to treat symptoms of disorders and not simply punish the rule-breakers (Conrad 1992b; Kim, Losen, and Martinez 2010; Rafalovich 2013).

A few scholars have recently examined racial and socioeconomic disparities in exclusionary or punitive policies at the school-level and find that policies such as suspension and expulsion are more common in schools with relatively larger African-American populations (Irwin, Davidson, and Hall-Sanchez 2013; Kupchik and Ward 2013; Welch and Payne 2010;2012). However, policies such as the use of parent-teacher conferences and oral reprimands are applied equally across schools regardless of racial configurations (Kupchik and Ward 2013; Welch and Payne 2012). While no research has considered how or whether schools, as institutions, implement medicalized forms of social control (Kim, Losen, and Hewitt 2010), results from empirical studies at the individual-level suggest that schools with larger African-American populations will rely less on medicalized school discipline because African-American children are less likely to be diagnosed with behavior disorders than White schoolchildren (Miller, Nigg, and

Miller 2009; Morgan et al. 2013).

Chapter 4 considers how perspectives on racial inequality arising from both criminology and medical sociology help to understand the influence of school and district level racial and ethnic composition on the criminalization and medicalization of school discipline across a broad range of school contexts. I propose that racial composition, as measured by the relative size of the African-American population, has independent school- and district-level effects on rates of both criminalized and medicalized school discipline. Furthermore, I argue that district-level racial composition moderates the association between school-level racial composition and school disciplinary policies.

Data and Methods

The dissertation relies on data from multiple sources. For Chapter 2 and Chapter 3, I use data from the National Longitudinal Study of Youth, 1979 Cohort – Child and Young Adult Sample (NLSY79-CYA). The NLSY79 is a prospective longitudinal study originally designed to analyze educational and labor market experiences of Americans who were born between the ages of 1957 and 1965. The total NLSY79 sample includes 12,686 male and female respondents. Respondents were interviewed every year from 1979 through 1994 and every other year from 1996 until 2010. While the NLSY79 was conceived as a labor market study, it has expanded to include important family conditions and health issues, including behavior problems. In 1986, researchers began a separate biennial survey of all children born to the females in the original NLSY79. By 2010, the

NLSY-Child and Young Adult Survey included information on 11,504 children from 4,932 mothers, ranging from 0 to 38 years of age. For this analysis, the NLSY-Child and Young Adult Survey is beneficial for several purposes. Not only does the study period of the project coincide with unparalleled changes in both school punishment and medically diagnosed behavior problems in American boys (Losen and Martinez 2013; CDC 2012) , but it contains prospective and repeated information on important developmental and socioeconomic characteristics from birth to young adulthood. As a result, I am able to measure behavior, social construction and social control, and several other important variables for repeated intervals and at multiple stages of the life-course.

Analytic Samples (NLSY-CYA)

Chapter 2 examines Black-White disparities in the social construction of child problem behavior. Because of this focus, the final sample for Chapter 2 is restricted to the male children of African-American and White mothers who were between the ages 6 to 14 during the years 1988 to 2010. After removing the boys who were missing information on the independent and dependent indicators of interest, my final sample includes 3,631 boys who contributed 11,802 person-years to the analyses described below.

Chapter 3 examines how Black-White disparities in the social construction of child problem behavior contribute to racial disparities in criminalized versus medicalized social control. Because of the need for variables measured during childhood and young adulthood, the total sample for Chapter 2 includes those African-American and White males who were younger than 15 years old in 1988 and contributed at least two years of

data following their fifteen birthday. After removing those observations that were missing or unable to contribute data for my dependent or central independent variables, my final sample contained 3,030 respondents.

Data for Chapter 4 was combined from multiple sources of official data. Rates of school punishment and enrollment of students covered under IDEA or Section 504 comes from Part 2 of the 2009-2010 U.S. Department of Education Civil Rights Data Collection (CRDC). The CDRC data contains cumulative and end of year data for the 2009-2010 school year for over 85 percent of U.S. schools and districts (U.S. Department of Education 2012). The National Center for Education Statistics (NCES) Common Core of Data Elementary/Secondary School Universe Survey: School Year 2009-2010 provided all school-level independent and control variables. All district-level independent and control variables are taken from the School District Demographics System American Community Survey (ACS) Profiles, 2006-2010. The final sample includes 50,095 public elementary and middle schools nested within 6,128 districts located in the 48 contiguous states.

Chapter 2: School Punishment, Therapy and Medication, and the Social Construction of African-American and White Boys' Problem Behavior

Over the past twenty-five years, school suspension and expulsion rates in the United States have increased more than 33 percent (Bertrand and Pan 2013; Losen and Skiba 2010). Nearly one in four American boys will have been suspended or expelled from school at least once by the time they reach 10th grade (Bertrand and Pan 2013). Alongside this increase in the use of suspensions and expulsions, American boys are being diagnosed and treated for behavior disorders at unprecedented rates. For example, the number of diagnosed cases of ADHD increased by almost 400% and prescriptions for stimulant drugs, often marketed as treatment for the growing number of behavioral and conduct disorders, have increased tenfold (Centers for Disease Control [CDC] 2012; Conrad 2013; Setlik, Bond, and Ho 2009; Thomas et al. 2006).

These trends in school discipline and medically diagnosed child behavior problems provide a reflective example of how childhood behavior problems are socially constructed. Specifically, the ways in which society defines and manages childhood behavior do not necessarily reflect the nature of the behavior itself (Conrad 2007; Conrad and Barker 2010). Instead, definitions of behavior are often shaped by the social status of the child and the dominant attitudes of the social control institutions responsible for controlling behavior (Paternoster and Iovanni 1989; Conrad and Barker 2010). Recently, scholars have pointed to two dominant trends in the way in which child misbehavior has

been socially constructed: criminalization and medicalization. Specifically, to control misbehaving children, schools and parents have turned to defining and managing their actions through strategies motivated by both the criminal justice and healthcare systems (Heitzeg 2009; Medina and McCranie 2011). Despite common theoretical and conceptual histories, scholarly work examining the social construction of child behavior has been delegated to separate literatures and isolated from one another. Research rarely, if ever, considers how school punishment and therapy and/or medication for behavior problems operate as opposing or collaborative approaches to child misbehavior. As a result, we know little about whether or why some children who misbehave experience harsh school discipline while other children become medicalized and receive therapy and/or medication for behavior problems.

In this paper, I argue that the social construction of childhood problem behavior is a racialized process similar to that observed in the criminal justice and health care systems serving adults. Specifically, as the criminalization and medicalization of child misbehavior has increased over time, White boys are being medicalized and receiving therapy or medication for behavior problems, while African-American boys are being criminalized through school suspensions and expulsions. Furthermore, I argue that disparities in criminalization versus medicalization are not explained by differences in the frequency of misbehavior. Instead, I argue that African-American boys are suspended at greater levels than White boys and White boys are medicalized at greater levels than African-American boys because of differences in blameworthiness, perceptions of threat, and social and structural constraints.

In testing racial disparities in the criminalization and medicalization of child problem behavior, I make several contributions to extant criminological and medical sociological literature on the social construction of childhood behavior. I bring together prior theoretical work from criminology on racial discrimination in criminal sentencing with that from medical sociology on racial disparities in mental health and health care access. I investigate a range of possible responses to child misbehavior, rather than a dichotomous indicator of either punishment versus no punishment or medication versus no medication. Moreover, I take advantage of a prospective longitudinal panel study to examine the processes of criminalization and medicalization at the individual level over an extended period of time. I examine characteristics associated with criminalization and medicalization on a group of children born to a cohort of mothers raising kids during a period of rapid growth in the use of both school punishment and medically diagnosed behavior disorders. In doing so, I assess the influence of race and behavior on the likelihood of criminalization versus medicalization on a single group of children who grew up during a period of extreme changes in the social construction of child behavior.

I draw from labeling theory and the cumulative disadvantage/advantage framework (Bernburg 2009; Link et al. 1989; Paternoster and Iovanni 1989) to test assumptions about how race influences the social construction of child misbehavior over time, net of the frequency or severity of behavior. Using twenty-two years of panel data on a sample of young African-American and White males, I answer four important questions about the social construction of child behavior. First, has the criminalization and medicalization of children's behavior increased over time? Second, are there racial

disparities in school punishment and therapy/medication of behavior problems? Third, are these disparities explained by racial differences in frequency of behavior problems between African-American boys and White boys? Finally, how have the criminalization and/or medicalization of White and Black boys' behavior changed over time?

Conceptual Framework

The Social Construction of Child and Adolescent Behaviors

Over the past twenty-five years, the social construction of child behavior has become increasingly modeled on both the criminal justice and healthcare systems. For example, American public schools have borrowed strategies from the police and courts to manage school disruptions, particularly the use of exclusionary formal punishment (Hirschfield 2008a; Kupchik 2010; Lyons and Drew 2006; Simon 2007). Moreover, an increasing proportion of students are suspended or expelled for less serious violations of school rules including tardiness, rude demeanor, poor grades, and even behavior that occurs off-campus (Kupchik 2010). In contrast to this crime control approach, many childhood behaviors, both deviant and routine, are becoming symptoms of medically recognized disorders and falling under the jurisdiction of psychiatrists and psychologists, who then treat such disorders with psychotherapy, psychotropic medication, or a combination of both (Conrad 2007). For a growing number of boys in the United States, misbehavior results in the therapy or medication of a mental or behavior disorder such as Attention Deficit Hyperactivity Disorder (ADHD) (Conrad and Slodden 2013; Conrad

1992a). Sociologists identify these processes as criminalization and medicalization, respectively.

The Criminalization of Child Misbehavior

The criminalization of school discipline refers to the ways in which schools control individual children's behavior through strategies rooted in the philosophy and practice of our legal system (Simon 2007). For example, analogous to mandatory minimum sentencing in the criminal justice system, schools are implementing zero tolerance policies that mandate school removal for even minor displays of misbehavior (Hirschfield 2008a; Simon 2007). Further, schools are adopting many of the surveillance methods and supervision strategies used in the criminal justice system as part of a child's daily setting, including metal detectors, the use of cameras and police officers on school grounds, and random locker searches for contraband (Hirschfield 2008a; Kupchik 2010). As more schools adopt these approaches to social control, more children risk punishment for a growing number of behaviors, both in and out of school, and are being forcibly removed from the educational process as a result of these behaviors (Kupchik 2010; Skiba et al. 2013).

As school discipline increasingly reflects a crime control strategy, the experiences of school punishment is comparable to that of the criminal justice process. Suspension and expulsion tells others that the young man has committed a serious offense, leading to an official and unofficial designation as a rule-breaker (Kupchik 2010; Skiba 2008).

Similar to the ways in which incarceration removes offenders from the community and make it difficult to return, suspensions and expulsions remove children from the classroom setting, forcing them to stay home or isolating them in rooms specifically designated for in-school suspension or removing them from school for extended or indefinite periods (Ferguson 2001; Rios 2006). As a result, teachers and administrators are made aware of past school transgressions or infractions and are more likely to view labeled children with suspicion, increasing student teacher conflict and the possibility of stricter regulation and surveillance of behavior (Hirschfield 2008a; Kupchik 2010). Amongst their peers, such students are noted for their rule violations and potentially cut-off from pro-social social groups and activities, increasing the likelihood of delinquent peer relationships (Ferguson 2001; Kupchik 2010). This separation from school is detrimental for the future educational success of the child.

The Medicalization of Child Misbehavior

While young boys are being removed from school in record numbers, many are becoming patients of psychiatrists and psychologists and being treated with psychotherapy, psychotropic medication, or a combination of both (Conrad 2007). Behaviors and actions that may lead to punishment in a classroom setting are also becoming the telltale symptoms of a number of common childhood mental illnesses/behavioral disorders. These include restlessness, impulsivity, inattention, and hyperactivity (Conrad and Slodden 2013; Conrad 1992a). By defining individual

behavior in medical terms, the mental health system has been able to assert jurisdiction over behaviors that were traditionally the concern of other social institutions, including schools and the legal system (Conrad 2007; Medina and McCranie 2011).

Through the expansion of the Diagnostic and Statistical Manual of Mental Disorders, or DSM, mental health professionals have introduced a growing number of new mental and behavioral disorders to describe a range of human behavior and emotions and revised many symptom thresholds for existing disorders to accommodate more patients (Mayes and Rafalovich 2007; Whooley 2010). At the same time, scholars have noted a marked increase in direct to consumer advertising of treatments for a number of common ailments (Conrad 2005; Conrad and Barker 2010). As a result, the use of diagnosis, therapy, and/or psychotropic medication as a way to define and control children viewed as troublesome has increased over the past twenty-five years (Conrad 2007). In particular, the use of stimulant medication to control symptoms of ADHD, including Ritalin, Adderall, or Dexedrine, is ten times higher now than it was in 1990 (Centers for Disease Control [CDC] 2010; Conrad 2013; Millichamp 2010; Setlik, Bond, and Ho 2009; Thomas et al. 2006). Indeed, ADHD is the most commonly diagnosed disorder among children between the ages of 6 and 14 in the United States (CDC 2012).

As a boy's behaviors become defined and managed using medical terms and technology, that boy and his family risk stigma and possible social exclusion as people are made aware of his disorder (Link and Phelan 2001, 2006; Thoits 2011). However, proponents of medicalization argue that pharmaceutical treatment improves classroom performance by improving attention and concentration and, in many cases, resulting in

better behavior (Barkley 2002; Millichamp 2010). When boys are adhering to their behavioral or pharmaceutical regimens, they report more ease and comfort during routine social interactions with their parents and peers (Barkley 2002). Furthermore, medicalized boys report better short-term impulse control, reducing incidents of classroom disruption (Barkley 1997; McDonagh et al. 2007), particularly when medication is combined with behavioral therapy (Barkley 2002). These benefits suggest that medicalization may be a more advantageous means of social control than other, more punitive measures (Conrad 1992a; Medina and McCranie 2011; Zola 1974).

The processes of criminalization and medicalization have given rise to a multi-institutional approach to the social construction of child behavior that reflects important societal perceptions and priorities (Conrad 2013; Conrad 1992a; Medina and McCranie 2011). Specifically, the decision to punish and/or treat a young man is a complex process that involves much more than his misbehavior. The social construction of his behavior takes into account attributes of the young man himself, his perceived threat to the community, and important social and structural factors that constrain the decision making process (Steffensmeier, Ulmer, and Kramer 1998; Link and Phelan 2001). To help explain how the behavior of young males is socially constructed, I turn to a discussion on the focal concerns of claims-making institutions (Steffensmeier, Ulmer, and Kramer 1998).

The Focal Concerns of Social Construction

Steffensmeier and colleagues (1998) posited that judges and other actors in the criminal justice system had three focal concerns when deciding on criminal sentences: the offender's blameworthiness, protection of the community, and practical implications and constraints in the decision making process. Blameworthiness involves the assessment of defendant's guilt and the perceived need for retribution. Defendants who commit more serious offenses are perceived to have caused great harm and are thus more likely to receive longer and harsher sentences (Chiricos et al. 2007; Huebner and Bynum 2006; Steffensmeier, Ulmer, and Kramer 1998). On the other hand, mitigating factors such as a history of abuse or mental health problems can limit blameworthiness and reduce sentence severity (Heubner and Bynum 2006; Steffensmeier, Ulmer, and Kramer 1998). In addition to perceptions of culpability, courtroom actors typically impose longer sentences on those they view as threatening to the community and in need of exclusion and isolation (Steffensmeier, Ulmer, and Kramer 1998). However, defendants viewed as low-risk or willing to cooperate with authority were often treated with leniency when the nature of the offense was less severe (Johnson and DiPietro 2012; Steffensmeier, Ulmer, and Kramer 1998).

Despite the relatively straightforwardness of perceived guilt and risk, judges and other actors rarely have total information about offenses and defendants (Steffensmeier, Ulmer, and Kramer 1998). Instead, they rely on cues drawn from characteristics external to the actual offense, including the race of the offender (Engen et al. 2002; Soung 2011; Steffensmeier, Ulmer, and Kramer 1998). Furthermore, courtroom actors are constrained

in these decisions by state and local economic resources such as available prison space and political climate (Johnson and DiPietro 2012; Steffensmeier, Ulmer, and Kramer 1998). Although this focal concern framework has not been directly applied to school punishment or the decision to seek a medical therapy or medication, research routinely underscores the importance of blameworthiness, perceptions of threat, and structural constraints in the social construction of child misbehavior.

Blameworthiness

The imposition of the criminal justice model on school discipline establishes blame and personal responsibility as central to the justification for harsh school punishment (Simon 2007). Students who commit more serious offenses, such as fighting or drug use, are much more likely to be removed from school for longer periods of time than students who commit relatively minor offenses (Kupchik 2010; Skiba et al. 2013). Boys who are considered extremely disruptive or disrespectful are more likely to be removed from the classroom and receive in-school suspensions (Ferguson 2001; Gregory and Weinstein 2008; Kupchik 2010; Skiba et al. 2013). For lesser offenses in particular, perceptions of blameworthiness are subject to the discretion of teachers and school administrators. Similar to the criminal justice system, these perceptions extend beyond the offending behavior to include cues based on personal biases, including preconceived notions of race and class (Ferguson 2001; Kupchik 2010; Monroe 2008; Skiba et al. 2013).

While school punishment is meant to serve as retribution for violating school rules, medicalization is intended to reduce individual responsibility and blame (Conrad 1992a; Link and Phelan 2010; Kvaale, Gottdiener, and Haslam 2013; Medina and McCranie 2011). If misbehavior is considered the result of an underlying behavioral or conduct disorder, adults are less likely to hold that child personally accountable for his actions and more likely to blame them on his disorder (Bussing et al. 2012; Conrad 1992a; Kvaale, Haslam, and Gottdiener 2013). If adults blame a young man's misbehavior on a medical or psychological cause, the perceived need for retribution declines. Instead, they may try to rehabilitate the young man by seeking out medication or therapy to control the medical or psychological issue responsible for his misbehavior (Conrad 1992a; Rafalovich 2013).

Perception of Threat

School administrators argue that they must provide a safe and effective learning environment, and harsh discipline and removal of troublemakers is an essential tool for this task (Kupchik 2010). However, in many cases, this perception of danger extends beyond the risk of harm to other students and teachers. The use of harsh discipline has been a useful tool in removing students considered threatening to the process of education itself (Kupchik 2010). Students who are perceived as unwilling to learn or cooperate in a classroom setting can be forcibly removed from school without causing actually threatening any other person's physical safety (Ferguson 2001; Skiba et al. 2013). Indeed, more students are suspended for offenses like classroom disruption and

tardiness than for fighting and weapons (Kupchik 2010; Skiba et al. 2013). In many cases, school suspension or expulsion for relatively small offenses can also help administrators remove failing students from the roster and improve the school's overall performance on important funding metrics, including standardized test scores (Skiba et al. 2013).

While suspension and expulsion excludes a young man from his classroom and isolates him from his peers, medicalization presents an attempt at managing behavior while keeping him involved in normal school activities (Conrad 1992a; Medina and McCranie 2011). For example, when adults view a young man as sick rather than bad, they may be less likely to consider his behavior threatening when it can be controlled through therapy and medicalization (Medina and McCranie 2011; Perry et al. 2007). When a young man is viewed as able and willing to participate in medical treatment and therapy, he is more likely to be kept in class with his peers (Conrad 1992a; Kvaale, Haslam, and Gottdiener 2013; Thoits 2011). Indeed, American public schools are legally bound to consider whether misbehavior can be blamed on a medically diagnosed disorder when making disciplinary decisions about medicalized young males (Kim, Losen, and Hewitt 2010).

Social and Structural Constraints

The social construction of a young boy's misbehavior is limited by several political and socioeconomic factors. For example, the implementation of zero tolerance policies and increases in school suspension and expulsion have historically been

concentrated in inner-city schools across the country (Lyons and Drew 2006; Skiba et al. 2013). Eager to be seen as responsive to perceived spikes in urban youth violence, “tough on crime” policymakers support and fund those schools that develop the most effective discipline plans, often measured by the number of classroom and school removals (Lyons and Drew 2006; Simon 2007). For boys attending these schools, even the most minor rule violation runs the risk of punishment (Ferguson 2001; Skiba et al. 2013). Moreover, many disadvantaged children attend schools with limited resources for dealing with growing pressures of high-stakes testing. As a result, young males with educational or behavioral difficulties and limited resources risk being suspended or expelled from school in efforts to improve the school’s overall performance (Skiba et al. 2013).

Similar political and economic factors are behind the medicalization of misbehavior. With the passage of the FDA Modernization Act of 1997, direct to consumer advertising became an increasingly effective way for pharmaceutical companies to market behavioral treatments to parents (Conrad 2007; Conrad and Barker 2010). Similar to other changes in healthcare laws and technology, members of socially advantaged groups are in a much better position to take advantage of these changes (Conrad and Potter 2004; Goldman and Lakdawalla 2005; Link and Phelan 1995). Additionally, parents’ with greater social and economic resources can influence how teachers and administrators apply the rules towards their children (Kupchik 2010). For example, by being able to provide their children with extracurricular activities and resources to help with their academics, parents are able to promote an image of their child

as serious about academics (Kupchik 2010; Lareau 2002; Lareau and Munoz 2012). Furthermore, this gives children the social resources to interact with adults in a reasoned, conversational manner, rather than passively accept sanctions and consequences (Kupchik 2010; Lareau and Munoz 2012). Consequently, parents and teachers are more likely to work together to develop a behavioral or educational plan that can meet the young man's needs rather than simply removing him from school.

To summarize, the social construction of childhood misbehavior shares many of the same focal concerns as the criminal sentencing process in the criminal court process. The criminalization and/or medicalization of a boy's misbehavior involves how culpable adults consider him to be for his actions, how dangerous he is thought to be to others, and the resources that parents and teachers have at their disposal. Importantly, similar to the criminal justice system, the focal concerns of many parents and teachers are heavily patterned by a racialized social structure that allows young African-American men to be routinely stereotyped as delinquent and dangerous while young White boys are better able to maintain their childlike innocence (Ferguson 2001; Soung 2011; Steffensmeier, Ulmer, and Kramer 1998). In the next section, I turn to discussions of labeling theory and cumulative disadvantage/disadvantage to help explain racial disparities in the social construction of child misbehavior within a focal concerns framework.

Race and Criminalization

Labeling Theory

According to labeling theory, decisions determining whether behaviors are viewed as normal or deviant are made by the dominant group (Bernburg 2009; Paternoster and Iovanni 1989). As a result, subordinate and minority groups are particularly vulnerable to social control and punishment (Paternoster and Iovanni 1989). In the United States, young African-American men are arrested, convicted, and incarcerated at extraordinarily high rates relative to other social groups (Western 2006). This mark of criminality extends elsewhere, leading to stereotypes of young African-American men as criminals and therefore more worthy of blame for problem behavior than young White men (Engen et al. 2002; Soung 2011). From early ages, the perception of African-American boys among larger society is that of criminal or threatening (Engen et al. 2002; Ferguson 2001; Rios 2006; Soung 2011).

These preconceived notions of criminality and blameworthiness shape how students are treated by school employees and inevitably lead teachers and administrators to seek out harsher punishments for African-American boys observed breaking the rules (Ferguson 2001; Skiba et al. 2013). In some school settings, racial and ethnic minorities are more often singled out even before they exhibit any behavior problems, leaving them with a very narrow line to cross before facing punishments (Ferguson 2001; Rios 2006, 2011). For example, in her in-depth study of school discipline and its role in shaping African-American masculinity, Ferguson (2001) reveals how school staff joke about young boys “having a prison cell” written all over them. To these teachers, boys who

misbehave are simply preparing themselves for their future lives as criminals, and time spent in the school's isolation room is just preparation for jail or prison (Ferguson 2001). In another example, Victor Rios (2006) reports that many young African-American males felt that their teachers, schools, and even families treated them like criminals from very young ages and that these institutions were collaborating to channel them into a life of incarceration and involvement with the criminal justice system.

Cumulative Disadvantage/Advantage

Social and structural conditions in the US are heavily influenced by race, which further contributes to a racialized process of criminalization. According to a cumulative disadvantage/advantage perspective, racial discrimination and structural inequality place young African-American boys at a greater risk of harsh punishments even after behavioral risk factors are considered. African-American boys are routinely subjected to criminalized forms of social control at all stages of development (Rios 2006). For example, African-Americans are more likely to go to schools with on-campus police officers, metal detectors, and zero tolerance disciplinary policies, all of which increase the risk of suspension and expulsion for even minor offenses (Kupchik 2010). In addition, these schools are more likely to experience overcrowding and lack the resources to handle individual student problems in ways other than forced removal (Ferguson 2001; Kupchik 2010). As a result, school punishment serves as another disadvantage,

compounding the ways in which poverty and discrimination influence the long-term well-being of young Black boys.

Race and Medicalization

Labeling Theory

The decision to seek therapy and/or medication for child misbehavior is extremely complicated. For many families, being diagnosed with mental or behavioral health disorder can be a stigmatizing experience for both young boys and their parents (Bailey et al. 2010; Brinkman et al. 2012). Therapy and medication can be controversial, as many parents are hesitant about giving their kids pharmaceutical medication, particularly stimulants at such a young age (Brinkman et al. 2009; Mueller et al. 2012). On the other hand, the stigma of mental illness has declined over time, as people are more willing to accept biological or psychological explanations for deviant behavior than they were in the past (Perry 2011; Pescosolido 2013). Moreover, many teachers and medical professionals claim that therapy and medication can provide the best chance of rehabilitation for child with behavioral or mental health disorders (Barkley 1997; Conrad 2007; Millichamp 2010). These concerns are reflected in the different ways that African-American and White boys' behavior is social constructed.

Fearing the stigma associated with poor mental health, African-American mothers are less likely than White mothers to consider their child's behavior as a result of a medical or psychological cause (Bailey et al. 2010; Bussing et al. 2012; Miller, Nigg, and

Miller 2009). A history of discrimination in American schools has left African-American families distrustful of recommendations made by teachers and administrators regarding their children's behavior (Davison and Ford 2002). Similar to the education system, there is a legacy of discrimination in the U.S. healthcare and mental health systems. The legacy of the Tuskegee experiments has left many African-American families skeptical of medical research, particularly contested and controversial issues (Bailey et al. 2010; Shavers, Lynch, and Burmeister 2000). As a result, African-American mothers are skeptical of how behavior disorders such as ADHD are constructed by professionals (Davison and Ford 2002; Fitzgerald 2008; Miller, Nigg, and Miller 2009). Instead, they blame misbehavior on other factors such as too much sugar (Bussing, Schoenberg, and Perwien 1998; Bussing et al. 2012).

On the other hand, social structural factors in the United States often leave White parents in a better position to consider the potential biological or genetic causes behind misbehavior (Bussing, Schoenberg, and Perwien 1998). Nearly all White parents are at least somewhat familiar with common behavior disorders such as ADHD (Bailey et al. 2010; Bussing et al. 2007). As a result, they are more familiar with the etiology of these disorders and are more likely to attribute their children's behavior to biological or genetic causes (Bussing, Schoenberg, and Perwien 1998; Bussing et al. 2007). Furthermore, White parents are more likely to have cordial and cooperative relationships with their sons' teachers and school administrators and are more willing to accept their recommendations when it comes to therapy or treatment (Bussing et al. 2012; Kupchik 2010).

Despite differences in the willingness to blame mental health problems for their sons' misbehavior, African-American and White parents are similar in their belief in the effectiveness of treatment at controlling behavior (Anglin et al. 2008; Miller, Nigg, and Miller 2009). However, African-American parents' often believe that behavior problems will subside on their own (Anglin et al. 2008; Bussing et al. 2012; Miller, Nigg, and Miller 2009). Moreover, when they do seek treatment, mental health providers often characterize African-American boys as incompetent and uncontrollable and therefore unable to benefit from therapy or treatment (Alegria et al. 2011; van Ryn and Fu 2003). As a result, not only are young African-American boys less likely to have their misbehavior blamed on a mental or behavioral health issue, they are less likely to be considered suitable targets for treatment. On the other hand, White boys are viewed as more capable of adhering to a treatment regimen and more likely to be more responsive to therapy and medication (Bussing et al. 2012; Cuffe et al. 2005). These different perceptions of threat and the capacity for rehabilitation contribute to racial differences in the likelihood to seek out treatment or therapy.

Cumulative Disadvantage/Advantage

According to the cumulative disadvantage/advantage perspective, increases in medicalization reflect the ability of White parents to use their social status and position to ensure their children can get the best care possible for their children's behavior problems. Like other health disparities, racial gaps in the medical treatment of behavior problems

are partially due to the ways in which social and economic resources are distributed along racial lines in the U.S. (Williams et al. 1997; Williams and Sternthal 2010). For example, compared to African-American families, White families, on average, have higher family incomes and are more likely to be covered under private insurance plans. These resources can facilitate the medical treatment of childhood problem behaviors by reducing barriers to care, providing payment for effective treatment, and improved health literacy (i.e. being able to understand this often complicated knowledge and put it into practice) (Morgan et al. 2013; Williams et al. 1997; Williams and Sternthal 2010). However, racial disparities in mental health and mental health treatment extend far beyond racial gaps in socioeconomic status.

In the United States, a racialized social structure can influence racial gaps in the medicalization of child behavior in several ways. First, since African-Americans are much less familiar with many common behavioral disorders, they are less exposed to information about symptoms and treatments (Bussing et al. 2012). Second, racial residential segregation interferes with the ability of African-American families to obtain effective medical and mental health care locally (Williams et al. 1997; Williams and Sternthal 2010). Finally, even if they are able to seek care, racial prejudices and biases on behalf of providers influences the type of care that African-American boys receive. For example, pediatricians are less likely to solicit information about behavior problems from the parents of African-American boys (Guerrero, Rodriguez, and Flores 2011). In addition, young African-American boys often do not receive the appropriate therapy or

medication because the doctor was either too busy to assess him properly or did not view the child as capable of adhering to treatment (Bailey et al. 2010; Bussing et al. 2012).

While African-American families are underserved by the mental health system, White families are far more familiar navigating the medical and healthcare systems to meet the needs of their children. As the most frequent consumers of medical technology, White families are often the target of direct to consumer advertisements (Conrad and Potter 2004; Conrad 2007). As a result, White parents are able to influence mental health professionals with respect to treating their children's behavior problems (Conrad and Leiter 2004; Goldman and Lakdawalla 2005). Indeed, doctors and psychologists often claim that they are simply confirming parents' diagnoses of behavior disorders, rather than examining and identifying symptoms themselves (Conrad 1992b; Rafalovich 2005). As a result, White families and children are better able to direct care and persuade their providers as to which diagnoses meet their children's symptoms (Conrad and Leiter 2004; Bussing et al. 2012; Goldman and Lakdawalla 2005). Once they are able to secure the desired therapy or medication, they have more options and are better able to find a provider that can offer effective treatment (Bussing et al. 2012). Moreover, they are able to use their child's diagnosis to ensure that their son receives extra consideration and assistance at school, particularly in the case of misbehavior (Conrad 2007; Kim, Losen, and Hewitt 2010).

