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The Effect of Race on Pretrial Detention in the Juvenile Justice System: A Meta-Analysis

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The Effect of Race on Pretrial Detention in the Juvenile Justice System:

A Meta-Analysis

Julie Hinds Griggs, PhD

University of Connecticut, 2014

Research has shown that youth of color are over-represented at every stage of the U.S. juvenile justice system. Over the last several decades, researchers have generated an immense body of literature in search of contributing factors but have yet to agree on the reasons for this disparity. Single studies rarely resolve the inconsistencies of social science research. Because of prior limitations in extant reviews, this study fulfills the need for a comprehensive empirical review of racial and ethnic disparities in the juvenile justice system by systematically reviewing all available research (both published and unpublished) that met eligibility criteria. There are two main research questions: (1) Are youth of color detained in the juvenile justice system more often than Whites even after controlling for prior delinquent history and severity of current offense? If so, what is the magnitude and strength of this difference? and (2) What extralegal (i.e., status variables: SES, family status; sample characteristics: age, gender), legal (i.e., offenses related to drugs, person, weapon) and contextual (i.e., jurisdiction, region) variables are related to the likelihood that racial disparity will occur? This meta-analysis, which is the first comprehensive quantitative synthesis that included both published and unpublished DMC research, revealed that discriminatory race-effects were evident across multiple studies spanning more than 30 years. Preadjudication detention is one of the best predictors of subsequent juvenile incarceration in a correctional facility. Thus, this meta-analytic review provides essential information for guiding critical decision making regarding juvenile justice policy. Further, a proportion of variability in study results is explained by demographic factors (i.e., SES, age), and region.

The Effect of Race on Pretrial Detention in the Juvenile Justice System:

A Meta-Analysis

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A Dissertation

Submitted in Partial Fulfillment of the

Requirements for the Degree of Doctor of Philosophy

at the

University of Connecticut

2014

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Julie Griggs

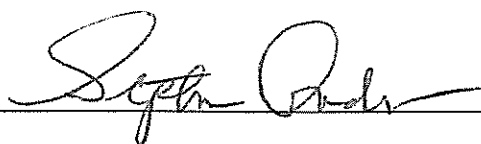
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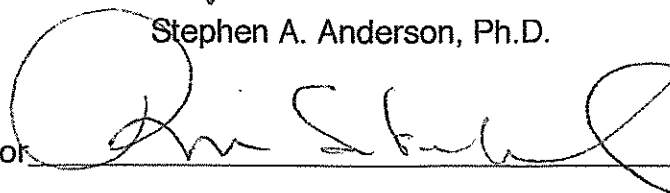
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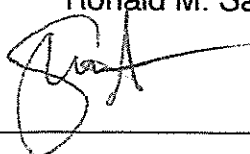
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I am what I am because of who we all are.

- African philosophy of Ubuntu

I am presenting this dissertation as a testament to the notion that the universe will rise up to meet you if you keep going. As a stroke survivor, I experienced this truth firsthand. It takes a village to finish a Ph.D., and I want to thank my village.

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Chapter 1: Introduction

Disproportionate Minority Contact

Research has shown that youth of color are over-represented at every stage of the U.S. juvenile justice system. Over the last several decades, researchers have generated an immense body of literature in search of contributing factors but have yet to agree on the reasons for this disparity. Researchers have found that identifying and explaining the reasons for disproportionate minority¹ contact (DMC) in the juvenile justice system is a much more complicated process than merely showing that it exists (Kempf-Leonard, 2007). The driving force of DMC research began after 1988 when Congress passed an amendment to the Juvenile Justice and Delinquency Prevention (JJDP) Act of 1974² (Public Law 93-415, 42 USC 5601 et seq.) requiring states to address disproportionate minority confinement/contact in their state plans by identifying the extent and causes of DMC or to risk losing federal funds (Cabaniss, Frabutt, Kendrick, & Arbuckle, 2006).

Since the initial clarion call, state governments have spent a vast amount of time and money on research to address DMC in the juvenile justice system.

¹ The United Nations defines minority groups as the non-dominant groups in a population that wish to preserve stable ethnic, religious, or linguistic traditions markedly differently from the rest of the population (Walker, Spohn & DeLone, 2004). The term minority is increasingly criticized as a derogatory word, insinuating "less than." The Office of Management and Budget calls on the Census Bureau and other federal agencies not to designate certain population groups as minority groups or non-Whites. Currently a more accepted term is "people of color." Because government agencies continue primarily to use the term "minority" (e.g., "disproportionate minority contact"), the word minority will be used in this proposal for continuity and simplicity. The phrase "youth of color" will be used when not included in the formal term "disproportionate minority confinement/contact" as long as this does not compromise clarity.

² In 1992, Congress amended the JJDP Act again by elevating DMC to a core requirement, which tied future federal funding of block grants to a state's compliance. In addition, it broadened the definition of DMC beyond *confinement* to *contact*; initial contact with the system is a key entry point where decisions are made that can lead to youth penetrating further into the juvenile justice system (Kakar, 2006; Kempf-Leonard, 2007; Mallicoat, 2007).

This research has produced mixed results regarding the reason for the overrepresentation of youth of color. Some studies have found that youth of color are treated more severely than Whites at various juvenile justice decision points, even after controlling for legal factors such as severity of crime, prior criminal history (Armstrong & Rodriguez, 2005, Webb, 2006). Conversely, other researchers have reported just the opposite – youth of color are treated more leniently than white youth as a result of such influences as correction of bias³ (Ray and Alarid, 2004). Still other researchers have found no discrimination and have determined that racial disparity exists because of differential involvement – youth of color are involved in more crime and more serious crime (Tracy, 2005).

Purpose of This Study

Single studies rarely resolve the inconsistencies of social science research. To make sense of divergent study outcomes, a research review that integrates cumulative knowledge of existing literature is needed to elucidate contributing DMC factors. Several leading scholars have conducted extant reviews of DMC research in hopes of uncovering reasons for racial disparity in the juvenile justice system. Unfortunately, the majority of these prior reviews are traditional narrative reviews that lack the scientific rigor required for meaningful statistical integration. DMC researchers conducted only one quantitative DMC review but it suffers from important shortcomings (i.e., publication bias, overlapping data) as well. Because of prior limitations in extant reviews, this

³ Correction of bias is when juvenile justice officials show leniency to a youth of color in order to correct for what they perceive as the juvenile's disadvantages.

study fulfills the need for a comprehensive empirical review of racial and ethnic disparities in the juvenile justice system by systematically reviewing all available research (both published and unpublished) that met eligibility criteria.

Before detailing aspects of this study any further, I will provide definitions of some of the most important words and concepts used in the DMC field. Many of terms are imperative to understanding DMC research and this study in particular.

Definitions of Key Terms

Delinquency. Delinquency is a violation of a law by a minor. Delinquency is comparable to *crime*, which is used in the adult criminal justice system.

Detention. Pretrial detention is defined as the temporary placement of youth who are taken into custody by the police or the juvenile court pending disposition or transfer to another agency (Baily, 1981; McNeece & Jackson, 2004; Webb, 2006).). Typically, youth who are accused of delinquency are held in secure juvenile detention facilities and adult jails while dependent and neglected youth are held in juvenile detention halls and youth shelters. Juveniles are placed in pretrial detention for the following reasons: (1) to ensure appearance at preadjudication hearings, (2) to minimize a threat to the community or to self, and (3) to accommodate them when there is no parent or guardian to whom they can return. As such, detention is not used as a punishment for youth but for the temporary care and protection of children or the community.

Detention is the first major step in the juvenile court process and the decision to detain belongs to the court. Even so, court personnel do not exercise exclusive control over which juveniles will be detained (Bortner & Reed, 1985). Occasionally, law enforcement officers make unilateral decisions, thereby circumventing the juvenile court's control over detention. Other factors in the decision to detain, beyond the province of court control, are parents who refuse to take their children home and juveniles who refuse to go home.

Disparity and discrimination. To understand DMC, it is important to distinguish between disparity and discrimination. Disparity denotes between-group differences in treatment outcomes but does not necessarily imply discrimination. Disparity is difference that can be explained by legitimate legal factors (e.g., prior offense, seriousness of offense). In contrast, discrimination is disparate treatment that can be explained by illegitimate extralegal factors (e.g., race, gender, or sexual preference) and is unrelated to delinquent behavior. In other words, when decisions are based upon seriousness of offense or prior record and decision point differences disappears after controlling for these legal factors, then the difference is considered appropriate rather than discriminatory (Cohen & Kluegel, 1978; McCarthy & Smith, 1986).

To clarify these two concepts, Walker et al. (2004) explained discrimination and disparity on a continuum ranging from systemic discrimination (i.e., discrimination at every juvenile justice decision point at all times) to pure justice (i.e., no discrimination at any time or place in the juvenile justice system).

Between these two extremes are institutional discrimination, contextual discrimination, and individual acts of discrimination.

Institutional discrimination, which is often overlooked and unintentional, is differential racial treatment resulting from institutional procedures that are based on a codified and sanctioned legacy of overtly racist policies. The focus of institutional discrimination is on outcome, not intent.

Contextual discrimination refers to discrimination in particular situations or jurisdictions. This includes, for example, aggressive police patrolling of neighborhoods inhabited predominantly by people of color.

Finally, individual acts of discrimination denote discrimination by juvenile justice personnel that does not represent a general pattern of differential treatment in the system as a whole.

Ethnicity. Ethnicity is defined as a socially-constructed cultural affiliation (Wonders, 2009).

Minority. As contained in the Juvenile Justice and Delinquency Act of 2002, the Federal Code of Regulations (28 C.F.R. § 31.304) defines minority populations as African-American, American-Indian, Asian, Pacific Islander, and Hispanic. However, many argue that the term “minority” denotes people who are not in the dominant group and is considered a pejorative term that connotes *less than* or *other*. Thankfully, the new OMB guidelines for federal agencies do not identify certain populations as “minority groups” (Walker et al., 2004). Today many people prefer the term “people of color.”

As with the concept of race, minority status is a fluid concept that differs according to time and place. Accurately identifying *minority* groups, which have been classified unsystematically, has been a challenge for the DMC initiative.

Overrepresentation. Overrepresentation exists when the proportion of a particular population in a given survey exceeds its proportion in the general population. Disparity may lead to overrepresentation.

Race. The concept of race is controversial and presents an evolving discourse. According to most experts in anthropology and sociology, race is a social construct which has no biological or genetic basis and which is fluid, constantly evolving throughout history. Instead of being objective, inherent or fixed, “race” is viewed as a system of socially constructed categories which are themselves invented and manipulated products of collective thought that change over time and by location. Rather than being purely genetic, race is an expression of social, economic, cultural, and psychological factors.

This view is supported by many in the scientific and medical community. In fact, the Human Genome Project has found that human beings have 99.9% of their DNA in common. According to an article published in the Journal of the American Medical Association (Winkler, 2004), genetic similarity cannot be inferred simply on the basis of racial categories. In fact, there is greater variation within “races” than between them (Walker et al., 2004).

Administrative and political classifications rather than genetic differences make up the critical categories for social analysis (Walker et al., 2004). Today, the federal government prohibits the use of the term “non-white.”

The major independent variable is race, which is a categorical variable. For this proposed study, race has been conceptualized according to the federal government’s designation. In 1997, the Office of Management and Budget revised and expanded racial categories to: (1) American Indian or Alaska Native; (2) Asian; (3) Black or African American; (4) Hispanic or Latino, technically ethnicities; (5) Native Hawaiian or Other Pacific Islander; and (6) White.

Because racial characteristics and the values assigned to them are so ingrained in our culture, many people have difficulty identifying discrimination because it looks so much like a natural ordering of our perceptions (Delgado, 2001, Lawrence, 1995). In other words, racial meanings are so deeply rooted in our cultural belief system that they have become like an *invisible veil of common sense* (Sue & Sue, 1999). Often, racial discrimination is influenced by unconscious racial motivation, and occurs without intent to harm or disadvantage the *other*. As a result, we often do not recognize the ways in which our culture has influenced our beliefs about race. In fact, many Whites are unaware that their identity is mediated by race (McIntosh, 1989).

Theoretical Frameworks

DMC literature reveals that findings at the state and local level are not always consistent due to variations in location, methods employed, and point of

contact considered. Despite this, national-level data show that DMC is evident at all decision points (i.e., arrest, court referral, detention, formal charging, adjudication, disposition), that it may be direct or indirect, and may intensify as juveniles continue through the system (Bishop, 2005; Huizinga, Thornberry, Knight, Lovegrove, Loeber, Hill, & Farrington, 2007; Pope & Feyerherm, 1993; Pope & Snyder, 2003). The DMC problem is clearly evident. However, research is inconclusive as to the reasons behind the racial disparity.

Public policy and academic discourse have focused on two divergent theses – differential treatment and differential offending – to explain the disproportionate rate at which youth of color make contact with the justice system (Bishop, 2005; Tracy, 2005). The differential treatment thesis posits that youth of color are more likely to be arrested, detained, adjudicated, and incarcerated regardless of the nature, extent and severity of the delinquent act and prior criminal history (Leiber, 2003; Tracy, 2005). Alternatively, the differential offending hypothesis asserts that minorities are overrepresented at every stage of the juvenile justice system because they commit more crimes, more serious crimes, and for an extended period of their lives (Piquero, 2008).

As some would argue, differential treatment involves the illegitimate and discriminatory use of extralegal factors (e.g., skin color, family status, and family income) to process youth of color. Conversely, differential offending asserts that the legitimate, legally permissible factors (e.g., higher rate of offending, seriousness of delinquent act) result in harsher processing for youth of color.

Some scholars have pointed out that there are large differences between the adult criminal justice system, where punishment is the primary goal, and the juvenile justice system, where treatment is the explicit objective (Bishop, 2005). To accommodate the individualized need-based decisions that are a central aim in the juvenile codes of nearly every state, juvenile justice officials are expected to take into consideration a youth's background and circumstances in addition to seriousness of offense and prior record. From a treatment perspective, extralegal factors (e.g., inadequate parental supervision, poor school performance) that are causally linked to delinquency are legitimate considerations in case processing, regardless of racial disparities. Some contend that not to consider extralegal factors is discriminatory.

Opponents have pointed out that coerced treatment is a form of punishment and social control (Bishop, 2005). They have argued, further, that the discretionary nature of the juvenile justice system is susceptible to abuse and to stereotyping. This debate highlights the need to identify and understand intervening variables (legal, extralegal⁴ and contextual) through which race influences decision making.

To explain juvenile delinquency, scholars look to explanations that are rooted in biological, psychological, and sociological frameworks. Delinquency

⁴ The distinction between legal and extralegal variables is based on the underlying principle of the Equal Protection Clause of the Fourteenth Amendment of the Constitution that provides equal protection for all people and that demands that states not discriminate on the basis of sex, race, or economic status. In contrast, the juvenile justice system considers legal variables (e.g., seriousness of offense and prior history) as legitimate concerns because youths with these case variables may be viewed as a threat to the community or to themselves (Baily, 1981).

theories fall into two general categories: 1) classical, and 2) positivist (Lawrence & Hemmens, 2008). According to classical theory, it is assumed that youth have free will and can choose whether or not to commit delinquent acts. Classicists explain delinquency as a voluntary choice made by an offender who perceives the criminal gains outweighing the costs – being caught and punished. Rooted in individual responsibility, classicism views punishment as the primary deterrent to delinquency and crime.

Conversely, positivists contend that delinquency is not a free choice based on cost-reward determinations but is caused by bio-psychosocial factors beyond a youth's control (Lawrence & Hemmens, 2008). Because delinquency is explained by genetic factors, psychological characteristics, and socioeconomic influences, positivism emphasizes treatment and change over punishment to address delinquency.

Most researchers use one of two frameworks – consensus theory or conflict theory – to interpret criminological/delinquency research findings (Leiber, 2003; Leiber, Fox, & Lacks, 2007). Consensus theory, which is based on a classical view of delinquency, emphasizes individual responsibility for acts of deviance (Walker et al., 2004). Thus, consensus theory views detention as the direct consequence of an individual's delinquent behavior and its severity. In other words, disparity⁵ in the juvenile justice system, which is viewed as a fair and just institution, is the consequence of differential offending with youth of color

⁵ Disparity refers to between-group differences in outcomes but may or may not be due to discrimination (Bishop, 2005).

committing more crime and more severe crime. Discrimination (i.e., differential treatment) is viewed as a random or isolated event (Leiber & Fox, 2005).

In contrast to consensus theory, which assumes a high level of social unity (e.g. all groups share the same values), conflict theory is rooted in the positivist paradigm that assumes norms and values differ among groups. Conflict theory focuses on “social reaction” or how social and governmental institutions respond to crime and delinquency. Also considered is the role of power (i.e., social control) in the formulation of law (Lawrence & Hemmens, 2008). These theories presume a lack of consensus with regard to societal norms and values, and view crime as a political concept – a label imposed by the dominant group on those less powerful. According to this perspective, crime and delinquency are addressed through social control (i.e. laws and policies that benefit the dominant group). An example of social control would be the War on Drugs that enacted harsher penalties for possession of crack cocaine— a drug predominantly used by lower income people of color – than cocaine – a more expensive drug that is predominantly used by whites from the middle and upper classes.

Conflict theory centers on macro-processes that concentrate on how the powerful protect their positions (Leiber, 2003; Tittle & Curran, 1988). In conflict theory, the role of social and political institutions is to maintain the power of the dominant majority group by controlling those in the minority who threaten that power. Conflict results from competition among social classes and other societal groups (e.g., race, ethnicity). In Conflict theory, structural forces - social and

political institutions – are the underlying cause of crime rather than an individual's criminal tendencies. Dominant social and political institutions seek to control those in the minority through the power to formulate laws and to define what is considered a *crime*. According to conflict theorists, discrimination⁶ is the basis for overrepresentation of youth of color in the juvenile justice system. An outgrowth of conflict theory, symbolic-threat thesis, posits that discrimination is not a general occurrence stemming from economic and political conflict over power and control of resources but rather is conditioned by the perceived threats posed by people of color on the powerful majority. Fostered by negative stereotypical perceptions, youth of color are viewed as posing a symbolic threat to middle class values and public safety (Leiber & Fox, 2005). According to Tittle and Curran (1988), officials stereotype youth of color as undisciplined, aggressive, overly sexual, dangerous, products of single female-headed households, drug offenders, and delinquents (Feld, 1999).

Over the last 50 years, numerous research studies have examined the over-representation of youth of color in the juvenile justice system at various decision points (e.g., arrest, intake, detention, adjudication, and disposition). Despite their intensive investigations, scholars have failed to provide research findings that definitively support either consensus or conflict theories to explain disproportionate minority contact.

⁶ Discrimination is based on differential treatment of people regardless of behavior or qualifications (Walker, Spohn & DeLone, 2004). The term refers to situations where extralegal or illegitimate factors cause the overrepresentation of youth of color (Bishop, 2005).