Summary and Hypotheses

The research discussed above describes how racial and ethnic disparities in the social construction of youth behavior emerged over time. Specifically, as school punishment and medical treatment became common responses to the misbehavior of young boys in the United States, there are clear racial disparities in the way these approaches are applied. Stereotypes of young African-American men as criminal extend to boys at very young ages, including notions of blameworthiness and perceptions of risk. Moreover, African-American boys are more likely to attend schools in hypercriminalized environments and have limited family involvement with mental health services. On the other hand, the parents and teachers of young White boys are more likely to consider biological or psychological causes of misbehavior and be more accepting of medical therapy or medication. In addition, White families are more likely to be involved in school disciplinary decisions and have greater access to information about behavioral disorders that may afflict their sons. Drawing from the research discussed above, I develop and test four specific research hypotheses regarding the ways in which racial stratification influences how child problem behavior is socially constructed, either through a process of medicalization or criminalization. These are delineated below:

H1: The probability of African-American and White boys being punished or receiving therapy/medication has significantly increased over time.

H2a: African-American boys are significantly more likely to be suspended or expelled from school than White boys.

H2b: White boys are significantly more likely to receive therapy or medication for behavior problems than African-American boys.

H3a: Higher levels of externalizing behavior problems will be significantly associated with a greater likelihood of a punishment and therapy/medication.

H3b: Racial differences in the frequency of externalizing behavior symptoms do not fully account for racial disparities in school punishment and therapy/medication.

H4a: The probability of school punishment for African-American boys' behavior will increase at a significantly greater rate than the probability of school punishment for White boys.

H4b: The probability of therapy/medication for White boys' behavior will increase at a significantly greater rate than the probability of therapy/medication for African-American boys.

Data and Methods

The data for this chapter were taken from the National Longitudinal Study of Youth, 1979 Cohort – Child and Young Adult Sample (NLSY79-CYA). The NLSY79 is

a prospective longitudinal study originally designed to capture the labor market experiences of Americans who were between the ages of 14 and 22 in 1979. A total of 12,686 male and female respondents were interviewed annually from 1979 through 1994 and biannually from 1996 until 2010. Since its inception, the mission of the NLSY has expanded to include important health and family conditions. In 1986, a separate biennial survey of all children born to original NLSY79 female respondents was initiated. By 2010, the NLSY-Child Survey included information on 11,504 children from 4,932 mothers, ranging from 0 to 14 years of age¹. The NLSY-Child Survey is beneficial for two key purposes. First, it contains prospective and repeated information on important developmental and socioeconomic characteristics throughout childhood. Second, the study period of the project overlaps with an unprecedented increase in both school punishment and medically diagnosed behavior problems in American boys (Losen and Martinez 2013; CDC 2012).

For this project, I reduce my sample to the male children of African-American and White mothers who were between the ages 6 to 14 during the years 1988 to 2010. I focus on young boys because they are overwhelmingly more likely to be suspended or expelled and diagnosed with behavior disorders than their female peers (Bertrand and Pan 2013; CDC 2012). Furthermore, many of the mechanisms behind the social construction of misbehavior vary across gender lines. For example, teachers and administrators are more likely to view boys as defiant and disruptive than girls (Newcomb et al. 2002; Skiba et al. 2013) and girls' diagnosed behavior problems are typically associated with attention

¹ The age range for the entire NLSY-CYA is 0-31 years old. However, since the age range for the current chapter is 4 to 14, all children's variables are taken from the Child Survey.

deficit or anxiety and not hyperactivity or disruptive behavior (Cuffe, Moore, and McKeown 2005). After removing the boys who were missing information on the independent and dependent indicators of interest, my final sample includes 3,631 boys who contributed 11,802 person-years to the analyses described below.

Dependent Variable

To construct a dependent variable that indicates whether the NLSY respondent's behavior was medicalized or criminalized, I create the following categorical measure of social construction: (1) neither punished nor therapy/medication; (2) Therapy/Medication only; (3) Punishment only; (4) both punishment and therapy/medication.

Therapy/Medication includes those boys who received therapy or medication for behavior problems in the past year, taken from the child's response to one of two questions: (1) has child seen a psychiatrist or psychologist for troubles in school or for tantrums, hyperactivity, or disruptive behavior in the previous year? and/or; (2) is child currently taking drugs to control his/her behavior?². School punishment is measured using the Mother's response to the question "Has your child ever been suspended or expelled from school?"

² The question does not refer to any specific drug or behavior. However, behavior problems like hyperactivity are the most commonly diagnosed disorders in childhood, particularly for young boys. Moreover, the NLSY-CYA asks about medication for other common ailments but not hyperactivity or other behavior problems. Finally, this measure has been used in prior analysis on childhood behavior problems (Currie and Stabile 2006; Currie, Stabile, and Jones 2014).

Independent Variables

The main independent variables of interest are respondent's race and time. Respondent's race is based on the report of the mother, taken from the NLSY Survey, and is coded as 0 if the NLSY Child identifies as nonHispanic White and 1 if he identifies as nonHispanic Black. I use the survey year to capture the increases in the frequency of both school punishment and medically diagnosed behavior disorders over the past 25 years. Furthermore, while increases in both school punishment and the use of therapy or medication for behavior problems were relatively sharp during the 1990s, this growth has slowed somewhat since the turn of the century. To capture the nature of this increase, I include measures of year and year-squared³.

Childhood misbehavior also figures prominently in the analyses. To capture misbehavior, I use the externalizing behavior scale adopted from the Child Behavior Checklist (CBCL) and derived from the Behavior Problems Index (BPI) (Guttmanova, Szanyi, and Cali 2007). Externalizing behaviors are those behavior characterized by a lack of emotional control or an inability to suppress impulses, leading to rule breaking (Guttmanova, Szanyi, and Cali 2007; Parcel, Campbell, and Zhong 2012). Importantly, the CBCL externalizing behavior score is consistent across and within racial and ethnic groups, and has been recommended for cross-group comparisons (Guttmanova, Szanyi, and Cali 2007)⁴. A full list of variables in the externalizing behavior scale is available in

³ To provide sensible estimates for race * time interactions, my year variable begins at zero and is measured every two years until 22. As a result, a value of zero for year is equal to the calendar year 1988.

⁴ Guttmanova, Szanyi, and Cali (2007) compare their CBCL measure of externalizing behavior scores with the Behavior Problems Index score created by Parcel and Menaghan (1988) and argue that the BPI score is biased and lacks construct validity across the three predominate racial and ethnic groups in the

Appendix G. As the list shows, the externalizing behavior scale includes a number of behaviors that could possibly lead to school discipline, including getting into trouble with teachers, being disobedient at school, and bullying or being cruel to others. To note, these behaviors are also listed by mental health professionals as “symptoms” of childhood behavior disorders. For example, cheating/lying and bullying are included in some conduct disorder symptom checklists, disobedience is often a sign of Oppositional Defiant Disorder, and confusion, restlessness, and inattention are considered to be classic ADHD symptoms.

I include a number of additional control variables in regression analyses to statistically control for potential confounders. First, to control for changes in disciplinary and educational expectations between elementary and middle school, I include a dummy variable equal to one if the NLSY child is still in elementary school. To account for prior difficulties in school, I include a dummy variable equal to one if the boy ever repeated a grade due to academic issues. I measure child’s academic achievement using the child’s standardized score on the PIAT Reading Recognition and Mathematics tests, designed to capture the boy’s mastery of basic skills taught in public school. Additionally, I include a dummy variable equal to one if the child has been enrolled in Head Start. To control for the effects that living in poverty has on behavior, education, and health care, I include a dummy variable equal to one if the total household income was less than the poverty

NLSY-CYA. In a series of sensitivity tests, I ran models using the BPI score, as well as the following other measures of childhood misbehavior: oppositional action (Cooksey, Menaghan, and Jekielek 1997), total child delinquency (a scale based on the child’s self-reported answers to seven different questions about deviant and/or illegal behavior between the ages of 10 and 14), and school delinquency (a scale based on the four behaviors most related to in-school activities). These models yielded results very similar to those reported in this chapter and are available from the author by request.

level. To capture other aspects of family socioeconomic status, I use measures of mother's education (in years) and a series of dummy variables indicating if the mother was unemployed (reference), employed part-time, or employed full-time. Because access to health care may influence decisions regarding therapy and medication, I include a series of dummy variables indicating whether the child is covered under a private insurance plan (reference), public insurance plan, such as Medicaid, or has no insurance coverage. To account for variation in family composition, I include measures of mother's marital status (currently married, cohabiting, single, or never married), whether or not the child lives in a single-mother household, and the number of siblings living in the home. To capture the disciplinary environment, cognitive stimulation and emotional support provided by the boys' primary caregiver(s), I include the Home Environment Score taken from the interviewer's assessment during the Home Inventory Scale. Additional time-varying variables include, respondent's age (in years), whether the respondent lived in a suburban, rural, or urban residence, the region of the country in which the respondent resides (Northeast, Midwest, South, or West). I also include time-invariant measures for mother's age at birth (dummy variable equal to "1" if the mother was under 18 years old), birth order, and whether or not the mother smoked during pregnancy.

Analytic Strategy

$$\ln\left[\frac{\Pr(y = m|x)}{\Pr(y = b|x)}\right] = \beta_0 + \beta_{year} + \beta_{black} + \beta_{behave} \dots \beta_n$$

To capture the social construction of misbehavior in young African-American and White males in the United States, I employ multinomial logistic models. To account for heteroskedasticity and nonindependence of error terms, I estimate robust standard errors clustered at the level of the individual. The multinomial logistic model can essentially be thought of as estimating simultaneous binary logit models for all possible comparisons among the outcome category (Long 1997). As demonstrated in the equation presented above, the outcome represents the log-odds of each individual boy falling into category m relative to the base category b .

In a series of regression models, I test the likelihood of punishment, therapy/medication, or both punishment and therapy/medication versus experiencing no labeling event. However, because I am examining these possible outcomes in the same model, I am able to make comparisons across all possible choices (e.g. likelihood of punishment versus therapy/medication). Thus, unlike prior work that considers only one form of social construction (e.g. school punishment versus no school punishment), I am able to make comparisons across a broader, more exhaustive range of potential outcomes (Box-Steffensmeier and Jones 2004; Long 1997).

To test my hypothesis, I run a series of four models. First, to test for changes in the social construction of childhood behavior over time, I run models including only measures of time (year and year-squared) and control variables. Second, to test for racial differences in how the behavior of children is socially constructed, I add a race dummy variable that identifies whether the respondent was nonHispanic Black or nonHispanic White. Third, to test whether racial disparities in the frequency of behavior problems can explain differences in how behavior is social constructed, I add a variable measuring the frequency of externalizing behavior symptoms. Finally, the fourth model uses race by year (and year-squared) interactions to capture whether there are racial disparities in how the behavior of children has socially constructed over time.

To handle issues of missing data, I use multiple imputation techniques to generate values for all covariates using the “ICE” command in Stata (Royston 2005). ICE relies on a chained equation approach in which a conditional distribution for missing data using the appropriate specification for each variable (e.g., logistic regression for dichotomous variables) and multiple datasets are created using Gibbs sampling techniques (Royston 2005; van Buuren 2012). I created five distinct data sets⁵, which were all used in conjunction with the mi command in Stata to complete both descriptive and multivariate analyses. Following von Hippel (2007), I impute values for all variables, including the interaction terms, in a given model and then delete observations with missing data on either behavior or dependent variables before running our regression analyses.

⁵ Typically, the number of imputed datasets is dependent on the amount of total missing information, with 3 to 5 datasets being a common recommendation for models containing up to 20% missing information, far greater than the 5% missing information in the current analysis (Royston 2005; Rubin 1987; van Buuren 2012).

Results

Table A.1 presents weighted means and proportions for the variables included in the study for African-American and White boys. These descriptive statistics reveal clear racial disparities in how misbehavior is socially constructed. Almost nine out of ten White boys receive no label for their behavior, compared to a little over three-quarters of African-American boys. Approximately 16 percent of the African-Americans report having been suspended without receiving therapy or medication in a given year, compared to only 3.4 percent of White boys. Meanwhile, 7.2 percent of White boys reported receiving therapy or medication for behavioral disorders in a given year, compared to just 4 percent of African-Americans. In addition to racial disparities in school punishment and therapy or medication, African-American boys display, on average, significantly higher levels of externalizing symptoms than White boys. The average score on the CBCL externalizing behavior scale is 6.12 for African-American boys and 5.5 for White boys.

In addition to differences in my dependent and key independent variables, there are a few other noticeable racial disparities on important covariates. African-American boys are significantly more likely to have repeated a grade, score significantly lower on the PIAT Reading Recognition and Math achievement tests, and are more likely to attend Head Start. Furthermore, African-American boys are almost four times as likely to be raised in a poor household and are more likely to be raised by a single mother. These disparities suggest that African-Americans in this sample are placed at significant

structural disadvantage when it comes to their education, potentially placing them at a greater risk of school punishment than their White peers.

Table A.2 presents the results from the first multinomial logit model examining the likelihood of punishment or therapy/medication between 1988 and 2010. In Table A.2, coefficients represent the log-odds and exponentiated coefficients represent odds ratios of therapy/medication, punishment, and receiving both therapy/medication and punishment versus receiving no label. Results from Table A.2 provide support for the first hypothesis. Specifically, there are significant and sizable increases in the likelihood of both school punishment (suspension or expulsion) and the use of therapy or medication for behavior disorders between 1988 and 2010. On the other hand, looking at the odds of school punishment versus no labeling, the significant and negative coefficient for year-squared suggests that the increase in suspensions and expulsions has slowed recently. These trends can be observed in Figure B.1, which displays predicted probabilities of punishment or expulsion and therapy or medication between 1988 and 2010. As Figure B.1 demonstrates, the likelihood of receiving therapy and/or medication for a behavior disorder without being punished increased steadily over the 22 year period. Meanwhile, the likelihood of school punishment increased rapidly in the early 1990s with the rate of increase slowly declining over time.

Table A.3 presents the results from the second multinomial logit model introducing a race dummy variable indicating whether the respondent was nonHispanic Black or nonHispanic White. Results from Table A.3 provide support for the second hypothesis. Specifically, during the period of time under study, African-American boys

were 173 percent [$100*(e^{1.006})-1$] more likely to be suspended or expelled than White boys and 30 percent [$100*(e^{-1.198})-1$] less likely to receive therapy or medication for behavior problems than White boys. This can be observed in Figure B.2, which presents predicted probabilities of school punishment and therapy/medication for all years of 1988 and 2010.

Figure B.2 reveals clear racial disparities in the social construction of child behavior. For White boys, the chance of receiving therapy or medication for a behavior problem is a little over 7 percent, compared to just 4 percent for African-American boys. On the other hand, while White boys have less than a 4 percent chance of being suspended or expelled from school, African-Americans boys' chances are more than 15 percent. Thus, over the past 25 years, school punishments were predominately experienced by African-American, while White boys were more likely to experience therapy or medication during the same period. Since both possible responses to child behavior are being examined simultaneously, this evidence suggests the behavior of African-American and White boys is socially constructed in fundamentally different ways.

Table A.4 presents results from multinomial logit models examining the odds of punishment or receiving therapy or medication over time (in years), net of an individual's propensity to engage/demonstrate externalizing behaviors. Results from Table A.4 provide support for my third hypothesis. Higher externalizing behavior scores are associated with greater odds of school punishment, the use of therapy or medication for behavior problems, or both. A one-unit increase in CBCL externalizing behavior scale is

associated with 26 percent [$100*(e^{0.231})-1$] increase in the odds of receiving therapy or medication, a 20 percent [$100*(e^{0.182})-1$] increase in the odds of school punishment, and 53 percent [$100*(e^{0.424})-1$] increase in the odds of both punishment and therapy/medication. While frequent displays of externalizing behaviors increases the likelihood of a formal social response, the likelihood of whether than response was a therapy/medication or school punishment is still determined by the respondent's race. Compared to White boys with similar behavior problems, African-American boys are 225 percent [$100*(e^{1.182})-1$] more likely to be suspended or expelled without receiving therapy or medication compared than they are to receive no label at all. Moreover, they are more than 62 percent [$100*(e^{-0.967})-1$] less likely to receive therapy or medication for a behavior disorder without punishment than White boys.

Results thus far have indicated that rates of school punishment and the therapy or medication of behavior disorders increased between 1988 and 2010. Further, African-American boys were significantly more likely to be punished and less likely to receive therapy or medication for behavior problems than White boys, even after differences in the frequency of externalizing behavior problems is considered. Next, I examine whether there are racial disparities in the increased use of both school punishment and medicalization. Specifically, did the use of school punishment increase faster for African-American boys than for White boys? Conversely, did the use of therapy or medication increase faster for White boys than for African-American boys?

Table A.5 presents results from multinomial logit models examining the odds of punishment and therapy/medication over time (in years) after including interactions

between my African-American dummy variable and both year and year-squared to assess the relative differences in the rates of criminalization and medicalization across African-American and White boys. Overall, results from Table A.5 reveal clear racialized patterns in the social construction of childhood behavior over time. Specifically, African-American boys are not only more likely to be punished without therapy/medication than White boys, even after controlling for behavior, but their rate of increase in school punishments over time is far more pronounced. Furthermore, while White boys are more likely to receive therapy or medication versus no label than African-American boys, there is no evidence to suggest that racial disparities in medicalization are increasing or decreasing over time. To facilitate a discussion of these trends, I turn to a series of figures displaying predicted probabilities of school punishment and therapy or medication over time for African-American and White boys.

Figure B.3 presents changes in the predicted probability of only therapy or medication (versus no response) for African-American and White boys between 1988 and 2010. Overall, White boys are more likely to receive therapy or medication than African-American boys. However, there are no significant differences between White boys and African-American boys in the increase in the use of therapy or medication. While African-American boys begin the period much less likely to receive therapy or medication for behavior disorders than White boys, the rates converge somewhat after the turn of the century. Meanwhile, White boys experience two noteworthy spikes in the likelihood of therapy or medication at the beginning and end of the 1990s.

Unlike therapy or medication alone, there are clear racial disparities in the overall likelihood of school punishment and the rates of increase in school punishment over time. As Figure B.4 demonstrates, increases in the use of suspensions and expulsions were predominately experienced by African-American boys. Indeed, as the chances of school punishment for African-Americans changed rapidly over time, increasing from 5 percent in 1988 to over 20 percent in 2000 and down to 10 percent in 2010, they remained relatively stable for young White boys. At no time in the study did the chances of school punishment for White boys reach that of African-American boys at their lowest (in 1988). Indeed, White boys were left relatively unaffected by changes in school punishment over the past 20 years.

Conclusion and Discussion

This article draws from focal concerns perspective in criminology and theories of labeling and cumulative disadvantage/advantage from medical sociology to examine racial disparities in the social construction of childhood misbehavior. Employing twelve waves and twenty-two years of panel data from the National Longitudinal Survey of Youth 1979 – Child Survey, I use multinomial regression models to demonstrate that there are clear racial disparities in the social construction of child behavior that translate into different social control experiences in childhood. Specifically, as rates of school punishment and medically diagnosed behavior disorders increase between 1988 and 2010, African-American boys have been more likely to be punished, while White boys

have been more likely to receive therapy or medication to control their behavior. Finally, as the rates of school punishment for African-American boys increase over time, White boys are generally able to avoid trends in criminalized school discipline through medicalization.

While frequent behavior problems are associated with a greater likelihood of punishment or the use of therapy and medication, they cannot explain racial disparities in the two forms of social control. Instead, when African-American and White boys are displaying similar levels of externalizing symptoms, parents and teachers are more likely to attribute the behavior of White boys to medical or psychological disorders and view them as capable of treatment (Bussing et al. 2012). Additionally, increased access to mental health professionals and information about disorders among White families may help White boys to receive treatment and avoid punishment. On the other hand, African-Americans may be considered more blameworthy for their actions and viewed as threatening to the school environment when they misbehave. Insufficient access to mental health care and disproportionate exposure to zero-tolerance disciplinary policies may increase the likelihood that African-American boys will be punished and less likely to be treated without punishment.

These findings have important implications for how we understand the social construction of child behavior problems. First, as rates of school punishment increase over time, they too are reflected in increasing disparities in incarceration in adulthood (Western 2002). Meanwhile, while White boys only display slightly fewer externalizing symptoms, they are much less likely to be punished when they do act out. Consequently,

while the use of therapy or medication may come with stigma, it may still provide Whites boys with the chance to escape serious consequences of stigma through rehabilitation and treatment (Kim, Losen, and Hewitt 2010).

While there is no statistically significant difference in the rates of increase for therapy or medication for African-American boys and Whites boys, two striking patterns in Figure 4 bear mentioning. For African-American boys, the rates of medicalization remain relatively stable until about 1996. However, for White boys, they increase rapidly between 1990 and 1996, immediately after passage of the Individuals with Disabilities Education Act (IDEA) of 1990 and an increased policy push to cover children diagnosed with ADHD under Section 504 of the Rehabilitation Act of 1973. These laws extended many protections and programs to children diagnosed with certain behavior and learning disorders that interfere with their free access to a public education (Kim, Losen, and Hewitt 2010).

In late 1997, the U.S. Food and Drug Administration (FDA) issued new guidelines that allowed pharmaceutical companies to air direct to consumer advertisements on television (Conrad and Barker 2010; Payton and Thoits 2011). In the following years, the pharmaceutical industry targeted predominately White and middle-class consumers, including parents of children with behavior problems (Conrad and Potter 2004). As a result, the rates of medicalization again increased for White boys relative to White boys (Conrad 2007; 2013; Conrad and Potter 2004). Future scholarship should consider how policy at the federal and state levels influences these trends, as well

as examine how White families can use their privileged role in the market place to avoid school punishment and ensure therapy and treatment.

Finally, the behavior of African-American boys is increasingly being constructed using the language of social control. While African-Americans are being punished at skyrocketing rates, they are also more likely to be diagnosed with behavior disorders than they were two decades ago. By layering the social control of African-American boys in both criminal justice and medical terms, the state, through schools, are able to maintain the racial status quo and prepare White and African-American boys for their racialized roles in a post-industrial society (Kupchik and Monahan 2006). Specifically, harsh punishment and nearly consistent formal social control perpetuate racial inequalities and reinforce stereotypes of African-American males as deviant and threatening (Wacquant 2001).

In order to prevent racial disparities in punishment and treatment, school disciplinary policies should focus on prevention strategies and alternatives to suspension and expulsion, particularly for high-risk populations. Further, school and community resources should be shifted from discipline or identifying behavior problems to addressing structural conditions that lead to problem behavior in the first place. Finally, policymakers need to consider racial/ethnic disparities in the social construction of childhood behavior when considering special education and testing policies so that African-American children are not subjected to over-control and pushed out of the education system too fast.

While these findings present clear evidence of racialization in the processes of criminalization and medicalization, there are some unanswered questions. First, because of data availability, I am unable to include measures of school racial and disciplinary context. This is an important omission, since African-American boys are more likely to attend predominately African-American school with harsh disciplinary policies. Nevertheless, Chapter 4 of this dissertation addresses these important questions in a large sample of U.S. schools and districts. Second, there is evidence that White and African-American mothers view their children's behavior differently. Consequently, relying on maternal report of behavior may bias these results. Nevertheless, tests of the Behavior Problems Index suggest that this issue does not bias studies using the NLSY-C (Guttmannova, Szanyi, and Cali 2007). Finally, this analysis is limited to comparisons between White and African-American males. Evidence suggests that Latino males may experience similar disparities in criminalization and medicalization (Alegria et al. 2008; Rios 2009). Furthermore, recent research suggests that African-American females may be experiencing increases in both school punishment (Losen and Martinez 2013) and medicalization (Miller, Nigg, and Miller 2009). These trends notwithstanding, the findings of this paper speak to important historical trends in both criminal justice and mental health and further our understanding of how social control is socially constructed at very early ages.

The United States has experienced unprecedented growth in exclusionary school punishments and the use therapy or medication to control child problem behavior. Furthermore, as trends have unfolded over the past twenty-five years, clear racial

disparities are emerging. Indeed, African-American boys are much more likely to have been suspended or expelled from school than White boys. On the other hand, as suspension and expulsion rates increased nationwide, White boys are avoiding harsh discipline altogether. Furthermore, despite have slightly lower levels of externalizing behavior symptoms White boys are much more likely than African-Americans to be treated for behavior problems. As child behavior becomes social constructed with the intent of control, problem behavior of White boys is rarely criminalized in the same as problem behavior in African-American boys. Instead, they use therapy or medication to medicalize their problem behavior. As a result, White boys with behavior problems may be in a better position than African-American boy to avoid long-term involvement with crime and the criminal justice system.

Chapter 3: The Consequences of Official Labeling in Childhood: The Influence of Race, Early School Punishment, and Therapy/Medication on Criminalized and Medicalized Trajectories of Social Control

Over the past quarter century, scholars have documented two trends in the social control of child problem behavior in the United States - a growing reliance on suspension and expulsion as punishment and deterrence for those who misbehave in public schools and a growing number of school-aged children receiving medical diagnoses and therapy or medication for behavioral disorders. As rates of suspension almost doubled over the past thirty years, the proportion of African-American boys being removed from their classrooms grew from 6 percent to 24 percent, while remaining relatively stable for White boys (Bertrand and Pan 2013; Losen and Martinez 2013). At the same time, a growing number of children's behaviors are being defined as medically diagnosed conditions, including conduct disorder (Frick and Nigg 2012; Conrad 2013), oppositional defiant disorder (Frick and Nigg 2012), and ADHD (Barkley 1997; Conrad 2007). Unlike trends in school punishment, African-American boys are less likely than White boys to seek out and receive therapy or medication for behavior disorders, only doing so when behavior problems are extremely severe and frequent (Miller, Nigg, and Miller 2009; Morgan et al. 2013). As a result, the misbehavior of young African-American males is socially constructed in ways that are fundamentally different than those of young White males. These racial disparities in how child problem behavior is defined and

managed through punishment or medication potentially set African-American and White males up for different life-course trajectories.

One such possibility is that racial variation in the social construction of child problem behavior contributes to racially patterned experiences with institutions of social control across the life-course. For example, criminologists and other social scientists propose that early school punishment sets the stage for long-term involvement with the criminal justice system, including leading to repeated convictions, probation, and incarceration (Hirschi 2008a; Simon 2007). Similarly, medical sociologists suggest that the early use of therapy and medication may contribute to long-term involvement with the mental health system, including the use of psychotropic drugs and psychoanalysis to control behavior and temper in adulthood (Conrad 2007; Link and Phelan 2006). Consequently, White males who use therapy and medication may be able to avoid school punishment and possibly escape long-term involvement with the criminal justice system. However, because of factors associated with therapy and medication for behavior problems, their adult lives may instead involve long-term use of psychotropic drugs and routine visits to therapy.

This project uses almost twenty years of panel data and a group-based trajectory modeling strategy to examine how the social construction of child problem behavior functions as a foundation for different life-course experiences when it comes to managing behavior problems during adolescence and young adulthood. Specifically, I conceptualize repeated and routine contact with the criminal justice and mental health systems as two separate trajectories of social control during adolescence and young

adulthood. I then take advantage of the multinomial logistic make-up of group-based modeling to examine the independent and cumulative consequences of race, punishment, and therapy or medication during childhood on the likelihood of following different life-course trajectories of social control, characterized by either contact with the criminal justice system or the mental health system.

By using group-based trajectory models to describe the social control experiences of adolescent and young adult males as trajectories of social control, this project make several contributions to life-course sociological research. I continue to bring together prior theoretical work from criminology and medical sociology on the role of labeling and racial disparities in criminal and mental health trajectories respectively.

Additionally, group based models takes advantage of the longitudinal nature of the data, allowing for the examination of how racial disparities in punishment and therapy/medication during childhood contribute to racial disparities in life-course trajectories of social control throughout young adulthood. Typically, research on the implications of school punishment has been limited to short-term, qualitative studies of children and their experiences during childhood and early adolescence (e.g. Ferguson 2001; Kupchik 2010; Rios 2011). Similarly, most scholarship on therapy and medication are limited to short-term effects on behavior, school performance, and other indicators of well-being during childhood and adolescence (Barkley 1997; 2002; Rafalovich 2013).

Not only am I able to take a longer life-course perspective on these issues, but I am able to compare and contrast the long-term implications of two different types of responses to child misbehavior, each aimed at controlling behavior through different

methods (Conrad 1992a; Medina and McCranie 2011). Most social science research has been unable to disentangle the consequences of punishment or the efficacy of therapy or medication from underlying behavioral traits (Fletcher and Wolfe 2013; Rafalovich 2013). Therefore, despite the connection between school punishment and medically diagnosed behavior problems among children, scholars have yet to test how or whether they influence individuals' experiences with social control institutions over the life-course (Behnken et al. 2014; Bernburg 2009). Finally, group-based models allow the researcher to test the probability of entry into certain social control trajectory groups as a function of time-stable variables such as race and the labeling of childhood behavior (Jones and Nagin 2007;2013; Nagin 2005; Nagin and Jones 2012). This strategy allows me to assess the independent and cumulative influences of race and labeling on criminalization and medicalization over the life course (Jones and Nagin 2007; 2013). Because White boys and African-American boys are likely to experience fundamentally different labeling events during childhood, the accumulative influence of race and labeling on entrance into different social control trajectories is extremely important to consider (Rios 2009).

Using panel data from the National Longitudinal Survey of Youth – Child and Young Adult Survey and a group-based modeling strategy, this paper this project answers three important questions about how the social construction of child problem behavior contributes to criminalized or medicalized trajectories of social control across adolescence and young adulthood. First, do African-American and White males follow different trajectories of social control throughout emerging adulthood? Second, does

school punishment and/or the use of therapy or medication for behavior problems during childhood influence the likelihood of following different trajectories of social control during young adulthood? Third, do racial disparities in labeling in childhood contribute to racial disparities in trajectories of social control experienced during adolescence and young adulthood?

Conceptual Framework

Criminalization and Medicalization as Life-Course Trajectories

Prior research on crime and offending over the life-course suggests that involvement with the criminal justice system does not necessarily follow a similar trajectory for all individuals over the life-course (Moffitt 1993; Nagin 2005; Sampson and Laub 2005). For example, a large proportion of the population will either never experience involvement with the criminal justice system or maintain an extremely low risk of coming into contact with the legal system throughout young adulthood (Nagin and Land 1993; Sampson and Laub 2005). On the other hand, another group of offenders may experience some involvement with the criminal justice system, most likely during their late teens, but tend to age out of this behavior during young adulthood (Moffitt 1993; Nagin and Land 1993; Piquero et al. 2013). A third, much smaller group of individuals will experience involvement in the criminal justice system from adolescence throughout adulthood (Moffitt 1993; Piquero et al. 2013). To help describe this phenomenon, scholars have turned to using group-based trajectory modeling, which

accommodates life-course patterns of development for distinctly different subgroups in the population that follow similar pathways over time (Erosheva, Matsueda, and Telesca 2014; Nagin 2005; Nagin and Odgers 2010). Importantly, by classifying groups of individuals according to similar developmental trajectories, group-based models are helpful in describing the long-term implications of early risk factors (Nagin 2005; Nagin and Odgers 2010; Nagin and Tremblay 2005; Petts 2009).

Scholars point to school punishment and the use of therapy or medication for behavior disorders as possible risk factors that influence the nature of interactions with important social institutions during the life-course, including the criminal justice and mental health systems (Behnken et al. 2014; Kim, Losen, and Martinez 2010; Kupchik 2010). For example, because of similarities between school punishment and criminal sentencing, scholars argue that suspensions and expulsions serve to frame childhood misbehavior similar to that of criminal offenders in the legal system (Hirschfield 2008a; Rios 2011). Much like incarceration or probation excludes and isolates criminal offenders and restricts their activities and interactions with others, suspension and expulsion removes young men from the student body and separates them from their classmates. Moreover, school punishments carry official and unofficial marks of “troublemaker” (Ferguson 2001; Simon 2007). These labels follow young men throughout their school careers, as teachers and others view them as less willing to learn and destined instead for a “prison cell” (Ferguson 2001; Rios 2009;2011). As a result, young men fall behind on schoolwork and become alienated from the education process,

compounding other social, including undiagnosed or untreated behavior disorders (Kim, Losen, and Hewitt 2010; Bowditch 1993).

These young men begin to perform worse in school and are less likely than their peers to complete high school. As a result, they face a substantial risk of involvement with the juvenile justice system and potentially long-term involvement with the adult legal system (Rios 2011; Skiba et al. 2011). Criminologists and other scholars have referred to this life-course trajectory as a process of criminalization, in which some American children are pushed into the criminal justice system through exclusionary school punishment (Hirschfield 2008a; Kim, Losen, and Hewitt 2010; Rios 2009). Instead of taking a typical educational pathway, such as moving from elementary to high school and on to college or employment, criminalized individuals experience an adolescence and adulthood characterized by insecurity and frequent contact with police and the court system (Bowditch 1993; Hirschfield 2008a; Rios 2009). Exclusionary school discipline can negatively influence school performance and increase the likelihood of school failure and dropping out of school (Bowditch 1993; Lamont et al. 2013). Scholars connect failure to complete school with a number of factors which increase the likelihood of criminal activity, particularly a failure to find steady employment (Sum, Khatiwada, and McLaughlin 2009) and maintain conventional relationships, including marriage and friendships with non-delinquent peers (Sampson and Laub 2005).

Nearly one in ten males without a high school degree will serve jail time or probation during young adulthood (Sum, Khatiwada, and McLaughlin 2009). For African-American males, the numbers are even more striking. One in four African-

American males without a high school diploma will spend time in jail or prison at some point in their lives and over half of all incarcerated African-American males do not have a high school diploma (Sum, Khatiwada, and McLaughlin 2009; Western 2006).

While school punishment controls behavior through deterrence and retribution, the use of therapy and medication for behavior disorders uses medical and psychological techniques and technology to manage symptoms such as inattentiveness or low self-control in childhood and adolescence (Behnken et al. 2014; Conrad 2007; Link and Phelan 2010). Importantly, many of these symptoms describe behaviors that are extremely similar to the behaviors that kids who get suspended display (Ferguson 2001; Kupchik 2010). For example, a growing number of parents or teachers consider restless, impulsive, or inattentive behavior in the classroom to be a symptom of common childhood mental illnesses/behavioral disorders, such as ADHD (Conrad 2007; Conrad and Slodden 2013). As a result, the use of diagnosis, therapy, and/or psychotropic medication on children viewed as troublesome has increased substantially over the past twenty-five years (Conrad 2007).

For many children who misbehave during childhood, therapy and medication has short- and long-term benefits that help to sustain or even improve school performance, assist in managing impulse control, and keep children in the classroom (Barkley 1997; Millichamp 2010). While research on the long-term implications of medication during yields inconsistent evidence as to whether drugs are helpful or harmful (Currie, Stabile, and Jones 2014; Rafalovich 2013), these short-term improvements in school performance and impulse control may keep young men out of trouble during adolescence and help

them to avoid dropping out before graduating from high school (Barkley 2002; Conrad 1992a; Wright, Jorm, and MacKinnon 2011). Furthermore, because children with behavior disorders may be treated as sick as opposed to bad, some scholars suggest that labeling misbehavior as a medical or psychological problem instead of a criminal offense offers children limited culpability (Conrad 1992a; 2007; Rafalovich 2013). Therefore, while children who are diagnosed with behavior problems may experience some hardships during adolescence and young adulthood, they are likely to escape criminalization and avoid the negative consequences associated with involvement in the criminal justice system. Instead, for these young men, adolescence and young adulthood may be characterized by routine visits to mental health professionals and/or the continued use of psychotropic drugs to control behavior. Rather than criminalization, these young men may experience life-course trajectories characterized by medicalization, in which formal social control of behavior is continually defined in medical terms and managed through the use of medical technology (Conrad 1992b; Conrad 2007).

As the criminal justice and medical systems vie for jurisdiction over problem behavior across the life-course, evidence suggests a layering of beliefs and practices which may influence life-course trajectories (Conrad 1992a; 2007; Medina and McCranie 2011; Zola 1974). However, most research to date on the effects of school punishment or therapy and medication during childhood has focused on short-term outcomes such as school performance or early childbirth (Barkley 1997; Bowditch 1993; Rios 2011). Furthermore, scholars interested in the life-course implications of child problem behavior have narrowly focused on either punishment or medication individually rather than

compare the two approaches (Barkley 1997; Bowditch 1993; Currie, Stabile, and Jones 2014). As a result, we remain unclear about whether and how recent trends in the social construction of child problem behavior contribute to different life-course trajectories of social control. Drawing from labeling theory arguments in criminology and medical sociology, I argue that changing perceptions of crime and individuals with behavior disorders extend to young boys who are either punished or received therapy or medication during childhood, thereby influencing the likelihood that they will follow a given trajectory while avoiding another trajectory.

Labeling Theory and Criminalized/Medicalized Trajectories of Social Control

According to labeling theory, the violation of rules and norms carries stigma due to the negative stereotypes associated with certain behaviors (Bernburg 2009; Goffman 1963; Link and Phelan 2001, 2006; Thoits 2011). Individuals are socialized to learn and adopt the rules and norms of expected behavior from other members of their peer group (Bernburg 2009; Link et al. 1989). Since individuals are expected to have learned certain rules by certain ages, violation of these rules is often met with condemnation (Bernburg 2009; Link et al. 1989; Link and Phelan 2001). As a result, social institutions officially label them as deviant, marking them for devaluation and discrimination by other members of the community (Bernburg 2009; Grattet 2011; Link et al. 1989; Paternoster and Iovanni 1989). Since most individuals will violate rules and norms at some point in their life, labeling by key institutions of social control as a result of their behavior can be

a major turning point in the life course (Becker 1963; Bernburg 2009; Sampson and Laub 1997, 2005). Being labeled by a formal institution of social control can influence the accumulation of human and social capital and the development of social bonds over time (Lopes et al. 2012; Sampson and Laub 1997; 2005).

In drawing attention to labeling events as important transitions in the life-course, criminologists have drawn heavily from important extensions made to labeling theory in medical sociology. In particular, Link and colleagues provide a modified labeling theory clarifying the mechanisms through which labeling can impact future life events (Link 1987; Link et al. 1989; Link and Phelan 2001; 2010; Lopes et al. 2012). Specifically, they argue that labeling contributes to a process through which negative interactions with social institutions early in life can cut off access to socially accepted means of success later in life, including education and employment (Bernburg 2009; Link et al. 1989; Link and Phelan 2010; Lopes et al. 2012; Paternoster and Iovanni 1989; Sampson and Laub 2005). According to modified labeling theory, labels from important social control institutions encompass and represent community attitudes about crime or mental illness and influence how individuals respond to others labeled as criminal or mentally ill (Link et al. 1989; Link and Phelan 2010). For example, portrayals of deviant behavior in the media and popular culture as dangerous and deserving of suspicion reinforce existing stereotypes about crime or mental illness and influence community expectations about people labeled as criminal or mentally ill (Bernburg 2009; Link et al. 1989; Link and Phelan 2010).

The prevailing societal attitudes and expectations regarding childhood behavior have changed dramatically over the past quarter century. During the late 1980s and early 1990s, images of violent crime in the inner-city schools began filling television sets across the country (Lyons and Drew 2006). These stereotypes of hyper-violent youth continue to evoke significant fear among Americans across the nation, particularly among middle-class, White families (Kupchik 2010; Lyons and Drew 2006). As a result, Americans called for increased law enforcement presence and tougher penalties for those who violate the law (Simon 2007). Policymakers at all levels responded with increased policing and public surveillance and the enactment of severe sentencing measures for violent and non-violent offenders (Simon 2007; Western 2006).

A crime control model permeates nearly all social institutions in the United States, as order and discipline, particularly of children and adolescents, has become a central aspect of social life in the United States (Simon 2007). One example of this transformation is the increased use of exclusionary school punishment in many of the same ways that the legal system uses criminal sentencing to punish offenders. For example, similar to the ways in which severe sentencing for minor legal infractions is intended to deter criminal activity, zero tolerance and compulsory suspensions policies are designed to enforce stricter discipline in schools (P. J. Hirschfield 2008a; Kupchik 2010; Lyons and Drew 2006; Simon 2007). Additionally, much like conviction carries the mark a criminal record, a troublemaker label often follows boys who have been suspended or expelled from school (Ferguson 2001; Pager 2003; Rios 2011).

While the tough on crime approach to controlling deviant behavior intensified over the past twenty-five years, attitudes surrounding mental illness have evolved along a different path. People still remain apprehensive about strangers who exhibit symptoms of mental disorders and avoid adults they know are diagnosed with serious mental disorders (Link and Phelan 2010; Pescosolido 2013; Pescosolido et al. 2007; 2008). However, as information about mental illness became more readily available to individuals, apprehension and distrust of psychiatric and medical diagnoses waned, particularly for less severe behavior disorders such as ADHD (Link and Phelan 2010; Pescosolido 2013). For example, surveys suggest that Americans are more willing to accept that behavior problems have biological or genetic causes and are not due to moral defects (Link and Phelan 2010; McLeod et al. 2007; Pescosolido 2013). Furthermore, Americans are increasingly more willing to recommend that people seek out therapy or medication for behaviors similar to those associated with ADHD diagnosis (Pescosolido et al. 2007; Pescosolido 2013). Notably, many of these behaviors, including inattentiveness, classroom disruption, tardiness and excessive absence, are those that are likely to be punished under the crime control model (Ferguson 2001; Hirschfield 2008a; Simon 2007).

Because different labels convey different perceptions of culpability and threat, they may establish different expectations of future behavior (Bernburg 2009; Link et al. 1989; Paternoster and Iovanni 1989). Consequently, individuals who receive different types of labels are likely to have different experiences when it comes to controlling their behavior problems over the life-course. For example, to be formally labeled as criminal

or delinquent suggests to others that a person may have some moral failing and thereby be worthy of distrust and suspicion (Paternoster and Iovanni 1989; Bernburg 2009). On the other hand, as society becomes more accepting of the effectiveness of therapy or medication for less severe behavior problems, labels associated with ADHD or other common disorders may tell others that, so long as an individual is using therapy or medication to control behavior, they pose no real threat to themselves or others (Link et al. 1989; Link and Phelan 2010; Pescosolido 2013; Thoits 2011). These different perceptions and expectations may set the stage for separate trajectories of controlling behavior problems.

Labeling theory argues that early labels can influence individuals' life-course trajectories in two important ways. First, because of their perceived unpredictability and dangerousness, labeled individuals are excluded from normal social routines and regarded as an "outsiders" (Goffman 1963; Grattet 2011; Link and Phelan 2001; Link et al. 1989; Paternoster and Iovanni 1989). This leads to a loss of status and resources, as excluded individuals are unable to acquire social and human capital at the same level and pace as their peers (Goffman 1963; Link and Phelan 2001; Link et al. 1989; Paternoster and Iovanni 1989; Western 2006). The second way that labeling can impact future life events is through a formal and informal mark as the result of a public display of punishment (Bernburg 2009; Paternoster and Iovanni 1989). Specifically, by publicly branding people as deviant, labels attach negative social stereotypes to individuals and have adverse effects on self-esteem and perceptions of behavior (Link 1987; Link et al. 1989; Rosenfield 1997; Thoits 2011). As a result, labels can result in a self-fulfilling

prophecy, as individuals begin to expect less of themselves, particularly with respect to own worth and behavior (Link 1987; Link et al. 1989; Moses 2009; Rosenfield 1997).

While the majority of labeling theory research has focused on the negative implications of labeling, less attention has been paid to the possibility that labels may produce positive short- and long-term results. For example, Link and Phelan (2010) argue that mental health labeling is a “package deal” with both consequences and benefits (Wright, Jorm, and MacKinnon 2011). While individuals labeled with mental disorders are stigmatized because of the diagnosis, they may also reap the benefits of labeling the mental illness as therapy or medication may improve symptoms of problem behavior (Link and Phelan 2010; Wright, Jorm, and MacKinnon 2011). In these cases, interactions with social control agents can be beneficial for well-being, at least in the short-term, by providing therapy or medication and helping to improve self-confidence and control behavior problems (Conrad 1992a; Link and Phelan 2010; Rosenfield 1997; Wright, Jorm, and MacKinnon 2011).

Rather than isolating and excluding, labels that associated with therapy or medication can be more inclusive and redeeming (Conrad 1992a; Medina and McCranie 2011; Rosenfield 1997; Triplett and Jarjoura 1994). For example, evidence suggests that certain features of medical therapy or medication are effective in managing symptoms of many common behavior problems. Furthermore, while strangers and casual acquaintances may avoid individuals who display symptoms of severe mental health disorders, therapy or medication may actually strengthen family and close friendship bonds, helping individuals maintain a close and supportive network of understanding

friends and family (Perry 2011; Thoits 2005, 2011). As a result, many individuals who receive therapy or medication may receive social and material support needed to combat declining confidence and self-esteem and avoid criminalization (Link et al. 1989; Link and Phelan 2010; Rosenfield 1997).

Because punishment is associated with higher blameworthiness and criminality, children whose misbehavior is punished are more likely to illicit a negative response and less likely to be considered worthy of rehabilitation (Ferguson 2001; Hirschfield 2008a; Rios 2011). Consequently, punished young men are at a greater risk of following a criminalized trajectory of social control and less likely to follow a medicalized trajectory of social control. On the other hand, because social views regarding the biological or psychological causes of problem behavior has become more accepted and confidence in treatments has increased, children who receive therapy or medication may not experience significant risk of following a criminalized trajectory of social control, instead following a medicalized trajectory of social control. Importantly, because of the substantive racial disparities in school punishment versus therapy and medication, these different ways to socially construct early child problem behavior both reflect and reproduce inequalities in the criminal justice and medical and mental health systems. Specifically, not only do different types of labels contribute to different trajectories of social control, but racial disparities in these different approaches to controlling individual behavior emerge early in the life-course and extend well into adulthood.

Race and Criminalized versus Medicalized Trajectories of Social Control

Evidence suggests that experiences with school punishment and the use of therapy or medication are fundamentally different for young White and African-American males (Kim, Losen, and Hewitt 2010; Losen and Martinez 2013; Morgan et al. 2013). While young African-American males are at a greater risk of suspension or expulsion, young White males are more likely to be diagnosed and treated for behavior disorders during childhood. For boys under the age of fifteen, the suspension and expulsion rate for African-Americans is three times larger than that of Whites (Losen and Martinez 2013; Skiba et al. 2013). While rates of suspension and expulsion have increased substantially for African-American males over the past 25 years, they have remained relatively stable for young White boys (Losen and Martinez 2013). African-Americans and Whites are equally as likely to be suspended or expelled for committing serious offenses such as drug or weapon possession; however, African-American males are much more likely to be removed from school for less serious offenses, including tardiness, disrespectfulness, or classroom disruption than White boys (Hirschfield 2008b; Kupchik 2010; Skiba et al. 2013). As a result, the increasingly punitive nature of school discipline has disproportionately fallen upon young African-American males while leaving young White males relatively unscathed.

Unlike racial disparities in school punishment, young White boys are three times more likely to seek and receive therapy or medication than are African-American boys (Morgan et al. 2013). Indeed, although African-American boys report more frequent behavior problems in early childhood, they are less likely than their white peers to seek

and receive therapy or medication for behavior problems (Miller, Nigg, and Miller 2009; Morgan et al. 2013). Further, when African-American boys do seek out medical assistance for behavior problems, it is usually after symptoms have become severe or frequent enough to merit punishment as well (Miller, Nigg, and Miller 2009). Consequently, even when their behavior problems are diagnosed and treated medically, young African-American males may be unable to avoid school punishment and the accompanying risk of criminalization (Kim, Losen, and Hewitt 2010).

Racial disparities in the social construction and control of childhood misbehavior via school punishment and/or the use of therapy and psychotropic medication have both direct and indirect implications for long-term social control outcomes over the life-course. Specifically, racial discrimination and the negative consequences of school punishment are cumulative risk factors which place African-American males in greater jeopardy of experiencing trajectories of criminalized social control characterized by long-term involvement with the criminal justice system than White boys who display similar behavior problems during childhood. On the other hand, by avoiding school punishment during childhood and using therapy or medication to control child misbehavior, young White males avoid criminalization and instead experience trajectories of medicalized social control characterized by routine visits to mental health professionals and long-term use of psychotropic drugs .

Summary and Hypotheses

The research discussed above describes how labeling in childhood serves as a transitional event that positions a young man with respect to long-term trajectories of social control. Specifically, labeling through early school punishment and/or the use of therapy or medication for behavior problems presents a package deal when it comes to dealing with child misbehavior (Link and Phelan 2006). While both seek to ameliorate future misbehavior, school punishment relies on retribution through exclusion and isolation while diagnosis relies on restoration through dealing with underlying biological or psychological issues (Conrad 2007; Simon 2007). Consequently, school punishment disrupts a young man's education and labels him as a rulebreaker at an early age, placing him at a greater risk of following a criminalized life-course trajectory characterized by increased risk of involvement with the legal system during adolescence and young adulthood. On the other hand, the use of therapy or medication during childhood establishes the mental health profession as the primary social control institution and identifies a young man as sick, as opposed to bad, placing him at a greater risk of following a medicalized life-course trajectory characterized by routine visits to mental health professional and psychotropic medication. Finally, evidence demonstrates that individual experiences with school punishment and the use of therapy or medication for behavior disorders are racial patterned. As a result, greater levels of school punishment among young African-American men stigmatize them early in life, increasing the risk of following criminalized life-course trajectories. On the other hand, greater rates of early diagnosis and low rates of punishment among White boys may offer them an extra

“buffer” to avoid the pitfalls associated with criminalization, instead placing them on a medicalized social control trajectory.

Drawing from the research discussed above, I develop and test three research hypotheses regarding the ways in which labeling during childhood contributes to racial stratification in social control trajectories during adolescence and young adulthood. These are delineated below:

H1a: African-American males will be significantly more likely than White males to follow criminalized life-course trajectories of social control.

H1b: White males will be significantly more likely than African-American males to follow medicalized life-course trajectories of social control.

H2a: School punishment will be significantly associated with a greater risk of following criminalized life-course trajectories of social control.

H2b: Early therapy and medication will be significantly associated with a greater risk of following medicalized life-course trajectories of social control.

H3a: Among those who experienced a labeling event during childhood, the probabilities of membership in criminalized trajectories of social control will be highest for African-Americans who experienced school punishment during childhood and lowest for Whites who experienced therapy or medication.

H3b: Among those who experienced a labeling event during childhood, the probabilities of membership in medicalized trajectories of social control will be

highest for Whites who experienced therapy or medication and lowest for African-Americans who experienced school punishment.

Data and Methods

To examine trajectories of social control across adolescence and young adulthood, I use data from the National Longitudinal Study of Youth, 1979 Cohort – Young Adult Sample (NLSY79-YA). The NLSY79 is a nationally representative, prospective cohort study containing information on 12,686 men and women who were between the ages of 14 and 22 in 1979. Beginning in 1986, a new survey containing information on the children of the original NLSY79 females was initiated, and, in 1994, a young adult survey was created for those children who had reached 15 years of age. For this project, I reduce my sample to African-American and White males who were younger than 15 years old in 1988 and contributed at least two years of data following their fifteen birthday¹. After removing those observations that were missing or unable to contribute data for my dependent or central independent variables, my final sample contained 3,030 respondents².

¹ I focus on males for two important reasons. First, males are more likely to be suspended or expelled and diagnosed with behavior disorders than their female peers (Bertrand and Pan 2013; CDC 2012). Second, criminologists and critical race scholars have argued that school punishment in general and criminalization in particular play important roles in shaping African-American masculinity and identity vis a vis the criminal justice system (Ferguson 2001; Rios 2009).

² There were 71 observations who were missing data on childhood labeling. While the methods used are capable of handling missing data for time-varying variables, to handle issues of missing data in the time-stable predictors, I employ multiple imputation techniques to generate values for all covariates using the “ICE” command in Stata (Royston 2005). ICE uses a chained equation approach in which a conditional distribution for missing data for each variable using the appropriate specification (e.g., logistic regression

Analytic Strategy

This paper employs group-based trajectory models using the *traj* command in Stata 13.0 (Jones and Nagin 2012; 2013). Group-based trajectory models identify clusters of individuals whose behavior follow similar pathways along a specific unit of time (e.g. age or year) (Jones and Nagin 2007; 2013). The method is a specialized application of finite mixture modeling using maximum likelihood to estimate the trajectory of each group, the proportion of the entire sample assigned to each group, and the probability of group membership for all observations (Jones and Nagin 2007; Nagin 2005). Unlike growth-curve models, which assume that the entire population shares similar risks and follows similar trajectories over time, group-based models assume that clusters of individuals follow similar and distinct trajectories (Jones and Nagin 2007; Nagin 2005; Nagin and Odgers 2010). Although the groups are approximations and not real and actual entities, they provide a useful classification scheme for describing how events may unfold over time (Nagin 2005; Nagin and Odgers 2010; Nagin and Tremblay 2005; Petts 2009). For purposes of this project, criminalized and medicalized social control trajectories reflect extremely different experiences in the long-term contact with important institutions of social control, not necessarily labels that define individuals as criminal or mentally ill, respectively. Instead, this project uses these different trajectories

for dichotomous variables) and multiple datasets are created using Gibbs sampling techniques (Royston 2005; van Buuren 2012). Following von Hippel (2007), I impute values for all variables in a given model and then delete observations with missing data on dependent and key independent variables before running our regression analyses.

as useful tools for criminologists and medical sociologists to discuss the layering of social control in the lives of individuals (Medina and McCranie 2011; Nagin and Tremblay 2005; Sampson and Laub 2005).

Trajectories of Social Control

Instead of discrete events that occur in a single point in time, the dependent variables for this chapter operationalize social control experiences as trajectories that certain individuals may follow which are characterized by their involvement with or avoidance of two important institutions during young adulthood: the criminal justice system and the mental health system. Thus, I operationalize possible criminalized and medicalized life-course trajectories as separate and distinctly different age-graded trajectories. A criminalized trajectory of social control is characterized by repeated or long-term involvement with the criminal justice system during young adulthood. A medicalized life-course trajectory is characterized by the use of mental health professionals or pharmaceutical drugs to help manage behavior problems throughout young adulthood. In operationalizing each social control trajectory, I specify different groups that fundamentally differ from one another in terms of shape and composition. For example, young men following criminalized trajectories follow different pathways with respect to criminal justice involvement than those that are not following criminalized trajectories. Similarly, those that follow medicalized trajectories follow

different pathways with respect to therapy and medication than those that are not following medicalized trajectories.

The first step in identifying different groups is defining the variables that will be used to create the trajectories. To capture involvement with the criminal justice system, I use a dummy variable equal to “1” if the respondent was convicted of or sentenced for a crime, served probation, or spent time in jail or prison since the last interview³. A similar dummy variable was created to capture involvement with the mental health system. Specifically, I use a dummy variable equal to “1” if the respondent indicated had: (1) seen a psychiatrist or psychologist for troubles in school or for a violent temper or behavior problems at school or work and/or; (2) taken drugs to control his behavior since the last interview. The variables were measured biannually for each individual after age fifteen. Because criminalized and medicalized trajectories are created from dichotomous variables, I use the binary logistic distribution to estimate the trajectories. This model estimates each trajectory by specifying the link between contact with the criminal justice or mental health system and age as a polynomial function:

³ Recently, criminologists have pointed to the ways in which involvement in the criminal justice system encompasses much more than jails and prison. For example, conviction and being on probation can also present barriers to employment. Criminal convictions carry a stigmatizing mark that follows individuals even if they were never incarcerated (Pager 2003; Western 2006). Further, probation carries the stigma of a criminal record (Pager 2003) as well as requires young men to make routine visits to probation officers, drug testing facilities, and community service obligations (Western 2006). Additionally, fines for probation can often surpass any income individuals may be able to find, placing them at risk of further punishment and preventing them from leaving probation (Harris, Evans, and Beckett 2010). Because of these factors, I consider a wide range of possible ways to come into contact with the criminal justice system.

$$\ln \left[\frac{\Pr(y=1;j)}{1-\Pr(y=1;j)} \right] = \beta_0 + \beta_1 Age + \beta_2 Age^2 + \beta_3 Age^3$$

In this model, $\Pr(y=1;j)$ is the probability of involvement with the criminal justice or mental health systems, respectively, for individuals in group j in a given year and β_0 , β_1 , β_2 , and β_3 are possible population parameters that may determine the shape of the trajectory. Importantly, because each trajectory can theoretically have its own unique shape, group-based models allow for estimating a unique set of parameters for each group (Nagin 2005).

Because the decision on how many groups to estimate is made a priori, it is important to consider both theoretical and methodological criteria (Nagin 2005). Following prior research and in keeping with the goals of the current project, I estimate a three-group model of criminalization, with one group following a linear trajectory, a second group following a quadratic trajectory, and a third group following a cubic trajectory, and a three-group model of medicalization, with one group following a linear trajectory, a second group following a quadratic trajectory, and a third group following a linear trajectory. This strategy aligns well with literature discussed earlier, which finds that, for a large proportion of the population, the risk of involvement with either the criminal justice system or mental health system will remain relatively low throughout adolescence and young adulthood (Piquero et al. 2013). On the other hand, for those that do experience criminalization or medicalization during adolescence or young adulthood, only a small proportion will actually maintain contact throughout adulthood (Moffitt 1993; Nagin and Land 1993; Piquero et al. 2013). Instead, their involvement with the

criminal justice and/or mental health systems is short-lived, often waning by the early twenties (Moffitt 1993; Nagin and Land 1993).

To build an appropriate model and test for model fitness, I ran a series of tests during throughout the analysis. I used Bayesian Information Criterion (BIC) as the primary methodological test to determine both the optimal number of groups and the best fitting model. For both criminalization and medicalization, I started with a one-group model and added groups until reaching the model with the largest BIC. For both dependent variables, BIC peaked in a three-group model. I then moved on to testing the appropriate number of parameters for age to estimate the shape of each trajectory (Nagin 2005). Finally, following Nagin (2005), I calculated posterior probabilities to determine the likelihood than an individual would follow a given trajectory based on his own pattern of involvement with either the criminal justice or mental health system. For both models (see Appendix H), posterior probabilities (average probabilities group of membership for group members) were all above the recommended cutoff of .70 (Nagin 2005).

Time-invariant Variables

To examine how events during childhood can contribute to different long-term trajectories of social control, this project focuses on several time-invariant variables captured before the respondents' fifteenth birthdays. Because school punishment and therapy/medication are measured before young adulthood, it reduces the chances of a reverse causal relationship between childhood labeling and trajectories of social control

during adulthood. The central independent variables in this paper capture the labeling of child problem behavior during childhood. This was accomplished by creating a series of dummy variables designed to capture a range of possible responses to childhood misbehavior involving school punishment and/or the use of therapy or medication for behavior problems before the age of fifteen. School punishment is measured using the Mother's response to the question "Has your child ever been suspended or expelled from school?" and coded "one" if the mother responds "yes." The use of therapy or medication is intended to capture medical or psychological services for behavior problems and is taken from the child's response to one of two questions: (1) whether or not the child had seen a psychiatrist or psychologist for troubles in school or for tantrums, hyperactivity, or disruptive behavior and; (2) whether or not the child was taking drugs to control his/her behavior. I then construct a categorical measure, coded as follows: (1) neither punished nor therapy/medication; (2) Therapy/Medication only; (3) Punishment only; (4) both punishment and therapy/medication. For all analyses, the "neither punished nor therapy/medication" is considered the reference group. Childhood misbehavior and race play key roles in the analysis as well.

To capture childhood problem behavior, I use an externalizing behavior scale adopted from the Child Behavior Checklist (Guttmanova, Szanyi, and Cali 2007). Externalizing behaviors are those behavior characterized by a lack of emotional control or an inability to suppress impulses, leading to rule breaking (Guttmanova, Szanyi, and Cali 2007). Importantly, as you can see from the list, the externalizing behavior scale includes a number of behaviors that could possibly lead to school discipline, including

getting into trouble with teachers, being disobedient at school, and bullying or being cruel to others. To note, these behaviors are also listed by mental health professionals as “symptoms” of childhood behavior disorders. For example, cheating/lying and bullying are included in some conduct disorder symptom checklists, disobedience is often a sign of ODD, and confusion, restlessness, and inattention are considered to be classic ADHD symptoms. Finally, many of these variables capture aspects of low self-control, a theoretically time-invariant explanation of criminal activity that develops in childhood and remains relatively stable across the life-course (Blokland and Nieuwbeerta 2010; Hay and Carter 2006; Gottfredson and Hirshi 1990). A full list of variables in the externalizing behavior scale is available in Appendix G. Following Currie and colleagues (2014), I create a time-stable measure of behavior by averaging the scores on the CBCL between the ages of 6 and 14.

Race is captured with a dummy variable equal to 1 for African-American respondents and 0 for White males. I focus on males because of their overrepresentation in school punishment, early diagnosis of behavior problems, and involvement in the criminal justice and mental health system during young adulthood (Bertrand and Pan 2013; CDC 2012; Miller, Nigg, and Miller 2009). In addition, many of the mechanisms behind social control for young Hispanic males may differ than those of young White and African-American males. In particular, the legacy of slavery and the use of the criminal justice system to further entrench a racialized caste system are less salient in the Hispanic community (Alexander 2012; Wacquant 2001; Western 2006).

I also include a number of time-invariant control variables to capture social and structural conditions during childhood that may increase the risk of entrance into different social control trajectories. To control for early academic experience, I include time-invariant measures of academic achievement using the child's standardized score the last year he took the PIAT Reading Recognition and Mathematics test⁴ and dummy variables equal to "1" if the respondent repeated a grade due to academic issues or enrolled in Head Start, respectively. To capture socioeconomic status, I use mother's education (in years) and a dummy variable equal to "1" if total family income (total money family members earned from wages, tips, and salaries in the past year, adjusted for inflation and reported in 2010 dollars) was ever less than the poverty level between the ages of 6 and 14⁵. I also include dummy variables indicating whether the respondent ever lived in a single-mother household as a child. Similar to externalizing behaviors, all continuous variables were created by averaging the scores between the ages of 6 and 14⁶.

⁴ While children in the NLSY-C take the PIAT Reading Recognition and Math tests each year they are surveyed, I chose to include their score the final year they took the test because young adults in the sample do not take the tests,

group-based models require that time-invariant variables be measured before group membership is measured, and children generally performed better on the exams as they got older. Supplemental analysis included these variables measured as the mean score during childhood (similar to externalizing behaviors) and the maximum score (typically equal to the final score) with no change to the substantive findings.

⁵ I chose to include a measure of ever having lived in poverty, as opposed to household income, for important methodological and conceptual reasons. First, all variables predicting risk of entering a given trajectory must be time-stable and measured before the dependent variables of interest. Second, prior research suggests that living in poverty is a strong predictor of both school punishment and involvement with the criminal justice system during young adulthood (Kupchik 2010; Lyons and Drew 2006). As a result, I chose to include a time-stable measure of poverty over the averaging of family income during childhood to capture socioeconomic status during childhood. Results for models using average family income during childhood are available by request.