Specifically in relation to pre-adjudicatory detention, many studies have found that youth of color are detained more than Whites (Armstrong & Rodriguez, 2005; Bishop & Frazier, 1988; Bortner, 1982; Bortner & Reed, 1985; Bortner, Sunderland, & Winn, 1985; Chused, 1973; DeJong & Jackson, 1998; Federle & Chesney-Lind, 1992; Johnson & Secret, 1990; Leiber & Fox, 2005; McCarthy & Smith, 1986; Sampson & Laub, 1993; Ray & Alarid, 2004; Secret & Johnson, 1997; Webb, 2006; Wolfgang, Figlio, & Sellin, 1972; Wordes, Bynum, & Corley, 1994; Wu, 1997) even after taking into account legal variables such as seriousness of offense and prior record, while other studies found no race-effects at pretrial detention (Bailey, 1981; Dungworth, 1977; Cohen, 1975; Cohen & Kluegel, 1979; Fagan, Slaughter & Hartstone, 1987; Frazier & Bishop, 1985; Pawlak, 1977; Tracy, 2005). Some studies have found that race-effects are direct while other researchers have found that race affects detention indirectly through intervening factors such as single-parent households (Schutt & Dannefer, 1988; Secret & Johnson, 1997), age (Bridges, Conley, Beretta, & Egen, 1993), gender (Bishop & Frazier, 1996; Cohen, 1975), and geographic location (Sampson & Laub, 1993; Bond-Maupin & Maupin, 1998).

Single studies rarely resolve the inconsistencies of social science research. To make sense of divergent study outcomes, a research review that integrates cumulative knowledge of existing literature is needed to elucidate contributing DMC factors. Several researchers have reviewed the immense empirical DMC research using traditional qualitative narrative literature

approaches (e.g., Bishop, 2005; Leiber, 2002; Liska & Tausig, 1979; McCarthy & Smith, 1986; Pope & Feyerherm, 1990a, 1990b; Pope & Leiber, 2005; Pope, Lovell, & Hsia, 2002; Ray & Alarid, 2004; Tittle & Curran, 1988). These traditional literature reviews integrate available research findings into a narrative and descriptive form.

Despite their important contributions, these previous traditional narrative literature reviews suffer from several limitations. Most importantly, traditional reviews lack the scientific rigor to uncover the underlying relations or to guide policy (Wolf, 1986). Problems associated with traditional literature reviews include:

1. Lack of scientific and analytical rigor; various studies have been examined separately with results compared in a qualitative manner.
2. Subjective nature of procedure. Selective inclusion of studies – often based on reviewer's own subjective view of the quality of the study – and interpretation of findings based on differential subjective weighing of studies.
3. Characteristics of studies as potential explanations for disparate or consistent results across studies have often remained unexamined.
4. Failure to examine moderating variables.

Without the use of statistical analysis, traditional narrative reviews have often relied on “vote-counting methods” where study results are sorted into categories such as positive significant, non-significant, and negative significant.

From the tallied categories, conclusions are drawn to answer questions such as: What is the proportion of studies that reveal a statistically significant race-effect in the juvenile justice decision point? Unfortunately, the vote-counting method overemphasizes the statistical significance of individual research findings, which are highly influenced by sample size.

In contrast to the traditional qualitative narrative reviews, Egen et al. (2002) conducted the only empirical review of DMC literature. But this sole quantitative DMC review is hampered by two important limitations: it addresses only studies published in peer-reviewed journals and includes overlapping datasets.

By excluding grey literature⁷ (e.g., book chapters, technical reports, state studies, conference presentations, working papers, bulletins, and fact sheets), the findings offered by Egen et al. (2002) are not comprehensive and thus can suffer from publication bias inasmuch as journals are more likely to publish studies with statistically significant findings.

Egen et al. (2002) defend their decision to restrict their analysis to only studies published in scholarly journals on the grounds that they are peer-reviewed, easier to find, and more representative of the literature. Yet numerous scholars of research synthesis stress the importance of conducting a comprehensive, exhaustive literature search (Cooper & Hedges, 1994; Cooper et al., 2009; Ellis, 2010; Lipsey & Wilson, 2001; Rosenthal, 1991). The literature

⁷ This refers to literature that is not published in scholarly journals and thus not found in a traditional index or electronic database (Cooper, Hedges, & Valentine, 2009).

search and information retrieval is a vital part of research synthesis because publication bias threatens the soundness and validity of the results.

In addition, prior reviews of DMC literature include studies that use the same or overlapping data sets. As a result, some study results are double-counted and the data are overrepresented in the review findings. Egen et al. (2002) attempted to eliminate oversampling by applying case weights to samples.

Why Preadjudication Detention?

Research on juvenile justice system processing has focused on seven major decision points: arrest, intake, detention, adjudication, disposition, transfers to an adult criminal court, and secure confinement in public institutions. This dissertation research focuses on placement in pretrial detention for the following reasons:

1. Individual studies have revealed two robust relationships: (a) juveniles of color are more likely to be placed in pretrial detention, and (b) juveniles thus placed in pretrial detention are more likely to receive restrictive outcomes at adjudication (Bishop & Frazier, 1988; Kempf-Leonard, 2007; Leiber, 2005). As mentioned earlier, many criminologists consider pretrial detention to be one of the best predictors of subsequent juvenile incarceration in a correctional facility.
2. Research has found that juvenile justice decisions at early decision points (e.g., arrest, intake, and pretrial detention) have significant and

compound effects on later stages of juvenile justice processing (Kakar, 2006; Ray & Alarid, 2004). This summative effect, which is referred to as “bias amplification,”⁸ creates more extensive minority disproportionality at later stages (Bishop, 2005; Fenwick, 1982, Fagan et al., 1987; Shook & Goodkind, 2009; Pope & Feyerherm, 1990; Sampson & Lauritsen, 1997). For example, youth of color are more likely to be placed in detention and thus more likely to receive more severe court dispositions (Austin, 1995; Wordes & Bynum, 1995; Feld, 1995; Poupart, 1995; Poe-Yamagata & Jones, 2000; Snyder & Sickmund, 1999). Detention is one of the best predictors of subsequent juvenile incarceration in a correctional facility (Bishop & Frazier, 1988; Kempf-Leonard, 2007; Leiber & Fox, 2005).

3. Because of the significance of early decision points, it is important to consider arrest, intake, and pretrial detention. The earliest decision point – arrest – is difficult to assess for race-effects because of the lack and inconsistency of data collection (Kempf-Leonard, 2007; Ray & Alarid, 2004). Many police departmental policies do not require documentation of juvenile contact that does not result in arrest. As a result, it is almost impossible to determine if juveniles of color are

⁸ “Bias amplification” is a term used to describe the increased probability that minority youth will penetrate deeper in the juvenile justice system after initial contact (Bishop 2005). Bias amplification creates a more homogenous population as juveniles move through the juvenile justice decision points. This can result in sample selection bias.

formally arrested more often than White juveniles and if white juveniles are informally released more often than juveniles of color or vice versa.

4. Pretrial detention is one of the most often studied decision points (Bishop, 2005).
5. Research has shown that incarceration can disrupt a youth's social and developmental trajectories as well as prolong delinquency, affect mental health, increase the likelihood of future offending, and affect a juvenile's education and employment (Holman & Zeidenberg, 2006, Johnson, Whitbeck, & Hoyt, 2005).
6. Reducing the secure confinement (either before or after trial) of juveniles is a core requirement of the 1988 amendment to the Juvenile Justice and Delinquency Prevention Act of 1974,⁹ with funding eligibility tied to state compliance.
7. The decision to detain prior to adjudication involves a high level of discretion. Unlike adjudication decisions (effected through sentencing in juvenile court), the decision to detain prior to trial does not involve a judicial review (Bishop, 2005; Webb, 2006). Despite clear guidelines, pretrial detention decisions are often left to the discretion of juvenile justice personnel. In most cases, police officers assist the juvenile intake officer in interpreting the statute, performing risk-need

⁹ The Juvenile Justice and Delinquency Prevention Act (JJDP) of 1974 created the Office of Juvenile Justice and Delinquency Prevention (OJJDP) to address juvenile crime and improve juvenile justice policies across the country (Hess, 2010).

assessments, and determining an appropriate response. Intake officers, who are entry-level employees with considerably less education and experience than decision makers at other points within the system, act as the primary decision makers in detention placement at arrest. Some scholars have referred to pretrial detention as one of the chief abuses of power in the juvenile justice system (Frazier & Bishop, 1985).

There are two general reasons for preadjudication detention (Webb, 2006): (a) to ensure appearance at pretrial hearings, and (b) to protect the community from the risk of serious reoffending prior to disposition. Although often used, pretrial detention is controversial. Some argue that it undermines the fairness of the delinquency process and prejudices court decisions.

Meta-Analysis

This dissertation is a meta-analysis, i.e., a statistical analysis that has the expressed goal of presenting the current state of knowledge on an important issue that research has left unresolved (Cooper, 2010). In this dissertation, extant studies are summarized using quantitative methods to draw overall conclusions that can direct future DMC research and policy.

A meta-analysis is described as a “statistical analysis of statistical analyses” (Ellis, 2010, p. 95). Cooper (2010) defines the term meta-analysis (often used as a synonym for research synthesis, research review or systematic review) as quantitative procedures that involve rigorous statistical integration.

Meta-analysis provides a more scientific, empirical approach to literature reviews, which is important in evidence-based decision making.

In a meta-analysis, the researcher computes an effect size (the strength of a relationship between two variables) for each empirical study in order to assess consistency and to compute a summary effect size. In recent years, meta-analysis has become popular in the behavioral, educational, social, and health sciences, particularly because it can highlight important issues that research has left unresolved (Cooper, 2010; Sanchez-Meca & Marin-Martinez, 2010).

Theoretical Implications of Research

This meta-analytic review has significant theoretical implications. Specifically, this analysis provides support for either consensus theory or conflict theory – the two contrasting perspectives that dominate DMC research.

To recap these perspectives, consensus theory posits that society has mutually-agreed upon social values with laws that serve all indiscriminately; whereas, conflict theory asserts that various societal groups (e.g., racial ethnic, economic) are in conflict for power resulting in laws and enforcement that serve the interests of the dominant group. According to consensus theory, racial disparity in the juvenile justice system is the results of differential offending¹⁰ – youth of color committing more serious offenses more often. On the other hand,

¹⁰ Also referred to as differential involvement.

conflict theory purports that racial disparity is explained by differential treatment¹¹ due to discrimination.

If this analysis finds that youth of color are more likely to be detained even after controlling for legal variables (prior history and seriousness of offense), this will support conflict theory and the differential treatment perspective. However, if the meta-analytic review fails to find race-effects in pre-adjudicated detention even after controlling for legal variables, then consensus theory (based on differential offending caused by individual delinquent behavior) will be supported.

Furthermore, by examining studies that control for contextual variables often associated with race (e.g., social class, family structure, and urbanization), this meta-analytic review should reveal juvenile-case and structural-context characteristics that are related to the divergent findings of primary studies and that may affect estimates of race-effects on pretrial detention. The goal is to address an important question: Under what conditions are race-effects more likely to occur? The answers will be important for revealing the accuracy and shortcomings of existing theories as well as for facilitating future theoretical development.

Policy Implications of Research

Preadjudication detention is one of the best predictors of subsequent juvenile incarceration in a correctional facility. In other words, unwarranted preadjudication detention can amplify biased effects at later decision points.

¹¹ Also referred to as differential selection.

Thus, this meta-analytic review provides essential information for guiding critical decision making regarding juvenile justice policy.

Unlike the criminal justice system that is restricted by more formal decision-making procedures, the juvenile justice system is allowed more flexibility in responding on a case-by-case basis. Historically, the primary goal of the juvenile justice system was treatment/rehabilitation as described by the *parens patriae* doctrine,¹² which calls on the state to assume parental responsibilities. This doctrine requires justice officials to take into account a juvenile's background and life circumstances in order to provide individualized, need-based therapeutic responses. This doctrine enables juvenile justice officials to have more discretion in decision making for the social welfare of juveniles. In keeping with this doctrine, state statutes lack specificity and provide a great deal of discretion to police officers, juvenile court officers, and judges to determine if detention is necessary (Leiber, Fox, & Lacks, 2007).

For the past 30 years, however, juvenile justice philosophy and policy has shifted away from treatment to punishment, accountability, and community protection, while using the same discretionary procedures that are unique to the juvenile justice system. Whether operating from a liberationist perspective

¹² This Latin phrase literally means "parent of the country." A century ago, modernization and industrialization led to the ideological conception of *childhood* and to the creation of the juvenile court. This new court simultaneously confirmed the responsibilities of parents to raise their children, and expanded the state's right to act as *parens patriae*, or superparent (Feld, 2005). From its beginning, the juvenile court assumed the task of controlling and *Americanizing* immigrant children from Eastern Europe whose families were flooding into U.S. cities.

(whereby youth are treated like adults and denied protections afforded to children) or a protectionist perspective (whereby youth are treated like children and denied rights afforded to adults), juvenile justice officials are continually required to make subjective decisions, and sometimes these decisions may be based on ethnocentrically-biased views, whether unintentional or intentional (Feld, 1999).

There is no question that youth of color are overrepresented in the juvenile justice system, but whether this disparity is the result of discrimination is intensely debated. The answer to this question has important policy implications: What DMC programs and procedures embody the most efficient use of taxpayer dollars? This study has synthesized extant DMC knowledge to address fundamental questions of juvenile justice disparity.

The next chapter will present an overview of the symbolic-threat hypothesis followed by a review of existing DMC research focusing on race-effects on pre-adjudicatory detention decisions. Instead of reviewing the results of existing individual studies, the focus will be to critique existing reviews of individual DMC studies focused on pre-adjudicatory detention. Chapter 3 will then discuss the study's meta-analytic research design and methodology, analytic strategy, and research limitations. Chapter 4 presents the results, which are then discussed in Chapter 5.

Chapter 2: A Review of Literature and Theoretical Perspective

A consistent theme in the juvenile justice system is the overrepresentation of youth of color in preadjudication detention and in every other decision point.¹³ Over the last 50 years, researchers have generated a substantial body of literature in search of contributing factors but results are inconclusive. Commonly referred to as disproportionate minority representation (DMC), DMC is defined as occurring when the proportion of minority juveniles detained or confined in secure detention facilities, secure correctional facilities, jails, and lockups exceeds the proportion of the group represented in the general population (Hsia, Bridges, & McHale, 2002). As a result, crime rates do not simply quantify criminal acts, but rather, reflect race-effects in the juvenile justice system.

To address growing concern over the disproportionate number of minority youth in the juvenile justice system, Congress passed an amendment in 1988 to the Juvenile Justice and Delinquency Prevention (JJDP) Act of 1974 (Public Law 93-415) requiring states to address disproportionate minority contact in their state plans by identifying the extent and reasons of its existence and by developing intervention strategies (Cabaniss, Frabutt, Kendrick, Arbuckle, 2006; Feyerherm,

¹³ There are nine Juvenile Justice decision points: arrest, referral, detention, diversion, petition, transfer/waiver, adjudication, disposition, confinement, and transfer to an adult court. At intake, law enforcement officers refer juvenile offenders to the juvenile justice system instead of directing them to social services or family interventions (Nunn, 2002). Parents, schools, social workers, victims, and probation officers can also make referrals. At the detention stage, the initial decision to detain the youth in a secure facility is made by the court. A judge presides over an adjudicatory hearing, which is comparable to a trial in an adult criminal court, to hear evidence. Prior to a finding of delinquency, a waiver petition may be filed to determine if the youth can be transferred to an adult court for prosecution. A judge determines the services and sanctions appropriate for the delinquent youth in the disposition, which is referred to as the sentencing phase in an adult criminal court. Disposition orders typically include placement in secure confinement, in a residential placement, on probation, in counseling/substance abuse treatment, or restitution.

1995; Hsia & Hamparian, 1998). Four years later, Congress amended the JJDP Act once again, elevating DMC to a core requirement by tying future federal funding to a state's compliance and by broadening the definition of DMC beyond confinement to contact with the system (Kempf-Leonard, 2007).

Theoretical Perspective:

Conflict Theory

In addition to consensus theory, which views racial disparities in the juvenile justice system as the result of differential offending, conflict theory posits that the disparities are the result of discrimination created when groups with differential power compete with each other for limited resources. Symbolic threat is an outgrowth of conflict theory and is based on the premise that people in the minority who fail to abide by middle-class standards are stereotyped as dangerous (Leiber, Johnson, Fox & Lacks, 2007; Leiber & Mack, 2003; Sampson & Laub, 1993). According to this theory, juvenile justice uses secure confinement of minorities as a way to protect the majority from these perceived threats to middle-class standards and public safety.

A number of criminologists and DMC researchers have conducted studies that support conflict theory as an explanation for the racial disparity in the justice system. For example, Blumstein (1982) found that 20 % of racial disparity in incarceration rates of African Americans was unexplained by their overrepresentation in arrest rates. This result varied by crime type, with drug offenses producing the highest disproportionality (48.9 %) between arrest and

prison. Blumstein's findings were confirmed by a separate study conducted by Langan (1985). In addition, Tonry (1995) noted African American arrest rates from the 1970s to the 1990s remained stable while their incarceration rates for the same time period increased significantly. All three researchers point to the War on Drugs (e.g., the politicization of crime) as a major contributing factor – a point that will be discussed in more detail later (Walker, 2004).

Tittle and Curran (1988) maintain that juvenile justice officials perceive youth of color as more dangerous and threatening because they are unable to identify with these youth, and as a result, subject them to judicial decisions that are often more severe than for similarly situated white youth. In other words, lack of identification creates fear that often results in the implementation of more social-control measures. Some of these stereotypes include youth of color (particularly African-American) as undisciplined, living in dysfunctional families headed by young mothers, sexually promiscuous, dangerous, delinquent, and drug offenders (Feld, 1999). These perceptions often work to the disadvantage of African Americans relative to Whites and may account for the overrepresentation of minorities in the juvenile justice system.

Stereotyping can be seen in state reports that revealed, through semi-structured interviews with juvenile justice personnel, that decision makers included generalized observations of minority youth and their families in their assessments (e.g., Frazier and Bishop, 1995; Leiber 2003; 1993; Leiber and Mack, 2003). In Florida, for example, respondents indicated that assessments

included whether the youth resided in a single-parent home when determining whether the family can provide adequate supervision to insure youth will adhere to possible court stipulations. Those interviewed indicated that a single-parent home is seen as more dysfunctional and this affects minorities more harshly since they are more likely to come from such households. In addition, Frazier and Bishop (1995) point out that decision makers see nonwhite families as being less adequate than white families even when both families can have issues that are problematic.

Bridges and Steen (1998) found that probation officers used different causal attributions to assess the delinquent behavior of African Americans and Whites and that these affected the decision-making process and resulted in longer recommended sentences for African Americans than for Whites¹⁴. As some researchers have noted, the racialization of crime and delinquency has created a situation in this country where criminal/juvenile delinquent has become a proxy for people of color (Walker et al, 2004).

¹⁴ Inherent in the symbolic threat thesis is the idea of moral exclusion, a concept well known in the sociological and psychological literature. Deutsch (1985) suggested that justice is granted to only those individuals with whom one identifies and shares social norms. Moral exclusion is the denial of resources and justice to groups considered *other* or dissimilar. Through the creation of stereotypes, moral exclusion makes it easier to justify the denial of fair and equitable treatment. As a number of justice theories point out, a fundamental criterion for perceived justice is perceived deservingness (Olsen, Cheung, Conway, Hutchison, and Hafer, 2011). Stereotyping is a way to dehumanize groups, making it easier for justice to operate on the Darwinian principle (e.g., survival of the fittest) rather on the fairness principle (Lerner, Miller, and Holmes, 1976). Taken to the extreme, the moral exclusion of marginalized groups from the boundaries of justice can be seen in the Third Reich's Final Solution to the Jewish Question of 1942, the Disappearances in Argentina's Dirty War of the 1970s, the Bosnian War, and the Rwandan Genocide of 1994. These horrific acts of humanity all began with the denial of justice to individuals who were considered a symbolic threat – rooted in stereotypes and fear – to the safety and a way of life to the dominant group.