⁶ While the PIAT Reading Recognition and Math tests were issued with every survey, I chose the mean over other options, for example the maximum score or the scores for the last time the child took the test on the survey for two reasons. First, all variables predicting risk of entering a given trajectory must be time-stable and measured before the dependent variables of interest. Second, similar to externalizing behaviors, taking the mean allows me to use the most information possible and takes into account severe

Additional variables include time-invariant measures of whether the respondent spent the majority of their childhood in a suburban, rural, or urban residence during school, the region of the country in which the respondent spent the majority of their time during elementary and middle school (Northeast, Midwest, South, or West) and whether the mother was under 18 years old when the respondent was born. Finally, because the stigma of childhood mental disorders has changed over time (Pescosolido 2013), I include a measure of *year born* to control for changing perception of punishment and therapy/medication.

Time-variant variables

I also control for a number of time-variant variables, measured each survey year during young adulthood, that serve as potential pathways between early childhood labeling events and involvement in either the criminal justice or mental health systems for individuals following different criminalized or medicalized trajectories, respectively. Given the relationship between participation in conventional activities such as work or school and the likelihood of offending and conviction during young adulthood, I include a measure of *economic idleness* using a dummy variable equal to “1” if the respondent neither worked nor was enrolled in school for a period of at least two months in the past year (Deming 2009). Additionally, because school punishment and therapy or medication may contribute to criminalization or medicalization through school

intrapersonal changes in performance over time. Results from models using other specifications, including the maximum and final scores, did not differ significantly from those presented in this analysis and are available by request.

performance, I include time-varying measures of *recent grades* and *high school graduation*. Because the NLSY-CYA does not include a measure of grade point average, recent grades are measured with a dummy variable equal to “1” if the respondent’s most recent grades were at least a C+ or better during school. High school graduation is measured with a dummy variable equal to “1” if the respondent received his high school diploma.

Childhood labeling is argued to significantly influence self-perception and sense of self-worth, particularly during important transitions from childhood to adolescence and young adulthood. I capture *self-esteem* using a ten-item scale based on the Rosenberg Esteem Scale (Rosenfield 1997). Respondents were asked whether they (1)strongly disagree to (4) strongly agree with the questions: I feel that I'm a person of worth, at least on an equal basis with others; I feel that I have a number of good qualities; all in all, I am inclined to feel that I am a failure (reverse-coded); I am able to do things as well as most people; I feel that I do not have much to be proud of (reverse-coded); I take a positive attitude toward myself; on the whole, I am satisfied with myself; I wish I could have more respect for myself (reverse-coded); I certainly feel useless at times (reverse-coded); at times I think I am no good at all (reverse-coded).

To measure *self-control*, I use a six-item scale based on Gottfredson and Hirschi’s (1990) argument that attitudinal measures of self-control better capture the concept during adolescence. Similar to the other measures, respondents are asked whether they (1) strongly disagree to (4) strongly agree with the questions: I often get in a jam because I do things without thinking; I think that planning takes the fun out of things; I have to

use a lot of self-control to keep out of trouble; I enjoy taking risks; I enjoy new and exciting experiences, even if they are a little frightening or unusual; life with no danger in it would be too dull for me. In order to be consistent across my attitudinal measures, I recode self-esteem and self-control so that higher scores on each measure indicate positive or “better” attitudes and standardize each variable before the analysis to ease interpretation of the coefficients.

Finally, I include a measure of *illegal behavior* using a scale (0-3) developed from questions relating to whether or not the respondent had engaged in any of the following behaviors: violent crime in the past year (hurt someone badly enough to need doctor, gotten into a physical fight at school or work, seriously threatened or hit someone); property crime in the past year (damaged school property intentionally, taken something worth \$50 or more, taken something from store without paying); drug use in the past month (marijuana, powder cocaine, crack cocaine, heroin, methamphetamine, or hallucinogens).

Results

Social Control Trajectories

Figure D.1 displays criminalized trajectories of social control. The majority of young men (75.8 percent) in the sample are classified as following a *low-risk criminalization* trajectory. For this group, the risk of conviction, probation, or incarceration remains relatively stable and low throughout adolescence and young

adulthood. In addition, there are two separate trajectories of criminalized social control. A small but not insignificant group (14.6 percent) follows an *adolescent-limited criminalization* trajectory. Individuals following this trajectory were at a relatively high risk of criminal justice contact during their late teens but generally avoiding involvement with the legal system during young adulthood. Because they seem to have managed to escape long-term involvement with the legal system by their late 20's, their risks of legal troubles as of the most recent survey wave were similar to those in the low-risk group. Finally, about 9.6 percent of the sample follows a *life-course persistent* criminalization trajectory. Similar to the adolescent-limited group, individuals in the long-term risk group experienced a steady increase in their risk of criminal justice involvement during their late teens. However these men remain at a relatively high risk for involvement with the criminal justice system throughout young adulthood.

Figure D.2 displays trajectories of medicalization. Similar to criminalization, trajectories of medicalization follow three distinct pathways. The majority of young men (82.2 percent) in the sample follow a social control trajectory characterized by a *low risk* of visiting a mental health professional or taking psychotropic medication to control behavior throughout adolescence and young adulthood. Another group (10.5 percent) follows an *adolescent-limited* trajectory, characterized by visits to mental health professionals and the use of psychotropic drugs during late adolescence, but limited use of mental health services starting in the early 20's. From age 25 and older, they experienced similar involvement with the mental health system as the low-risk group. Finally, another 7.3 percent of the sample follows a *life-course persistent* trajectory of

medicalized social control. For individuals following this trajectory, the use of mental health professionals and technology to handle problem behavior continues throughout adolescence and young adulthood. After defining trajectories of criminalized and medicalized social control, I turn to discussion of how time-invariant variables capturing childhood experiences predicts membership in different trajectories after controlling for time-variant predictors of criminal justice contact or the use of mental health services in young adulthood⁷.

Table C.1 presents log-odds and odds-ratios from multinomial regression models predicting membership in either the adolescent-limited or life-course persistent trajectories of criminalized social control, using the low-risk group as a reference category, and controlling for time-varying covariates thought to influence criminal justice contact⁸. Results indicate the likelihood of following a given trajectory compared with

⁷ This paper focuses on how different labeling events during childhood, school punishment and receiving therapy or medication for behavior problems, predict entry into different life-course trajectories characterized by involvement with the criminal justice or mental health systems. However, the model also controls for a number of time-variant variables that could potentially mediate the association between the labeling of early childhood behavior and contact with the criminal justice system (being on probation, being incarcerated, or being convicted of crime) for individuals following different trajectories of criminalized social control or the visiting a therapist or taking psychotropic medication at a given age. Specifically, I control for economic idleness using a dummy variable equal to “1” if the respondent was unemployed and out of school in the same year (Deming 2009), high school graduation, most recent grades, self-esteem, self-control, and criminal activity during each survey year. Because the coefficients for time-varying variables represent the log-odds of criminal justice contact or the use of mental health services for individuals in each group rather than the influence of these variables on group membership itself, and the substantive focus of the paper on predicting membership in different trajectories, I center my results and discussion around the time-invariant variables. Results for time-variant variables is reported in Appendix I.

⁸ The coefficients for time-stable covariates in models using the *traj* command in Stata 13.0 can be thought of as the log-odds of group membership compared to membership in a given reference group. Because I am estimating a three-group model, *traj* estimates a multinomial model of group membership relative to a given base category. The straightforward way to interpret coefficients for these models is by considering the percent change in the log-odds of group membership versus membership in one of the respective low-risk groups $[100 \cdot (e^{bx}) - 1]$ for a one-unit difference in the independent variables (Long 1997; Nagin and Jones 2013). On the other hand, the coefficients for time-varying variables represent the log-odds of

following a low-risk trajectory. Looking first at racial differences in the likelihood of following criminalized life-course trajectory, African-American boys were no more likely than White boys to follow an adolescent-limited criminalization trajectory versus a no-risk trajectory of criminalization. However, African-Americans were 182 percent $[100*(e^{-1.038})-1]$ more likely than Whites to follow a life-course persistent trajectory of criminalized social control than a no-risk trajectory.

Turning to a discussion of how labeling during childhood predicts the entrance into different trajectories of criminalization, Table C.1 provides evidence that school punishment and the use of therapy or medication for behavior problems have different consequences when it comes to involvement with the criminal justice system over the life-course. Compared to those who received no label during childhood, young men who experienced only school punishment were 116 percent $[100*(e^{.771})-1]$ more likely to enter an adolescent-limited trajectory of social control and 271 percent $[100*(e^{3.718})-1]$ more likely to enter the life-course persistent trajectory of criminalization than they are to follow a low risk trajectory of social control. Similarly, those who experienced school punishment and the use of therapy or medication during childhood were 427 percent $[100*(e^{1.663})-1]$ and 256 percent $[100*(e^{1.271})-1]$ more likely to enter an adolescent-limited trajectory or life-course persistent trajectory of criminalization than a low-risk trajectory, respectively. Importantly, those young men who experienced therapy or medication for behavior problems, yet were not suspended or expelled from school during childhood, were no more likely than those young men who had no label before the

criminal justice contact for individuals in each group, rather than the effects of time-varying variables on group membership.

age of fifteen to enter either criminalized trajectory of social control relative to a low-risk trajectory.

Finally, the influence of misbehavior during childhood, as measured by externalizing behaviors, was significantly and positively associated with the risk of involvement in a life-course persistent trajectory of criminalized social control. However, while young men who displayed one standard deviation greater frequency of externalizing behavior symptoms were 29 percent [$100*(e^{.261})-1$] more likely to follow a life-course persistent trajectory of criminalization than they were a low risk trajectory, frequent misbehavior in childhood did not explain the risks associated with either race or labeling. Instead, after controlling for childhood problem behavior, African-Americans and young men who were suspended or expelled from school before the age of fifteen were significantly and markedly more likely to experience criminalized social control during adolescence and young adulthood.

Other childhood variables also predicted entrance into criminalized social control trajectories. Living in poverty during childhood was associated with a greater likelihood of experiencing an adolescent-limited trajectory. Interestingly, after school punishment and performance is considered, repeating a grade during elementary or middle school is negatively associated with the likelihood of following a life-course persistent trajectory. Finally, mother's education during childhood decreases the chances of following both an adolescent-limited trajectory and a life-course persistent trajectory relative to a low-risk trajectory.

Table C.2 presents log-odds and odds-ratios from multinomial models predicting membership in either the adolescent-limited or life-course persistent trajectories of medicalized social control, using the low-risk group as a reference category. Unlike with criminalized trajectories of social control, African-Americans are significantly less likely than Whites to follow a life-course persistent trajectory of medicalized social control relative to a low-risk trajectory. Compared to Whites, African-American males are 68 percent $[100*(e^{-1.155})-1]$ less likely to follow a life-course persistent trajectory of medicalized social control than they are a low risk trajectory. Similar to criminalized trajectories, there is no statistically significant difference between Whites and African-Americans in the likelihood of following an adolescent-limited medicalized trajectory compared to a low-risk medicalized trajectory.

Looking at the influence of punishment and therapy or medication during childhood on the likelihood of entrance into different trajectories of medicalized social control, results from Table C.2 suggest that the use of therapy or medication for behavior problems early in life is associated with a greater likelihood of involvement with medicalized social control over the life-course. Compared to young men who were not labeled, young men who experienced only the use of therapy or medication are more than 500 percent more likely to follow either adolescent-limited trajectory or a life-course persistent trajectory of medicalized social control as opposed to a low-risk trajectory. Similar differences between those young men who were both suspended or expelled and received either therapy or medication and those who were never labeled during childhood, experiencing both labeling events before the age of fifteen increases the

chances of following an adolescent-limited or life-course persistent trajectory of medicalized social control by over 700 percent compared to following a low-risk medicalized social control trajectory. Importantly, those young men who were suspended or expelled from school during childhood, yet did not receive therapy or medication for their behavior problems, were no more likely to enter either medicalized trajectory of social control than those young men who had received therapy or medication for their behavior problems before the age of fifteen.

While race and childhood labeling were predictors of subsequent trajectories of medicalized social control, the influence of externalizing behaviors during childhood was not significantly associated with a greater risk of involvement in either trajectory. Furthermore, similar to trajectories of criminalized social control, frequent displays of externalizing behaviors in childhood did not mediate the association between either race or labeling and involvement in medicalization during adulthood. Indeed, other than race and labeling, only year born was found to be significantly associated with the entrance of either medicalization trajectory.

One of the benefits of group-based modeling is the ease in which researchers can model and illustrate how time-stable risk factors can accumulate and increase or decrease the likelihood that individuals will follow given trajectories (Jones and Nagin 2007). For example, because African-American and White males are likely to have fundamentally different experiences with respect to school punishment and therapy or medication for behavior problems during childhood, racial differences in trajectories of criminalized and medicalized social control are likely to be even more pronounced. To help illustrate this

accumulation of risk, Figure D presents predicted probabilities of membership in either the low-risk, adolescent-limited, or life-course persistent criminalization trajectories for young White and African-American males with different labeling experiences during childhood.

As Figure D.3 demonstrates, racialized experiences of school punishment or therapy and medication help to contribute to racial disparities in criminalization over the life-course. For example, White boys who receive therapy or medication during childhood are more likely to avoid long-term involvement in the criminal justice system. Indeed, White boys who received only therapy or medication during childhood were almost as likely to follow a low-risk trajectory of criminalized social control as African-American boys who received no label at all. Furthermore, the likelihood of White boys who received only therapy or medication during childhood following a life-course persistent trajectory of criminalization is less than five percent. Finally, White and African-American boys who experience both school punishment and therapy or medication during childhood are similar in their likelihood of following a life-course persistent trajectory of criminalization. However, White boys who experience both punishment and therapy/medication during childhood had a lower probability of following a life-course persistent trajectory of criminalized social control than any African-American male, regardless of labeling in childhood.

Figure D.4 presents predicted probabilities of membership in either the low-risk, adolescent-limited, or life-course persistent medicalization trajectories for young White and African-American males with different labeling experiences during childhood.

Similar to criminalized social control, racialized experiences of school punishment or therapy and medication help to contribute to racial disparities in medicalization over the life-course. For the most part, young men who did not receive therapy and medication for behavior problems during childhood are most likely going to follow a low-risk trajectory of medicalized social control. On the other hand, racial disparities in early therapy or medication for behavior problems appears to set the stage for disparities in medicalized social control for extended periods of the life-course. Both African-American and White males who received therapy or medication during childhood had similarly high probabilities of following an adolescent-limited trajectory. However, the probability of following a life-course persistent trajectory of medicalization for African-American males was relatively low compared to that of White males receiving similar early labels.

Discussion

By using a group-based modeling strategy to conceptualize the processes of criminalization and medicalization as trajectories of social control that individuals follow, this paper helps to initiate a conversation between criminology and medical sociology on the long-term implications of labeling in childhood. Employing panel data from the National Longitudinal Survey of Youth 1979 – Child and Young Adult Survey, this paper tests three sets of hypotheses regarding racial disparities in criminalized and medicalized trajectories of social control. In doing so, this project demonstrates that labeling during

childhood via school punishment or the use of therapy and medication for behavior problems has significant implications for long-term trajectories of criminalized and medicalized social control. Moreover, racial disparities in labeling in childhood contribute to racial divergent trajectories of social control across the life-course. These patterns place African-American males at an increased risk of involvement with the criminal justice system and White males at a greater risk of involvement with mental health services and/or psychotropic drugs to control behavior over the life-course.

Results provide partial support for hypotheses 1a and 1b. Specifically, African-American males are more likely than White boys to follow life-course persistent criminalized social control trajectories than low-risk trajectories, but are no more likely than Whites to follow an adolescent-limited trajectory of criminalized social control relative to a low-risk trajectory. Similarly, White males are more likely than African-Americans to follow life-course persistent medicalized social control trajectories than low-risk trajectories, but are no more likely than African-Americans to follow an adolescent-limited trajectory of medicalized social control relative to a low-risk trajectory. These contradictory findings suggest that, not only do racial disparities in the social control of problem behavior begin in early childhood, but they continue well into adulthood. Importantly, while White males avoid long-term problems associated with the criminal justice system, their behavior problems are not unsupervised during adulthood. Instead, they are more likely to rely on therapy and psychotropic drugs to control behavior problems throughout young adulthood.

Results supported hypotheses 2a and 2b, demonstrating that young men who were suspended or expelled from school before they were fifteen were at an increased risk of following a trajectory associated with criminalized social control during adolescence and young adulthood, including routine or repeated contact with the legal system through conviction, probation, or incarceration. Additionally, these young men were unlikely to follow trajectories of medicalized social control, which involved seeking out mental health services such as therapy for violent or disruptive behavior or using psychotropic drugs to control behavior in adolescence and young adulthood. On the other hand, young men who experienced only therapy medication but were not punished in school were no more likely than those who received no label to follow a criminalized life-course trajectory. Instead, these young men became medicalized in early childhood and were likely to remain under medical or psychological supervision for extended periods of the life-course.

The overwhelming majority of the sample was at a relatively low risk of involvement in either criminalized or medicalized social control trajectories. Indeed, most men in the United States will never come into contact with either the criminal justice system or the mental health system. However, for those that do require formal social control during young adulthood, there appears to be two fundamentally different trajectories. For both criminalization and medicalization, there appears to be both an adolescent-limited group and a life-course persistent group. For the adolescent-limited groups, involvement with formal institutions of social control is at its peak during late adolescence and early adulthood and declines steadily in the early twenties. On other

hand, for the life-course persistent risk groups, involvement with institutions of social control begins late in adolescence and remains relatively stable through young adulthood. Moreover, not only did young men who had different labeling experiences during childhood experience fundamentally different life-course trajectories, but these relationships remained significant after controlling for time-varying measures associated with stigma and behavior that should have a more immediate effect on contact with institutions of social control for young men following different social control trajectories.

Finally, in support of the third set of hypotheses, racial disparities in labeling during childhood may contribute to later racial disparities in both criminalized and medicalized trajectories of social control. Specifically, because White boys with behavior problems are more likely to receive therapy or medication during childhood and have greater access to resources that accompany early mental health treatment, including better school counseling services and better mental health care, they are better positioned to take advantage of therapy and medication than African-American boys. As a result, they are able to avoid involvement with criminalized forms of social control, including school punishment during childhood and the legal system during young adulthood. On the other hand, once young White males use the mental health system as social control during childhood, they are at a greater risk of medicalized social control continuing during young adulthood. Consequently, White boys appear to be able to use medicalization to escape criminalization and avoid the negative implications of a criminal record during young adulthood.

On the other hand, discrimination and disadvantage associated with racial minority status and the negative consequences of exclusive school punishment during childhood combine to increase the risk of entering criminalized social control trajectories for young African-American males. Indeed, for many African-Americans, school punishment may be the first stage in a life-course process in which removal from school has negative implications for long-term well-being of African-American boys beyond educational and economic success. For example, suspended and expelled African-American boys are more likely to be viewed as dangerous or criminal and less likely to be seen as capable of rehabilitation (Kim, Losen, and Hewitt 2010; Soung 2011). As a result, school punishment initiates a life-course process in which the misbehavior of young African-American males is viewed as criminal, thus criminalizing the child himself. Moreover, because African-American males are less likely to receive any form of therapy or medication, they do not follow medicalized social control trajectories and instead become increasingly criminalized across the life-course.

While these findings provide support that labeling in childhood has long-term consequences, some unanswered questions remain. First, because of data availability, I am unable to include measures of school racial and disciplinary context. This is an important omission, since African-American boys are more likely to attend predominately African-American schools with harsh disciplinary policies and fewer educational and counseling resources. Second, relying on maternal report of behavior may bias these results. Nevertheless, tests of the Behavior Problems Index suggest that this issue does not bias studies using the NLSY-C (Guttmannova, Szanyi, and Cali 2007).

Furthermore, prior research using the NLSY-CYA suggests that maternal reports of behavior provide the most accurate measure of problem behavior in childhood and attitudinal measures provide the best measure during adolescence and young adulthood (Hay and Forrest 2008; Piquero and Turner 2002). Finally, my measures of criminal activity and criminal justice contact are severely limited and do not include serious offenses. However, many of the proposed mechanisms of labeling, including stigma and the benefits of medicalization, are more likely to help minor behavior problems and less likely to prevent serious crime. Moreover, given that the NLSY-CYA is a national sample and not a sample of offenders, the levels of serious offending in the sample are low and reflect levels in the population.

Finally, the use of group-based models has some drawbacks. In particular, estimated trajectories are not “real” and actual entities. Instead, they are approximations of trajectories that different groups in the population experience (Nagin 2005; Nagin and Tremblay 2005). They are intended to serve as heuristic devices to facilitate discussion and not represent reflections of what occurs in society (Nagin 2005; Nagin and Tremblay 2005). However, these trajectories provide an excellent tool for describing how early life events impact later involvement in manner that captures longitudinal processes over time. By viewing the criminalization and medicalization as trajectories rather than discrete events that occur at single points in time, this project provides a useful starting point for discussing how school suspension and the use of therapy or medication during early childhood affect the risk of long-term offending patterns while not necessarily influences criminal justice contact in a given year. Furthermore, a three-group model better

approximates reality, in which most young men carry a relatively low risk of criminal justice contact throughout life, some experience criminal justice contact during young adulthood, and only a few experience life-course persistent offending behavior (Moffitt 1993; Sampson and Laub 2005).

The United States has experienced unprecedented growth in the use of school punishment and medically diagnosed behavior problems. Furthermore, as these different forms of social constructing child behavior take hold, clear racial disparities have emerged. However, we know little about how or whether these different ways to label child problem behavior influence extend across the life-course. In particular, scholars are unclear as to how school punishment and the use of therapy or medication influence long-term social control outcomes, including criminalization or medicalization, processes in which behavior problems during childhood increase the likelihood that individuals will spend their adolescence and young adulthood involved with different social control institutions.

This project brings us closer to understanding just how labels can influence later life events. Specifically, the use of therapy or medication for behavior problems can be stigmatizing, but it may provide some benefits that can protect against long-term negative consequences associated with this stigma. Specifically, while young men who received therapy or medication during childhood were likely to rely on medicalized social control during young adulthood, they avoided involvement with the criminal justice system. While medicalization is not without its difficulties, including increased risk of depression (Currie, Stabile, and Jones 2014), medical sociologists argue that it is a qualitatively more

beneficial social control experience than probation or incarceration (Conrad 1992b, 2007; Medina and McCranie 2011; Zola 1974). On the other hand, school punishment is a stigmatizing experience that marks a young man as a troublemaker, a label that has troubling long-term implications for social and economic well-being. Consequently, because African-American males are more likely than Whites to receive these criminalized labels during childhood, they receive criminal identities at early ages that can follow them well into adulthood.

Chapter 4: The Influence of School- and District-Level Racial Composition on the Criminalization or Medicalization of Child Behavior through School Discipline Policies

Scholars argue that increasingly punitive school discipline for a childhood problem behaviors in school mirrors societal responses to criminal activity among adults, such as mandatory sentencing and three-strike laws (Hirschfield 2008a; Simon 2007). At the same time, there is a growing focus in American schools on identifying and attempting to control deviant behavior of children and adolescents through the use of methods modeled on medical treatment, most notably through the identification and therapeutic treatment of conditions such as ADHD, conduct disorders, and oppositional defiant disorder (Conrad 2007; Frick and Nigg 2012; Rafalovich 2013). Thus, as we enter the second decade of the twenty-first century, more American schoolchildren are either suspended or expelled from school or diagnosed and treated for behavior disorders in the United States than at any time in history (Conrad and Slodden 2013; Losen and Martinez 2013).

As important socializing institutions, how schools define and manage deviant behavior reflects the ideas and emotions of the community regarding child behavior (Cohen 1985). The use of punitive school discipline and medical or psychological diagnoses as social control provide examples of two dominant models of social control: criminalization and medicalization. Specifically, through exclusionary and punitive school discipline measures, schools adopt a criminalized approach to social control,

defining problem behavior according to philosophy and strategies of the American criminal justice system (Simon 2007). For example, similar to criminal conviction, school suspension and expulsion exclude deviant children from their peers, officially and unofficially mark them as troublemakers, and disrupt their opportunity to learn course material in the classroom (Hirschfield 2008a). At the same time, schools also rely on medicalization as a social control strategy. Through the use of programs established by federal laws pertaining to student disability and behavior disorders, schools define the misbehavior of some children in medical or psychological terms and implement a system of behavior management based on therapy and rehabilitation. This includes offering students assistance in the classroom, modified curricula and extra time on assignments and exams, and, importantly, a requirement that schools consider any underlying behavior disorders in the disciplinary process when a student misbehaves (Gius 2007; Kim, Losen, and Martinez 2010; Smith 2001).

A growing body of research on school disciplinary policies has focused on racial and socioeconomic disparities in the exposure to exclusionary or punitive policies. Recently, criminologists have suggested that exclusionary disciplinary policies, ranging from suspension and expulsion to metal detectors and on-campus police officers, are more common in schools with relatively larger African-American populations (Irwin, Davidson, and Hall-Sanchez 2013; Kupchik and Ward 2013; Welch and Payne 2010;2012). On the other hand, more inclusive measures of social control, including mild disciplinary (e.g. parent-teacher conferences, oral reprimands) or clearly visible

security cameras, are applied equally across schools of racial configurations (Kupchik and Ward 2013; Welch and Payne 2012).

To date, no research has considered how or whether schools, as institutions, implement medicalized forms of social control (Kim, Losen, and Hewitt 2010). The majority of empirical research involving medicalization and social control has been at the individual-level, typically comparing rates of medical diagnosis or quality of therapy or treatment across members of different racial groups. Findings from this line of research suggests African-American school-children are less likely to be diagnosed with behavior disorders than White schoolchildren (Miller, Nigg, and Miller 2009; Morgan et al. 2013). Scholars are less clear on whether schools with relatively larger African-American populations may be less likely to provide students with services necessary to meet the needs of students with medically defined behavior disorders (Ferguson 2001; Kim, Losen, and Hewitt 2010).

In examining whether school and district level racial composition influences the criminalization or medicalization of school discipline, this paper makes several contributions to extant criminological and medical sociological literature regarding the social control of child behavior. First, it brings together prior theoretical work from criminology on racialized crime theories with work from medical sociology on racial disparities in mental health and health care access. The inclusion of medicalized school discipline examines structural inequalities across multiple domains of social control with important, but different, implications for how child behavior is defined and managed (Medina and McCranie 2011). Second, this project provides an important example of

how medicalization can operate at an institutional level in non-medical organizations (Conrad 1992b). For example, while diagnoses for behavior disorders may or not be required by medical professionals, the day to day management of child behavior is carried out by non-medical school personnel (Conrad 1992b; Gius 2007). Third, this paper considers how school- and district-level racial compositions influence the criminalization or medicalization of school discipline. In doing so, the paper argues that both the racial composition of the student body and the racial composition of the surrounding population are important when it comes to setting and implementing school disciplinary policy. Finally, by considering social control in elementary and middle schools, I am able to examine how schools socially construct the misbehavior of children at critical points in their development and at a stage in the life-course when teachers and administrators may be less likely to view students as “little adults” (Kupchik and Ward 2013; Soung 2011). Most research on school discipline has been conducted at the high school level, where teachers may consider some students to be more dangerous and disciplinary decisions may involve less discretion (Kupchik and Ward 2013). If the discretion of teachers and administrators is more important in elementary or middle schools, these decisions may be influenced by social and structural factors associated with race (Kupchik and Ward 2013).

I draw from racialized crime perspectives in criminology, the fundamental cause hypothesis in medical sociology, and critical race perspectives that cut across disciplines to examine the influence of school and district level racial and ethnic composition on the criminalization and medicalization of school discipline across a broad range of school

contexts. Using a large dataset of over 50,000 schools in over 6,000 districts, I answer several important questions about the how school social control policies. First, does the relative size of the African-American population at the school- and district-level influence how schools and districts implement punitive disciplinary measures such as suspension and expulsion? Second, does the relative size of the African-American population at the school- and district-level influence how schools and districts implement medicalized school disciplinary measures like IDEA enrollment and Section 504? Finally, does district-level racial composition attenuate the association between school-level racial composition and school disciplinary policies?

Conceptual Framework

The Criminalization of School Discipline

The focus on discipline and protection of children has always been central to the operation of American schools. However, for most of U.S. history, teachers and administrators often responded to in-school deviance with sanctions that centered around adherence to orderliness and structure, such as detaining children after school (or during Saturday school) for extra lessons, reciting school rules, or restorative school service projects like cleaning and maintenance (Kupchik 2010). Rarely did teachers consider students to be criminally responsible for their behavior problems (Kupchik 2010; Monahan and Torres 2009). The goals of school discipline were largely reformative instead of retributive. Administrators and teachers sought solutions that could improve child productivity while decreasing interference with the education goals of the

classroom (Kupchik 2010; Monahan and Torres 2009). Consequently, schools often reserved stricter punishments, such as suspension or expulsion, for the most egregious offenses, and schools often took great pains to avoid meting out such punishments (Kupchik 2010; Simon 2007).

Recently, however, society's attitudes towards youth behavior and school discipline have shifted toward the "get tough" philosophy of the criminal justice system. During the late 20th century, images of violent crime in the inner-city schools filled television sets across the country (Lyons and Drew 2006; Simon 2007). For many parents, these images conjured up notions of superpredators that threatened the safety of their children whenever they left the house (Simon 2007). As the place where children are most often away from their parents, schools became a primary focus for intervention and deterrence. Parents demanded confirmation that teachers and administrators were providing their children with a safe and secure school environment (Lyons and Drew 2006; Simon 2007). To meet these demands, the non-academic priorities of many school systems shifted to the monitoring and controlling of child behavior and the protection of potential victims (Kupchik and Monahan 2006; Lyons and Drew 2006; Monahan and Torres 2009; Simon 2007).

One of the clearest examples of this trend is the use of exclusionary disciplinary policies such as suspension or expulsion for students who violate a broad spectrum of rules (Hirschfield and Celinska 2011; Kupchik 2010; Noguera 2003). While they have been traditionally applied to more serious in-school offenses, punishments such as suspension and expulsion are increasingly being meted out for relatively minor rule

violations, such as tardiness, classroom disruptions, unruly demeanor towards adults, and inattentiveness (Kupchik 2010). Consequently, rates of school suspension and expulsion have skyrocketed over the past twenty-five years. As the use of exclusionary disciplinary policies has become more commonplace across the country, criminologists and other social scientists have pointed out that these forms of school punishment effectively operate in the same manner as sentencing policies do in adult courts of law (Hirschfield 2008a; Kupchik 2010; Simon 2007).

Much like harsh sentences in the criminal justice system are thought to deter future criminal behavior, strict school discipline is intended to establish a zero tolerance atmosphere for wrongdoing that ensures student safety and orderly classrooms (Hirschfield 2008a). In practice, similar to the ways in which incarceration or probation removes offenders from the general population or restricts their movement and interaction with others, exclusionary school discipline removes misbehaving children from classroom and isolates them from their peers. As a result, schoolchildren are removed from important lesson time, causing them to fall behind on their schoolwork, magnifying other problems that may be associated with academic difficulty, including undiagnosed or untreated learning or behavior disorders (Kim, Losen, and Hewitt 2010; Bowditch 1993). Moreover, similar to incarceration and probation for adults, these punishments single out offenders from their peers and officially and unofficially marks them as deviant (Ferguson 2001; Simon 2007). In some cases, being suspended or expelled can prohibit involvement in extracurricular activities that may assist in social development (Skiba 2008). Further, teachers and other professionals may spend less time

and effort helping those children they view as troublemakers because they are seen as less engaged in their own learning (Ferguson 2001).

The Medicalization of School Discipline

A growing number of childhood problematic behaviors, such as inattention, hyperactivity, and opposition or defiance of adult authority, have received increased attention from medical and psychological professionals (Conrad and Slodden 2013; Conrad 2007). Doctors and psychologists began defining such behavior as symptoms of disorders such as ADHD or oppositional defiant disorder, and using medical, as opposed to moral or legal, terminology (Conrad 1992a; 2007; 2013). Furthermore, medical professionals began prescribing therapy or medication to control these symptoms, thus asserting their position in the defining and management of deviant behavior (Conrad 1992b; 2007). Sociologists refer to this process as the medicalization of social control (Conrad 1992b, 2007; Zola 1972).

Medicalization defines certain deviant behaviors using medical terminology, adopts a medical framework for addressing the problem, and uses a medical intervention to “treat” the problem rather than relying on deterrence and punishment observed in the legal system (Conrad 1992a,b; Medina and McCranie 2011). Importantly, once this definition becomes accepted, other organizations and institutions begin to approach the problem using a medical model, controlling behaviors via the tools and techniques of the health and psychological professions (Conrad 1992b, 2007; Medina and McCranie 2011). While schools are rarely directly involved in the diagnoses of specific disorders, they can

and do implement school disciplinary procedures that medicalize social control. Most notably, they employ school disciplinary policies designed to supervise and control the movement of students whose behavior problems are considered medical disorders (Malacrida 2004; Mayes and Rafalovich 2007; Reid and Katsiyannis 1995).

For example, schools provide programs and services specifically designed to meet the needs of children with developmental and behavior problems (Kim, Losen, and Martinez 2010; Holler and Zirkel 2008; Reid and Katsiyannis 1995; Zirkel 2011). These programs allow schools to monitor and manage those children with behavior problems through a structured daily routine of lesson plans, increased attention to movement and actions, and adherence to a regiment of conduct similar to that of clinical therapy or treatment (Fitzgerald 2009; Malacrida 2004; Reid and Katsiyannis 1995). Importantly, these programs do not necessarily rely on the participation of medical professionals and, in some cases, do not even require medical diagnoses for enrollment (Gius 2007; Holler and Zirkel 2008). As a result, medicalization takes places within the school organizational context, as the day to day management of children with behavior disorders is carried out by educators rather than medical personnel (Conrad 1992b; Malacrida 2004; Reid and Katsiyannis 1995).

Medicalization in schools can take place through the implementation of services for children that meet the criteria for specific behavior disorders mandated by two federal laws, the Individuals with Disabilities Education Act (IDEA) of 1990 and Section 504 of the Rehabilitation Act of 1973 (Gius 2007; Holler and Zirkel 2008; Kim, Losen, and Hewitt 2010). Under the guidelines put forward by these two pieces of legislation,

schools are required to ensure that children with disabilities, including behavior disorders such as ADHD, oppositional defiant disorder, and conduct disorder, are guaranteed free access to a public education (Kim, Losen, and Hewitt 2010; Holler and Zirkel 2008). To meet this guarantee, schools provide, among other things, individualized education plans (IEPs) including modified curriculum, enhanced learning environments, and extra school personnel to assist with behavioral and educational needs (Guis 2007; Holler and Zirkel 2008; Kim, Losen, and Martinez 2010). Most importantly, because misbehavior in school may be the result of a child's disorder, schools must determine whether an infraction was the result of a behavior disorder before making any disciplinary decisions (Kim, Losen, and Hewitt 2010; Holler and Zirkel 2008). By considering potential medical or psychological causes for school misbehavior, implementation of services under IDEA and Section 504 reflects the medicalization of social control through a diagnostic and therapeutic approach to school discipline.

While both IDEA and Section 504 establish guidelines for schools to consider and make accommodations for students' behavior disorders, there are several key differences between the two pieces of legislation that have significant implications for the current study. First, the two statutes differ with respect to how they define disorders (Zirkel 2011). To qualify for IDEA, students must meet the diagnostic criteria for one of thirteen disability categories (Holler and Zirkel 2008). For example, children with oppositional defiant disorder are classified as having an emotional disturbance, and provided specialized services based on their abilities to get along in a normal classroom (Kim, Losen, and Martinez 2010). Similarly, students clinically diagnosed with ADHD are

often covered under “other health impairments” and given assistance with note and test taking, as well as other necessary services (Holler and Zirkel 2008). On the other hand, children whose primary disorder falls outside of these behavior categories, for example Autism or deafness, are provided services that best meet the needs associated with those impairments (e.g. interpreter services for children who use sign language) that they would not provide to children with behavior disorders¹.

Instead of a formal diagnosis from a medical or mental health professional, eligibility for coverage under Section 504 requires that students have a “physical or mental impairment that substantially limits one or more major life activities” (Holler and Zirkel 2008, pg. 20). Unlike IDEA, these major life activities extend to areas outside of learning, including behavior and attention problems that do not always interfere with classroom performance (Gius 2007; Holler and Zirkel 2008). Thus, if a child is not diagnosed with a behavior disorder as defined under IDEA, schools are able to formally provide similar services and coverage (Gius 2007; Holler and Zirkel 2008; Kim, Losen, and Martinez 2010).

The second important difference between the two laws involves eligibility requirements. While, IDEA requires that students be formally diagnosed by a medical or psychological professional for such disorders, teachers and administrators are allowed to initiate a Section 504 plan without an official diagnoses from a health professional (Holler and Zirkel 2008; Kim, Losen, and Martinez 2010). Thus, not only are schools legally bound to offer services to children with behavior disorders, Section 504 offers

¹ For children with multiple disorders, the “most disabling” condition, or the condition that best describes the child’s impairment, is considered the primary disability and is official impairment listed with the school (Holler and Zirkel 2008).

school officials the discretion to decide whether certain students may require services and which services are most appropriate, without the need of a doctor or psychologist (Fitzgerald 2008; Guis 2007; Holler and Zirkel 2008; Kim, Losen, and Martinez 2010).

Finally, the two statutes differ in the ways in which are services provide are funded. Specifically, while IDEA explicitly sets aside funds for special education services, Section 504 is an unfunded mandate require schools and districts use their own resources to ensure compliance (Holler and Zirkel 2008; Kim, Losen, and Hewitt 2010). Because Section 504 does not require an official diagnosis and services rely on resources provided by the school or the district, enrolling children in a Section 504 plan can be a costly and sometimes controversial decision (Gius 2007; Fitzgerald 2008; Kim, Losen, and Hewitt 2010). Thus, the choice to offer Section 504 services to a child relies on much more than just actual behavior, including teachers' perceptions of behavior, the ability of educators in the school and district to properly diagnose problems with a doctor, and schools' and districts' available social and economic resources. As a result, Section 504 plans involve a greater deal of discretion by teachers and school administrators than the seemingly straightforward guidelines proposed under IDEA (Gius 2007; Kim, Losen, and Hewitt 2010).

Some schools may lack the human and economic resources to provide adequate services under IDEA or Section 504. Instead, schools rely on exclusionary discipline and suspend or expel higher rates of students. Consequently, if schools are not implementing these policies and programs evenly across the United States, children with similar behavior problems may experience significantly different responses from their teachers

and administrators. For example, many scholars have pointed out significant racial and ethnic disparities in the use of both the use of more criminalized forms of school discipline and the medicalization of childhood problem behavior (Kim, Losen, and Hewitt 2010; Kupchik and Ward 2013; Irwin, Davidson, and Hall-Sanchez 2013; Morgan et al. 2013). These scholars point to stratification in other social institutions, suggesting that school disciplinary policies reflect and perpetuate longstanding inequalities in social control in the United States (Kupchik and Ward 2013; Irwin, Davidson, and Hall-Sanchez 2013; Wacquant 2001).

Race, Social Control, and School Discipline

The association between school and district racial composition and the use of school disciplinary policies is complex. Schools and districts serving predominately White student bodies now implement strict disciplinary policies that were once limited to urban schools and those with larger racial and ethnic minority populations (Kupchik 2009). For example, in an in-depth qualitative and quantitative study of four American high schools, Kupchik (2010) found that predominately White and African-American schools all adopted similarly punitive measures, including the use of school suspension and expulsion when student broke the rules. Furthermore, by the end of the first decade of the 21st century, most school districts had adopted zero tolerance disciplinary policies, regardless of racial and ethnic composition (Hirschfield 2008b; Kupchik 2010). As Johnathon Simon (2007) argues, the behavior of all children in the United States is increasingly “governed through crime” as schools adopt a one size fits all approach to school discipline (Kupchik 2009; Kupchik and Ward 2013).

There are similar arguments regarding the relationship between race and the use of medicalization and medicalized social control in schools. As discussed earlier, schools medicalize deviant behavior through services initiated by federal laws such as IDEA or Section 504, which manage students with behavior problems through medical technology and techniques rather than punitive coercion (Fitzgerald 2009; Gius 2007; Holler and Zirkel 2008; Reid and Katsiyannis 1995; Zirkel 2011; Zola 1972). Importantly, these federal laws mandate a one size fits all strategy when it comes to the medicalization of school discipline. Specifically, schools are required to provide equal services to students with any health disorder that interferes with their free access to a public education. While the quality of these services is highly contingent on the resources that schools and districts are able to provide, it is illegal for schools and districts to not provide medicalized students with educational and behavior services (Kim, Losen, and Hewitt 2010). Therefore, regardless of whether local racial composition influences the ability of schools to adequately meet the needs of children with behavior problems, they are required to enroll and provide at least nominal services to diagnosed children (Kim, Losen, and Hewitt 2010).

While schools may adopt similar and supposedly race-blind disciplinary strategies “on the books,” the execution of such practices is heavily influenced by school racial or ethnic composition (Kupchik 2009; Kupchik and Ward 2013). According to racialized crime and punishment theories, including critical race theory and racial threat, social control practices and policies in the United States reflect historical racial tensions which subjugate and criminalize African-Americans (Irwin, Davidson, and Hall-Sanchez 2013;

Wacquant 2001). Many scholars highlight the historical connections between slavery and Jim Crow to recent phenomenon such as the War on Drugs and mass incarceration (Alexander 2010; Irwin, Davidson, and Hall-Sanchez 2013; Wacquant 2001). They argue that a history of racialized social control practices provide a template for modern criminal justice strategies on controlling socially marginalized populations, particularly African-Americans. Recently, a few studies have extended these racialized crime perspectives towards the study of disciplinary practices across school contexts in the United States. In particular, the view of African-Americans as dangerous and in need of constant control extends throughout the life-course, with childhood being no exception (Rios 2009; 2011).

While racialized crime theories suggest that race and school racial composition of local areas is associated with differences in the use of punitive school disciplinary measures, research from population health and medical sociological perspectives suggest that there are clear racial disparities in medicalization. Similar to school punishment, these disparities exist in a manner that benefits White children. Specifically, because medicalization of behavior offers children many benefits, including extra test time, modified curricula, and a requirement that schools consider behavior disorders before discipline a child, it is likely to be the preferred method of controlling advantaged children (Medina and McCranie 2011; Rafalovich 2013). Furthermore, because medicalizing children requires both financial resources and expertise, schools serving disadvantaged populations are less likely to implement such measures (Kim, Losen, and Hewitt 2010). According to the fundamental cause hypothesis (FCH), social conditions

are “basic causes” of health disparities in that they affect multiple outcomes through multiple mechanisms (Link and Phelan 1995; Phelan, Link, and Tehranifar 2010).

Applying a FCH framework to racial inequalities in health, scholars suggest that race can serve as a primary organizing factor that determines access to important resources, such as money, information, and social support that help individuals escape health problems (Link and Phelan 1995; Williams 2005; Williams and Sternthal 2010).

Link and Phelan (1995) argue that socially advantaged groups are able to purposefully use their social and economic resources to maintain better physical and mental health. As such, schools serving predominately White student bodies can access resources, including social and human capital, which enable them to implement the medicalized disciplinary regimes such as IDEA and Section 504 (Goldman and Lakdawalla 2005; Phelan, Link, and Tehranifar 2010). On the other hand, with limited social and economic resources, schools and districts serving predominately African-American students are unlikely to cover children with behavior problems (Kim, Losen, and Hewitt 2010).

While the fundamental cause hypothesis suggests that access to resources drives racial disparities in the medicalization, critical race scholars suggest that such these disparities reflect the racialized social structure of the United States that consistently disadvantages racial minorities, particularly African-Americans (Williams 2005; Williams et al. 2010). Historical patterns of racial discrimination have left African-American families extremely distrustful of both the education system and mental health systems (Bussing et al. 2012; Davison and Ford 2002). As a result, recommendations

made by teachers and administrators regarding their children's behavior or learning problems are met with skepticism and contempt (Davison and Ford 2002; Fitzgerald 2008; Miller, Nigg, and Miller 2009). Further, even when parents' support of medicalization is not necessarily required, as is the case with Section 504, teachers and administrators in schools with greater proportion of minority children are less likely to view misbehavior of children as the result of a medical issue (Soung 2011). Instead, they are likely to consider inattention and class disruption to be confrontational behavior akin to criminal activity (Ferguson 2001; Rios 2011; Soung 2011).

In sum, relatively large African-American student bodies are more likely to be subjected to intensive surveillance and routine searches of person and property, increasing the risk of punishment (Kupchik and Ward 2013; Noguera 2003; Welch and Payne 2010). Furthermore, teachers and administrators are more likely to view the misbehavior of racial and ethnic minorities as aggressive or confrontational than that of White school children, particularly if the teacher or administrator is not African-American (Ferguson 2001; Irwin, Davidson, and Hall-Sanchez 2013; Morris 2005). As a result, their perceptions of the African-American student body as unruly, disobedient, and less deserving of inclusion translate into a greater willingness on behalf of schools to apply harsh disciplinary measures (Ferguson 2001; Irwin, Davidson, and Hall-Sanchez 2013; Morris 2005; Skiba et al. 2013). Therefore, regardless of available resources and other characteristics of the student body, schools with relatively larger African-American student bodies will be more likely to use strict disciplinary policies.

On the other hand, the surveillance of White children who misbehave often involves medical or psychological therapy and the use of pharmaceutical treatment (Morgan et al. 2013; Stevens, Harman, and Kelleher 2005). Furthermore, teachers and administrators are more likely to consider biological or psychological disorders as the cause of misbehavior in White school children than they are racial and ethnic minorities, whose behavior they attribute to poor parenting (Behnken et al. 2014; Miller, Nigg, and Miller 2009). As a result, their perceptions of the African-American student body as unruly, disobedient, and less deserving of inclusion translate into a greater willingness on behalf of schools to apply harsh disciplinary measures (Ferguson 2001; Irwin, Davidson, and Hall-Sanchez 2013; Morris 2005; Skiba et al. 2013). Therefore, regardless of legal obligations to cover children who display behavior problems with services under IDEA or Section 504, schools with relatively larger African-American student bodies will enroll fewer students in such programs.

While schools have been the primary focus of research on school disciplinary practices, far less attention has been paid to how the racial composition of the larger school district may influence school disciplinary policies. The failure to consider both school and district-level racial composition overlooks several important factors pertaining to school discipline. First, while school discipline is ultimately a decision made by teachers and school administrators, districts establish a curriculum and set disciplinary standards for their public schools to follow (Kim, Losen, and Hewitt 2010; Lyons and Drew 2006). Moreover, districts can be held federally accountable for student and school performance, increasing pressure on districts to ensure that schools are keeping children

safe and meeting the needs of children with behavior problems (Kim, Losen, and Hewitt 2010; Lyons and Drew 2006). Additionally, school districts raise and allocate funding for important school disciplinary programs, including federally mandated safety and civil rights statutes regarding children with behavior problems (Kim, Losen, and Hewitt 2010). Finally, given high levels of segregation throughout the United States, decisions regarding the social control of African-American children in schools are likely predicated on the racial composition of the district in which a school is located. For example, because of a lack of resources to accommodate children with behavior problems, predominately African-American districts often rely on large numbers of suspensions and expulsions to demonstrate compliance with federal laws mandating school safety (Lyons and Drew 2006; Simon 2007). Thus, while most school districts have some form of zero tolerance policies that mandate harsh discipline for even minor rule infractions, districts with relatively larger African-American populations may have higher rates of school punishment than districts with relatively smaller African-American populations (Kim, Losen, and Hewitt 2010; Kupchik 2010; Simon 2007; Skiba and Knesting 2001).

Conversely, while federal law mandates children with behavior disorders be provided services under IDEA or Section 504, schools in districts with relatively large African-American populations may be less likely to actually implement these services. For example, residents of predominately African-American school districts are unlikely to seek out diagnoses for behavior disorders covered under IDEA (Davison and Ford 2002; Miller, Nigg, and Miller 2009; Morgan et al. 2013). Furthermore, they are more likely than residents in predominately White school districts to experience inadequate

resources and insufficient information about both available health services and the rights of students with behavior disabilities, decreasing the chances that schools in these districts will provide services covered under Section 504. Importantly, because Section 504 is an unfunded federal mandate, districts must rely on resources provided at the state and local levels (U.S. Department of Education's Office for Civil Rights (OCR) 2013). As a result, districts with relatively larger African-American populations may be less able to provide services under IDEA and Section 504 and therefore may have lower rates of enrollment in these programs than districts with relatively smaller African-American populations (Kim, Losen, and Hewitt 2010).

In addition to directly influencing school disciplinary policies, district-level racial composition can also condition the relationship between school-level racial composition and school discipline. For example, in predominately White local areas, support for harsh discipline increases as the percentage of African-American students increases (Pickett and Chiricos 2012). If local policymakers, school board members, and school teachers and administrators are drawn from this majority White population, fears of criminality and antisocial behavior by African-American school-children could translate into the use of harsh discipline, even in elementary and middle schools (Kupchik and Ward 2013; Pickett and Chiricos 2012; Welch and Payne 2010). On the other hand, in districts with relatively larger African-American populations, local governments and school boards are more likely to contain African-American members and schools may be more likely to higher African-American teachers and administrators (Skiba and Peterson 2000; Zumwalt and Craig 2005). Thus, in districts with relatively smaller African-

American populations, small but noticeable differences in racial composition at the school level should be associated with greater differences in the likelihood of using school punishment than in districts with relatively larger African-American populations (Irwin, Davidson, and Hall-Sanchez 2013; Welch and Payne 2010).

While the association between school-level racial composition and punitive school discipline should be less pronounced in districts with relatively larger African-American populations, district-level racial composition may magnify the influence of school-level racial composition on medicalized social control. While rates of medical diagnoses of behavior disorders are lower for African-American schoolchildren than for White schoolchildren, schools in predominately White school districts may benefit from greater social and economic resources at the district level. For example, schools in these districts may have access to greater local resources, including personnel and information, to meet the needs of children eligible for services IDEA or Section 504 (Kim, Losen, and Martinez 2010). On the other hand, schools in predominantly African-American may be strapped for personnel and financial resources and are often unable to appropriately handle children with behavior problems. For example, inadequate staffing and services may lead to misdiagnoses or underdiagnoses, as teachers and staff are unable to properly identify symptoms of behavior disorders when children act out (Spangler and Slate 2012). As a result, the negative association between school-level African-American composition and the likelihood of medicalized school discipline should be more pronounced in districts with relatively larger African-American populations.

Summary and Hypotheses

The literature discussed above describes how school discipline has shifted towards post-industrial social control techniques modeled on the criminal justice and medical systems. Through legal mandates influenced by the changing perception of youth and education in society, schools have increasingly adopted the social control practices of both and the medical system. However, early evidence suggests that these models are unevenly distributed across schools serving different racial and ethnic populations. Specifically, this paper examines whether schools and districts with relatively larger African-American populations are more reliant on criminalized school discipline and less likely to use medicalized school discipline. Furthermore, this project examines whether district-level racial composition moderates the relationship between school-level racial composition and school disciplinary policies.

H1: Schools and districts with relatively larger African-American populations will have higher rates of criminalized disciplinary measures (suspension and expulsion) than schools and districts with relatively smaller African-American populations.

H2: Schools and districts with relatively larger African-American populations will have lower rates of medicalized disciplinary measures (IDEA and Section 504) than schools and districts with relatively smaller African-American populations.

H3: The positive association between school-level African-American composition and punitive school discipline will be less pronounced in districts with relatively larger African-American populations.

H4: The negative association between school-level African-American composition and medicalized school discipline will be more pronounced in districts with relatively larger African-American populations.

Data and Methods

To examine how school and district level racial composition and socioeconomic status influence school disciplinary practices, this paper relies on multiple sources of data. Information on school punishment, medicalization, and police-student contact were taken from Part 2 of the 2009-2010 U.S. Department of Education Civil Rights Data Collection (CRDC). The CRDC data contains cumulative and end of year data on an assortment of information regarding school-level educational programs and services for 85 percent of U.S. schools and districts (U.S. Department of Education 2012). All other school-level independent and control variables were taken from the NCES Common Core of Data Elementary/Secondary School Universe Survey: School Year 2009-2010. All district-level independent and control variables are taken from the School District Demographics System American Community Survey (ACS) Profiles, 2006-2010².

² Unlike Census long-form data, ACS data do not represent a single time point and are thus not representative for any given year. However, it is common practice to use the ACS to represent a data point in Census analyses, particularly to estimate non-Census years (Iceland, Sharp, and Timberlake 2013; Sharp

The final sample included all public elementary and middle schools in the 48 contiguous states with at least 20 students that were not considered alternative schools for students with learning and behavior problems³. After dropping schools that did not meet the criteria and the small proportion of schools with missing data on outcome and predictor variables, the final sample size is 50,095 schools nested within 6,128 districts.

Dependent Variables

This paper focuses on two approaches to the social control of childhood problem behavior: criminalization and medicalization. Criminalized school discipline is captured using a count of the total number of students who were *suspended or expelled* during the school year. Medicalization is captured using a count of the total number of students who were provided services under *IDEA* for either emotional disturbances or “other health impairment” and another count of the total number of students who were covered under *Section 504*. As noted earlier, to qualify for IDEA, students must meet the diagnostic criteria for one of thirteen disability categories (Holler and Zirkel 2008).

Because the focus of the paper is examining how racial composition influences the ways in which schools respond to and socially construct behavior problems, I wanted to focus on those impairments explicitly related to behavior. Emotional disturbances

and Iceland 2013). Furthermore, the ACS recommends using 5-year estimates when examining smaller geographic units (U.S. Census Bureau 2008). Finally, because of the centrality of district-level information to the research questions, I chose to rely on estimates using specific district boundaries, as opposed to city- or county-level boundaries.

³ I removed schools and districts from Alaska and Hawai'i for several reasons. First, as relatively new states without any geographic or historical connections to the racialized history of the United States, it is unknown if race contributes to social construction in the same way as it does in the rest of the country. Second, Hawai'i and Alaska present unique racial and ethnic dimensions, specifically native Hawaiians and Alaskans. Results including Alaskan and Hawaiian schools do not differ greatly from the current analysis and are available by request.

cover many commonly diagnosed behavior disorders, including oppositional defiant and conduct disorders and over 80% of all children covered under the “other health impairment” have been clinically diagnosed with ADHD (Frick and Nigg 2012; Holler and Zirkel 2008). Importantly, teachers and administrators making decisions about disciplining a child need only consider whether the misbehavior is due to the child’s diagnosed disorder and not whether the child was diagnosed with any disorder (Kim, Losen, and Hewitt 2010). Moreover, if children are diagnosed with learning disorders or physical, yet have untreated or undiagnosed psychological or behavior problems, they may be at an increased risk of school failure and potential disciplinary problems (Kim, Losen, and Hewitt 2010; Schifrer 2013). Consequently, I chose to focus on how schools construct their students’ primary behavior problems through coverage under IDEA for only those problems related to behavior. Additionally, because IDEA and Section 504 require different criteria for services and rely on different funding mechanisms, I chose to run all analyses on the two variables separately.

Independent Variables

The goal of this paper is to examine the relationship between racial composition and rates of criminalized and medicalized of school discipline at the school- and district-level influence. Therefore, the central school-level independent variable captures the proportion of the school student body that is African-American (*percent African-American*). The central district-level independent variable captures the proportion of the district that is African-American (*percent African-American*). Finally, to examine

whether the association between school-level racial composition and school discipline varies across districts with varying racial compositions, cross-level interactions of school- and district-level percent African-American are included for all four dependent variables.

School-Level Control Variables

In addition to school racial and ethnic composition, several school-level control variables are included. Following prior school-level research (Welch and Payne 2010), I measure socioeconomic status using the percentage of students in the school receiving free or reduced lunches (*Percent free and reduced lunch*). To control for *Latino immigrant composition* at the school-level, I include an index composed of the average of the summed z-scores for two variables that measure the percent of the school that either Latino or considered limited-English proficient ($\alpha = .73$). To control for serious or criminal behavior on school groups, I include a dummy variable equal to one if the police had to remove or arrest a student on school grounds during the school year (*student-police contact*). To control for other school-level demographic and organization factors, I include variables measuring the percentage of the student body that is male (*percent male*) and the *student-teacher ratio*, which is logged to handle issues of skewness. Finally, I include dummy variables equal to one if the school is either a charter or a magnet school (*Charter/Magnet school*) and if the school has a *gifted and talented program*. To capture *school locality*, I include a series of dummy variables equal to one if

the school is located in a large urban area, small to medium urban area, small town, or rural area (suburb was reference category).

District-Level Control Variables

To account for district-level socioeconomic status, I created a measure of *district disadvantage* using an index composed of the average of the summed z-scores for five variables that measure the percent of the school-district that: holds less than a high-school degree; is out of the labor force; living in single-mother households; living in households on public assistance; and living in households receiving SNAP benefits ($\alpha = .78$). To control for population turnover at the district level, I include a measure of *residential instability* using an index composed of the average of the summed z-scores for the percent of the school-district that are renter occupied and the percentage of the district that lived in a different school district prior to 2005 ($\alpha = .78$). To control for *Latino immigrant composition* at the district-level, I include an index composed of the average of the summed z-scores for three variables that measure the percent of the school-district that: are Latino; are foreign-born; arrived in the United States since 2005; and speak English “less than well” ($\alpha = .93$).

Finally, I include three variables capturing the occupations of adults living in the school district. To control for *professional/managerial occupations*, I include an index composed of the average of the summed z-scores for four variables that measure the percent of the school-district that work in finance, information, professional, or managerial employment ($\alpha = .81$). To control for *service sector employment*, I include an

index composed of the average of the summed z-scores for the percent of the school-district that are employed in sales and the percentage of the district that are employed in retail ($\alpha = .46$). Additionally, I include a variable indicating the percentage of the school district employed in the manufacturing sector (*percent manufacturing*). I include measures of federal funding (*IDEA funding* and *Safe Schools Act funding*), state funding (*special education funding*), and district level funding measures (*local funding* and *median home value*). Each variable is logged to handle issues of skewness. Finally, I include dummy variables to capture geographic location of the school-district. I also include a series of dummy variables to capture *Census region* (South was reference category).

Analytic strategy

To examine criminalized and medicalized school discipline as a function of school and district-level racial composition, this project employs random intercept models with schools at level-1 and districts at level-2. Because the variances of the count dependent variables are all considerably larger than the means, I control for overdispersion by running negative binomial models (Cameron and Trivedi 1998). By specifying these counts with variable exposure by school student body, the analysis becomes one of rates of discipline across schools (Osgood 2000). Additionally, because this project is interested in the association between racial composition and school discipline at both the school- and district-level, percent African-American at the school-level is group-mean centered (Enders and Tofighi 2007; Kreft and De Leeuw 1998; Raudenbush and Bryk

2002). In group-mean centering, the values of level-1 explanatory variables are centered around the mean value for each level-2 group. For this project, school-level percent African-American is centered around the mean value for all schools in a given district. In the example, all values of percent African-American at the school level are centered around the mean percent African-American for all schools a given district.

In this model, η_{ij} logged expected count of students who were either suspended or expelled or provided services under IDEA or Section 504 for school i in district j . Looking at the central level-1 independent variable in this model, $\%AA_{ij}$ represents the percentage of African-American students in school i in district j and $\%AA_{.j}$ represents the average percentage of African-American students among all schools in district j . As a result, β_1 represents the within-district relationship between school-level percent African-American and school discipline, or the expected difference between two schools in the same district that vary by 1 percent African-American and β_2 represents the between-district association between percent African-American and school discipline, or the expected difference in mean counts of the dependent variable across two different districts that vary by 1 percent African-American.

Unlike level-1 variables that are measured in their original metric or centered on the overall mean (grand-mean centering), group-mean centered variables are uncorrelated with all level-2 variables (Enders and Tofighi 2007; Kreft and De Leeuw 1998; Raudenbush and Bryk 2002). In the case of highly correlated level-1 and level-2

variables that are measured using the same construct, coefficients for variables in their original metric or grand-mean centered represent difficult to interpret effects of the combination of both level-1 and level-2 variables (Enders and Tofighi 2007; Kreft and De Leeuw 1998; Raudenbush and Bryk 2002). This is particularly true when level-1 and level-2 measures represent slightly different concepts (Enders and Tofighi 2007). Because group-mean centered level-1 variables are uncorrelated with level-2 variables, their coefficients represent the “pure” estimate of the effect of level-1 variables (Enders and Tofighi 2007; Kreft and De Leeuw 1998; Raudenbush and Bryk 2002). Further, cross-level interactions between level-1 and level-2 predictors measured in their original metric or grand-mean centered variables may confound correlation with moderation, presenting statistically significant findings when there are none (Enders and Tofighi 2007; Hoffman and Gavin 1998). On the other hand, because there is no correlation between level-1 and level-2 variables using the group-centered approach, models including cross-level interaction represent the true moderating influence of district-level racial composition on the association between school-level racial composition and school discipline (Enders and Tofighi 2007).

Results

Table E.1 presents descriptive statistics for all variables used in the analysis for elementary schools, middle schools, and high schools in the United States. These descriptive statistics reveal several telling patterns regarding school discipline in the

United States. Nearly 87 out of every 1,000 American elementary and middle schools suspended at least one student during the 2009-2010 school-year. Conversely, only about 9 out of 1,000 American elementary and middle schools reported covering used IDEA or Section for emotional or behavior problems, respectively. Turning to the school- and district-level independent variables, elementary and middle school students in the United States have student bodies that are, on average, almost 18 percent African-American. At the same time, the average school district in the United States is around 12 percent African-American.

This project controls for a number of important social and economic variables at both the school- and district-level. Notably, slightly more than 52 percent of the students attending American elementary and middle schools are covered under a free and reduced lunch program. Furthermore, seven percent of schools reported that a police officer had removed or arrested a student on school grounds. Turning to important district-level variables, there is a greater amount of state and federal funding going toward medicalization than supporting punitive disciplinary policies. While school districts receive just \$1.10 per student in Safe Schools Act funding, they receive, on average, \$51.59 in federal IDEA funding and \$55.91 in additional state funding for services. These differences speak to the relative affordability of school punishment compared with medicalization and the importance of human and social resources capable of actually spending such funds appropriately.