The symbolic-threat hypothesis further recognizes that discrimination is not general but rather conditional and dependent upon the circumstances (Leiber, 2003; Leiber & Fox, 2005; Tittle & Curran, 1988). In other words, the impact of racial stereotypes on decision making is variable. Both microlevel (e.g., individual-level case-processing variables such as offense type and family status) and macrolevel (e.g., geographic/jurisdiction) factors are predictors of race-effects.

DMC researchers have examined a number of microlevel and macrolevel factors that predict race effects and that support conflict theory's symbolic threat thesis. In particular, studies of drug offenses, violent crime, family status, family income, age, and geography/jurisdiction have been shown to support the symbolic threat thesis.

Drug Offenses

The War-on-Drugs campaign of the 1980s can be seen as fueling the symbolic threat of youth of color. In an attempt to explain racial disparity in drug arrests, conflict theory – of which symbolic-threat thesis is a derivative – asserts that the powerful majority seeks to maintain its position by structuring criminal law to maintain social order by controlling those less powerful groups who are seen as symbolic threats to the middle-class way of life, values, and safety. In other words, crime is a political concept defined by the powerful to keep the powerless subjugated.

For example, drug offenses regarding crack cocaine (a cheaper form of cocaine used predominantly by people of color and those with limited access to economic resources) are associated with harsher penalties than those that apply to powder cocaine. Sampson and Laub (1993) further asserted that less powerful groups are perceived as threatening not only to powerful political elites but to mainstream America.

Illegal drug use is about the same across racial and ethnic groups. According to UCLA Katz (2000) whites account for 75% of the nation's illegal drug users and African-Americans comprise only 13%. These percentages were consistent with African-American/white ratios in the U.S. population. Despite this, African Americans make up 75 % of the nation's drug prisoners (Katz, 2000; Welch, 2007).

Moreover, figures show that white-collar crimes (i.e., embezzlement, consumer fraud, bribery, insider trading, and price fixing), committed predominantly by Whites, cause more deaths and property loss, on a per capita basis, than all street crime combined. Yet, Sampson and Laub (1993) found that African-American youth charged with drug offenses are seen more often as dangerous and more likely to be placed in detention especially if they reside in economically depressed communities.

Leiber and Fox¹⁵ (2005) used multivariate analysis to examine 5,554 juvenile court records in Iowa's largest county (home to the largest minority community in the state) and found that African-American juveniles charged with a drug offense had a 16% decreased likelihood of receiving a release at intake compared to white youth. In contrast, a drug-offense charge was not a significant predictor of a decision to release Whites.

Violent Crime

In a sample of 1,195 youth in an urban Michigan county, Shook & Goodkind (2009) found significant racial disproportionality in detention decisions among juveniles who had committed violent delinquencies even after controlling for legal factors (e.g., prior offenses, offense severity). Of the juveniles who were arrested for violent offenses, 82 % of African-American juveniles were detained while only 58% of White juveniles received detention. The researchers cite these findings as support for conflict theory's symbolic-threat hypothesis, which presupposes that African Americans are viewed by juvenile justice decision makers as more threatening than similarly situated Whites. In the criminal justice system, Schlesinger (2005) found that African American defendants arrested for violent crimes were 33 percent more likely to be denied bail than defendants.

Family Income

Using a hierarchical generalized linear model, Armstrong and Rodriguez (2005) examined individual and contextual factors affecting preadjudication

¹⁵ The study incorporated only dichotomous juvenile race categories (i.e., Black, White). This may not necessarily be a shortcoming of the study design but may be the result of poorly collected state data.

detention of 8,289 juvenile delinquents in 65 counties in a northeastern state. A majority of these juvenile delinquents resided in a household living below the median-level income as defined by the U.S. Census Bureau. The researchers found that higher levels of family income significantly decreased the likelihood of preadjudication detention by a factor of .13 (Armstrong & Rodriguez, 2005). This is significant because the study also found that the race of juvenile defendants significantly correlated with family income levels, such that juveniles of color were more likely to have lower family income levels compared to White juveniles. Armstrong and Rodriguez (2005) interpreted this finding as supporting conflict theory's symbolic-threat thesis. Race/ethnicity is associated with SES in increasing the likelihood of detention. This study highlights the need to consider the intersectionality of multiple identities (i.e., race, gender, class, sexual identity) at particular social locations that may contribute to the overrepresentation of youth of color in the juvenile justice system. Other evidence of significant correlations between race/ethnicity and economic resources is provided by Schlesinger (2005).

In a study of 2,003 Ohio court cases using logistic regression, Wu and Fuentes (1998) found that youth of color from families on welfare have a higher likelihood of being confined. The researchers cited this study as evidence of stereotypes that run counter to mainstream standards.

Many youth of color have fewer economic resources, hence this is an important variable when studying racial disparity in juvenile justice decision

making. In our society, race is so correlated with class and income that it is often used as a proxy (Winkler, 2004).

Family Status

In keeping with symbolic-threat thesis, family status – defined as a living arrangement where two-parent homes are contrasted with one-parent homes, group homes, or foster homes – has also been found to threaten to middle-class values. Leiber and Fox (2005) found that family status had a statistically significant contrasting effect on both Whites and African Americans in juvenile justice decision making. Whites from a single-parent home experienced an increased chance of being released by 6 % whereas African Americans from single-parent homes had a decreased chance of being released by 6 %. Leiber and Fox (2005) interpreted their overall study findings as consistent with symbolic-threat thesis in that African Americans are perceived as dangerous and must be detained for the safety of the middle class.

Age

In a study of all juvenile delinquency petitions filed in an Iowa county in 2003-2004, Leiber et al. (2007) found support for the symbolic-threat hypothesis that older youth of color are perceived as more threatening than older White youth. In an examination of different racial groups, age increased the odds of receiving an intake petition by 43 % for Native Americans, 25 % for African Americans, and 27 % for minority youth classified as other. These minority percentages were in contrast to 13 % for older Whites. In other words, older

minority youth had a greater risk of being petitioned at intake than older White juveniles.

Geography/Jurisdiction

Conflict theorists have noted that race-effects vary geographically across and within jurisdictions (Bray, Sample, & Kempf-Leonard, 2005). Referred to as *justice by geography*, regional factors can account for difference in dynamic socio-historical and political contexts where greater power and resources are allocated to the dominant racial group (Feld, 2005; Kempf-Leonard, 2007; Omni & Winant, 1994). Using quantitative and qualitative methodology, Leiber (2003) found that stereotyping varies by jurisdiction and youth of color who do not abide by middle-class standards (as in dress, demeanor, or family status) were viewed as more threatening and dangerous in particular geographic areas. Leiber et al. (2007) called for more research that takes into account the context across jurisdictions to better understand the implications of social control in juvenile justice decision making.

While these studies provide clues to contributing factors of DMC and support for conflict theory's symbolic threat thesis, no one study can address the lack of consensus that surrounds DMC explanations. That is why research reviews are so important. These reviews integrate existing knowledge into a coherent whole so that conclusions can be drawn. While literature reviews take a traditional narrative approach to summarizing extant studies, research synthesis (e.g., meta-analysis) uses an empirical approach to integrating research to

address issues that have been left unresolved. Before discussing the results of my meta-analysis, it is important to examine the current state of DMC knowledge by exploring earlier DMC reviews. The following section will discuss existing reviews of DMC research.

Prior Reviews of Race-effects in DMC Studies

This section will examine the six most comprehensive and most frequently cited narrative reviews of DMC studies (Egen et al., 2002; Leiber, 2002; Liska and Tausig, 1979; Pope and Feyerherm, 1990a, 1990b; Pope et al., 2002; Tittle and Curran, 1988). There are other DMC reviews cited (Bishop, 2006; McCarthy & Smith, 1986; Ray & Alarid, 2004) but they do not provide sufficient details (such as a complete list of included studies, search criteria, or selection criteria) to allow for critical examination of them.

Traditional Narrative Reviews

In 1979, Liska and Tausig conducted a narrative literature review of 17 articles published from 1963 to 1977 to examine the effects of social class and race on juvenile justice decision making at three decision points: arrest, judicial referral, and judicial disposition. The review's findings reveal race-effects at each decision level. However, the effects of other explanatory conditions were inconclusive. Only six studies controlled for seriousness of offense and prior record: two legal variables found to be highly correlated with race (Speirs et al., 2001). Of these six studies, only three of them simultaneously controlled for these two legal variables. Liska and Tausig (1979) found that simultaneously

controlling for seriousness of offense and prior record reduced race-effects at each decision point but still produced significant race differentials, operating continuously and systematically across decision points. Their results indicated a cumulative process that begins with a more heterogeneous juvenile population at intake but ends with a decidedly homogenous population of youth of color in post-adjudication confinement. This process that involves the accumulation of disadvantaged youth is referred to as amplification.

In a traditional narrative review that included only published studies, Tittle and Curran (1988) summarized 35 DMC studies conducted from 1967 to 1986 in a table that identified the level of decision-making investigated, the legal variables controlled for, and three independent “disadvantage” variables (SES, race/ethnicity, and family status). Of the 35 studies, 14 reported a significant race-effect, 6 reported a significant effect for family structure, and 6 reported SES as a significant factor influencing decision making. While the results seemed to contradict the symbolic-threat discrimination argument, Tittle and Curran (1988) argued that the review findings revealed enough evidence of race-effects to suggest that discrimination is a conditional rather than general phenomenon. Furthermore, the authors believed that the results of their review highlighted the need for further investigation to determine under what conditions or contingencies racial disparities are most likely to occur.

Tittle and Curran (1988) found support for the symbolic-threat hypothesis by discovering more severe juvenile justice decision making in areas where the

symbolic racial threat was considered high (i.e., neighborhoods with a large concentration of people of color). In fact, the researchers found that race-effects in decision making were twice as large in what Tittle and Curran (1988) described as *high-racial-threat areas* compared to *low-threat areas* (e.g., neighborhoods with a more homogenous White population).

One of the most frequently cited reviews (n =46) is by Pope and Feyerherm (1990a; 1990b). The authors believed that DMC could be explained in several different ways: (1) by differential involvement of economically disadvantaged youth of color, (2) by consistent and overt racism, and/or (3) by structural factors (e.g., jurisdictional fragmentation, multiple decision makers operating in a discretionary and informal manner) in the juvenile justice system that are either intentionally or unintentionally disadvantageous to youth of color. In this traditional qualitative narrative review, the authors examined 46 DMC research studies (both qualitative and quantitative, published and unpublished) available in the 1970s and 1980s and found that race impacted decision making directly and indirectly in two-thirds of the studies even when statistical controls were included.

Pope and Feyerherm (1990a; 1990b) suggested some specific problems that should be addressed in future DMC research studies:

1. Aggregation and disaggregation. The combination of jurisdictions (e.g., statewide) into larger datasets can dramatically alter the description of the relationship between race and decision making. For example,

examining statewide data may obscure identification of jurisdictions such as specific cities or towns, where youth of color are experiencing discrimination.

2. Multiple decision points. Primary researchers should examine multiple decision points because race-effects tend to increase as youth are processed deeper into the juvenile justice system.
3. Multivariate models and indirect effects. Researchers should employ more sophisticated analytic techniques (e.g., multivariate) that can detect direct, indirect, and interactional race-effects.
4. Jurisdictional differences. Research should include both rural and urban jurisdictions in the study sample.
5. Social and structural variables. Studies should examine information on family characteristics, case-processing variables, and social conditions to detect any influence on race-effects.
6. Identification of minority groups. Youth of color should be identified specifically according to race and ethnicity, and should not be aggregated into catchall groupings of non-White, or minority.

In a review of state technical reports, Leiber (2002) discovered that despite variability in the assessment studies, most (n=32) reported evidence of race differences in juvenile justice outcomes that are not completely accounted for by differential involvement in crime. The results from state assessment studies parallel those from the general literature of research on juvenile justice

decision making (Bishop, 2005; Engen et al., 2002; Pope and Feyerherm, 1992; Pope et al., 2002). Race was found to have either a direct relationship with decision making and/or interaction or combination effects with legal variables (e.g., crime type and prior record), extralegal factors (e.g., age and family status), process variables (e.g., detention) and/or community contexts (e.g., degree of poverty).

According to Leiber's (2002) review, as revised and reprinted in Pope and Leiber (2005), minority overrepresentation was determined to be the result of solely legal factors (such as severity of crime) in only 12 states. Furthermore, several studies revealed that many legal and extralegal variables appear to be associated with race-effects and work to the disadvantage of minority youth. In one reviewed study, Lockhart et al. (1991) examined racial disparity in 159 counties within Georgia's juvenile justice system in 1988 and found that major determinants of outcome were the severity of the current charge and the extent of prior contact with the juvenile justice system. Compared to White youth, African-American youth tended to have more prior contact and to be arrested for more severe offenses. In a traditional qualitative narrative review that included only published studies from 1989 through 2001 and extended the first Feyerherm and Pope review, Pope et al. (2002) found that the majority (25) of the studies ($n = 34$) reported race-effects even when legal factors were controlled. These studies included 17 that reported mixed results, revealing that not all minority races had harsher sanctions imposed or that the race-effects existed for some

decision points but not others. Many of these studies noted race-effects at detention and intake decisions and the strength of indirect relationships between detention and subsequent juvenile justice decision points. While this review discovered race-effects across studies, the reviewers did not determine the causes or influences.

In a traditional qualitative narrative review that included only published studies from 1989 through 2001 and extended the Feyerherm and Pope (1990a, 1990b) reviews, Pope et al. (2003) found that the majority (25) of the 34 studies reported race-effects even when legal factors were controlled. These studies included 17 that reported mixed results, revealing that not all minority races had harsher sanctions imposed or that the race-effects existed for some decision points but not others. Many of these studies indicated significant race-effects at detention and intake decisions and a strong relationship between detention decisions and subsequent juvenile justice decision points. While this review discovered race-effects across studies, the reviewers did not determine the causes or influences.

Critique of Prior Reviews

The six most commonly cited reviews of DMC research have provided invaluable information for the advancement of understanding race-effects in the juvenile justice system; however, these reviews (Egen et al, 2002; Leiber, 2002; Liska & Tausig, 1979; Pope & Feyerherm, 1990a, 1990b; Pope, et al., 2002; Tittle & Curran, 1988) are hampered by important limitations (see Table 1). Of the

traditional narrative qualitative reviews, only Pope and Feyerherm (1990a, 1990b) was comprehensive in nature and included both published and unpublished research.

Contemporary scholars have been quite critical of traditional qualitative narrative reviews (Borenstein et al, 2009; Cooper, 2010; Cooper & Hedges, 1994; Lipsey & Wilson, 2001; Rosenthal, 1991; Wolf, 1986). Their criticisms of traditional literature reviews include:

1. Selective inclusion of studies grounded in personal judgments;
2. Rare use of systematic techniques to ensure that all relevant literature was located and information gathered accurately;
3. Reliance on statistical significance that is influenced by sample size; statistical tests often fail to reject the null hypothesis because of their lack of statistical power;
4. Lack of scientific rigor;
5. Subjective differential weighting of studies;
6. Failure to examine study characteristics as possible explanations of synthesized results; and
7. Failure to consider moderating variables.

As pointed out by Rosenthal (1991), the social sciences typically suffer from *poor cumulation* because they do not show the orderly progress and development that the older sciences (e.g., physics and chemistry) do. Specifically, Rosenthal contends that social sciences lack sophisticated

quantitative reviews to summarize empirically cumulative knowledge. This is the case with DMC research. All but one of the extant DMC reviews is a traditional qualitative narrative study.

Concerned about imprecision in traditional narrative reviews, researchers are increasingly using systematic empirical synthesis. Of the DMC reviews, only Egen et al. (2002) conducted an empirical synthesis. Unfortunately, this empirical review is not comprehensive in nature and is susceptible to two types of biases. First, this review includes only studies published in peer-reviewed journals. In their defense, Egen et al. (2002) argue that there is no reason to expect that excluded unpublished studies differ systematically from the included published ones. However, Cooper (2010) disagrees and makes the case that published research is susceptible to bias against null findings. In other words, journals are more likely to publish research that has significant findings. Lipsey and Wilson (1993) examined 92 meta-analyses presenting treatment effects in both published and unpublished reports and found evidence of bias against null findings where the published estimates were about one-third greater than unpublished estimates.

In addition to bias against null findings, Egen et al.'s (2002) review is predisposed to confirmatory bias. This is where researchers with findings that conflict with widely-held beliefs are less likely to submit their results for publication (Cooper, 2010). Because of the possibility of these two biases,

Cooper (2010) recommends that reviewers not limit their research syntheses to only published primary studies.

The term meta-analysis has come to encompass all forms of quantitative research synthesis (Lipsey & Wilson, 2001). This meta-analysis is unique in that it is the first DMC review that is both comprehensive in including both published and unpublished studies, and empirical. Specifically, this meta-analytic review examines race-effects on preadjudication detention. Using empirical analysis, this meta-analytic review will go beyond the question of whether racial disparity exists to address the question of why research findings diverge: Why do some studies find discrimination while others do not?

Like the juvenile justice system, the adult criminal justice system has been beset with persistent racial disparities; and research has revealed similar inconsistencies (Schlesinger, 2005). But unlike investigators of the juvenile justice system, researchers who focus on disparities in the criminal justice system have conducted several meta-analyses (e.g., Mitchell, 2005, Pratt, 1998) in attempting to explain conflicting empirical research outcomes.

Research Questions

This review is indebted to Mitchell's (2005) review of racial disparity research in the *adult* criminal justice sentencing system and attempts to answer some of the same questions in juvenile preadjudication detention. Like Mitchell, this dissertation will go beyond the question of whether racial disparity exists and also address the question of why research findings diverge. Why do some

studies find discrimination while others do not? That said, this proposed dissertation attempts to answer two main research questions:

RQ1. Are youth of color detained in the juvenile justice system more often than Whites even after controlling¹⁶ for prior delinquent history and severity of current offense? If so, what is the magnitude and strength of this difference?

RQ2. What extralegal (i.e., status variables: SES¹⁷, family status; sample characteristics: age, gender), legal (i.e., offenses related to drugs, person, weapon) and contextual (i.e., jurisdiction, region/geography) variables are related to the likelihood that racial disparity will occur?

Hypotheses

This study hypothesized the following:

H1. Juveniles of color receive pretrial detention more often than Whites, even after controlling for legal variables (such as prior delinquent history and severity of current offense)¹⁸.

H2. Variation in findings of racial disproportionality in juvenile detention is due, in part, to differing extralegal status characteristics (e.g., SES and family status) associated with race.

H3. Racial disparities in detention are greatest in juvenile cases with specific extralegal characteristics (e.g., age, gender) and structural contexts (e.g.,

¹⁶ This meta-analysis “controls” for prior offense history and offense severity by only including studies that control for these two legal variables.