Table E.2 presents the coefficients and standard errors for random intercept negative binomial models (with variable exposure) of school punishment (suspension and

expulsion) and medicalized school discipline (IDEA or Section 504 enrollment) for elementary and middle schools in the United States. For each dependent variable, Model 1 includes all school and district-level predictors and Model 2 includes a cross-level interaction between percent African-American at the school and district level. To examine whether an association between racial composition and different types of school discipline exists at both the school- and district-level, I begin with a discussion of Model 1 for each dependent variable. Turning to rates of suspension and expulsion, there is evidence of an association between racial composition and school punishment at both the school- and district-levels. At the school-level, elementary and middle schools with larger African-American student bodies relative to other schools in their districts are more likely to use some form of school suspension during the school year. On average, schools with one standard deviation larger percent African-American (13.3 percent) than other schools in their district have 12 percent $[100*(e^{.008*13.3})-1]$ higher suspension and expulsion rates, controlling for other relevant school and district-level factors. Holding the racial composition of the schools constant, districts with one standard deviation larger percent African-American (15.3 percent) have 12 percent $[100*(e^{.004*15.5})-1]$ higher average school rates of suspension and expulsion than other districts with relatively smaller African-American populations.

Turning to the medicalization dependent variables, schools and districts with relatively larger African-American populations are less likely to use services for behavior problems as mandated by either IDEA or Section 504. First, the association between racial composition and the use of IDEA is insignificant at the school-level. On

the other hand, a one standard deviation (15.5 percent) difference in district-level percent African-American is associated with 20 percent $[100*(e^{0.18*15.6})-1]$ lower rate of IDEA services at the district-level. On the other hand, schools with one standard deviation greater percent African-American (13.3 percent) than other schools in their district are 5 percent less likely $[100*(e^{-0.11*13.3})-1]$ to provide services under Section 504. In addition, districts whose African-American population is one standard deviation higher (15.5 percent) have 15 percent $[100*(e^{-0.39*15.6})-1]$ lower rates of Section 504 usage than districts with relatively smaller African-American populations.

There are a number of control variables are significantly associated with the use of different types of school disciplinary measures. Given that significant associations between school and district-level racial composition and differences in criminalized and medicalized school discipline remain after controlling for important socioeconomic and funding variables, the discussion will center on disadvantage and federal, state, and local funding variables.

There is a relatively consistent significant and positive association between the school-level disadvantage and the use of punitive school discipline. However, the association between school disadvantage and medicalized school discipline runs in different directions for IDEA and Section 504. Specifically, a greater proportion of students receiving free and reduced lunch is associated with greater use of services under IDEA and a lower use of services under Section 504. Meanwhile, district-level disadvantage is consistently associated with a greater likelihood of all three types of school discipline. Additionally, federal and state funding is consistently associated with

school discipline. First, schools in districts who receive more federal funding for IDEA services are more likely to provide services under IDEA and have lower rates of students on Section 504 plans. Second, federal funding for Safe Schools, typically used to hire SROs and implement stricter disciplinary measures (Kupchik 2010) is negatively associated with school punishment and the provision of services under IDEA.

To examine the moderating influence of district-level racial composition at level-2 on the level-1 relationship between school-level racial composition and school discipline, Model 2 for each dependent variable includes cross-level interactions between the group-mean centered school-level measure of percent African-American and the grand-mean centered district-level measure of percent African-American (Enders and Tofighi 2007; Kreft and De Leeuw 1998). Notably, the “main effect” coefficients for percent African-American at both the school- and the district-level remain statistically significant in most cases and in the expected directions. Importantly, the statistically significant interaction terms for all three dependent variables suggest that the relationship between school-level racial composition and school discipline varies across districts with different racial compositions. To help facilitate a discussion of these patterns, I turn to a series of figures displaying marginal effects, or expected differences in rates of school punishment and medicalization across school districts with different racial compositions.

Figure F.1 presents marginal differences in punishment rate for a one standard deviation (13.3 percent) difference in school-level percent African-American in school districts with different racial compositions. As Figure F.1 illustrates, the positive association between school-level African-American composition and rates of school

punishment is less pronounced in districts with relatively larger African-American populations. In school districts where five percent of the population is African-American, schools with a one standard deviation (13.3 percent) larger African-American student body have 17.4 percent higher expected rates of suspension and expulsion than schools in the same district with smaller African-American student bodies. A similar difference in school-level percent African-American is associated with 15 percent higher expected rates of school punishment in a district where 15 percent of the population is African-American and 12.5 percent higher expected rates of school punishment when the district-level percent African-American is 25 percent. Notably, once African-Americans reach a statistical majority at the district-level, the marginal influence that differences in school-level racial composition have on school punishment is much less pronounced than in districts with relatively smaller African-American populations. Within these districts, the expected rates of school punishment schools that vary by one standard deviation (13.3 percent) in their school-level percent African-American differ by 6.8 percent.

Turning to the first of medicalized school discipline dependent variables, Figure F.2 presents expected differences in rates of IDEA enrollment for a one standard deviation (13.3 percent) difference in school-level percent African-American in school districts with different racial compositions. As Figure F.2 illustrates, while statistically significant, the association between school-level racial composition and rates of IDEA enrollment is relatively weak. Notably, in the districts with the relatively smallest and relatively larger African-American populations, the association between one standard deviation (13.3 percent) differences in school-level percent African-American and rates

of IDEA enrollment go in opposite directions. In school districts where five percent of the population is African-American, a one standard deviation (13.3 percent) difference in school-level percent African-American is associated with 3.3 percent lower expected rates of IDEA enrollment. On the other hand, a similar difference in school-level percent African-American is in a district where at least half of the population is associated with 2.5 percent lower expected rates of IDEA enrollment.

Lastly, Figure F.3 presents expected differences in rates of Section 504 enrollment for a one standard deviation (13.3 percent) difference in school-level percent African-American in school districts with different racial compositions. The statistics presented in Figure F.3 provide evidence that the negative association between school-level African-American composition and medicalized forms of school discipline is more pronounced in districts with relatively larger African-American populations. In school districts with an African-American population around 5 percent, a one standard deviation (13.3 percent) difference in school-level percent African-American is associated with just 2 percent lower expected rates of Section 504 use. A similar contrast in within district school-level percent African-American for districts with 15 percent African-American population is associated with 3.3 percent lower expected rates of Section 504 use. However, when the African-American composition reaches 50 percent at the district-level, a one standard deviation (13.3 percent) difference in school-level percent African-American is associated with 7.6 percent lower expected rates of enrollment under Section 504.

Conclusion and Discussion

This project argues that schools can criminalize school discipline by using suspension and expulsion, which remove children from the classroom and brand them as troublemakers. On the other hand, schools can medicalize school discipline by using services covered under the Individuals with Disabilities Education Act (IDEA) of 1990 and Section 504 of the Rehabilitation Act of 1973, which provides additional education and behavior tools to assist children with medically recognized behavior problems. Drawing from racialized crime theories and medical sociological perspectives on race and health, this project examines the relationship between racial composition and both criminalized and medicalized school discipline at both the school- and district-level.

Employing school and Census data for 50,095 elementary and middle schools located with 6,128 U.S. school districts, I use random intercept negative binomial models and a group-mean centering strategy to test four related hypotheses regarding these relationships. In doing so, I present evidence of a relationship between the relative size of the African-American population and both criminalized and medicalized disciplinary measures at both the school- and district-level. Furthermore, this project suggests that district-level racial composition attenuates the association between school-level racial composition and school disciplinary policies in ways that expose African-American children to disproportionately punitive school environments while possibly undermining their ability to receive necessary and helpful school services for behavior problems instead.

Findings are generally supportive of the first hypothesis, that schools and districts with relatively larger African-American populations will be more likely to use suspension and expulsion. Specifically, schools with larger African-American student bodies relative to their district mean have greater rates of school punishment. Furthermore, after controlling for the relationship between racial composition and punishment at the school-level, districts with larger African-American populations have larger average rates of school punishment. Consistent with racialized crime theories, the use of harsh and punitive school discipline is more common among racial minorities.

Findings provide partial support for the second hypothesis, that schools and districts with relatively larger African-American populations will be less likely to use IDEA or Section 504 to control misbehavior. Schools with larger African-American student bodies relative to the district mean experience lower rates of Section 504 use. Controlling for within-district differences in school-level African-American composition, districts with larger African-American populations have lower rates of students using services under both IDEA and Section 504.

Similar to racialized crime theories, race and health perspectives in medical sociology argue that discrimination and distrust in the American health care system translate into racial disparities in health and services provided (Link and Phelan 1995; Williams et al. 2010). Importantly, these disparities are going to exist even when socioeconomic disparities and access to resources are controlled for. Thus, similar to other forms of social control, when there is room for discretion, racial disparities are likely to be pronounced. Here, resources and decisions regarding IDEA are often

formally implemented at the district-level. District residents must seek out diagnosis and treatment from available providers (Gius 2007; Holler and Zirkel 2008; Zirkel 2011). Furthermore, funding for IDEA services is allocated among children at the district-level and not the school-level. On the other hand, Section 504 relies completely on school- and district-level discretion and resources (Gius 2007; Kim, Losen, and Hewitt 2010). Consequently, parents of students attending predominantly African-American schools in predominantly African-American districts may be less aware of services and rights than residents of other districts (Kim, Losen, and Hewitt 2010).

Findings also provide support for the third hypothesis, proposing that the positive association between school-level African-American composition and medicalized school discipline will be less pronounced in districts with relatively larger African-American populations. In predominately White school districts, residents may view African-American students as threatening to their childrens' economic well-being or safety (Pickett and Chiricos 2012; Welch and Payne 2010). Thus, African-American school children are more likely to be considered in need of social control and schools in these districts with relatively larger African-American student bodies are likely to use suspension and punishment at greater rates (Pickett and Chiricos 2012). For example, while district-wide zero tolerance expulsion policies are not likely to vary from district to district, the use of such measures within-district may be much greater in more racially diverse schools in Whiter districts (Hirschfield 2008; 2010; Kim, Losen, and Hewitt 2010). On the other hand, in districts with relatively larger African-American

populations, rates of school punishment may be relative high across all schools and less sensitive to within district differences in racial composition (Hirschfield 2008b).

Finally, findings provide support for part of the fourth hypothesis, that the negative association between school-level African-American composition and punitive school discipline will be more pronounced in districts with relatively larger African-American populations. Indeed, while the association between school-level racial composition and the use of Section 504 is more pronounced in districts with relatively larger African-American populations, the negative association between race and IDEA enrollment is actually attenuated in this same districts, eventually changing direction. If discrimination and distrust in the American health care system translate into racial disparities in health and services provided and drive both school and district level main effects, these disparities may be more pronounced when it comes to Section 504, which relies heavily on teacher and administrator discretion and available information and resources (Gius 2007; Kim, Losen, and Hewitt 2010). On the other hand, decisions regarding how IDEA is implemented across schools are implemented at the district-level and factors associated with IDEA, particularly formal diagnosis, are heavily conditioned by race (Miller, Nigg, and Miller 2009). Consequently, in predominantly African-American districts, slight differences in racial composition are less likely to matter for IDEA enrollment than for Section 504 (Kim, Losen, and Hewitt 2010). On the other hand, in predominately White districts, where residents are better equipped with information about treatment and their rights under the law, finite resources are more

likely to be distributed across to schools with relatively fewer African-American students (Kim, Losen, and Martinez 2010; Kupchik 2010).

While these findings present evidence that racial and ethnic population factors influence how schools implement measures of school discipline, there remain some unanswered questions. First, this project examines overall rates of criminalized and medicalized school discipline rather than analyze the race of students being punished or medicalized in the schools. While this information is available in the data, the strategy of describing broad patterns of school discipline rather than focusing on specific racial differences allows me to test for overall school environment. While future research will seek to answer important questions surrounding racially patterned use of discipline among different students in schools, an examination of broader patterns provides an excellent starting point for the conversation about the criminalization and medicalization of school discipline.

Additionally, the argument that the use of IDEA and Section 504 reflect the medicalization of school discipline does have several drawbacks. Importantly, schools use both IDEA and Section 504 for a range of disorders. While I tried to attend to this by including only those most associated with misbehavior, I am unable to account for misdiagnoses by school professionals. Nevertheless, models examining total IDEA enrollment yielded similar findings. Additionally, schools are allowed to suspend kids enrolled in an IDEA or Section 504 plan for short periods of time, provided they consider behavior problems. Indeed, rates of suspension for kids on IDEA plans are relatively high (Kim, Losen, and Hewitt 2010). However, as stated earlier, schools may be prone to

misdiagnose and punish kids with other disorders that have little to do with behavior. Particularly in African-American communities, where schools have limited human resources, behavior problems are more likely to go undiagnosed or treated as learning problems (Davison and Ford 2002; Kim, Losen, and Hewitt 2010). To ensure that I am examining how schools define and manage similar behavior problems, such as hyperactivity and classroom disruption, I rely on a measure including only those children covered plans that cover just those disorders characterized by behavioral symptoms.

Finally, the use of student-police contact as a control for extreme behavior problems in the school may underestimate the level of student misbehavior in the school. For example, teachers and administrators may have knowledge of illegal activity that they do not report to police or they may be more likely to suspend students for relatively minor infractions in lower crime schools. Despite these concerns, research suggests that actual police presence is relatively common in American schools (Kupchik 2009; 2010). Consequently, the likelihood of police officers allowing crime to go unabated is relatively low (Kupchik 2010). Moreover, minority students are actually more likely to be suspended for minor transgressions than are White students and the use of punitive school discipline for minor infractions is more common in schools with higher levels of crime and violence (Kupchik 2010).

Despite these shortcomings, this paper helps to bring together literatures from criminology and medical sociology on the social construction of the social control of childhood behavior. By examining how schools use criminalized and medicalized school discipline differently across different racial and ethnic contexts, this paper strengthens the

claim that criminalization and medicalization are racialized social processes that benefit majority Whites at the expense of racial and ethnic minorities. Furthermore, these disparities begin at extremely early ages and exist even when federal law requires that no such disparities exist (Kim, Losen, and Hewitt 2010). Findings from this paper confirm that attempts to examine deviance and misbehavior must consider the layering of medical and criminal social control, both at an individual and an institutional level.

Chapter 5: Conclusion

There has been a marked increase in the use of both punitive school discipline and therapy and medication to manage child problem behavior. However, research examining these different responses to child behavior problems is typically separated by disciplinary interests and rarely speaks to one another. Consequently, we know little about whether school punishment and therapy or medication affect the same children or whether they serve as alternative forms of social control for different groups of children. Additionally, research on these responses to child problem behavior have focused primarily on the short-term effects of either punishment or medication on grade repetition, high school graduation, and other indicators of well-being during childhood and adolescence (Barkley 1997;2002; Currie, Stabile, and Jones 2014; Rafalovich 2013). Scholars have yet to examine how early patterns of social construction of behavior problems serve to criminalize young men by increasing the risk of involvement in the criminal justice system or medicalize them through the repeated and routine reliance on mental health services to control behavior problems. These gaps in the research have left us with an incomplete understanding of how child problem behavior is socially constructed. Furthermore, despite increasing use of both punishment and medication, we remain unclear about the long-term and widespread impact of these changing policies.

Findings from the three papers deepen our understanding of how the layering of

social control is a racialized process which occurs throughout the life-course and manifests itself in multiple social institutions (Medina and McCranie 2011). Rooting this analysis in criminological and legal theories of criminalization (Hirschfield 2008a; Rios 2006; 2011; Simon 2007) and medical sociological theories of medicalization and health disparities (Conrad 1992b; 2007), I demonstrate that the problem behavior of African-Americans and Whites is socially constructed in fundamentally different ways from childhood through adolescence and young adulthood. Furthermore, I reveal how the racial composition of local populations influences the ways in which schools, as primary socializing institutions, construct and control child behavior by implementing different disciplinary strategies. Additionally, I incorporate contributions to labeling theory from both criminology and medical sociology (Link and Phelan 1995; Link et al. 1989; Lopes et al. 2012; Sampson and Laub 1997) to demonstrate how racial disparities in the social construction of problem behavior in childhood can translate into different life-course trajectories characterized by further criminalization or medicalization.

Drawing from this rich theoretical literature has enabled me to initiate an important and timely conversation between two literatures about how we, as a society, define and manage deviance. Below I provide a brief summary of the findings of each chapter and draw attention to several important contributions of this dissertation to the criminological and medical sociological literatures. I finish by addressing the limitations of this dissertation and describing future research plans that builds on these papers and further push our understanding of social control.

Summary of Results

Chapter 2 uses a focal concerns perspective and relies on contributions to labeling theory from both criminology and medical sociology to investigate racial disparities in the social construction of child problem behavior. I focus on two important processes for socially constructing behavior rooted in differing views on misbehavior and social control: school punishment (suspensions and expulsions) and the use of therapy or medication. In chapter 2, I argue that school punishment encompassed criminalization as social control because it excludes and isolates children who misbehave and marks them as a troublemaker for the remainder of their school career (Ferguson 2001; Rios 2011). On the other hand, the use of therapy or medication is medicalized social control because it relies on medical definitions and technology to manage behavior (Conrad 1992a). Because racial inequalities are prevalent throughout the criminal justice and mental health systems that influence these forms of social control, I argue that the social construction of child problem behavior will be racially patterned as well.

Overall, the findings from Chapter 2 support this hypothesis. First, as the use of suspensions and expulsions increased dramatically between 1988 and 2010, African-American boys are significantly more likely to be punished than White boys and White boys are significantly more likely to receive therapy or medication for behavior problems than African-American boys. Furthermore, racial differences in child problem behavior, as measured by the CBCL externalizing behavior scale, could not explain racial differences in punishment and therapy or medication. Finally, African-American boys are not only more likely to be suspended or expelled without receiving treatment for behavior

problems than White boys, , but the rate of increase in school punishment for African-American boys over time is far more pronounced.

Chapter 3 uses a group-based modeling strategy to test a series of hypotheses involving criminalized and medicalized social control as possible life-course trajectories that young men may follow. I draw on insights from both criminology and medical sociology regarding the long-term implications of labeling in childhood to demonstrate that labeling in childhood can influence involvement with varying institutions of social control across the life-course. Specifically, I argue that racial disparities in labeling in childhood help to contribute to racial disparities in criminalized and medicalized social control across the life-course.

Results from Chapter 3 are generally supportive of these hypotheses. Specifically, African-Americans are more likely than White boys to follow criminalized social control trajectories than low-risk trajectories. At the same time, White males are more likely than African-Americans to follow medicalized social control trajectories than low-risk trajectories. Furthermore, young men who were punished in school during childhood have a greater risk of following a trajectory associated with routine or repeated contact with the legal system and were unlikely to follow trajectories which involved seeking out mental health services to control behavior in adolescence and young adulthood. On the other hand, young men who experienced only therapy or medication during childhood with experiencing punishment were not significantly more likely than those who received no label to follow a criminalized life-course trajectory, but they were more likely to use mental health services for extended periods of the life-course. Finally,

because White boys with behavior problems are more likely to receive therapy or medication during childhood than African-American boys, they are able to avoid criminalized trajectories of social control. However, the use of therapy or medication increases the likelihood that White males will use medicalized social control during young adulthood. Conversely, for many African-Americans, school punishment may commence a process in which the misbehavior of young African-American males is viewed as criminal, thus leading to long-term criminalization throughout adulthood.

Chapter 4 shifts the focus to the ways in which school- and district-level racial composition can influence the use of both suspension and expulsion and the use of services covered under the Individuals with Disabilities Education Act (IDEA) of 1990 and Section 504 of the Rehabilitation Act of 1973, intended to provide tools to assist children with medically recognized behavior problems. Drawing from theories of racial inequality in both criminology and medical sociology, chapter 3 examines a series of hypotheses regarding the independent and moderating influence of school-level and district-level racial composition on both criminalized and medicalized school discipline.

Findings from Chapter 4 are generally supportive of these hypotheses. First, schools with relatively larger African-American student bodies have greater rates of school punishment than other schools in their districts. Additionally, districts with larger African-American populations have larger average rates of school punishment than other districts. Conversely, schools with relatively larger African-American student bodies have lower rates of students covered under IDEA or Section 504 than other schools in their districts. Furthermore, districts with larger African-American populations also have

lower rates of students covered under IDEA or Section 504 than do other districts. Finally, the positive association between school-level African-American composition and punitive school discipline is attenuated in districts with relatively larger African-American populations. On the other hand, the negative association between school-level African-American composition and rates of coverage under IDEA and Section 504 is more pronounced in districts with relatively larger African-American populations.

Contributions of Dissertation

This dissertation bridges criminological and medical sociological literatures on deviance and social control over the life-course and across multiple units of analysis. Generally speaking, this dissertation addresses racial disparities in social control at very young ages. Furthermore, it reveals that these disparities only intensify over time and over the life-course. Finally, this dissertation points to the important role that schools play in socially constructing child problem behavior across racially distinct communities.

Racial Disparities in the “Layering” of Social Control

Chapter 2 suggests that, while the frequent display of problem behaviors during childhood increases the likelihood of both school punishment and the use of therapy or medication, it does not explain the association between race and labeling. Furthermore, the problem behavior of Whites and African-Americans in socially constructed in

fundamentally different ways. Findings from Chapter 2 suggest that scholars need to examine racial inequalities in the criminalization and medicalization of behavior problems beginning at very early ages.

There is scant research on the long-term implications of the labeling of child problem behavior. Findings from Chapter 3 reveal that racial disparities in the social construction of child problem behavior translate into racial disparities in social control in young adulthood. One of the most interesting findings from Chapter 3 is the ways in which criminalized or medicalized forms of social construction in childhood not only increase the odds of similar forms of adult social control, but block off pathways to different social control. For example, punishment does not lead to treatment in the future and treatment may prevent long-term involvement with the criminal justice system. Thus, because Whites are more likely to use medicalization, they can escape long-term criminalization. Indeed, even Whites are punished in school, the use of therapy and medication during childhood can help them to avoid legal troubles later in life.

Chapter 4 draws attention to school discipline, particularly the use of medicalization as social control in schools. While a growing body of criminological and sociological research has examined racial disparities in school punishment, none have considered how schools effectively operate as clinics for children with diagnosed (or undiagnosed) behavior problems. Findings of both school- and district-level racial disparities in these forms of discipline are important. Notably, because schools with larger African-American student bodies do have higher levels of misbehavior (Skiba et al. 2013), the overreliance of punitive discipline and the underuse of IDEA and Section

504 may exacerbate racial inequalities early in childhood and further contribute to disparities across the life-course.

Policy Implications

There are a number of policy implications that can be gleaned from this dissertation. First and foremost, this dissertation continues to shed light on ill-conceived and poorly executed harsh school disciplinary policies that provide limited deterrence and almost no long-term benefits for children. Importantly, as Chapter 2 reveals, these policies are much more likely to affect young African-American boys than White boys over time, even after controlling for problem behavior. Furthermore, as Chapter 4 suggests, these policies are more abundant in schools and districts with relatively larger African-American populations. Consequently, the negative outcomes associated with school punishment, including possible long-term involvement in the criminal justice system, is concentrated among already disadvantaged African-American males.

While this dissertation suggests that caution should be taken when dispensing harsh school punishment, it does not claim that schools should increase the use of therapy and medication instead. While I make the argument that medicalization is, in most cases, a more preferable alternative to school punishment, it is not without its downsides. In particular, Chapter 3 suggests that early therapy and medication establishes a long-term pattern of medicalized social control. While more severe behavior problems may subside, repeated and routine use of psychotropic medication may lead to other problems,

including depression (Currie, Stabile, and Jones 2013) and an overreliance on medicalization instead of dealing with social problems that may underlay problem behavior (Conrad 2007).

Finally, if the federal government is going to mandate adherence to two qualitatively different school disciplinary procedures, there needs to be clearer guidelines about when and where each approach is appropriate. Furthermore, there should be improved funding behind IDEA programs and increased awareness in the African-American community of their children's legal rights under both IDEA and Section 504. In order to provide children with an equal and free access to a public education, we need to structure the social control of child behavior problem in an more equitable and beneficial manner that is conducive to rehabilitation rather than exclusion.

Limitations and Future Directions

There are several limitations to this dissertation that must be addressed in future research. First, because the NLSY79-CYA was intended to capture aspects of health and development in childhood, there are not good measures of school racial and disciplinary context. This is an important omission, since African-American boys are more likely to attend predominately African-American school with harsh disciplinary policies. Not only does school environment influence the decision to punish or provide therapy and treatment, but schools with harsh disciplinary policies may influence long-term trajectories as well. For example, Hirschfield (2008a) and colleagues suggest that school

discipline criminalizes all students, not just those who misbehave (Kupchik 2010). For example, the use of uniforms and SROs to closely monitor movement in the hallway reflects the ways in which prisons manage the behavior of convicts (Hirschfield 2008a; Kupchik and Monahan 2006). This serves to prepare African-American students in particular for an adulthood in which risk of incarceration is a much more salient experience, regardless of behavior (Wacquant 2001). While I attempt to address this limitation in Chapter 4, by taking a unique look at how schools organize their own disciplinary policies, I am unable to assess how school policies affect individual students attending these schools.

Another limitation of dissertation is the focus on just African-Americans and Whites (and just males in the first two chapters). Indeed, research suggests that Latinos experience similar forms of discrimination in both the criminal justice and healthcare systems (Alegria et al. 2008; Losen and Martinez 2013). For Chapters 1 and 2, I reduce my sample to the male children of African-American and White mothers. I focus on young males for several reasons. First, younger male children are overwhelmingly more likely to be suspended or expelled and diagnosed with behavior disorders than their female peers. Second, many of the mechanism behind the labeling of behavior vary for boys and girls (Bertrand and Pan 2013; Cuffe, Moore, and McKeown 2005). I chose to remove children of Latino descent for similar reasons. In particular, Latinos in the NLSY – Child Survey are not representative of Latinos nationwide. Like the rest of the sample, they are representative of young boys born to US mothers who were ages 14-22 in 1979, and are thus native-born. Second, decisions about punishment, schooling, and medical

treatment for Latinos are often informed by things such as language barriers and immigration status, something that does not necessarily apply to White and Black boys (Alegria et al. 2008; Losen and Martinez 2013). While scholars have demonstrated that Latinos are over-represented in school punishment statistics (Losen and Martinez 2013; Rios 2011) and may be underserved by the mental health system (Alegria et al. 2008), I save these questions for future analysis.

These limitations notwithstanding, this dissertation advances our knowledge on how race influences important social control practices including and beyond the criminal justice system. In doing so, this dissertation provides a framework for future research on the criminalization and medicalization of social control. For example, as mentioned early, future research should include Latinos and females. Importantly, for Latinos, scholars need to consider the dual nature of criminalization as well. Specifically, not only are the behavior problems of Latinos more likely to be viewed with suspicion but, in many contexts, their very presence can be criminalized through misperceptions of immigration status (Rios 2009). Furthermore, while the behavior problems of males and females may manifest themselves differently, there is a growing convergence in terms of social responses to these behaviors, as the rates of both punishment and medicalization of females is growing steadily (Cuffe, Moore, and McKeown 2005; Losen and Martinez 2013).

Additionally, future research should consider the ways in which increases in incarceration rates and changes in the funding and effectiveness of public health and educational services influence the rates of prescriptions for behavioral medication. For

example, as states and districts rely on increasingly punitive school disciplinary policies, do White parents use their resources to preemptively seek treatment for their children's minor behavior problems as a means of providing an extra disciplinary buffer. By examine individual rates of punishment and medication usage across varying disciplinary and racial contexts, I can get a more nuanced view of just who is getting criminalized or medicalized and under what conditions.

In conclusion, these findings demonstrate that racial disparities in social control begin early in life, continue well into adulthood, and exist at both individual and institutional levels. In shedding light on these key patterns, I draw attention to the important role of race and racial minority status in influencing how behavior is socially constructed and what strategies of social control are most important. These findings demonstrate that race matters, at times more than problem behavior and economic resources. Thus, a legacy of racialized social control that began with slavery and Jim Crow and continued with mass incarceration may indeed extend well into childhood (Alexander 2012; Irwin, Davidson, and Hall-Sanchez 2013; Kupchik and Ward 2013). As this dissertation reveals, these preconceived notions of criminality and mental health reproduce longstanding inequalities that systematically channel White boys out of harm's way through therapy and medication while painting the problems of African-American males as immoral and criminal.

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Appendix A: Tables from Chapter 2

Table A.1. Descriptive Statistics

	White boys		African-American boys
Dependent variable			
Neither punished nor treated	87.74%	***	78.19%
Diagnosis/Treatment only	7.18%	***	4.02%
School punishment only	3.36%	***	15.52%
Treatment & School Punishment	1.72%	*	2.26%
Independent variables			
Externalizing behavior symptoms	5.50	***	6.12
Age	9.96	***	10.24
Elementary school	70.50%	**	67.77%
Repeated a grade	9.18%	***	26.49%
PIAT Reading Recognition score	107.67	***	98.14
PIAT Math score	107.60	***	95.77
Attended Head Start	7.73%	***	38.72%
Poverty	10.41%	***	40.94%
Mother's Education (Yrs)	13.54	***	12.56
<i>Mother's Employment Status</i>			
Full-time	22.79%	***	26.71%
Unemployed	45.42%	***	36.65%
Part-time	31.79%	***	36.64%
N (Person-Years)	7,483		4,631
N (Individuals)	2,248		1,398
<i>Insurance Coverage</i>			
No Insurance	5.31%		5.78%
Private insurance	84.68%	***	54.45%
Public insurance	10.01%	***	39.76%
Mother currently married	79.67%	***	36.27%
Single Mother	10.60%	***	34.83%
Number of siblings	1.86	***	2.10
Home environment score	0.31	***	-0.45
<i>Residential status</i>			
Suburban	50.45%	+	48.19%
Rural	31.26%	***	15.69%
Urban	18.28%	***	36.12%
<i>Region of country</i>			
Northeast	18.38%	***	13.97%
Midwest	35.03%	***	19.51%
South	30.87%	***	58.89%
West	15.73%	***	7.63%
Mother under 20 at birth	5.97%	***	18.33%
Birth order	1.90	***	2.18
Maternal smoking during pregnancy	30.89%	***	32.03%
Maternal drinking during pregnancy	54.78%	***	36.79%
N (Person-Years)	7,483		4,631
N (Individuals)	2,248		1,398

Notes: All data are weighted to reflect the complex sampling design of the NLSY79 study

Table A.2. Multinomial Models (clustered SE) of Punishment only, Therapy/Medication only, and both Punishment and Therapy/Medication (Neither Punished nor Therapy/Medication is reference category)

	Therapy/Medication				School Punishment				Both Punishment and Therapy/Medication			
	b		SE	exp(b)	b		SE	exp(b)	b		SE	exp(b)
Year	0.095	**	0.037	1.099	0.165	***	0.039	1.180	0.339	***	0.07559	1.404
Year ²	-0.002		0.002	0.998	-0.008	***	0.002	0.992	-0.011	***	0.002895	0.989
African-American												
Externalizing behaviors												
African-American* Year												
African-American * Year2												
Age	0.103	*	0.027	1.109	0.477	***	0.034	1.611	0.298	***	0.067	1.347
Elementary school	0.383	**	0.130	1.467	0.094		0.136	1.099	-0.019		0.223	0.981
Repeated a grade	0.506	**	0.176	1.658	0.502	***	0.130	1.652	0.957	***	0.224	2.604
PIAT Reading Recognition score	-0.023	***	0.005	0.978	-0.010	*	0.004	0.990	-0.012		0.008	0.988
PIAT Math score	-0.005		0.005	0.995	-0.004		0.005	0.996	0.005		0.007	1.005
Attended Head Start	0.375	*	0.177	1.454	0.324	**	0.120	1.383	0.123		0.249	1.131
Poverty	-0.509	**	0.165	0.601	-0.209		0.147	0.811	-0.547	*	0.229	0.578
Mother's Education (Yrs)	0.010		0.022	1.010	0.020		0.023	1.020	-0.034		0.053	0.966
Unemployed ^a	0.098		0.132	1.103	0.335	**	0.122	1.398	0.435	+	0.223	1.545
Part-time ^a	-0.246		0.159	0.782	0.351	**	0.143	1.420	0.508	+	0.270	1.661
Private insurance ^b	0.430	+	0.241	1.537	-0.077		0.174	0.926	-0.142		0.328	0.868
Public insurance ^b	0.915	*	0.259	2.496	0.420	*	0.194	1.522	0.925	**	0.355	2.521
Mother currently married	0.126		0.180	1.134	-0.576	*	0.142	0.562	-0.431		0.267	0.650
Single Mother	0.251		0.166	1.285	0.104		0.133	1.110	0.046		0.232	1.047
Number of siblings	-0.077		0.050	0.926	-0.042		0.043	0.959	-0.020		0.070	0.980
Home environment score	-0.128	+	0.069	0.880	-0.258	***	0.055	0.773	-0.284	**	0.094	0.752
Rural ^c	-0.312	*	0.132	0.732	-0.539	***	0.124	0.583	-0.141		0.213	0.868
Urban ^c	-0.074		0.135	0.928	0.365	**	0.127	1.441	0.041		0.208	1.042
Northeast ^d	-0.405	*	0.190	0.667	-0.069		0.189	0.933	-0.253		0.294	0.777
South ^d	0.042		0.150	1.043	0.299	*	0.137	1.349	0.088		0.247	1.092
West ^d	0.092		0.188	1.097	-0.002		0.184	0.998	0.046		0.334	1.047
Mother under 20 at birth	-0.586	*	0.238	0.557	0.377	*	0.168	1.458	0.228		0.343	1.256
Birth order	-0.143	*	0.066	0.867	0.094		0.058	1.099	-0.102		0.092	0.903
Maternal smoking during pregnancy	0.237	+	0.136	1.268	0.357	**	0.125	1.428	0.566	*	0.221	1.761
Maternal drinking during pregnancy	0.173		0.130	1.189	-0.077		0.114	0.926	0.057		0.216	1.059
Intercept	-4.175		0.394		-4.153		0.365		-6.580		0.642	

+ p < .10 * p < .05 ** p < .01 *** p < .001

^a reference is Full-Time

^b reference is Uninsured

^c reference is Suburban

^d reference is Midwest

Table A.3. Multinomial Models (clustered SE) of Punishment only, Therapy/Medication only, and both Punishment and Therapy/Medication (Neither Punished nor Therapy/Medication is reference category)

	Therapy/Medication				School Punishment				Both Punishment and Therapy/Medication			
	b		SE	exp(b)	b		SE	exp(b)	b		SE	exp(b)
Year	0.093	*	0.037	1.097	0.172	***	0.039	1.188	0.338	***	0.076	1.402
Year ²	-0.002		0.002	0.998	-0.008	***	0.002	0.992	-0.011	***	0.003	0.989
African-American	-1.198	***	0.182	0.302	1.006	***	0.144	2.735	-0.354		0.248	0.702
Externalizing behaviors												
African-American* Year												
African-American * Year ²												
Age	0.106	***	0.027	1.112	0.481	***	0.035	1.618	0.296	***	0.066	1.345
Elementary school	0.384	**	0.131	1.468	0.120		0.137	1.127	-0.024		0.224	0.976
Repeated a grade	0.517	**	0.177	1.677	0.515	***	0.131	1.674	0.958	***	0.224	2.607
PIAT Reading Recognition score	-0.024	***	0.005	0.977	-0.008	+	0.004	0.992	-0.013		0.008	0.987
PIAT Math score	-0.008	+	0.005	0.992	0.002		0.005	1.002	0.004	+	0.007	1.004
Attended Head Start	0.580	**	0.186	1.785	0.130		0.122	1.139	0.179		0.255	1.196
Poverty	-0.401	*	0.163	0.669	-0.295	*	0.149	0.745	-0.513	*	0.232	0.598
Mother's Education (Yrs)	0.018		0.022	1.019	0.005		0.029	1.005	-0.029		0.052	0.972
Unemployed ^a	0.091		0.132	1.096	0.371	**	0.123	1.449	0.429	+	0.224	1.536
Part-time ^a	-0.191		0.159	0.826	0.300	*	0.145	1.350	0.522	+	0.271	1.685
Private insurance ^b	0.479	*	0.241	1.615	-0.118		0.171	0.889	-0.133		0.331	0.875
Public insurance ^b	1.033	***	0.256	2.810	0.302		0.192	1.352	0.955	**	0.364	2.599
Mother currently married	0.039		0.178	1.040	-0.425	**	0.141	0.654	-0.467	+	0.267	0.627
Single Mother	0.309	+	0.169	1.363	0.075		0.132	1.078	0.058		0.233	1.060
Number of siblings	-0.067		0.050	0.935	-0.049		0.043	0.952	-0.016		0.070	0.985
Home environment score	-0.164	*	0.070	0.849	-0.215	***	0.055	0.807	-0.295	**	0.095	0.744
Rural ^c	-0.434	**	0.136	0.648	-0.364	**	0.128	0.695	-0.185		0.216	0.831
Urban ^c	0.021		0.134	1.021	0.270	*	0.130	1.309	0.088		0.209	1.092
Northeast ^d	-0.307		0.192	0.736	-0.208		0.184	0.812	-0.210		0.290	0.810
South ^d	0.209		0.153	1.233	0.080		0.145	1.083	0.146		0.249	1.157
West ^d	0.066		0.189	1.068	0.056		0.186	1.057	0.032		0.335	1.033
Mother under 20 at birth	-0.503	*	0.239	0.605	0.300	+	0.166	1.350	0.251		0.344	1.285
Birth order	-0.128	+	0.068	0.880	0.066		0.058	1.068	-0.093		0.092	0.912
Maternal smoking during pregnancy	0.157		0.140	1.170	0.446	**	0.128	1.563	0.540	*	0.226	1.717
Maternal drinking during pregnancy	0.121		0.129	1.128	-0.006		0.116	0.994	0.042		0.215	1.043
Intercept	-4.045				-4.525				-6.500		0.645	

+ p < .10 * p < .05 ** p < .01 *** p < .001

N (Person-Years)

N (Individuals)

^a reference is Full-Time

^b reference is Uninsured

^c reference is Suburban

^d reference is Midwest

Table A.4. Multinomial Models (clustered SE) of Punishment only, Therapy/Medication only, and both Punishment and Therapy/Medication (Neither Punished nor Therapy/Medication is reference category)

	Therapy/Medication			School Punishment			Both Punishment and Therapy/Medication		
	b	SE	exp(b)	b	SE	exp(b)	b	SE	exp(b)
Year	0.148 ***	0.039	1.159	0.214 ***	0.040	1.238	0.484 ***	0.092	1.623
Year ²	-0.003 *	0.002	0.997	-0.009 ***	0.002	0.991	-0.016 ***	0.003	0.985
African-American	-0.967 ***	0.183	0.380	1.182 ***	0.146	3.260	0.194	0.258	1.214
Externalizing behaviors	0.231 ***	0.014	1.259	0.182 ***	0.013	1.200	0.424 ***	0.021	1.529
African-American* Year									
African-American * Year ²									
Age	0.124 ***	0.028	1.132	0.508 ***	0.036	1.662	0.367 ***	0.072	1.444
Elementary school	0.361 **	0.135	1.435	0.137	0.141	1.147	-0.004	0.244	0.996
Repeated a grade	0.318 +	0.188	1.374	0.401 **	0.137	1.494	0.506 *	0.239	1.659
PIAT Reading Recognition score	-0.023 ***	0.005	0.977	-0.007 +	0.004	0.993	-0.015 +	0.008	0.985
PIAT Math score	-0.007	0.005	0.993	0.004	0.005	1.004	0.012	0.008	1.012
Attended Head Start	0.500 **	0.190	1.649	0.076	0.124	1.079	0.076	0.262	1.079
Poverty	-0.443 **	0.170	0.642	-0.354 *	0.152	0.702	-0.709 **	0.252	0.492
Mother's Education (Yrs)	0.021	0.025	1.021	0.008	0.032	1.008	-0.014	0.055	0.986
Unemployed ^a	0.045	0.136	1.046	0.320 *	0.125	1.377	0.405	0.262	1.499
Part-time ^a	-0.232	0.162	0.793	0.266 +	0.145	1.305	0.554 +	0.301	1.741
Private insurance ^b	0.575 *	0.248	1.777	-0.039	0.180	0.961	0.021	0.364	1.021
Public insurance ^b	0.932 ***	0.265	2.539	0.260	0.199	1.297	0.756 +	0.404	2.130
Mother currently married	0.039	0.180	1.040	-0.443 **	0.143	0.642	-0.461	0.285	0.631
Single Mother	0.362 *	0.172	1.436	0.112	0.135	1.119	0.161	0.251	1.174
Number of siblings	-0.088 +	0.052	0.916	-0.067	0.044	0.936	-0.048	0.079	0.954
Home environment score	0.000	0.075	1.000	-0.097 +	0.056	0.908	0.027	0.101	1.028
Rural ^c	-0.459 **	0.139	0.632	-0.397 **	0.131	0.673	-0.308	0.232	0.735
Urban ^c	-0.008	0.136	0.992	0.255 +	0.132	1.290	0.040	0.218	1.041
Northeast ^d	-0.225	0.191	0.798	-0.178	0.187	0.837	-0.153	0.308	0.858
South ^d	0.211	0.158	1.235	0.119	0.147	1.127	0.311	0.244	1.365
West ^d	0.044	0.193	1.045	0.061	0.189	1.063	0.153	0.354	1.166
Mother under 20 at birth	-0.518 *	0.238	0.595	0.354 *	0.168	1.425	0.443	0.372	1.558
Birth order	-0.118 +	0.072	0.888	0.079	0.059	1.082	-0.060	0.096	0.942
Maternal smoking during pregnancy	0.023	0.142	1.023	0.344 *	0.132	1.410	0.331	0.224	1.393
Maternal drinking during pregnancy	0.097	0.132	1.102	-0.013	0.118	0.987	0.033	0.219	1.034
Intercept	-4.584	0.408		-4.968	0.377		-8.668	0.762	

+ p < .10 * p < .05 ** p < .01 *** p < .001

^a reference is Full-Time

^b reference is Uninsured

^c reference is Suburban

^d reference is Midwest

Table A.5. Multinomial Models (clustered SE) of Punishment only, Therapy/Medication only, and both Punishment and Therapy/Medication (Neither Punished nor Therapy/Medication is reference category)

	Therapy/Medication			School Punishment			Both Punishment and Therapy/Medication		
	b	SE	exp(b)	b	SE	exp(b)	b	SE	exp(b)
Year	0.151 ***	0.043	1.162	0.139 *	0.057	1.149	0.475 ***	0.108	1.608
Year ²	-0.003 +	0.002	0.997	-0.005 *	0.002	0.995	-0.015 ***	0.004	0.985
African-American	-0.821 *	0.362	0.440	0.524 +	0.305	1.689	-0.001	0.880	0.999
Externalizing behaviors	0.231 ***	0.014	1.259	0.181 ***	0.013	1.198	0.424 ***	0.021	1.528
African-American* Year	-0.031	0.070	0.970	0.159 *	0.065	1.172	0.017	0.158	1.017
African-American * Year ²	0.001	0.003	1.001	-0.007 *	0.003	0.993	0.000	0.006	1.000
Age	0.124 ***	0.028	1.132	0.511 ***	0.036	1.667	0.366 ***	0.072	1.442
Elementary school	0.362 **	0.135	1.436	0.145	0.141	1.156	-0.010	0.244	0.990
Repeated a grade	0.318 +	0.189	1.374	0.381 **	0.137	1.464	0.514 *	0.240	1.672
PIAT Reading Recognition score	-0.023 ***	0.005	0.977	-0.007 +	0.004	0.993	-0.015 +	0.008	0.986
PIAT Math score	-0.007	0.005	0.993	0.004	0.005	1.004	0.012	0.008	1.012
Attended Head Start	0.501 **	0.190	1.651	0.083	0.125	1.086	0.079	0.263	1.082
Poverty	-0.444 *	0.171	0.642	-0.354 *	0.152	0.702	-0.703 **	0.251	0.495
Mother's Education (Yrs)	0.021	0.025	1.021	0.007	0.031	1.007	-0.013	0.055	0.988
Unemployed ^a	0.047	0.137	1.048	0.310 *	0.125	1.363	0.406	0.263	1.501
Part-time ^a	-0.232	0.162	0.793	0.255 +	0.146	1.290	0.551 +	0.302	1.735
Private insurance ^b	0.573 *	0.248	1.774	-0.039	0.180	0.962	0.031	0.364	1.031
Public insurance ^b	0.930 ***	0.265	2.534	0.273	0.199	1.314	0.762 +	0.406	2.143
Mother currently married	0.040	0.180	1.041	-0.444 **	0.143	0.641	-0.456	0.284	0.634
Single Mother	0.363 *	0.172	1.437	0.109	0.136	1.115	0.165	0.250	1.179
Number of siblings	-0.087 +	0.052	0.916	-0.069	0.044	0.933	-0.049	0.079	0.953
Home environment score	0.000	0.075	1.000	-0.093 +	0.056	0.911	0.023	0.102	1.024
Rural ^c	-0.461 **	0.140	0.631	-0.386 **	0.132	0.680	-0.309	0.233	0.734
Urban ^c	-0.006	0.137	0.994	0.257 *	0.136	1.294	0.014	0.220	1.014
Northeast ^d	-0.225	0.191	0.799	-0.180	0.186	0.835	-0.154	0.308	0.858
South ^d	0.212	0.158	1.236	0.112	0.148	1.119	0.309	0.245	1.362
West ^d	0.045	0.193	1.046	0.053	0.189	1.055	0.152	0.354	1.165
Mother under 20 at birth	-0.515 *	0.238	0.598	0.362 *	0.166	1.437	0.457	0.375	1.579
Birth order	-0.118	0.072	0.889	0.076	0.059	1.079	-0.060	0.096	0.941
Maternal smoking during pregnancy	0.023	0.142	1.024	0.343 *	0.132	1.410	0.325	0.224	1.383
Maternal drinking during pregnancy	0.098	0.132	1.103	-0.016	0.118	0.984	0.033	0.220	1.034
Intercept	-4.603	0.419	0.010	-4.626	0.426	0.010	-8.588	0.829	0.000

+ p <.10 * p<.05 ** p<.01 *** p<.001

^a reference is Full-Time

^b reference is Uninsured

^c reference is Suburban

^d reference is Midwest

Appendix B: Figures from Chapter 2

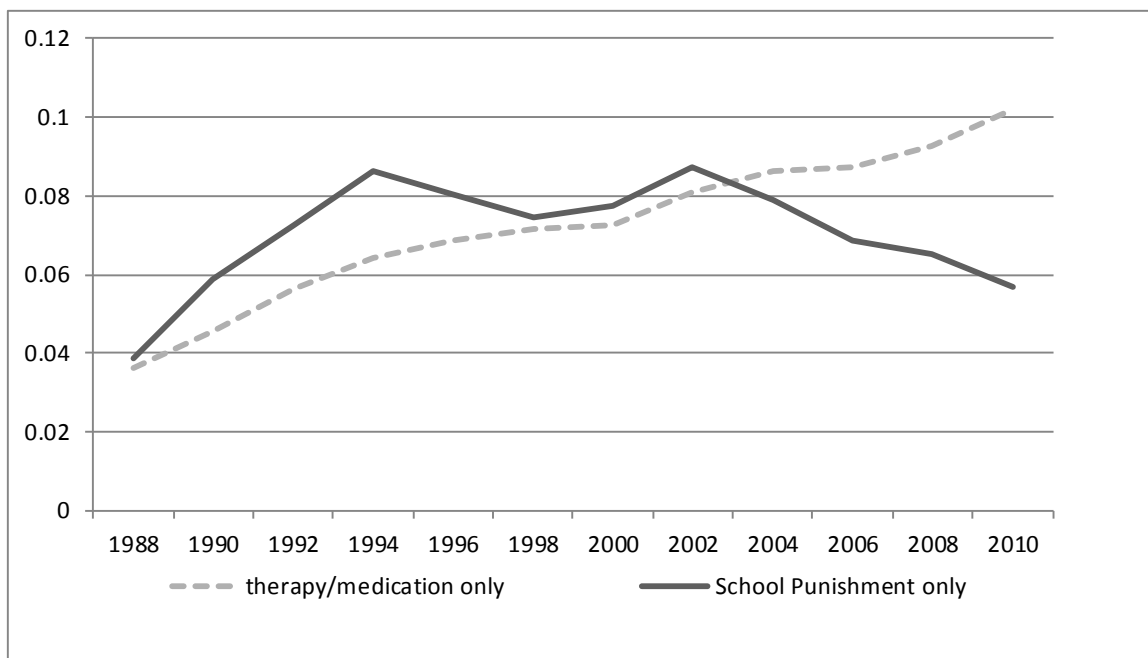


Figure B.1: Predicted probabilities of receiving only therapy/medication or only school punishment (versus no response) between 1988 and 2010 (Full Sample)

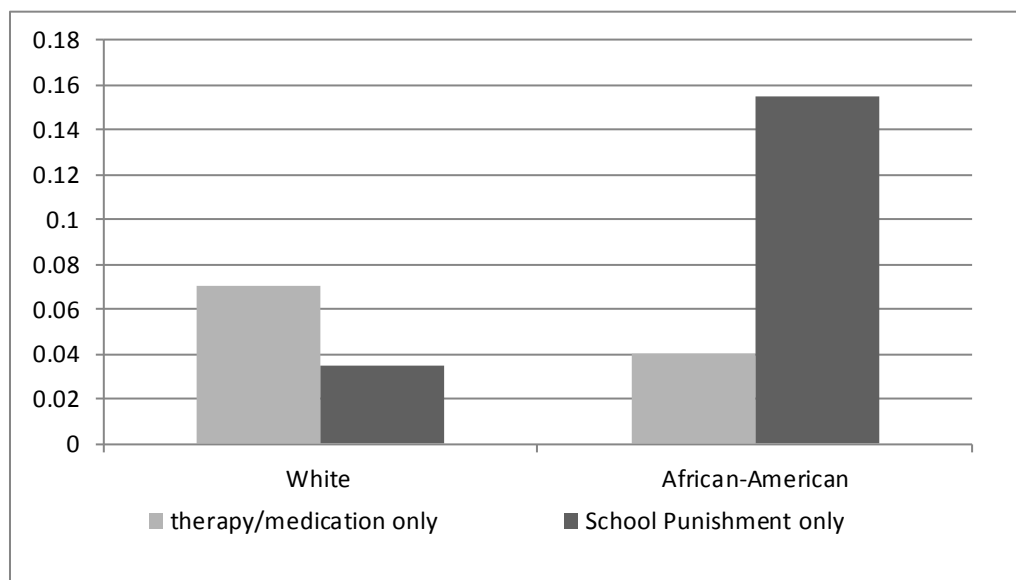


Figure B.2: Predicted probabilities of only receiving therapy/medication or school punishment (versus no response) between 1988 and 2010

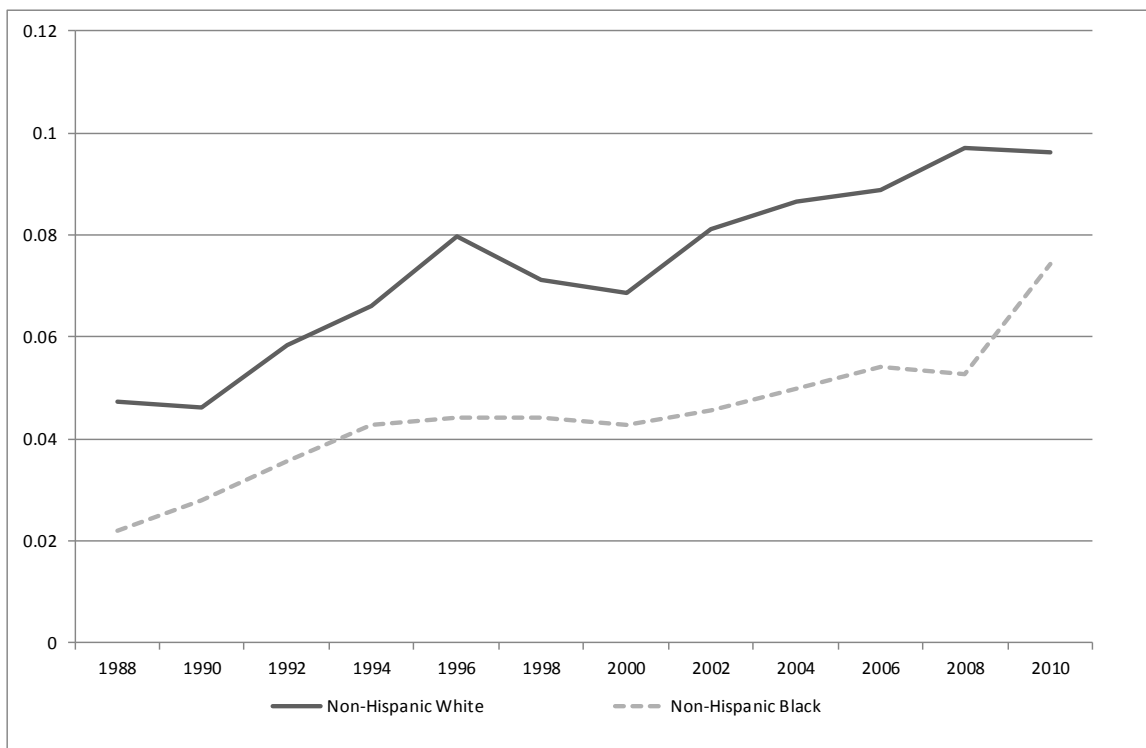


Figure B.3: Predicted probabilities of only receiving therapy/medication (versus no response) between 1988 and 2010

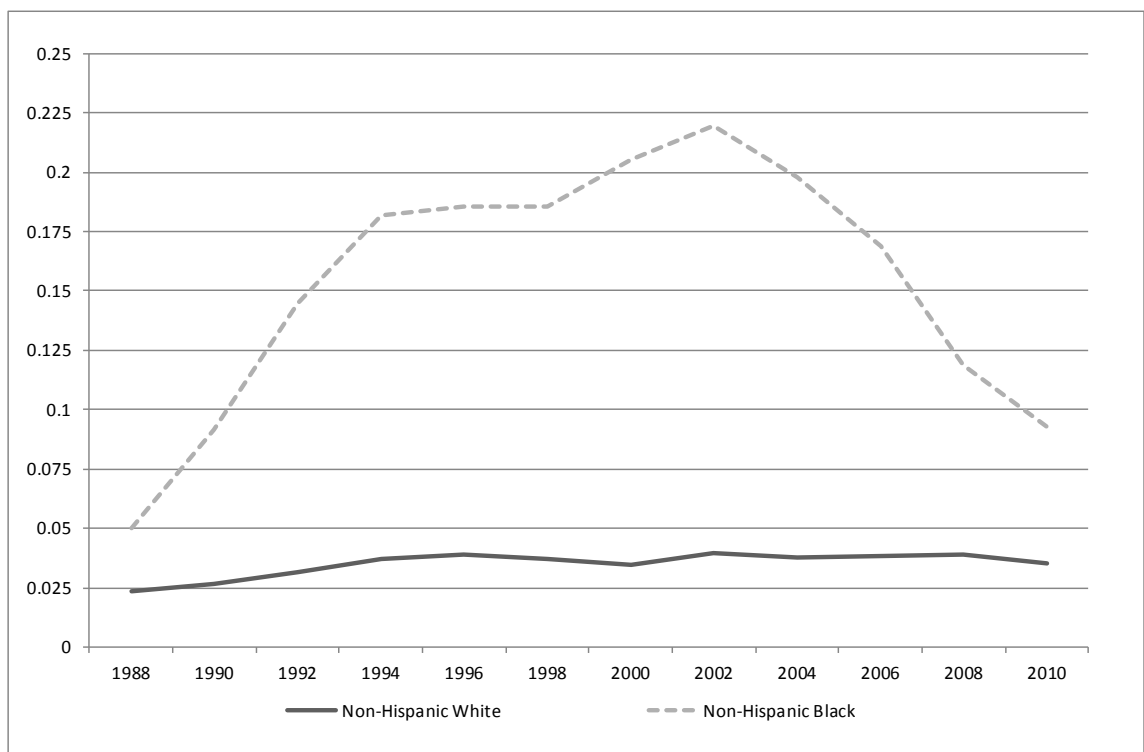


Figure B.4: Predicted probabilities of only receiving school punishment (versus no response) between 1988 and 2010

Appendix C: Tables from Chapter 3

Table C.1. Multinomial Logistic Models of Involvement in Trajectories of Criminalized Social Control (reference is low-risk group), National Longitudinal Survey of Youth - Young Adult Sample (N= 2,698)

	Adolescent-Limited			Life-Course Persistent		
	b	SE	exp(b)	b	SE	exp(b)
African-American	-0.326	0.291	0.722	1.038 **	0.356	2.822
Therapy/Medication only ^a	0.622	0.405	1.862	0.413	0.564	1.511
School punishment only ^a	0.771 **	0.283	2.162	1.313 ***	0.264	3.718
Therapy/Medication & School Punishment ^a	1.663 ***	0.376	5.274	1.271 **	0.449	3.564
Externalizing behavior symptoms	0.114	0.128	1.121	0.261 *	0.124	1.298
Poverty	1.169 ***	0.343	3.220	-0.120	0.283	0.887
PIAT Reading Recognition score	-0.024 +	0.012	0.977	0.003	0.012	1.003
PIAT Math score	0.011	0.014	1.012	-0.008	0.014	0.992
Repeated a grade	0.087	0.267	1.091	-0.564 *	0.281	0.569
Enrolled in Head Start	0.433 +	0.254	1.541	-0.069	0.244	0.934
Single Mother	0.306	0.246	1.358	-0.058	0.247	0.943
Mother's Education (Yrs)	-0.209 ***	0.057	0.812	-0.164 **	0.061	0.849
Urban ^b	0.154	0.307	1.167	-0.529	0.360	0.589
Rural ^b	-0.154	0.290	0.858	-0.036	0.243	0.965
Northeast ^c	0.123	0.454	1.131	-0.297	0.367	0.743
South ^c	0.027	0.431	1.027	-0.382	0.331	0.682
West ^c	0.540	0.481	1.715	-0.900 +	0.536	0.407
Mother under 20 at birth	-0.478	0.362	0.620	0.310	0.295	1.364
Year born	-0.026	0.030	0.974	-0.068	0.044	0.934

^a reference is No Labeling Events

^b reference is Suburban

^c reference is Midwest

+ p < .10 * p < .05 ** p < .01 *** p < .001

Table C.2. Multinomial Logistic Models of Involvement in Trajectories of Medicalized Social Control (reference is low-risk group), National Longitudinal Survey of Youth - Young Adult Sample (N= 2,605)

	Adolescent-Limited			Life-Course Persistent		
	b	SE	exp(b)	b	SE	exp(b)
African-American	0.367	0.634	1.443	-1.155 **	0.367	0.315
Therapy/Medication only ^a	2.607 **	0.793	13.554	1.991 ***	0.356	7.324
School punishment only ^a	0.005	0.790	1.005	0.202	0.485	1.224
Therapy/Medication & School Punishment ^a	2.666 **	0.991	14.388	2.205 ***	0.443	9.074
Externalizing behavior symptoms	0.174	0.232	1.190	0.290 +	0.148	1.337
Poverty	0.332	0.614	1.394	-0.254	0.321	0.775
PIAT Reading Recognition score	0.017	0.024	1.017	0.008	0.013	1.008
PIAT Math score	-0.060	0.033	0.942	-0.018	0.015	0.982
Repeated a grade	0.225	0.508	1.253	-0.278	0.386	0.757
Enrolled in Head Start	0.591	0.528	1.807	-0.292	0.442	0.747
Single Mother	-0.755	0.560	0.470	-0.103	0.319	0.902
Mother's Education (Yrs)	-0.164	0.111	0.849	0.101	0.065	1.106
Urban ^b	1.269 +	0.749	3.558	-0.104	0.340	0.901
Rural ^b	0.641	0.698	1.898	0.248	0.314	1.282
Northeast ^c	0.240	0.938	1.271	0.052	0.438	1.053
South ^c	-0.687	0.837	0.503	0.145	0.413	1.156
West ^c	0.019	1.024	1.020	0.116	0.481	1.123
Mother under 20 at birth	1.129 +	0.675	3.092	0.462	0.466	1.587
Year born	0.056	0.081	1.058	0.090 *	0.040	1.094

^a reference is No Official Labeling

^b reference is Suburban

^c reference is Midwest

+ p < .10 * p < .05 ** p < .01 *** p < .001

Appendix D: Figures from Chapter 3

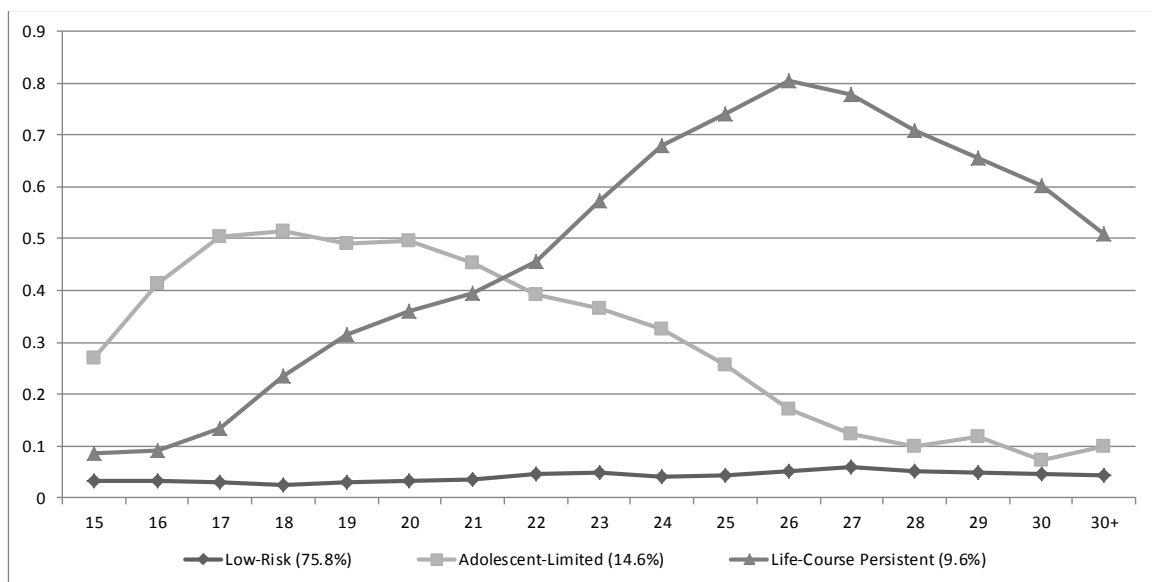


Figure D.1. Low-Risk, Adolescent-Limited, and Life-Course Persistent Trajectories of Criminalized Social Control