¹⁷ In my meta-analysis, a juvenile’s socioeconomic status could be measured in a number of ways. The most common measures of SES were family employment status, income, or education level.

legal offense-related delinquencies, jurisdiction/geography/region) where youth of color pose the greatest symbolic threat. That is, when:

H_{3a}. youth of color are older males;

H_{3b}. youth of color are accused of drug-related offenses;

H_{3c}. youth of color are accused of person- or weapon-related offenses;

H_{3d}. youth reside in urban areas and in southern states.

Influenced by conflict theory' symbolic threat thesis and by Mitchell's (2003) meta-analysis of adult criminal system, this study hypothesizes that even after controlling for legal variables (e.g., prior delinquent history and severity of current offense), juveniles of color receive pretrial detention more often than Whites. In addition, disparities in detention are greatest in juvenile cases (as relating to age and type of delinquency such as drug-related offenses) and structural contexts (e.g., region/jurisdictions) where youth of color pose the greatest threat to the dominant society. For example, several scholars have hypothesized that disparities are greatest in the southern states where there is a long history of racial conflict (i.e., Jim Crow laws, Voting Rights laws, Segregation,) and in urban areas where there is typically a greater concentration of youth of color.

Chapter 3: Research Design and Analysis of Data

In addition to synthesizing research to determine if racial discrimination is indeed evident across studies, this dissertation seeks to elucidate numerous factors that may contribute to racial disparity in the juvenile justice system.

Overview of Purpose and Research Questions

Contemporary scholars have criticized traditional qualitative narrative reviews for lacking scientific rigor. In search of more precise conclusions, researchers are moving away from the traditional qualitative review and conducting more quantitative syntheses that consist more of statistical analysis than narrative. Credited with coining the term meta-analysis, Glass (1976) differentiates meta-analysis from other types of research. Whereas primary research is analysis of original data of a research study, secondary research is the reanalysis of study data from multiple studies, using more rigorous statistical techniques, to answer research questions. Meta-analysis is “the analysis of analyses...the statistical analysis of a larger collection of analysis results from individual studies for the purpose of integrating the findings” (p. 3). Research synthesis attempts to account for inconsistencies in primary research findings.

The key metric in meta-analyses is the effect-size statistic to examine both the magnitude and the direction of a relationship, not merely its statistical significance. As such, reviewers are not faced with the confounding issues (such as sample size) that figure prominently in significance test results (Lipsey & Wilson, 2001). Furthermore, effect-size is a standardized statistic that allows for

comparisons across studies and is considered to represent the degree of relationship between two variables.

According to Cooper's (2010) most recent model, meta-analysis involves seven steps: (1) formulating the problem/research question, (2) searching the literature, (3) gathering information from studies, (4) evaluating the quality of studies, (5) analyzing and integrating study outcomes, (6) interpreting findings, and (7) presenting results. The first four of these steps will provide the framework for the remainder of this chapter.

Since the 1960s and 1970s, the amount of social science research has increased dramatically with the advent of the computer and the birth of the internet. As a result, researchers have greater access to information and have the ability to conduct more sophisticated data analyses. As the amount of research has increased, social scientists have struggled to integrate extant study results in a timely and effective manner. The purpose of this research synthesis is to present the current state of knowledge of race-effects on juvenile justice detention and to re-examine inconsistent DMC research findings.

Search Strategy

To ensure that the sample of studies in the proposed synthesis was representative of all research on the topic, a broad and exhaustive literature search was conducted. This step included: (1) a search of computerized bibliographic databases (e.g., ERIC, PsychINFO, Sociological Abstracts, Dissertation Abstracts Sociological Abstracts; Social Science Citation Index;

Criminology: Sage, A Full-Text Database; and LexisNexis Legal); (2) a hand-search of relevant journals not available online but obtained at the library; (3) the use of the snowball technique to examine references of prior reviews and of eligible studies to identify additional studies; (4) an investigation of conference programs obtained from online index searches, from pertinent societies and associations, or directly from the presenter(s); (5) phone calls to each state's DMC representative to obtain government technical reports; and (6) contacting professional leaders and researchers in the field to identify any missed studies. This search also included the examination of field-specific journals (e.g., *The Journal of Crime and Delinquency*, *Criminology*, *Justice Quarterly*, *Crime and Delinquency* and *The Journal of Criminal Justice*) and notable books.

Searches were conducted using keywords and any combination of keywords. Keywords included: juvenile justice system, detention, disproportionate minority contact, DMC, racial disparity, African Americans, detention reforms, detention research, minority youth, youth of color, and racial bias. In addition, state agencies were contacted to locate any internal evaluations of juvenile justice detention practices in regard to racial disparities.

Preliminary screening was based on title, abstract, and other available information. Studies that were not disqualified on the basis of preliminary review were retrieved.

Inclusion and Exclusion Criteria for Studies

From an initial result of more than 600 potential professional DMC-related citations, selection for inclusion in this meta-analysis was narrowed according to certain conditions. Specifically, an empirical study had to meet the following criteria: (1) examined pretrial detention decisions for juvenile justice cases in the U.S. (i.e., U.S. adult criminal justice system cases were excluded); (2) simultaneously, controlled for seriousness of offense and prior history;¹⁹ (3) estimated the direct influence of race on pretrial detention decisions; (4) available prior to Jan. 1, 2011; (5) from an independent, non-overlapping data set; and (6) written in English, the primary language of the U.S. juvenile justice system.

Focusing on the adult criminal justice system rather than the juvenile justice system, Mitchell (2005) conducted a meta-analysis of studies that examined the influence of race and ethnicity on sentencing decisions. This study applied similar methodological and analytic procedures to examine racial and ethnic disparities in preadjudication detention decisions within the juvenile justice detention system.

As such, this study did not include criminal court data because of the philosophical differences between adult and juvenile justice systems. Unlike the adult criminal systems, the juvenile justice system is guided by the *parens patriae* doctrine. This doctrine calls for the juvenile justice system to assume a parental

¹⁹ Several studies have found that legal indicators such as seriousness of offense and prior record are stronger predictors of detention than race (Armstrong & Rodriguez, 2005; Bishop & Frazier, 1998; Cohen & Kluegel, 1979; O'Neill, 2002).

role that includes interventions centered on the wellbeing and on the needs of the child. Decisions are based on a philosophy of protection and nurturing instead of punishment as in the criminal system.

The eligibility criteria included both published and unpublished comparisons. While many researchers argue that unpublished studies lack the scientific rigor of published studies that are peer reviewed, this study included both published and unpublished research to address publication bias – a bias that results from including only published studies and that is a common criticism of many meta-analyses. Despite including both published and unpublished studies, this study maintained the scientific integrity of the meta-analysis by implementing highly selective inclusion criteria (e.g., controlling for prior record and seriousness of offense, and restricting dependent data), and through the use of specific coding procedures (study features, variables included, data analysis).

When multiple studies used overlapping data, the decision concerning which racial comparisons to include was based on the Mitchell's (2005) criteria: (1) comparisons that report greater detail for calculating effect size will be selected over those reporting less detail, (2) comparisons that analyze data in the most context-specific manner will be given highest priority, (3) comparisons using the greatest number of control variables will be given priority, and (4) comparisons with the larger sample size will be given precedence.

Based upon these screening criteria, the original 600 studies were narrowed down to 198. Two coders then evaluated all 198 studies according to

rigorous, pre-specified criteria and concluded that 28 studies met the conditions for inclusion in this meta-analysis. These selection criteria are summarized in Table 2.

Table 2 also highlights why the 150 ineligible studies (75.76%) failed to meet the inclusion criteria. Primarily, they were not included because they:

1. did not directly analyze pretrial detention (35.35%);
2. were not empirical analyses or did not sufficiently report their regression results (22.73%);
3. did not simultaneously control for seriousness of offense and prior record (12.12%); and
4. did not measure the unmoderated influence of race (5.56%).

More specifically, 70 studies that were determined to be ineligible did not analyze the direct influence of pretrial detention. Instead, they analyzed how pretrial detention mediated the impact of race on other decision points.

Forty-five of the studies were deemed ineligible because they were not empirical studies. Specifically, they did not use statistical methods to analyze quantitative data.

Twenty-four studies were ineligible because they did not simultaneously control for prior record and seriousness of offense. Several studies have found that prior record and seriousness of offense (e.g., Armstrong & Rodriguez, 2005; Bishop & Frazier, 1998; Cohen & Kluegel, 1979; O'Neill, 2002) are important predictors of detention. Consequently, it has become standard practice within

juvenile and criminal justice research to hold offending patterns and offense characteristics constant so that these variables will not influence the size of the race-effects (Huizinga et al., 2007).

In 11 ineligible studies, the authors did not measure the unmoderated influence of race upon detention decisions. In other words, the author(s) calculated a race-effect and did not control for gender or age.

The selection criteria enumerated above reduced the number of eligible studies to 48. Twenty studies were eliminated from this group because the authors did not report sufficient information to calculate an effect size (e.g., standard deviation, sample size), sample breakdown according to race, which racial/ethnic group was used as the reference group, or because the same data set as another included study.

In all, this meta-analysis included 28 eligible studies with 44 effect estimates and a combined sample size of 566,528, yielding an average of 20,233 juvenile cases per study. Thus, the sample size of this meta-analysis was 44, a total based on the number of independent detention race and ethnicity contrasts (effect estimates) and not on the total number of studies. There are more effect sizes than eligible studies because several studies analyzed more than one contrast.

All the eligible studies are found in the reference list and are designated with an asterisk (*). In addition, the citations for the ineligible studies are grouped

according to the reason for ineligibility or exclusion and are presented in the appendices (see Appendix A).

Table 3 provides a breakdown of the eligible studies by publication type and year. The majority of eligible studies (65%, 21 studies) are peer-reviewed journal articles. In addition to a book chapter (1), the remaining studies are unpublished technical reports (31.25 %, 10 studies). The large percentage of unpublished studies included in this meta-analysis reduces the possibility of publication bias.

Eligible studies did not include any research written prior to the 1980s. The lack of studies from the 1960s and 1970s is primarily due to the shortcomings of statistical methods available at the time, lack of methodological rigor, and the poor quality of state data available. Out of the total 198 initial studies, two were published in the 1960s and 17 were published in the 1970s; yet, none of these 19 studies was included in the meta-analysis. Much of the pre-1980 research used bivariate analysis that did not control for the interrelationships between all the independent variables, thereby increasing the possibility of spurious results (McCarthy & Smith, 1986). As mentioned earlier, research reveals the importance of controlling for legal variables (i.e., prior history and seriousness of offense) because they are strong predictors of race-effects and can produce spurious results. In an examination of 17 studies from the 1960s and 1970s that examined race-effects in the juvenile justice system, Liska and Tausig (1979)

found only one study that controlled for both seriousness of offense and prior history.

In the 1980s, juvenile justice researchers slowly began using more sophisticated statistical methods (e.g., logistic regression). Regression techniques were used by four primary studies from the 1980s. This number doubled in the 1990s to eight primary studies (28.13%) and doubled again to 16 (57.14%) in the 2000s. As computer technology advanced, so did statistical models. Researchers from two of the primary studies published in the 2000s used hierarchical linear modeling, a more specialized regression technique that takes into account the clustering nature and the nested, hierarchical data structures of the social sciences.

Coding Procedures and Quality Control

This research used a detailed pre-specified coding system to systematically extract information from every eligible study on sample/context characteristics, research design, methodology, and effect-size results, as well as the publication type. Instead of using paper coding sheets, an electronic database was designed for cataloging study data based on prespecified coding categories (Appendix A). Information on each study was entered on 5 electronic data forms detailing: eligibility, study, sample context, outcome, and effect size. The eligibility form detailed whether or not the study met each of the eligibility criteria. The study form collected study information regarding the publication type, number of samples, and number of decision points. On the sample form, I recorded information about the jurisdiction, region, data collection dates, unit of analysis, mean age, number of females, the sample size broken down by race according to those detained and not detained. The outcome form focused on the moderator variables coded. Finally the effect size form detailed each racial contrast in the study.

Trained to maximize interjudge agreement, two experienced coders (a Ph.D. social scientist and a graduate student) independently coded 10 randomly selected studies and entered the information into the coding database. Upon completion, the two coders compared results and discussed any discrepancies. The coders made revisions to the coding data and protocol until an acceptable level of agreement was reached.

Once this pilot test was completed, the two coders randomly selected another representative sample of 10 studies to assess inter-rater reliability. This is consistent with Lombard, Snyder-Duch, and Bracken's (2002) recommendation of an inter-rater reliability sample size of not less than 10 % of the full sample.

In the end, each of the eligible 28 studies was coded twice and compared on all items. Double coding was used to address coder drift, the subtle variations in the coding process that can creep in over time (Wilson, 2009). Although evidence indicates that this double-coding process results in high reliability (Patall, Cooper, & Robinson, 2009; Rosenthal, 1987), inter-rater reliability was also calculated using Cohen's kappa and Krippendorff's alpha. Krippendorff's alpha, which is not appropriate for dichotomous variables, ranged from .8894 to .9990 for nondichotomous variables. Cohen's kappa was used to calculate reliability for dichotomous variables and ranged from .615 to .800. Both indices revealed a relatively high level of agreement.

Dependent Variable and its Operationalization

Pretrial detention is defined as the temporary placement of juveniles in secure facilities, pending disposition (Webb, 2006). Juveniles are placed in pretrial detention for the following reasons: (1) to ensure appearance at pretrial hearings, (2) to minimize a threat to the community or to self, and (3) to accommodate them when they have no parent or guardian to whom they can return.

In most studies on this subject, pretrial detention is operationalized as a dichotomously-coded dependent variable (the juvenile was or was not detained prior to adjudication) which is contrasted with other variables of interest such as race/ethnicity or other contextual factors to determine differences between the two groups. All samples included in the proposed meta-analysis will be non-overlapping. That is, all studies that are included will be independent so that there are no overlapping samples that would result in double counting.

As noted above, the detention decision is a crucial juvenile justice decision point that greatly influences the manner in which a case is subsequently processed (Kurtz, Linneman, and Spohn, 2008; Leiber, 2003). As with arrest, the decision to detain does not involve a judicial review. In most cases, police officers assist the juvenile intake officer in interpreting the statute, performing risk-needs assessments, and determining an appropriate response. Intake officers, who are entry-level employees with considerably less education and experience than decision makers at other points within the system, often act as the primary decision makers of detention placement at arrest. As a result, some scholars have referred to the decision to detain as one of the greatest abuses of power in the juvenile justice system (Webb, 2006; Bishop, 2005).

Independent Variable and its Operationalization

The major independent variable is race – a categorical variable. For this proposed study, race has been conceptualized according to the federal government's designation. In 1997, the Office of Management and Budget

revised and expanded racial categories to: (1) American Indian or Alaska Native, (2) Asian; (3) Black or African American, (4) Hispanic or Latino, (5) Native Hawaiian or Other Pacific Islander, and (6) White. However, as will be explained later, these categories typically have not been used in available studies.

Unit of Analysis

In this meta-analysis, the unit of analysis is not the individual study but rather contrasts between White juveniles and juveniles in other minority groups. This study calculated an effect size (the dependent variable in this meta-analysis) for each independent contrast from all eligible preadjudication detention studies. For example, one study can report more than one contrast in different jurisdictions.

Statistical Dependency

One of the primary decisions in a meta-analysis is how to handle statistical dependency – a violation of the independent statistical assumption vital to some types of data analyses. This meta-analysis encountered two types of statistical dependency: (1) multiple studies using the same sample, (2) a study which compares the detention outcomes of various racial contrasts but uses the same comparison group (i.e., White) in all the contrasts.

As noted earlier, the issue of overlapping samples was addressed by using only one of the studies and excluding the others, and choosing the study with the most sophisticated statistical analysis (i.e., with more moderator variables). In cases where a study compares multiple racial contrasts using the

same White sample, this study opted to conduct each racial contrast separately. It did not attempt to take this statistical dependency into account because the impact was small.

Data Analyses

Meta-analysis involves two types of variables: (1) effect-sizes of variables of primary interest (i.e., dependent variable), and (2) descriptive variables (i.e., independent variables) that characterize the effect sizes and the studies that generate them (Lipsey & Wilson, 2001). Chapter 4 will first present study characteristics of the eligible studies. This analysis will examine the moderator variables to describe the sample, context, and methods of the primary studies. Second, it will discuss the analysis of effect-size estimates as well as which moderators are associated with variability in effect size (i.e., disparity in pretrial detention for youth of color).

Effect-Size Analysis

To combine effect sizes across studies, a common effect size must be chosen to estimate the summary or main effect size. Because the dependent variable in this meta-analysis is dichotomous (minority-White contrast), the odds ratio was chosen to average the effect across groups (Fleiss, 1993). The odds ratio is a mathematical transformation (antilog) of the coefficient and indicates the increase or decrease in the likelihood (odds) of the outcome (detention) for each unit of increase in the predictor variable.

Since the raw data from each study was available (i.e., the number detained and not detained for each racial group) and studies reported differing measures of effect size (odds ratio, beta, or OLS standardized coefficients) and the standard errors were not always available, log odds ratios and standard errors were computed for each study using the counts. Each study can be viewed as an individual 2 x 2 contingency table (Harris et al., 2008; Sterne et al., 2001; Fleiss, 1993):

	Non-White	White	Total
Detained	a	b	N1
Not Detained	c	d	N0

The odds ratio (OR) for a single study, then, is:

$$OR = (ad)/(bc)$$

And, the log odds ratio (Log OR):

$$\text{Log OR} = \log(OR)$$

The standard error (SE) for the Log OR:

$$SE(\text{Log OR}) = \sqrt{1/a + 1/b + 1/c + 1/d}$$

Before calculating the summary effect, each study contrast must be weighted to reflect precision (e.g., in terms of sample size and study design). For example, a study contrast with a larger sample would be given more weight. The weighted mean effect size reflects the population effect size more accurately than any of the individual estimates (Ellis, 2010). Each study effect is defined by a

confidence interval, a range of likely values for the true effect, and reflects the width of precision (Borenstein et al., 2009).

Calculating Weighted Mean Effect Sizes

To determine how much weight is given to each study, meta-analysis has two different approaches for assigning weight to each study. The two approaches – the random effects model and the fixed effect model – are based on different assumptions regarding the nature of the studies (Borenstein et al., 2009). Determining which computational model to use depends on one's expectations about whether the studies share a common effect size or not.

The fixed-effect model assumes that there is only one true effect size that is shared by all the studies and that any differences are due to sampling error. Fixed-effect model is used when the two following conditions are met: (1) all studies in the meta-analysis are functionally identical, and (2) the goal of the meta-analysis is to compute a common effect size for an identified population and not to generalize to other populations (Borenstein et al., 2009). For example, a fixed model is typically used for meta-analytic studies of clinical trials that compare a drug to a placebo. These studies draw from a common pool of patients, use the same researchers and implement the same measure and dose. In addition, these studies seek to determine if a particular drug works in the population from which the patients were drawn.

In contrast to the fixed-effect model in which a single effect is assumed to be common to every study and which focuses on minimizing within-study error,

the random-effects model is best used for a series of studies performed by independent researchers who desire to generalize results; it attempts to minimize both the within and between study error in a meta-analysis (Borenstein et al., 2009). Under the random-effects model, studies are assumed not to be functionally equivalent, and therefore, not to share a common effect size.

The random-effects model, in which the true effect can vary across studies, has the primary goal of estimating the mean of a distribution of true effects (Borenstein et al., 2009). It is considered more conservative than the fixed-effect model because the assigned weights to studies are more balanced, thereby ensuring that large studies are less likely to dominate the analysis while smaller studies are less likely to be trivialized.

While it has become common practice to use the fixed-effect model at first but to switch to a random-effects model if the test of homogeneity is statistically significant, I have chosen not to adopt this practice, at the recommendation of Borenstein et al. (2009). Instead, I am basing my *a priori* decision to use the random-effects approach based on my understanding of whether or not all studies in my sample share a common effect size. In this study, effect sizes were estimated with Stata™ statistical package using a random-effects approach.

The fixed-effects model tests the null hypothesis that there is zero effect in every study (Borenstein et al., 2009). In contrast, the random-effects model tests the null hypothesis that the mean effect is zero.

Moderator Variable Analysis

Moderator analyses were conducted to determine whether coded legal and extralegal variables (e.g., drug offenses, age, and family status²⁰) were related to effect size and whether there were interesting interrelationships among them. Moderators are variables that affect the direction and/or strength of the relationship between an independent variable and a dependent variable (Baron & Kenny, 1986). As stated by Baron and Kenny, a moderator effect exists if the interaction term explains a significant amount of variance in the criterion variable. An interaction effect occurs when the effect of one variable is not the same at all levels of the other variable (Guevara, Spohn, & Herz, 2004).

Past research has revealed that certain variables may moderate the relationship between pre-adjudicatory detention and youth of color. These moderators include: individual-level variables (such as age, sex, socioeconomic status, family status, school, and type of crime), sample/context-level variables (such as jurisdiction or region), and study-level variables (such as study year and type of publication).

Earlier studies examining DMC from the 1960s and 1970s found evidence of overt racial bias but failed to compare similarly situated youth (Speir, Meredith, & Johnson, 2001; Zatz, 1987). Since that time, state databases began collecting more information about the background of youth. In addition, researchers have begun using more advanced statistical methods.

²⁰ Family status is defined in terms of living arrangements where two-parent homes are contrasted with one-parent homes, group homes, or foster homes.

Chapter 4: Results

Descriptive Analyses

Three racial and ethnic categories that were identified in the literature were used as comparisons to Whites: African Americans, Latinos and minorities.²¹ In addition to these racial and ethnic groupings, I created a new category, entitled “youth of color,” by aggregating data from *all* 28 eligible studies of each identified racial and ethnic group apart from White. Because of the insufficient data available for analyzing some moderators (e.g., region), the aggregated youth-of-color category was created in hopes of identifying additional relationships with detention outcomes. From this aggregated data, a youth-of-color/White contrast (44 effect sizes) was analyzed to examine the overall effect of pre-adjudicated detention on youth of color. A separate meta-analysis was performed for each racial and ethnic category with (bivariate) and without (multivariate) contextual variables that had multiple studies on the subject.

The aim of this study was to determine: (1) whether, even after controlling for legal variables (e.g., prior delinquent history and severity of current offense) minorities receive pretrial detention more often than Whites; (2) whether disparities in detention in juvenile cases are due to structural contexts (i.e., geography/jurisdictions) where minority juveniles pose the greatest symbolic threat; and (3) whether variability of race-effects is due to differing sample characteristics (e.g., mean age and proportion of females).

²¹ “Minority” is a category used by eight specific studies to refer to all youth who were not identified as White. Analyses were run on the White/*minority* contrast that was used in eight primary studies.

Geographically, this meta-analysis included studies with data from 15 states as summarized in Table 4. The regions represented in the eligible studies were the Southwest (i.e., Arizona; 4.55%), South²² (i.e., Florida, South Carolina, West Virginia; 15.91%), North (i.e., New York, New Jersey, Pennsylvania; 9.09%), Midwest (i.e., Illinois, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, Ohio; 54.54%), and the central plains (Oklahoma; 4.55%). Five studies were from unknown states (11.36%).

Table 5 reports the contextual characteristics of the 45 detention contrasts. The descriptive statistics for the meta-analytic sample reveal that half (50%) of the detention contexts are comprised of data pertaining to cities and counties while 50% are based on state-wide data. The majority (81.82%) of the detention data comes from non-Southern states.

Table 6 reports the descriptive statistics on the methodological variables for 44 detention contrasts with non-missing data. These analyses averaged 9 variables, the majority of which are categorized as control variables (i.e., not related to race/ethnicity, offense history, or seriousness of offense).

Interestingly, Table 8 reports that only 11% of the coded analyses used both type of offense and severity of offense rating to describe this important seriousness of offense variable. The majority of the coded analyses describe severity of offense using only one variable, either common law (44%) or severity of offense (44%).

²² The south has been operationalized as the eleven former Confederate states.

As shown in Table 7, gender (98%), age (89%), and unpublished (69%) are the most common types of control variables. Meanwhile, few studies controlled for SES (13%), family status (31%), school status (27%), drugs (22%), weapons (13%), or person offenses (38%).

Not surprisingly, male youth of color comprised the majority of the samples analyzed in this meta-analysis (Table 8). The mean sample age was 15 years old and males composed at least 75% of the samples. In detention contrasts comparing African Americans to Whites, African Americans comprised 23% of the samples. In Latino/White detention contrasts, Latinos represented 6% of the samples. Youth of color represented on average 32% of all the samples.

Summary of Descriptive Analysis

The descriptive analyses of the primary studies included in prior reviews and in this meta-analysis reveal several important findings. First, this meta-analysis was comprised of 28 primary studies (i.e., 44 racial contrast effect estimates) that examined preadjudatory detention in the juvenile justice system. This compares favorably to the six prior DMC reviews that included an average of 38 primary studies. While the average number of studies is greater when compared to this meta-analysis, this difference can be explained by previous studies examining several juvenile justice decision points. For reasons discussed earlier, this meta-analysis did not include other decision points but focused exclusively on preadjudication detention.

Furthermore, in common with a mere one-third of previous meta-analytic studies, this study included both published and unpublished sources. However no studies prior to the 1980s were included because of specification biases²³ that plagued prior studies. It was not until after 1980 that studies began to control for prior record and severity of offense, two legal variables found to be highly correlated with race (Speirs et al., 2001).

The primary studies included in this meta-analysis represented most major areas of the country. The only section of the country not included in the analysis was the West. Half of the studies collected data at the city/county level and half sampled at the state level.

All studies included here controlled for prior history and seriousness of offense; however, the majority still used simplistic coding measures. This was in spite of a call by leaders in the field to adopt the use of multiple variables to measure these legal characteristics.

In this meta-analysis, the average age of the juveniles was 15. The majority were male.

Effect-Size Analysis

The meta-analysis was run using Stata 10.1 to determine if there was DMC across studies. In the primary studies, three racial contrasts²⁴ were

²³ Specification bias occurs when studies omit relevant factors that influence results.

²⁴ Some racial categories (e.g., *other*, Asian, Pacific Islander, and American Indian) were included in primary studies but because of the small sample size (i.e., number of primary studies) were not analyzed as individual contrasts in this meta-analysis.

identified: African American/, Latino/White, and minority/White.²⁵ These are the groups that had the most comprehensive data. In addition to calculating a minority/White contrast, this study used the categorical term “youth of color” to combine all racial groups other than Whites featured in each of the 28 studies (i.e., 44 effect estimates) into a fourth contrast.

For each contrast, forest plots were generated with the odds ratio, confidence interval, weight for each study, the overall OR, and confidence intervals for all studies combined (Harris et al., 2008; Sterne et al., 2001). The overall OR is the result from the pooled analysis taking into account each study while adjusting for the number of participants and events in each study. The precision of each study is represented by the confidence interval, a range in which it is expected that the *true* effect size is located. A confidence interval that does not include 0 indicates that the average effect size is statistically significant and has a *p*-value less than .05. An effect size to the left of center indicates that Whites are more likely to be detained than the comparison group. If the effect size is to the right of center, it indicates that the comparison group is more likely to be detained than Whites. The forest plot displayed in Figure 1 expresses graphically what the overall odds ratio indicates: African-American juveniles are much more likely to be detained than Whites. The forest plot shows the contribution of each study to the meta-analysis (i.e. the weight of the study), and it is represented by the area inside the box (Sterne et al., 2001). The center of

²⁵ “Minority” is a specific categorical term used by other researchers in six of the primary studies.

the box represents the effect estimate from that study, and the confidence interval for each study is also shown (Sterne et al., 2001).

A meta-influence analysis was performed to determine the influence of individual studies on the overall effect size. Effect size of 0.10 is small, 0.30 is medium and 0.50 is large. The meta-analysis estimates are computed dropping a single study at a time (Sterne et al., 2001).

Publication bias, the notion that significant results are published more often than non-significant findings, can skew the results of a meta-analysis (Oakes Sandoz, 1993). Potential publication bias and small study bias were assessed by a funnel plot of the Log OR against the inverse of the SE with the Egger regression test and the Begg test (Tinuouye et al., 2013). Because it is possible that the meta-analytic studies overestimate the true effect size as a result of a biased sample (e.g., publication bias), graphic displays such as funnel plots are used to assess the relationship between sample size and effect size. Funnel plots, (i.e., scatterplots) display the effect sizes on the x-axis and standard errors on the y-axis. Standard errors are plotted with the smaller ones near the top of the y-axis and the larger ones toward the bottom. If a relationship is found, one possible reason is the existence of missing studies (Borenstein et al, 2009).

Egger's test examines the asymmetry of a funnel plot by testing whether the Y intercept = 0 from a linear regression of standard normal deviates. If there is no bias, then all of the studies scatter about the line of $y=0$. If there is

asymmetry, the regression line will not run through the origin (Egger et al., 1997). Negative values of the intercept indicate that smaller studies are showing more beneficial effects than larger studies. Begg's test examines the interdependence of variance and effect size using the Kendall method of rank correlation coefficient. A p value of >0.05 means there is no evidence of publication bias.

The goal of meta-analysis is not just to determine a summary effect (i.e., mean of effect sizes with more weight given to more precise studies)²⁶ but to describe and understand the pattern of effects (i.e., if the effect size is consistent across studies or if it varies) for consideration of implications (Borenstein et al., 2009). In the random-effects model, the true effect size can vary from study to study as a result of both true variation in effect sizes and random error.

In primary studies, the mechanism for describing variation is standard deviation, which is used to determine the proportion of subjects falling in a given range and the proportion of variance explained by covariates. In meta-analysis, the process of explaining variation is a little more complicated, requiring a test for evidence of heterogeneity (i.e., variation in true effect sizes) among the studies. The statistical test for heterogeneity is used to establish whether studies with

²⁶ The weight that is assigned to each study is the inverse of the study variance, which is both the within-studies variance and between-studies variance (T^2). Under the random-effects model, the weight assigned to each study is $w_i = 1/VY_i$ where VY_i is the within-study variance for study i plus the between-studies variance T^2 . That is, $VY_i = VY_i + T^2$. The weighted mean, M , is computed with the following:

$$M^* = \frac{\sum_{i=1}^k W_i^* Y_i}{\sum_{i=1}^k W_i^*}$$

differing results are consistent, that is, whether there are genuine differences underlying each study's findings (heterogeneity) or whether the variation in the study results is the result of chance (homogeneity) (Higgins, Thompson, Deeks, & Altman, 2003). In other words, heterogeneity or dispersion is the result of study differences or of the probability of random error. The I^2 statistic is the test for heterogeneity between studies (Simic et al., 2013). I^2 ranges from 0-100%, with lower values indicating a lower degree of heterogeneity.

The null hypothesis of the heterogeneity analysis is: The observed variance of the effect size is not statistically different from what is expected from sample error alone; variance is due to sampling error. A rejection of the null hypothesis indicates that sampling error is not the only explanation of the variation. There are five ways of measuring heterogeneity: Q , p , T , T^2 and I^2 .

This meta-analysis aimed to compute the I^2 , a ratio of true heterogeneity to total observed variation,²⁷ to determine what proportion of the observed variance reflects the real differences in effect size (Borenstein et al, 2009). It is not directly impacted by the number of studies in the analysis and is based on a relative scale (displaying proportion) instead of an absolute amount. With a range of 0-100%, an I^2 approaching 100% means that most of the observed variance is real (Borenstein et al., 2009). Values of I^2 can be interpreted as follows: 25% is low, 50% is moderate, and 100% is high (Simic et al., 2013).

²⁷ $I^2 = 100\% \times (Q - df) / Q$, where Q is Cochran's heterogeneity statistic and df the degrees of freedom (Higgins et al., 2003).

Bivariate Analysis: African-American/White Contrasts

Twenty studies provided 28 effect estimates. Of these, 26 suggested a positive association (i.e. African Americans were detained more often than Whites). The overall pooled estimate²⁸ was $OR=1.85$ (95% $CI=1.59-2.16$) with a p -value of $p < .001$, indicating a significant effect and a rejection of the null hypothesis (that the mean effect is zero). According to this analysis, African Americans were detained more often than Whites, at an almost double rate.

In Figure 1, a forest plot (i.e., error-bar chart, odds ratio plot, and a meta-analysis plot) displays the magnitude of the parameter of interest (Borenstein et al., 2009; Lipsey & Wilson, 2001). Figure 1 expresses graphically what the overall odds ratio indicates: African-American juveniles are much more likely to be detained than Whites.

The I^2 estimate was 96.3% ($p < 0.001$), suggesting a high level of heterogeneity between studies. This is analogous to the regression index (R^2) that indicates the proportion of total variance explained by the covariates (Borenstein et al., 2009). The p -value was < 0.001 , leading to a rejection of the null hypothesis that all studies share a common effect size.

In a funnel plot, if the studies are free of bias, they will be scattered symmetrically. For this contrast, the funnel plot for the 28 effect estimates appeared as asymmetrical, indicating potential bias (Figure 2). Because interpretation of the funnel plot is largely subjective, it is recommended that

²⁸ This is also referred to as the summary estimate or summary effect.

follow-up tests (e.g., Egger, 1997; Begg & Mazumdar, 1994) be conducted as well (Borenstein et al., 2009). There was no evidence for bias using the Egger (i.e., weighted regression) method (p for bias 0.70) or the Begg (i.e., rank correlation method).

In the random-effects model, the goal is to estimate the mean of a distribution of effects into an overall summary effect that is not influenced, either too little or too much, by a particular study as a result of its size. To ensure that each study is accurately represented in the summary effect, an influence analysis²⁹ was conducted on the 28 effect estimates (Figure 3). As revealed by the graphic plot, no single study unduly influenced the overall association or summary effect.

In the African-American/White contrast, African American youth were detained at more than twice the rate of White juveniles even after controlling for legal variables. This finding supports the hypothesis that racial disparity in pre-adjudication detention is the result of discrimination and not differential involvement.

Bivariate Analysis: Latino/White Contrasts

Six studies that included almost 36,000 juvenile cases were included in the meta-analysis comparing whether Latinos were detained more often than Whites. All six studies showed a positive association, with the overall $OR=2.38$

²⁹ The primary purpose of the influence analysis is to determine if there are studies that have an undue impact on the aggregate results. In an influence analysis, meta-analysis estimates are computed by “leave-one-out” analysis where a study is omitted one at a time.

(95% CI=1.57-3.60) (Figure 4) and a significance of $p<.001$. This indicates that Latinos were detained more often than Whites. In fact, Latinos were detained at more than twice the rate of White juveniles.

The I^2 value was 95.6% ($p<0.00$), indicating a high degree of heterogeneity (Figure 4). This is the proportion of the observed variance that reflects the real differences in effect size.

The funnel plot of the six studies appeared asymmetrical (Figure 5). In follow-up bias tests, the Egger's test ($p=.16$) and Begg's test were not significant. Figure 6 shows the results of the influence analysis. No single study appeared to influence the overall association. In the Latino/White contrast effect there does not appear to be either any bias present or any undue influence of one particular study.

Similar to analysis findings of the White/African-American contrast, Latinos were detained at more than double the rate of White juveniles even after controlling for legal variables. Again, these findings support the hypothesis that racial disparity in pre-adjudication detention is the result of discrimination and not differential involvement.

Bivariate Analysis: Minority/White Contrasts

Eight studies provided 10 effect estimates comparing whether "minorities" –specifically defined as such in each of the primary studies – are detained more often than Whites. All 10 estimates showed a positive association, with the overall OR=1.56 (95% CI=1.37-1.78) and a significant value at $p<.001$ (Figure 7).

This indicates that minorities were detained one-and-a-half times more often than Whites.

The I^2 value was 95.2% ($p < 0.00$), indicating a high degree of heterogeneity (Figure 7). The funnel plot shows possible asymmetry; however, neither the Egger's test nor the Begg's test was significant (Figure 8). In Figure 9, the influence analysis shows that no single study had an undue influence on the meta-analysis.

As in the earlier contrasts, most of the race-effect – minority youth are detained one-and-a-half times more than their Whites peers – appears to be real without bias. Furthermore, no single study seemed to influence the total effect. This contrast supports the hypothesis that youth of color are detained more than White juveniles even after controlling for legal factors.

Bivariate Analysis: Youth of Color/White Contrasts

Twenty-eight studies provided 44 effects estimates comparing whether all racial and ethnic groups combined into a youth-of-color grouping are detained more often than Whites. Forty-two estimates showed a positive association, with the overall OR=1.85 (95% CI=1.67-2.04) with $p < .001$ (Figure 9). The overall odds ratio indicates that youth of color were detained almost twice as often as Whites. The I^2 value was 96.5% ($p < 0.00$), indicating a high degree of heterogeneity (Figure 10) and that most of the proportion is a real effect.

The funnel plot looks asymmetrical and the Egger's test was significant ($p=0.04$); however, further testing with the Begg's rank correlation method

indicated no evidence for bias (Figure 11). Figure 12 indicates that no single study had a disproportionate effect on the analysis.

In analysis of these racial contrasts, youth of color are at least one-and-a-half times more likely to receive detention than their White counterparts while holding legal variables constant. Upon analysis of these racial contrasts, I find overwhelming support for conflict theory's premise that youth of color are discriminately detained prior to adjudication when compared to White youth. These findings do not support the hypothesis of differential involvement.

Multivariate Analysis: African-American/White Contrasts

As in the primary studies, multiple regression, which is referred to as "metaregression" in a meta-analysis, is used to assess the relationship between one or more covariates (moderators) and the dependent variable (Borenstein et al., 2009; Stern et al., 2001). There is one difference, however. Each study needs to be assigned a weight that corresponds to its precision and size. A larger study carries more weight in the analyses.

Three models were run for each racial contrast category. The first model included whether the study controlled for type of offense: drugs, weapon, person offense, or property offense. The second model focused on whether the study controlled for demographic factors: age, gender, SES, family status, school problems, urban setting, and whether the study included interactions with race (e.g., race x age interaction, race x gender interactions). The third model focused on jurisdiction and region.