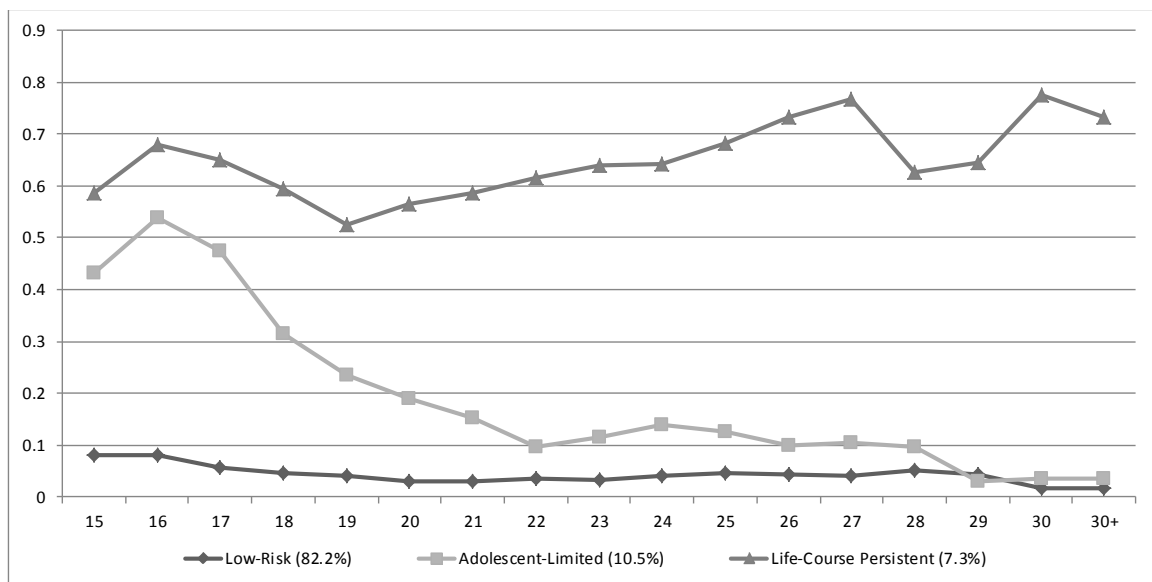
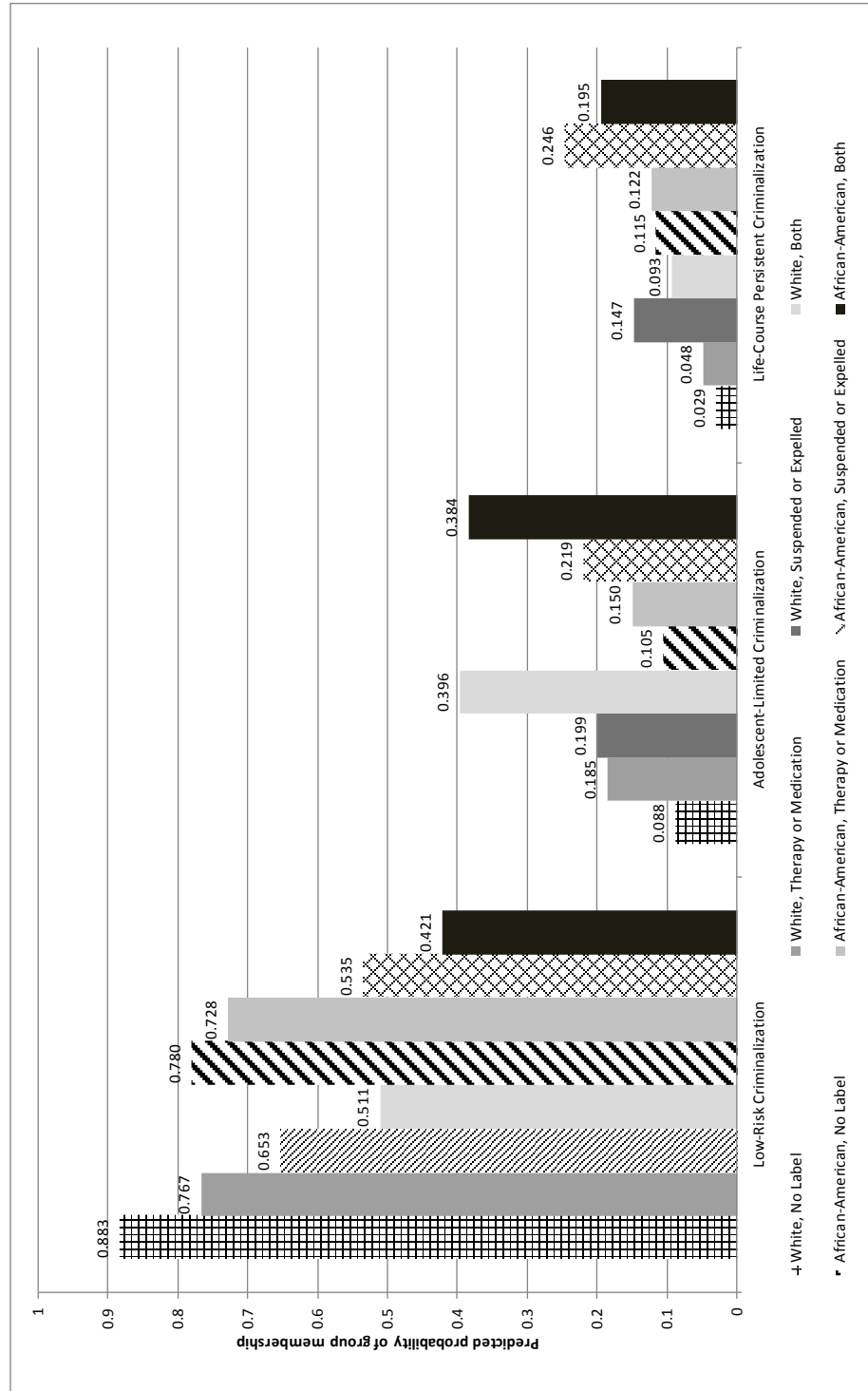


Figure D.2. Low-Risk, Adolescent-Limited, and Life-Course Persistent Trajectories of Medicalized Social Control



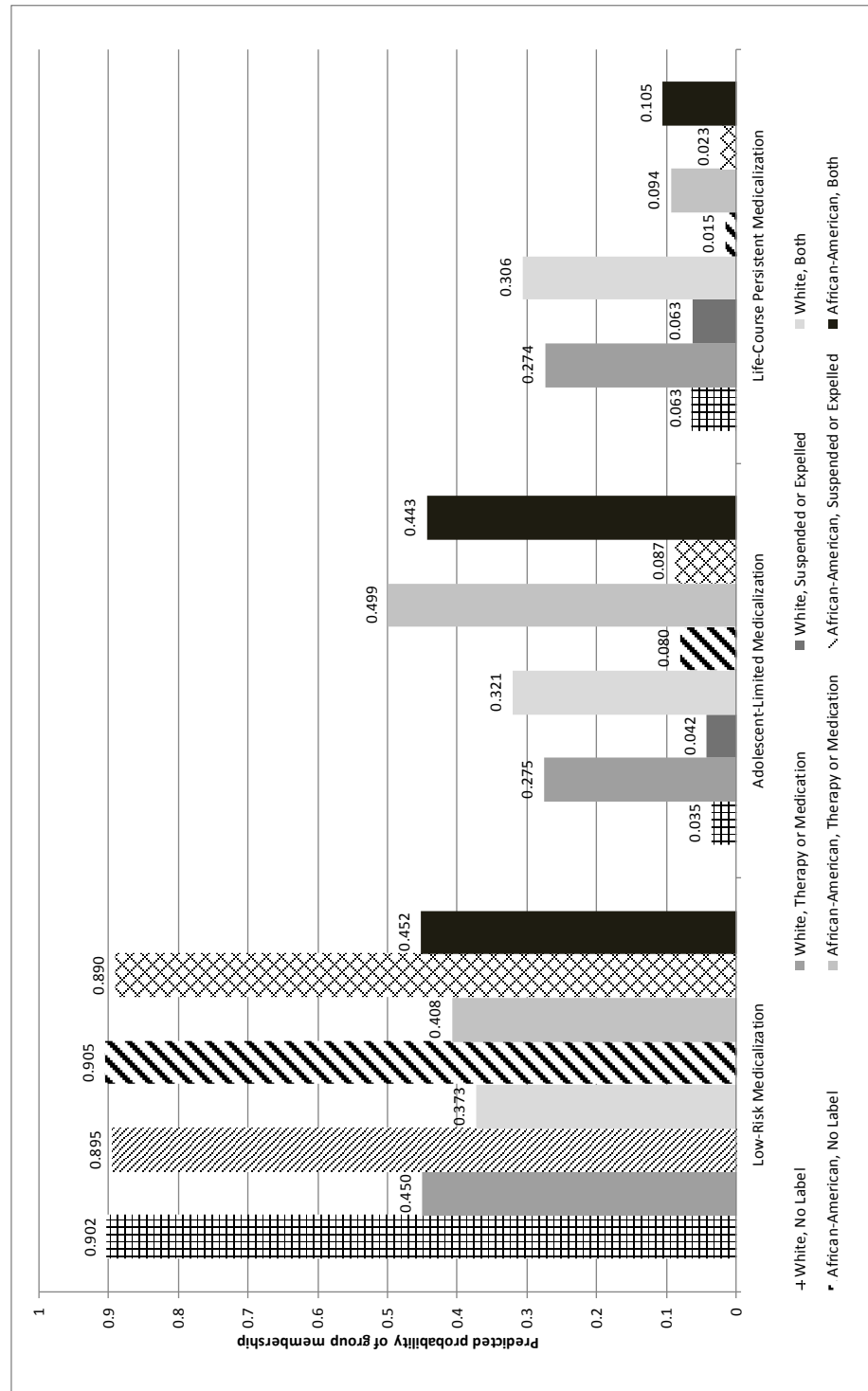


Figure D.4. Predicted probabilities of involvement in different trajectories of medicalized social control by race and official labeling experiences during childhood

Appendix E: Tables from Chapter 4

Table E.1. Descriptive Statistics

	<u>Mean</u>	<u>Standard Deviation</u>
Dependent variables		
Suspensions/Expulsions per 1,000 students	86.87	164.80
Individualized Behavior Plan under IDEA per 1,000 students	8.89	19.36
Section 504 Plans per 1,000 students	8.80	15.15
Independent variables		
School-level Percent Black	17.87	25.28
District-level Percent Black	12.22	15.49
School-level control variables		
Percent free and reduced lunch	52.00	28.07
Immigrant composition ($\alpha = .95$)	0.05	0.91
Percent foreign-born	7.45	14.08
Percent Hispanic	21.78	27.12
Police contact	7.48%	0.26
Percent Male	50.88	3.37
Student-Teacher Ratio	2.77	0.24
Charter/Magnet school	5.99%	23.73%
Gifted and talent program	74.64%	43.51%
Middle School	123.11%	42.16%
School Size (total students)	532.81	257.95
<i>School locality</i>		
Suburban	34.30%	
large urban	14.05%	
Small-medium urban	16.37%	
Small town	12.01%	
Rural	23.27%	
District-level control variables		
Disadvantage index ($\alpha = .78$)	-0.01	0.72
Percent less than HS degree	5.23	4.22
Percent out of labor force	34.72	6.44
Percent Single mother households	11.42	5.08
Percent households on public assistance	2.47	1.81
Percent households on SNAP	9.53	6.44
Residential instability ($\alpha = .78$)	0.03	0.91
percent renters	32.37	12.77
Percent recent movers	35.10	8.36
Immigrant composition ($\alpha = .95$)	0.04	0.94
Percent foreign-born	11.47	10.98
Percent recent arrivals	3.60	3.25
Percent speak English well (reverse-coded)	80.55	18.54
Percent Hispanic	15.94	19.21
Professional/Managerial Employment ($\alpha = .81$)	0.03	0.80
Percent financial	6.09	2.66
Percent information	2.13	1.12
Percent professional	9.20	3.75
Percent management	31.28	9.80
Service sector employment ($\alpha = .46$)	0.02	0.79
Percent sales	23.04	3.62
Percent retail	10.43	2.42
Percent manufacturing	10.47	5.30
Federal IDEA funding (per student)	\$51.59	\$48.50
Federal Safe Schools Act funding (per student)	\$1.10	\$3.84
State special education funding (per student)	\$55.91	\$88.23
Local funding (per student)	\$1,102.67	\$743.16
Median home value	\$222,474.20	\$150,561.50
Population	272,696	613,249
<i>Census region</i>		
South	25.17%	
Midwest	14.31%	
Northeast	37.12%	
West	23.40%	
N(Schools)		50,095
N(Districts)		6,128

Table E.2. Results from Negative Binomial Models (with variable exposure) - including cross-level interaction - of School Punishment (Suspension and Expulsion) and Medicalized School Discipline (IDEA - Behavior/Attention Problems or Section 504), U.S. Elementary and Middle Schools, 2009-2010 School Year

	Suspension/Expulsion						IDEA						Section 504					
	Model 1			Model 2			Model 1			Model 2			Model 1			Model 2		
	b	SE		b	SE		b	SE		b	SE		b	SE		b	SE	
Independent variables																		
School-level Percent Black	0.008	***	0.000	0.011	***	0.000	0.000	0.001	0.000	-0.002	*	0.001	-0.004	***	0.001	-0.002	*	0.001
District-level Percent Black	0.004	***	0.001	0.004	***	0.001	-0.015	***	0.001	-0.015	***	0.001	-0.011	***	0.001	-0.011	***	0.001
School-level * District-level Percent African-American				-0.0002	***	0.0000				0.0001	**	0.0000				-0.0001	*	0.0000
School-level control variables																		
Percent free and reduced lunch	0.013	***	0.000	0.013	***	0.000	0.003	***	0.000	0.003	***	0.000	-0.012	***	0.000	-0.012	***	0.000
Immigrant composition ($\alpha = .95$)	-0.047	***	0.010	-0.051	***	0.010	-0.327	***	0.016	-0.324	***	0.016	-0.082	***	0.017	-0.085	***	0.017
Police contact	0.382	***	0.013	0.382	***	0.013	0.109	***	0.018	0.109	***	0.018	0.047	0.022	0.047	0.047	*	0.022
Percent Male	0.008	***	0.001	0.008	***	0.001	0.024	***	0.002	0.024	***	0.002	0.001	0.002	0.001	0.001	0.002	0.002
Charter/Magnet school	-0.103	***	0.018	-0.108	***	0.018	-0.430	***	0.030	-0.428	***	0.030	-0.004	***	0.032	-0.009	0.033	0.033
Gifted and talent program	0.135	***	0.013	0.135	***	0.013	0.214	***	0.020	0.214	***	0.020	0.122	***	0.021	0.121	***	0.021
Middle School	1.673	***	0.010	1.673	***	0.010	0.972	***	0.012	0.973	***	0.012	0.903	***	0.013	0.902	***	0.013
Student-Teacher Ratio (logged)	-0.381	***	0.026	-0.373	***	0.026	-0.495	***	0.040	-0.499	***	0.040	-0.236	***	0.044	-0.232	***	0.044
District-level control variables																		
Disadvantage index	0.050	**	0.016	0.052	**	0.016	0.199	**	0.033	0.196	**	0.033	0.074	**	0.029	0.076	**	0.029
Residential instability	0.090	***	0.009	0.093	***	0.009	-0.066	***	0.019	-0.068	***	0.019	0.072	***	0.017	0.074	***	0.017
Immigrant composition	-0.082	***	0.011	-0.081	***	0.011	-0.294	***	0.022	-0.294	***	0.022	-0.060	***	0.021	-0.059	***	0.021
Professional/Managerial Employment	-0.182	***	0.015	-0.182	***	0.015	0.060	+	0.031	0.061	*	0.031	-0.135	***	0.025	-0.136	***	0.025
Service sector employment	0.075	***	0.009	0.075	***	0.009	0.043	*	0.018	0.043	*	0.018	-0.033	*	0.015	-0.034	*	0.015
Percent manufacturing	-0.053	***	0.007	-0.053	***	0.007	-0.020	0.016	0.016	-0.020	0.016	0.016	-0.083	***	0.014	-0.083	***	0.014
Federal Safe Schools Act funding per student (logged)	-0.034	***	0.013	-0.034	***	0.013	-0.176	***	0.027	-0.176	***	0.027	-0.029	0.025	0.025	-0.029	0.025	0.025
Federal IDEA funding per student (logged)	0.010	*	0.004	0.011	*	0.004	0.044	*	0.009	0.043	0.009	0.043	0.090	0.008	0.008	0.090	0.008	0.008
State special education funding per student (logged)	0.007	*	0.003	0.007	*	0.003	-0.050	*	0.007	-0.050	***	0.007	-0.052	***	0.006	-0.052	***	0.006
Local funding per student (logged)	0.023	***	0.016	0.024	***	0.016	0.137	***	0.035	0.136	***	0.035	0.058	*	0.029	0.057	*	0.029
Median home value (logged)	-0.151	***	0.022	-0.154	***	0.022	0.096	+	0.046	0.100	*	0.046	0.258	***	0.038	0.258	***	0.038
Population (logged)	-0.037	***	0.007	-0.037	***	0.007	0.103	***	0.014	0.102	***	0.014	-0.048	***	0.012	-0.047	***	0.012
School locality																		
large urban	-0.039	***	0.020	-0.040	*	0.020	-0.027	0.032	0.032	-0.026	0.032	0.032	0.011	0.034	0.034	0.011	0.034	0.034
Small-medium urban	0.045	***	0.015	0.044	**	0.015	-0.069	**	0.024	-0.067	**	0.024	0.046	+	0.026	0.043	0.026	0.026
Small town	-0.181	***	0.019	-0.182	***	0.019	-0.014	0.029	0.014	-0.013	0.029	0.014	-0.063	*	0.031	-0.064	*	0.031
Rural	-0.053	***	0.015	-0.051	***	0.015	-0.034	+	0.019	-0.034	+	0.019	-0.054	*	0.021	-0.053	*	0.021
Census region																		
Midwest	-0.298	***	0.078	-0.298	***	0.078	-0.014	0.044	0.044	-0.012	0.044	0.044	1.200	***	0.040	1.200	***	0.040
Northeast	0.129	***	0.086	0.131	***	0.086	-0.628	***	0.036	-0.629	***	0.036	0.798	***	0.036	0.799	***	0.036
West	0.173	***	0.105	0.176	***	0.105	-1.428	***	0.057	-1.429	***	0.057	-0.411	***	0.048	-0.413	***	0.048
Intercept	-7.361			-7.362			-6.414			-7.876			-7.876			-7.876		
Within-District Variance	3.066			3.066			0.585			0.888			0.888			0.888		
Between-District Variance	101.238			101.238			0.564			2.638			2.638			2.638		

+ p < .10 * p < .05 ** p < .01 *** p < .001

^a reference is Suburban

^b reference is South

Appendix F: Figures from Chapter 4

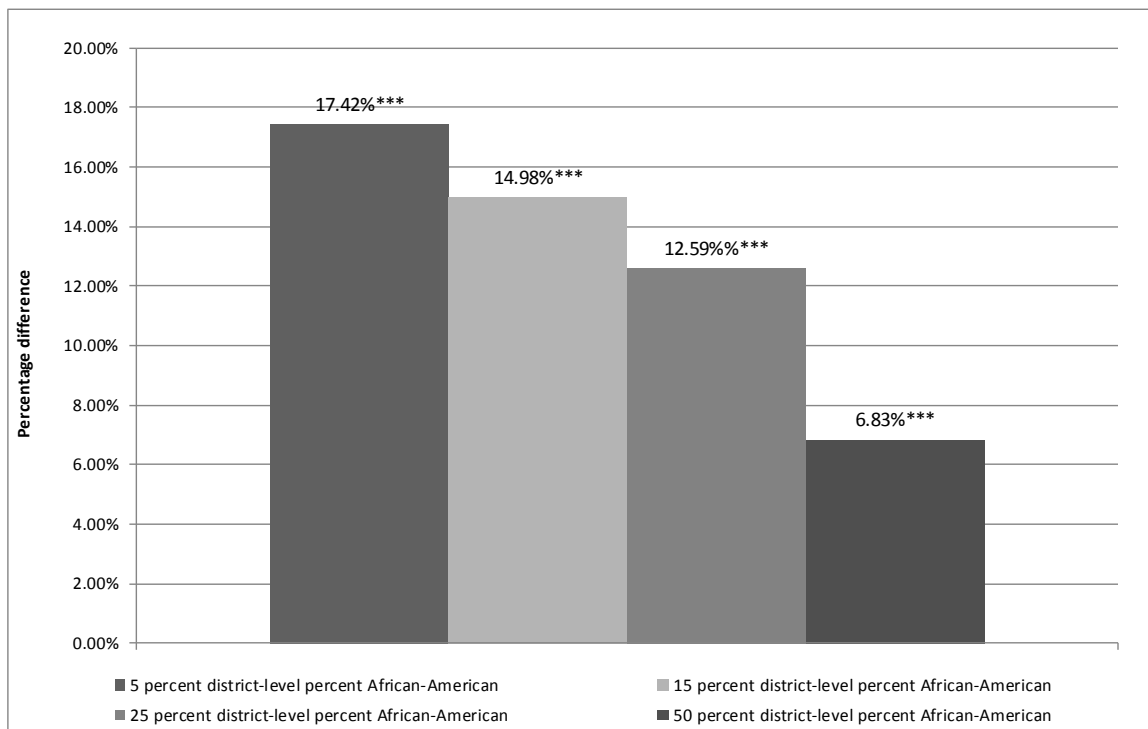


Figure F.1. Percentage difference in punishment rate for a one standard deviation (13.3 percent) difference in school-level percent African-American in Different School Districts

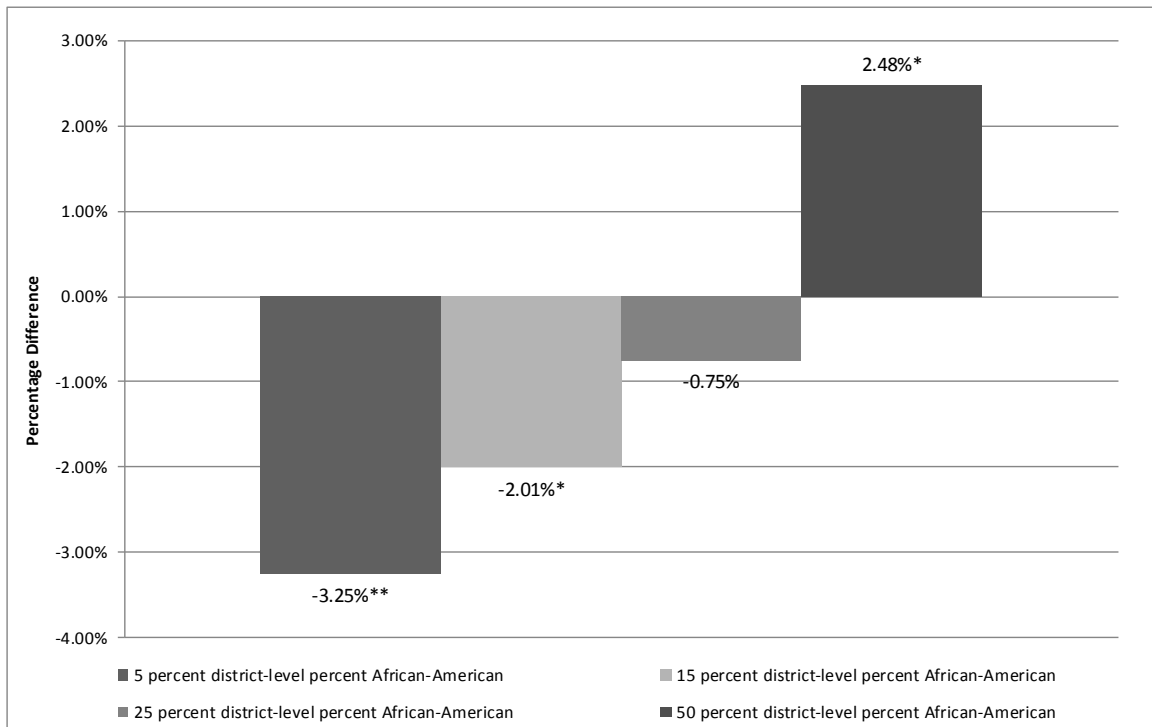


Figure F.2. Percentage difference in coverage rate for IDEA for a one standard deviation (13.3 percent) difference in school-level percent African-American in Different School Districts

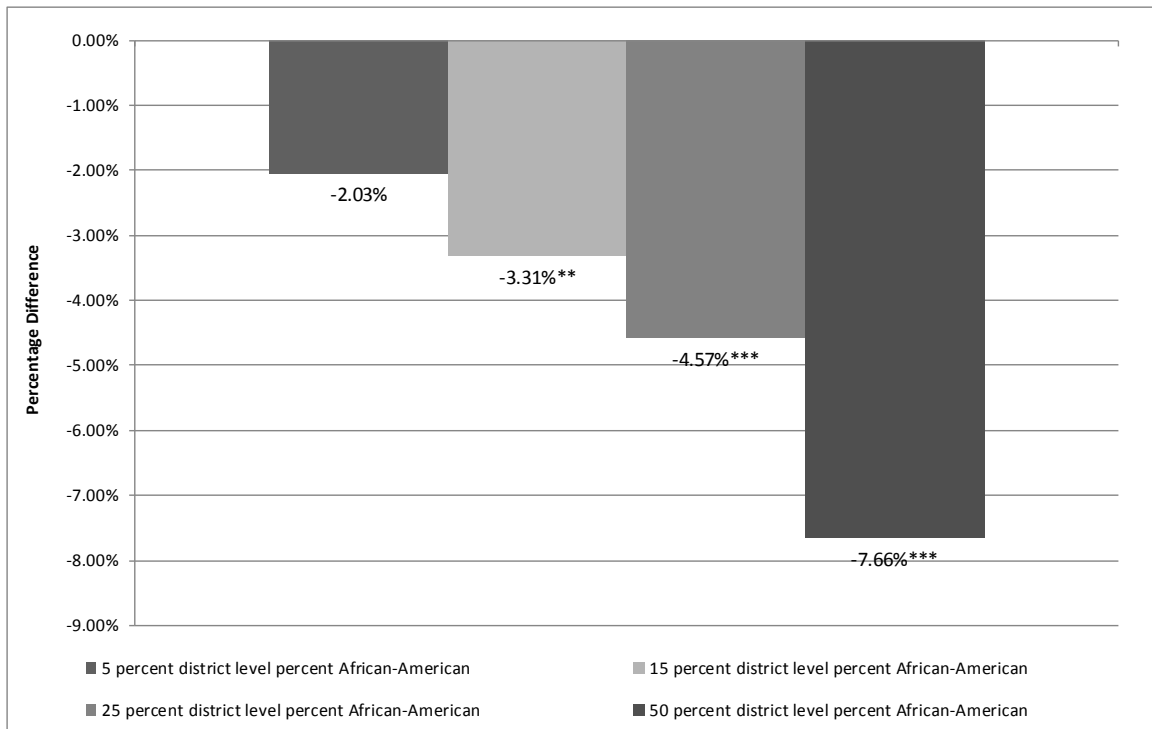


Figure F.3. Percentage difference in Section 504 usage rate for a one standard deviation (13.3 percent) difference in school-level percent African-American in Different School Districts

Appendix G: Externalizing Behavior Symptoms (CBCL Checklist)

Externalizing Behavior Problems (Child Behavior Checklist)

Cheats or tells lies	Disobedient at home
Bullies or is cruel/mean to others	Stubborn, sully, irritable
Breaks things deliberately	Strong temper, loses easily
Disobedient at school	Demands a lot of attention
Sudden changes in mood/feelings	Argues too much

Appendix H: Posterior Probabilities of Following Criminalized or Medicalized
Social Control Trajectories

Table H1. Posterior Probabilities of Following Criminalized or Medicalized Social Control Trajectories

Criminalized			
	Low-Risk	Adolescent-Limited	Life-Course Persistent
Low-Risk	0.888	0.038	0.074
Adolescent-Limited	0.156	0.799	0.114
Life-Course Persistent	0.087	0.112	0.732
Medicalized			
	Low-Risk	Adolescent-Limited	Life-Course Persistent
Low-Risk	0.911	0.060	0.029
Adolescent-Limited	0.225	0.708	0.067
Life-Course Persistent	0.172	0.081	0.747

Appendix I: Results from Logistic Group-based trajectory models of the Effects of
Involvement with the Criminal Justice System or the Mental Health System for
Young Men Following Different Trajectories of Social Control

Table I.1. Results from Logistic Group-based trajectory models of the Effects of Involvement with the Criminal Justice System or the Mental Health System for Young Men Following Different Trajectories of Social Control

	Low-Risk Criminalization			Adolescent-Limited Criminalization			Life-Course Persistent Criminalization					
	b	SE	exp(b)	b	SE	exp(b)	b	SE	exp(b)			
Economic Idleness	0.537	0.380	1.711	0.629	+	0.343	1.875	0.502	0.312	1.652		
Graduated HS	-0.692	**	0.215	0.500	-0.839	***	0.206	0.432	-0.743	***	0.208	0.476
Good/Excellent grades	-0.544	**	0.179	0.581	-0.037		0.174	0.964	0.148		0.204	1.159
Self-esteem	0.038		0.051	1.038	-0.071	+	0.040	0.932	-0.009		0.048	0.992
Low Self-control	0.161	***	0.036	1.175	0.053		0.032	1.054	0.095	**	0.034	1.100
Illegal behavior	0.813	***	0.115	2.254	0.406	***	0.120	1.500	0.378	*	0.150	1.460
Intercept	-7.187	***			-44.121	***			-21.280	***		
Linear	0.077	***			5.480	***			1.482	***		
Quadratic					-0.224	***			-0.026	***		
Cubic					0.003	***						

	Low-Risk Medicalization			Adolescent-Limited Medicalization			Life-Course Persistent Medicalization					
	b	SE	exp(b)	b	SE	exp(b)	b	SE	exp(b)			
Economic Idleness	0.278	0.348	1.320	0.334	0.586	1.397	0.540	0.574	1.716			
Graduated HS	-0.039		0.148	0.962	-0.392	0.303	0.676	-0.529	0.364	0.589		
Good/Excellent grades	0.328		0.162	1.388	-0.472	0.317	0.624	0.294	0.310	1.341		
Self-esteem	-0.117	***	0.035	0.889	0.264	**	0.082	1.302	-0.287	**	0.079	0.751
Low Self-control	0.079	**	0.025	1.082	0.030		0.061	1.030	0.029		0.047	1.030
Illegal behavior	0.723	***	0.086	2.060	0.819		0.196	2.269	-0.429	+	0.232	0.651
Intercept	-4.449	***			2.409	+			-2.447			
Linear	-0.010				-0.202	***			0.136			
Quadratic									-0.001			

+ p < .10 * p < .05 ** p < .01 *** p < .001

All models control for time-stable variables included in the analyses, including race, official labeling, academic performance, residency status, and birth circumstances. All time-stable variables were measured before the age of fifteen.