An F-test was used to determine if there was overall significance due to the combined group of covariates and the effects of the individual covariates (Harbord and Higgins, 2009).). In some cases not all covariates were included in the analyses due to small numbers or no variability between studies. Variables were coded as “not controlled for”=0 and “controlled for”=1. The I^2 , the percent residual variation due to heterogeneity, was computed. The standardized β , standard error, and p -value are reported. The adjusted r^2 , the proportion of between-study variance explained by these factors, was also computed. The meta-regression procedure in Stata uses the REML estimation that is the restricted maximum likelihood. The first step is to estimate tau-squared which is the between study variance and then the coefficients (beta) are estimated. The F test is calculated when more than a single covariate is added to the model. This tests the null hypothesis that all of the coefficients of the covariates are equal to 0. The F-test is the joint test for all of the covariates. If $p < 0.05$ in the F-test, then there is evidence that at least one of the covariates is associated with the outcome. The adjusted r^2 is the proportion of between study variance explained by the covariates. A higher value for r^2 means that the covariates explain a larger proportion of the between study variance.

The standardized β estimates, SE, and p -values for the individual covariates for all three models are shown in Table 9.

Multivariate Analysis: African-American/White Contrasts

Model 1: Types of Offenses

For model 1, the \bar{r}^2 , the percent residual variation due to heterogeneity, was 97%, with the other 3% attributable to within-study sampling variability. The adjusted r^2 , the proportion of between-study variance explained by these factors, was 4%. The remaining between-study variance, measured by the tau statistic, was 0.14. The joint test for all covariates was $F(4,23)=1.29$ ($p=0.30$), indicating no association with the covariates. No single covariate in model 1 was statistically significant.

Model 2: Demographic Factors

For model 2, the \bar{r}^2 was 88%, with the other 12% attributable to within-study sampling variability. The adjusted r^2 was 31%. The remaining between-study variance, measured by the tau statistic, was 0.10. The joint test for all covariates was $F(7,20)=2.61$ ($p=0.04$), indicating a significant association with the demographic covariates. In the model, the only individual characteristic that was statistically significant was SES ($\beta=0.48$, $p<0.05$), indicating that juveniles with low SES were more likely to be detained than those with high SES. No other demographic covariates were statistically significant, even though age, gender, and family status were expected to affect levels of juvenile detention.

Model 3: Jurisdiction and Region

The third model included jurisdiction type (city/county or state), and region (South or not South). The \bar{r}^2 value was 92% and the adjusted r^2 was 0.53%. The

tau statistic was 0.14. The joint test for the covariates was $F(3,24)=1.29$ ($p=0.30$), indicating no association. No single covariate in this model was statistically significant.

Multivariate Analysis: Latino/White Contrasts

Due to insufficient observations, not all covariates were included in this analysis (Table 10).

Model 1: Types of Offenses

In model 1, only 3 of the 4 types of offenses were included; the weapons variable was dropped. The \bar{r}^2 for model 1, the model that included offenses, is 96%, with the other 4% attributable to within-study sampling variability. The value of r^2 was -36%. The r^2 can be negative if the covariates explain less of the heterogeneity than would be expected by chance (Harbord and Higgins, 2008). This is more common in a meta-regression with a small number of studies, which is the case in this analysis. The joint test for the 3 covariates in model 1 was $F(3,2)=0.54$, $p=0.70$ indicating no significant associations between the covariates and differential rates of detention for White and Latino youth.

Model 2: Demographic Factors

Four of the possible 7 covariates were included in model 2: SES, family status, urban setting, and school problems. The \bar{r}^2 was 0 and r^2 was 100% with $F(4,1)=28$, $p=0.14$. Again, there were no significant association between the covariates and differential rates of detention among White and Latino youth.

Model 3: Jurisdiction and Region

Model 3 included covariates for jurisdiction type (city/county or state), and region (South or not South). The \bar{r}^2 value was 64% and the adjusted r^2 was 76%. The joint test for the covariates was $F(3,2)=5.09$ ($p=0.17$). Neither covariate was statistically significant ($\beta=-0.39$, $p=0.56$).

Multivariate Analysis: Minority/White Contrasts

Model 1: Types of Offenses

Due to insufficient observations, not all covariates were included in the analyses (Table 11). Model 1 included only the person-offense variable. The \bar{r}^2 for model 1, the model that included offenses, was 96%, with the other 4% attributable to within-study sampling variability. The value of r^2 was -15%; the negative value is once again attributable to the very small sample sizes. The single covariate, person offense, was not statistically significant.

Model 2: Demographic Factors

In model 2, which tested whether SES and family status were used as controls, the \bar{r}^2 was 95% and r^2 was -21.6% with $F(2,6)=0.39$, $p=0.69$. There were no significant associations between the covariates and differential detention of White or minority youth.

Model 3: Jurisdiction and Region

Model 3 tested whether the type of jurisdiction, and region of the country were associated with the study effects. The \bar{r}^2 was 86% and r^2 was -12% with $F(3,5)=0.77$, $p=0.56$. Neither the full model nor any of the individual covariates proved to be statistically significant.

Multivariate Analysis: Youth of Color/White Contrasts

The standardized β estimates, SE, and p -values for the individual covariates for the three models are shown in Table 12.

Model 1: Types of Offenses

For model 1, the R^2 , the percent residual variation due to heterogeneity, was 97%, with the other 3% attributable to within-study sampling variability. The adjusted r^2 , the proportion of between-study variance explained by these factors, was 1%. The joint test for all covariates was $F(4,39)=1.22$ ($p=0.31$), indicating no association with the covariates. No single covariate in model 1 was statistically significant.

Model 2: Demographic Factors

For model 2, the R^2 was 93%, with the other 7% attributable to within-study sampling variability. The adjusted r^2 was 15%. The joint test for all covariates was $F(6,37)=2.19$ ($p=0.07$), indicating no association with the demographic covariates. No single covariate in model 1 was statistically significant. In the model, the only individual characteristic that was statistically significant was age ($\beta=0.35$, $p=0.05$), indicating that older youth of color are more likely to be detained. No other demographic covariates were statistically significant even though gender and family status were expected to affect levels of juvenile detention.

Model 3: Jurisdiction and Region

The third model included jurisdiction type (city/county or state), and region (South or not South). The F value was 93% and the adjusted r^2 was -2.6%. The joint test for the covariates was not significant $F(3,39)=0.75$ ($p=0.53$). However, the region was statistically significant ($\beta=-0.301$, $p=0.04$). This result is presented with the caveat that it has to be interpreted in light of the entire model not being significant. I contend that it is appropriate to include this result because the general model and the specific parameters answer different questions. Most of the covariates are not contributing to the overall model. The relevance of the result significance depends on my original hypothesis. Because the hypothesis is about the significant variable – controlling for the others – and not about the whole model, then I believe that the significance of this covariate is important.

Summary

The results of the meta-analysis suggest that there are racial differences in the juvenile justice processing system. The strongest effect was seen when comparing Whites to Latinos ($OR=2.38$), which is higher than the effect seen in the African American/White contrast ($OR=1.85$), minorities/White contrast ($OR=1.56$), and youth of color/White contrast ($OR=1.85$). All of these comparisons were statistically significant. There was no evidence for publication bias, nor was there undue influence by any single study. These results are consistent with two previous studies (DeJong & Jackson, 1998; Maupin & Bond-

Maupin, 1999) that found Latino juveniles received more severe treatment than White and African-American youth.

Finally, multivariate analyses examined whether studies adjusted for certain offenses and/or demographic characteristics as well as testing for whether there were regional differences in detainment, and whether the type of jurisdiction was associated with detainment. None of the types of offenses (relating to weapons, person, drugs, or property) included in model 1 was significant for any of the racial contrasts. For the African-American/White contrast in model 2, the demographics showed that SES is an important factor and increases the race-effect. No other model 2 variables (i.e., gender, age, family status, urban setting, interaction with race, school problems) were statistically significant and did not explain the racial differences observed. In the youth of color/White contrast for model 3, region (i.e., South vs. not South) was statistically significant; but because the standardized β coefficient was negative (-0.301), the results indicated the opposite of what was expected and what previous research had found: Youth of color who had contact with the justice system in Southern states were less likely to receive detention.

Chapter 5: Discussion

Almost fifty years has passed since Dr. Martin Luther King Jr. stood on the steps of the Lincoln Memorial and delivered his “I have a Dream” speech in which he called for an end to a system of justice based on the color of one’s skin (King, 1992), yet national research reveals that the probability of a youth of color entering the juvenile justice system is substantially higher than that for White youth who commit the same offense (Huizinga et al., 2007). This is particularly true for African American and Hispanic youth, who have a greater risk of involvement with the juvenile justice system at all decision points from arrest to confinement.

There is undoubtedly overrepresentation of youth of color in the juvenile justice system. Evidence reveals that youth of color are more likely than White juveniles to receive detention. The question is, why? At present, this meta-analysis is the most comprehensive quantitative review of research on disproportionate minority detention in the juvenile justice system. This meta-analytic review goes beyond the only other quantitative DMC reviews, Egen et al. (2002), by including both published and unpublished primary studies, and by including only independent, non-overlapping data.

Purpose and Findings

The purpose of this research was to synthesize extant DMC studies that examine the overrepresentation of youth of color in preadjudication detention in the juvenile justice system in the hope that the results will reveal the sources and

contributing factors of disparate treatment. In relation to its hypotheses, this study discovered the following outcomes:

H₁: Juveniles of color will receive pretrial detention more often than whites even when legal variables (such as prior delinquent history and severity of current offense) have been controlled³⁰.

In this meta-analysis, which only included studies that controlled for legal variables (i.e., prior delinquent history and severity of current offense), juveniles of color received pretrial detention more often than Whites across studies. Furthermore, African-American and Latino youth were detained at more than twice the rate of White juveniles even after controlling for legal variables (i.e., prior history, seriousness of offense). As a whole, youth of color were detained one-and-a-half times more than their Whites peers.

Youth of color were differentially detained (treated) more often than White youth above and beyond what would be expected by differential offending. In other words, these results reveal that youth of color receive preadjudication detention disproportionately to their White peers not simply because they commit more delinquencies and more serious delinquencies. Findings suggest that racial discrimination may be a factor.

H₂. Variation in findings of racial disproportionality is due, in part, to differing status characteristics (e.g., SES and family status) associated with race.

³⁰ Control for legal variables – prior history and offense seriousness – was achieved by including only studies that controlled for these variables

This hypothesis is grounded in prior research focused on symbolic-threat thesis which posits that officials may impose greater social control (e.g., preadjudication detention) on youth of color who are stereotyped as dangerous and who are perceived to be threatening to middle-class values (Feld, 1999; Lieber & Fox, 2005; Moak, Thomas, Walker, & Gann, 2007; Sampson and Laub, 1993; Tittle & Curran, 1998). As with the results revealed by the quantitative DMC review by Egen et al. (2002), multivariate analysis of covariates revealed little support for the idea that race-effects can be attributed to other extralegal characteristics. In fact, this study found only one significant effect that could shed light on possible contributing status characteristics. In this analysis, lower socioeconomic status (SES) significantly increased the likelihood that African Americans would receive preadjudication detention.

H₃. *Racial disparities in detention are greatest in juvenile cases with specific extralegal characteristics (e.g., age, gender) and structural contexts (e.g., legal offense-related delinquencies, region) where youth of color pose the greatest symbolic threat:*

H_{3a}. *youth of color are older males;*

H_{3b}. *youth of color are accused of drug-related offenses;*

H_{3c}. *youth of color are accused of person- or weapon-related offenses;*

H_{3d}. *youth of color reside in the Southern states.*

Being older was the only significant covariate found that provided support for hypothesis 3. Using the symbolic-threat thesis to explain this finding, older

youth of color are perceived as more threatening than younger youth of color and all ages of White youth, and therefore, are at higher risk for preadjudication detention than their White peers. These findings are consistent with previous studies. In a statewide assessment of racial disproportionality, Bridges et al. (1993) found that older youth of color who committed delinquent acts in Washington State were more likely to be detained than Whites.

In addition, this finding is in line with the primary study by Leiber et al. (2007) that examined the decision point, juvenile petition, and found support for the symbolic-threat hypothesis. Older youth of color were perceived as more threatening. Age increased the odds of receiving intake petition by 43 % for Native Americans, 25 % for African Americans, and 27 % for minority youth classified as "other." These minority percentages are in comparison to 13 % for Whites. In other words, older minority youth have a greater risk of being petitioned at intake than older White juveniles.

According to the results of this study, youth of color accused of drug-related delinquency and/or violent acts (involving a person or weapon) are not significantly more likely to receive preadjudication detention than White youth. No legal offense-related variables significantly differentiated White and minority youth.

Interestingly, the regional covariate for hypothesis 3c was also significant; however, the finding is contrary to the theoretical expectations of this study. According to multivariate analysis results, youth of color who had contact with the

justice system in Southern states were less likely to receive preadjudication detention. Concerned about *justice by geography*, scholars have called on researchers to *situate* DMC race-effects in context by recognizing geopolitical and sociohistorical factors.

For example, researchers have examined whether there are greater race-effects in criminal and juvenile justice systems in the South, which has a history of racial social control. These studies (e.g., Chiricos & Crawford, 1995), in keeping with findings of the quantitative review by Egen et al. (2002), did not find an association between region and race-effects in DMC. In his meta-analysis of race-effects in the criminal justice system, Mitchell (2005) uncovered a difference between Southern and non-Southern jurisdictions but the finding was not statistically significant.

Limitations of Current Research

While I believe that this meta-analysis is an improvement over previous DMC reviews, it is not without some limitations. First, meta-analytic reviews of social science studies inevitably involve judgment, which determines the quality of studies to be included (Slavin, 1986). No procedural or statistical canons can remove the threat of reviewer's bias. In an attempt to minimize it, this study addressed the threat in three ways: (1) it made the selection procedures explicit and open, (2) it conducted a coder reliability test recommended by Lipsey and Wilson (2001), and (3) it used criteria for inclusion into the sample consistent with those advocated by Glass, McGaw, and Smith (1981).

A second limitation, which is inherent in all meta-analyses, is this study's dependency on the quality of available DMC studies. Most importantly, none of the studies included in this meta-analysis were experimental in nature. This is simply the nature of juvenile justice research. Consequently, this meta-analytic dissertation was not be able to make causal inferences. However, it added to the knowledge base by providing clues to potential cause-effect relationships. As noted above, SES was found to be significant factor for African-American youth. For youth of color as a whole, age and region (e.g., southern) were found to be significant variables; however, these two findings should be interpreted with the caveat that they were part of a model that was found not to be significant.

A third limitation of meta-analysis is that the broad aggregation of results may not be sensitive to some of the finer points, such as the subtle dimensions of context. Of course, this is the tradeoff in the case of almost any research synthesis. To capture the broad overview of an issue, some smaller details will be left out of focus. Analogous to survey research in which studies rather than people are surveyed, meta-analysis is a closed-ended questionnaire approach that is limited to the objective coding of available data (Lipsey & Wilson, 2001).

As in the case of surveys, the depth and complexity of a topic, can be addressed by a qualitative piece that follows the meta-analysis. In fact, numerous DMC experts have called for the need for a mixed methods (e.g., both quantitative and qualitative) in the examination of racial disparity in the juvenile justice system (Piquero, 2008; Kempf-Leonard, 2010; Pope & Feyerherm, 2002).

Because of the discretion provided juvenile justice system decision makers due to *parens patriae* doctrine, a qualitative piece is needed to explore in depth the attitudes and beliefs of juvenile justice officials involved in key decision points. For example, how does a youth's dress and demeanor interact with race to influence juvenile justice decisions (i.e., arrest, detention)? How are youth of color perceived? For example, Bridges and Steen (1998) researched probation officers' word choices describing youth and found substantial race differences. Officers attributed more negative attitudinal and personality traits to youth of color. In addition, the researchers found that these perceived attributes negatively influenced officers' recommendations about sentencing, even after controlling for case and offender characteristics.

A fourth limitation of meta-analyses is the *apples and oranges* criticism (Lipsey & Wilson, 2001; Rosenthal, 1991; Wolf, 1986). Some critics argue that aggregating effect sizes across a mix of study findings is not meaningful because it is like comparing apples and oranges (e.g. because of research incompatibility) (Lipsey & Wilson, 2001; Rosenthal, 1991; Wolf, 1986). To address this criticism, I used the statistical test for homogeneity, an empirical analysis that determines if a collection of effect sizes from different studies are comparable or not. In each racial contrast analysis, a high degree of heterogeneity was found between studies suggesting that most of the observed variance was real.

Implication of Findings

This meta-analysis, which is the first comprehensive quantitative synthesis that included both published and unpublished DMC research, revealed that race-effects were evident across multiple studies spanning more than 30 years. Results of this meta-analysis showed youth of color were differentially detained (treated) more often than White youth above and beyond what would be expected by differential offending,, even after controlling for legal factors (prior history and seriousness of offense), This differential treatment does not, by itself, establish the existence of racial bias. Other factors may contribute to the disproportionality, yet, this study's multivariate analysis of covariates revealed little support for the idea that race-effects can be attributed to other extralegal characteristics. In fact, this study found only one significant effect that could shed light on possible contributing factors that offers partial support for the symbolic-threat thesis that youth of color are a threat to middle-class values. In this analysis, lower socioeconomic status (SES) significantly increased the likelihood that African Americans would receive preadjudication detention. According to these findings, African-American youth with low socioeconomic status, as well as older youth of color, are more likely to be detained. Race and ethnicity have consistently been found to correlate with economic resources (Schlesinger, 2005). Most African Americans and Latino youth have fewer economic resources so this is an important variable when studying racial disparity in detention.

However, the disparate results of this meta-analysis call into question the equity of the juvenile justice system and confirm the need to re-examine policies and procedures as well as to continue to examine contextual factors.

In addition to presenting the current state of knowledge, this meta-analysis highlights gaps and shortcomings that need to be addressed if future research is to shed light on DMC contributing factors. This study discovered some important issues that are hampering our understanding of DMC and hindering progress in identifying and addressing the complex web of contributing factors. To strengthen DMC research, this study recommends that the following steps be taken.

Standardize Data-Collection Systems and Key Definitions

DMC findings can often seem contradictory and difficult to compare because the United States has 51 juvenile justice systems, each with its own history, laws, policies, organization, administration, and service delivery methods. This leads to variability in data collection and reporting. Many jurisdictions have poor data-collection systems that stymie DMC research efforts (Bishop, 2005).

Within the juvenile justice system, there needs to be a unified system of defining variables. There is little agreement on how to define essential terms, on how to analyze data, and on how to determine race/ethnicity. For instance, there has never been a common and accepted definition of “juvenile detention.”

Recognize the Complexity of Racial Categorization and National Origin

A precise and uniform definition of race and ethnicity is crucial for examining DMC. Unfortunately, there is little consensus among the juvenile

justice personnel or researchers on exactly how to define race and ethnicity. As a result, the terms vary across jurisdictions. Although the U.S. Census has attempted to provide a race and ethnicity classification scheme that allows for self-identification and multiple categories, there is inherent difficulty in classifying on the basis of external characteristics (Bishop, 2005).

Since the beginnings of DMC research, identifying minority groups has been challenging. As stated previously, the U.S. juvenile justice system is comprised of many different jurisdictions, each operating with their own procedures and practices with no overarching, systematic collection of data. For example, in some jurisdictions, juvenile justice personnel have identified “minorities” in an imprecise manner by using *non-White* as a catch-all designation. Some group Hispanics in the White category and others do not. Minority status is a fluid concept.

Most DMC-related studies use such broad categories of people that researchers cannot discern differences in culture, language, country of origin, and skin color (Kempf-Leonard, 2007). For example, the Hispanic designation is typically applied to all peoples from Central and South America, including countries like Brazil in which the dominant language and ancestry are not Spanish. When the juvenile justice system uses dichotomous categories of White/Black, Latinos are often included in the White category. Because studies have found that Latinos often receive harsher sentences than Whites, studies that include Latinos as White can make the White-Black gap in juvenile justice

processing appear smaller than it actually is. When ethnicity is ignored, ethnic disparities in juvenile justice processing are obscured (Schlessinger, 2005). As Kempf-Leonard and Hawkins (2005) point out, current observations of disparity often reflect poorly specified race and ethnic categories.

Conduct Research Focused on the Effect of Gender on Juvenile Justice

Decision Making

Female juveniles are the fastest-growing population within the juvenile justice system; yet, it is unclear whether this is the result of rising rates of criminality or differential processing leading to more arrests, prosecutions, and incarcerations (Mallicoat, 2007). A study by Guevara et al. (2006) found that the effects of race on the preadjudication detention and disposition outcomes vary by gender. As Lieber and Mack (2003) reported, White girls are more likely to receive diversion, African-American girls are more likely to be placed on probation, and African-American males are more likely to be recommended for formal processing. Despite the alarming increase of females in the juvenile justice system, there is a disturbing scarcity of research examining the interaction effects of race and gender on juvenile justice decision making or examining the influence of family status on race sentencing across gender. Consistent with the traditional sex-role perspective, Lieber and Mack's study revealed that juvenile justice decision makers treated females more harshly than males to reinforce stereotypical notions of proper females' behavior and to protect female sexuality.

With the increasing number of females within the juvenile justice system, this system faces a major challenge because of the paucity of programs designed specifically for girls (Bloom, Owen, Piper-Deschenes, Rosenbauam 2002). Many scholars and practitioners are calling for policy changes within the juvenile justice system so as to accommodate more appropriate gender-specific treatment. A theoretical approach to treatment that is gender-sensitive and addresses the realities of girls' lives must be developed for effective programming for girls and women. Gaardner, Rodriguez and Zatz (2005) echo this sentiment and point out that the juvenile justice system has long been criticized for inadequate attention to the specific needs of girls. I am not surprised that gender was not significant in this meta-analysis because very few studies adequately reported gender statistics along with race/ethnicity. Even though gender was often reported, it was not broken down by race/ethnicity so the data was not usable.

Use More Rigorous Statistical Analyses

A common criticism of DMC research is that is not sufficiently rigorous. In the literature review by Pope et al. (2002), the authors call for researchers to employ more complex research methods (e.g. multivariate analyses and hierarchical linear modeling) that control for extralegal relevant variables such as family status, age, and economic status, and also examine data as finely as possible by disaggregating data. More sophisticated statistical models, such as the hierarchical generalized linear model (HGLM), allow researchers to consider

the nested nature of data on multiple levels (e.g., community or individual) of influence.

Situate Research in a Specific Context

Defining legal and extralegal factors is important for understanding the debate over disparity in the use of words and discrimination in the juvenile justice system (Bishop, 2005). Disparity denotes between-group differences, regardless of the reason for these differences. Discrimination is defined as illegitimate factors (e.g., racism, sexism, or patriarchy) that cause disparity in juvenile justice system outcomes.

Finding causes for racial disparities is extremely difficult because of the number of complex, interrelated, and multilevel factors (Kempf-Leonard, 2007). It is essential that DMC researchers attempt to disentangle direct and indirect factors that contribute to the disparity by disaggregating data from national sources and putting it in context. One must not only compare majority and minority youth but also recognize within-group differences. Comparing similarly situated juveniles can highlight the fact that race/ethnicity status is not just a number but is a socially constructed concept that is related to quality of life, opportunities, and values. Unless DMC research samples similarly situate youth, the study outcomes will be comparing apples and oranges. Researchers need to use both quantitative and qualitative data to discern sociocultural differences within minority youth groups (Hawkins et al., 1998).

Research studies examining risk factors contributing to criminal behavior

have found that some family indicators are significantly related to criminal behavior (Charish, 2004). These family indicators include family disruption (Elliott, 1994; Thornberry et al., 1999; Leiber & Mack, 2003); parent-child separation and parental criminality (Hawkins, et al., 2000); male unemployment and household welfare status (Farnworth et al., 1990); and poverty (Lipsey and Derzon, 1998; Maahs, 2001; Elliott, Huizinga, & Menard (1989)). Elliott, Huizinga, & Menard (1989) found that juveniles living in poverty were twice as likely to self-report felony assault and robbery. A number of studies (Land, 2000; Elliott, 1994; Peebles and Loeber, 1993) have shown that when neighborhood risk factors were taken into account, there were no significant differences in offending rates for White and minority youth. Additional study data on these variables are needed to enhance the potential of meta-analysis to incorporate these important factors.

Conclusion

The reason that there has been such difficulty answering the question “Why does DMC continue to exist?” is that the answer is complicated and requires multifaceted studies which examine the dynamic influence of variables over time, standardized juvenile justice data, and an ongoing public discourse that advances racial understanding. When race is viewed as a social construct that is not captured by arbitrary categories, it becomes obvious that the DMC question is tediously complex and much more difficult to answer.

DMC is part of this much larger societal problem, and in many ways, race is too vast to expect the juvenile justice system to address it adequately (Pope &

Feyerherm, 1990). However, as Pope and Feyerherm point out, handwringing and essentially ignoring the problem of disparate juvenile justice are not options. The cost is too large.

Studies have shown that DMC involves both discrimination (conscious or unconscious), and differential involvement (e.g., more delinquency and more serious offenses) that need to be studied *in situ*. Because race is not just a product of skin color but involves multilevel, intricately woven factors, it is imperative that researchers look at racial issues in the juvenile justice system from multiple vantage points. This includes examining risk factors (e.g., education level, family structure, neighborhood, socioeconomic level, age of mother at birth, association with deviant peers, poor school performance) and protective factors (community resources, government services, positive relationship with at least one adult) as well as multilevel bioecological and sociocultural factors (e.g. reciprocal interaction with mother as infant, proper nutrition, institutional ideologies, structural systems, public policies, government practices, social norms, and cultural values).

As this DMC-related literature review reveals, gaps of knowledge are evident and there is a need for more research using complex research methods that can capture intricate interaction effects with extralegal contextual factors to provide a more comprehensive understanding of DMC. Moreover, comparison of prior literature reviews to current studies reveal that some researchers have failed to incorporate existing knowledge from research reviews of earlier studies

and were destined to repeat the limitations and shortcomings of previous research.

Basic to effective research is the understanding, as Kempf-Leonard and Hawkins (2005) pointed out, that racial disparity is not just a problem for the juvenile justice system or minority groups, it is our problem as a society. The answer lies not in developing an improved justice system for *their* children but in social reform focusing on prevention rather than intervention, and in collectively realizing that these are *our* children.

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Table 1

Shortcomings of Extant DMC Reviews of the Juvenile Justice System

Review	No. of Studies	Statistical Analysis ^a	Effect Size ^b	Independent Datasets ^c	Unpub. Studies ^d
Egen et al. (2002)	65*	Yes	Yes	No	No
Leiber (2002)	32	No	No	Yes	Yes
Liska & Tausig (1979)	17	No	No	No	No
Pope & Feyerherm (1990)	46	No	No	Yes	Yes
Pope et al. (2002)	34	No	No	Yes	No
Tittle & Cochran (1988)	35	No	No	Yes	No

^a Review is quantitative in nature and not just qualitative. In other words, it uses statistical analysis in its review of studies and is not limited to a traditional narrative approach.

^b Review analyzes data and compares results by computing effect sizes.

^c Review does not include overlapping datasets. All primary study samples are independent of one other.

^d Review includes only published studies, not unpublished studies. This allows for potential publication bias to skew the data.

* Total number of studies was 65 with 125 racial contrasts. Because several of the 65 included studies using overlapping samples, there was 55 datasets used.

Table 2

Summary of Final Eligibility Status

	n	%
Total number of studies identified	198	100.00%
Ineligible		
No simultaneous control of prior record & serious offense	24	12.12%
Not an empirical analysis or does not report regression results	45	22.73%
Does not measure unmoderated influence of race	11	5.56%
Does not analyze pretrial detention	70	35.35%
Unable to retrieve	4	2.02%
SUBTOTAL	154	77.78%
Eligible		
But overlapping or duplicate data	7	3.54%
Uncodeable*	9	4.55%
Independent data	28	14.14%
SUBTOTAL	44	22.22%
TOTAL (number of included eligible and independent studies)	28	14.14%

*Reasons for a study to be determined uncodeable include: did not report standard errors (3); did not report sample breakdown of race/ethnicity by detained/not detained (4); inconsistent reporting of data (1); and racial and ethnicity categorizations were inconsistent with prevailing literature (1).

Table 3

Publication Type and Year of Eligible Studies (n = 28)

	n	%
Publication Type		
Book chapter	1	3.57%
Peer-reviewed journal article	18	64.29%
Technical reports	9	32.14%
Total	28	100.00%
Publication Year		
1960-1969	0	0.00%
1970-1979	0	0.00%
1980-1989	4	14.29%
1990-1999	8	28.57%
2000-2011	16	57.14%
Total	28	100.00%

Table 4

Preadjudication Detention Studies by State

Jurisdiction	k ^a
Arizona	2
Florida	3
Illinois	2
Iowa	6
Kansas	1
Michigan	1
Minnesota	1
Missouri	4
Nebraska	7
New Jersey/New York	2
Ohio	2
Oklahoma	2
Pennsylvania	2
South Carolina	2
West Virginia	2
Unknown	5

k^a = number of effect sizes with nonmissing values.

Table 5

Samples in Eligible Studies (n = 44)

	k	%
Jurisdiction Type		
City/County	22	50%
State	22	50%
Total	44	100.00%
Region		
Southern	7	15.91%
Non Southern	36	81.82%
Not reported	1	2.27%
Total	44	100.00%

Table 6

Descriptive Statistics on Methodological Variables

Methodological Variable	Mean	SD	Min	Max	k
Total variables	8.98	2.77	5	16	44
Prior-offense variables	1.93	1.03	1	5	44
Seriousness-of-offense variables	1.69	1.04	1	5	44
Control variables ³¹	5.36	2.31	3	13	44

k = number of effect sizes with non-missing values.

³¹ A control variable is defined as any variable other than a youth's race/ethnicity, offense seriousness, and prior offense history.

*Table 7**Percentages of Previous Studies Examining Relevant Methodological Variables*

Methodological Variable	k	%
Seriousness-of-offense measure type		
Common Law	21	47.73%
Rating used	18	40.91%
Rating & Common Law	5	11.36%
Prior-offense measure type		
Single variable	19	43.18%
Multiple variables	25	56.82%
Controls for age		
Yes	39	88.64%
No	5	11.36%
Controls for gender		
Yes	42	95.45%
No	2	4.55%
Controls for SES		
Yes	9	20.45%
No	35	79.55%
Controls for family status		
Yes	15	34.09%
No	29	65.91%
Controls for school status		
Yes	10	22.73%
No	34	77.27%
Controls for drugs		
Yes	8	18.18%
No	36	81.82%
Controls for weapons		
Yes	4	9.09%
No	40	90.91%
Controls for person offenses		
Yes	17	38.64%
No	27	61.35%
Unpublished		
Yes	17	38.64%
No	27	61.36%

Table 8

Sample Characteristics

	Mean (SD)	Min	Max	k
Mean Age	15.19 (.60)	13.66	16.70	30
Proportion female	0.23	0.00	0.35	33
Proportion race				
Proportion Black/African American	0.23	0.07	0.86	31
Proportion Latino/Hispanic	0.06	0.02	0.37	10
Proportion Minority (African American and others)	0.32	0.09	0.55	9

k = number of effect sizes with non-missing values

Table 9

Results from Metaregression Analysis of African-American/White Contrasts (n=28)

	Standardized β	SE	p-value
<u>Model 1</u>			
Weapons	0.32	0.28	0.14
Person	-0.47	0.22	0.09
Drugs	0.10	0.28	0.73
Property	0.31	0.28	0.30
<u>Model 2</u>			
Gender	-0.21	0.27	0.23
Age	0.32	0.22	0.10
SES	0.48	0.27	0.04
Family status	-0.20	0.17	0.33
Urban setting	-0.41	0.23	0.11
Interaction w/race	-0.22	0.21	0.07
School problems	0.28	0.17	0.14
<u>Model 3</u>			
Jurisdiction	-0.26	0.16	0.13
Region	0.11	0.11	0.59

Table 10

Results from Metaregression Analysis of Latino/White Contrasts (n=6)

	Standardized β	SE	p-value
<u>Model 1</u>			
Person	0.01	0.62	1.00
Drugs	0.40	0.76	0.70
Property	-0.85	0.74	0.34
<u>Model 2</u>			
SES	-0.20	0.16	0.50
Family status	1.20	0.13	0.08
Urban setting	-0.24	0.22	0.45
School problems	-0.36	0.13	0.25
<u>Model 3</u>			
Jurisdiction	0.81	0.27	0.14
Region	0.39	0.33	0.56

Table 11

Results from Metaregression Analysis of Minority/White Contrasts (n=10)

	Standardized β	SE	p-value
<u>Model 1</u>			
Person	0.11	0.29	0.78
<u>Model 2</u>			
SES	0.21	-.29	0.68
Family status	-0.43	0.40	0.42
<u>Model 3</u>			
Jurisdiction	-0.55	0.17	0.21
Region	0.35	0.29	0.55

Table 12

Results from Metaregression Analysis of Youth of Color/White contrasts (n=44)

	Standardized β	SE	p-value
<u>Model 1 (n=44)</u>			
Weapons	0.34	0.24	0.06
Person	-0.32	0.19	0.17
Drugs	0.24	0.22	0.26
Property	0.05	0.21	0.83
<u>Model 2 (n=44)</u>			
Gender	-0.28	0.28	0.06
Age	0.35	0.21	0.05
SES	0.26	0.18	0.16
Family status	0.01	0.15	0.97
Interaction w/race	-0.069	0.16	0.65
School problems	0.12	0.16	0.48
<u>Model 3 (n=43)</u>			
Jurisdiction	-0.22	0.12	0.17
Region	-0.301	0.13	0.04

Figure 1. African-American/White Contrasts: Forest Plot (n=28)

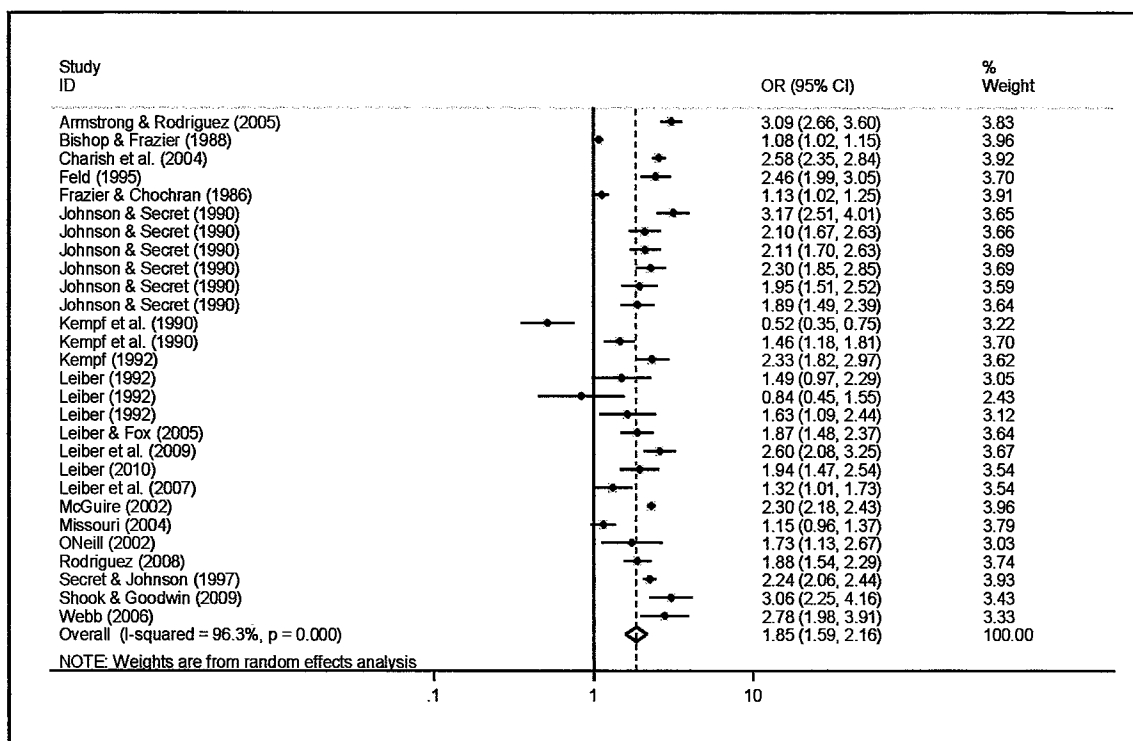


Figure 2. African-American/White Contrasts: Funnel Plot with Pseudo 95% confidence limits (n=28)

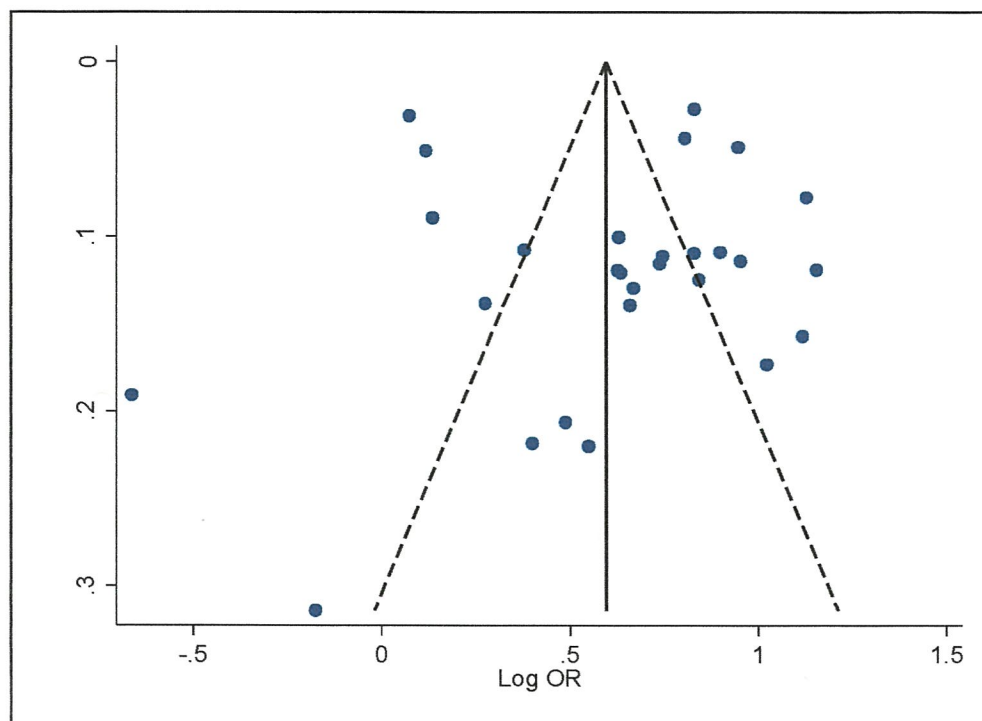


Figure 3. African-American/White Contrasts: Influence of Individual Studies on the Summary Effect (n=28)

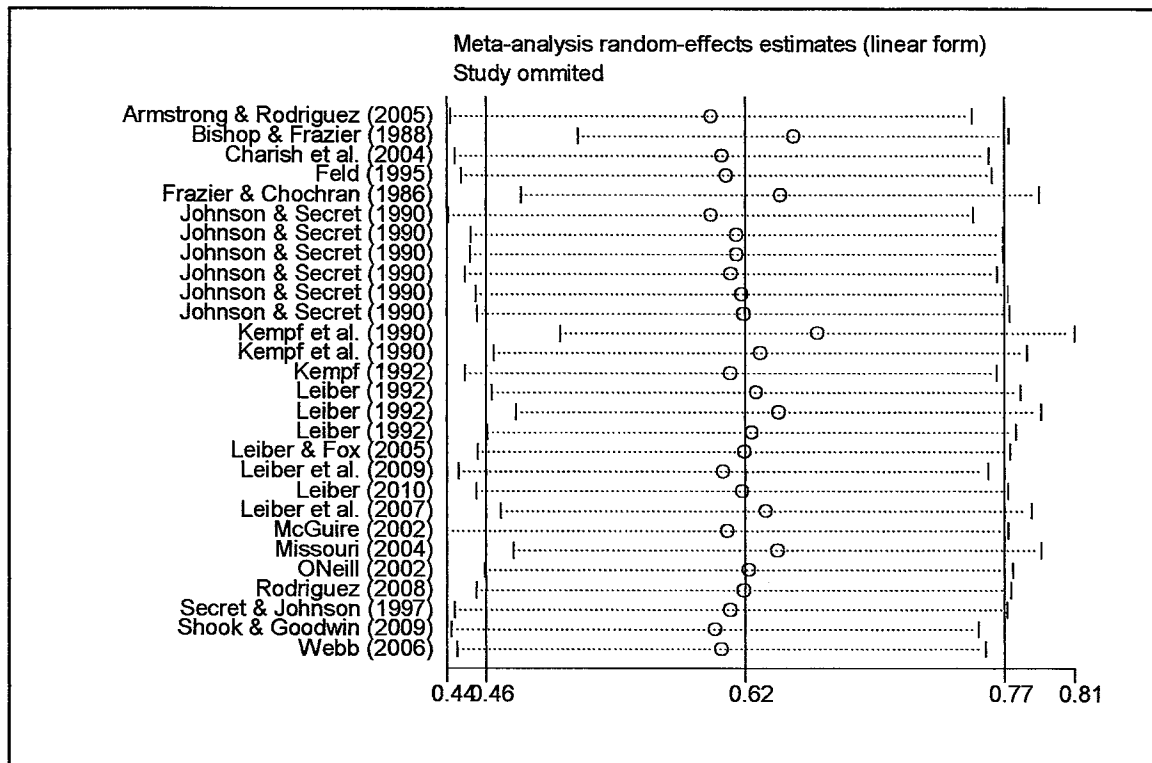


Figure 4. Latino/White Contrasts: Forest Plot (n=6)

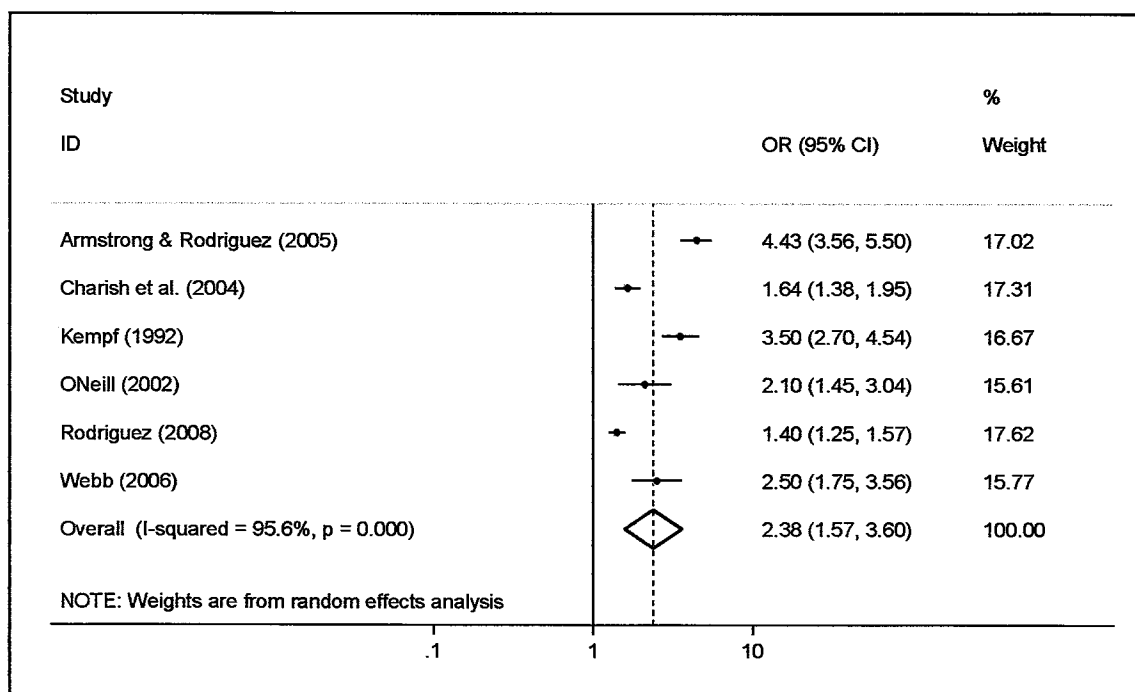


Figure 5. Latino/White Contrasts: Funnel Plot with Pseudo 95% Confidence Limits (n=6)

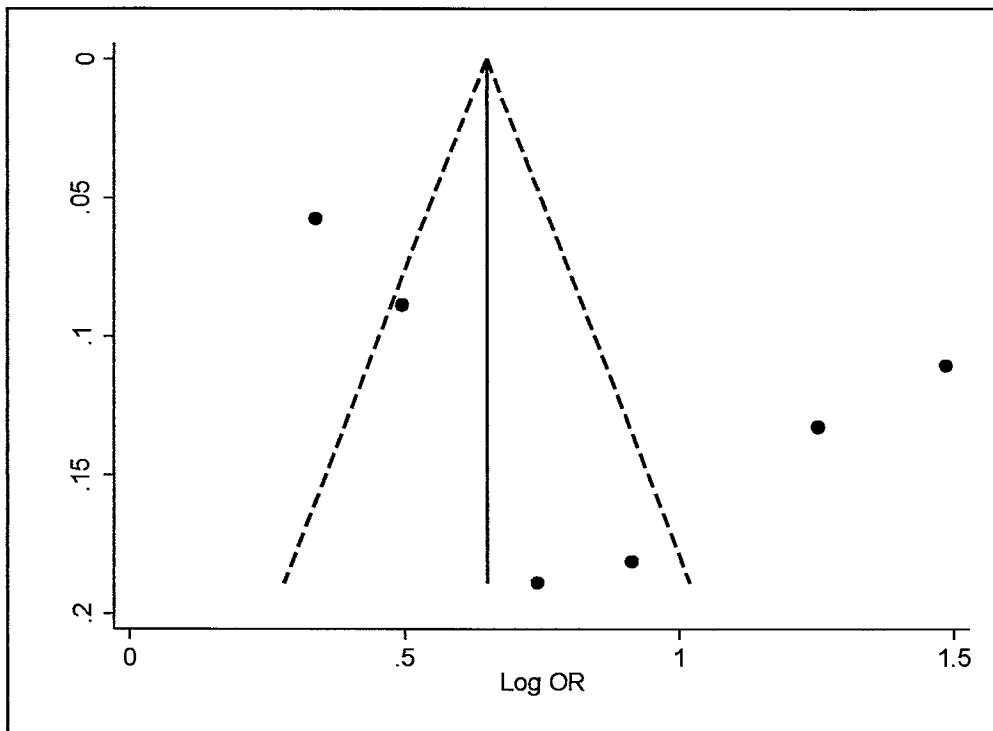


Figure 6. Latino/White Contrasts: Influence of Individual Studies on The Summary Effect (n=6)

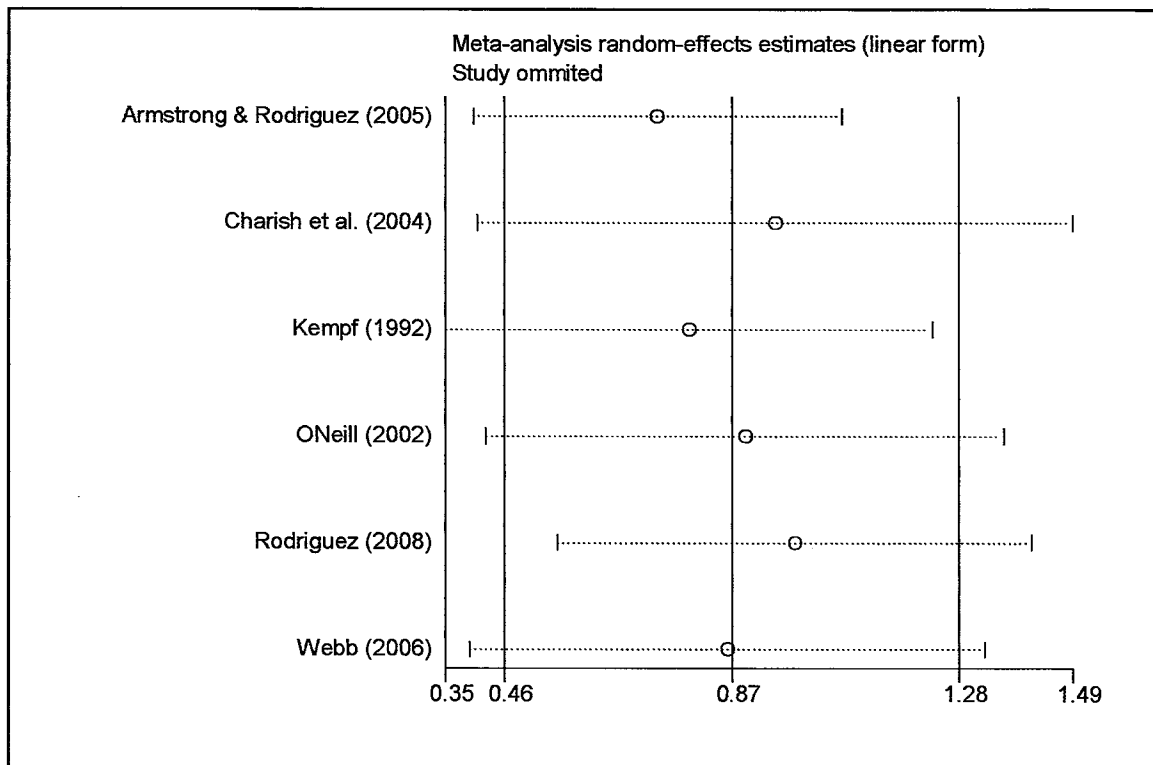


Figure 7. Minority/White Contrasts: Forest Plot (n=10)

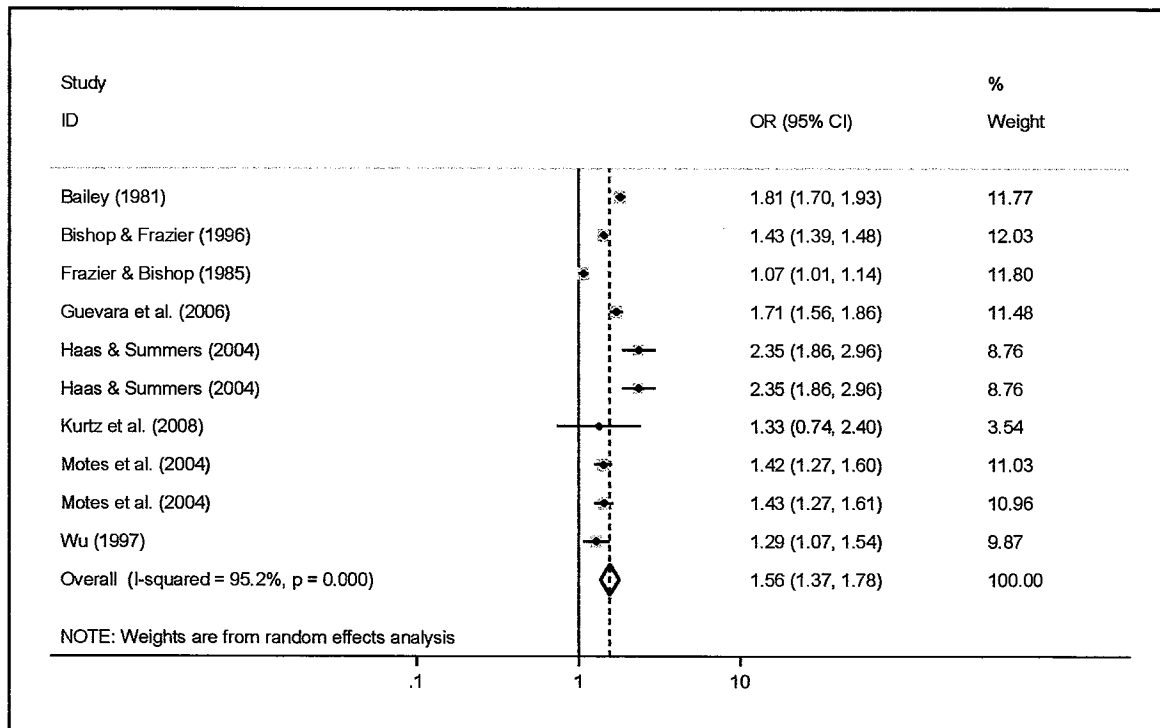


Figure 8. Minority/White Contrasts: Funnel Plot with Pseudo 95% Confidence Limits (n=10)

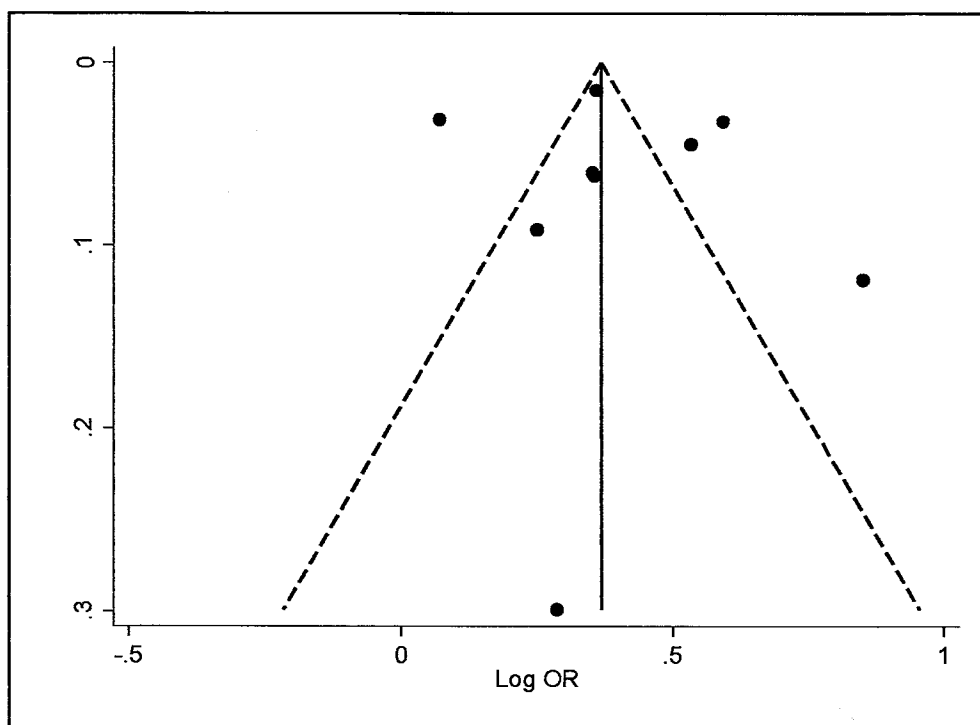


Figure 9. Minority/White Contrasts: Influence of Individual Studies on the Summary Effect (n=10)

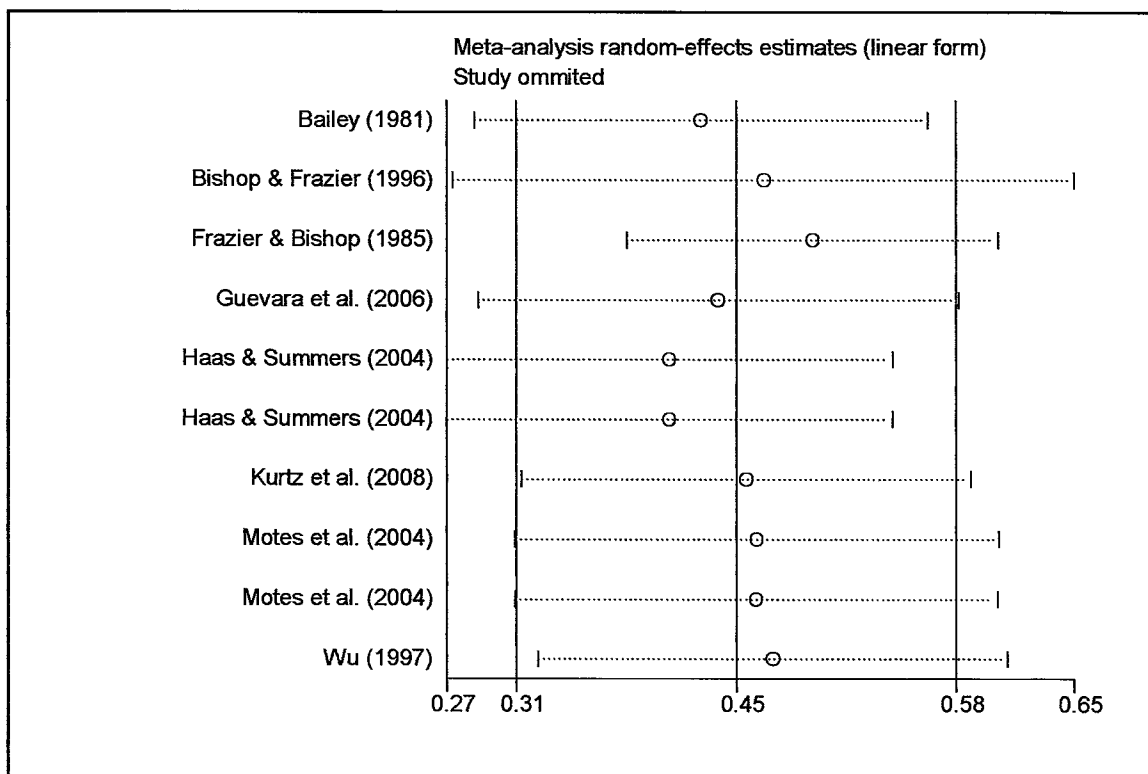


Figure 10: Youth-of-Color/White Contrasts: Forest Plot (n=44)

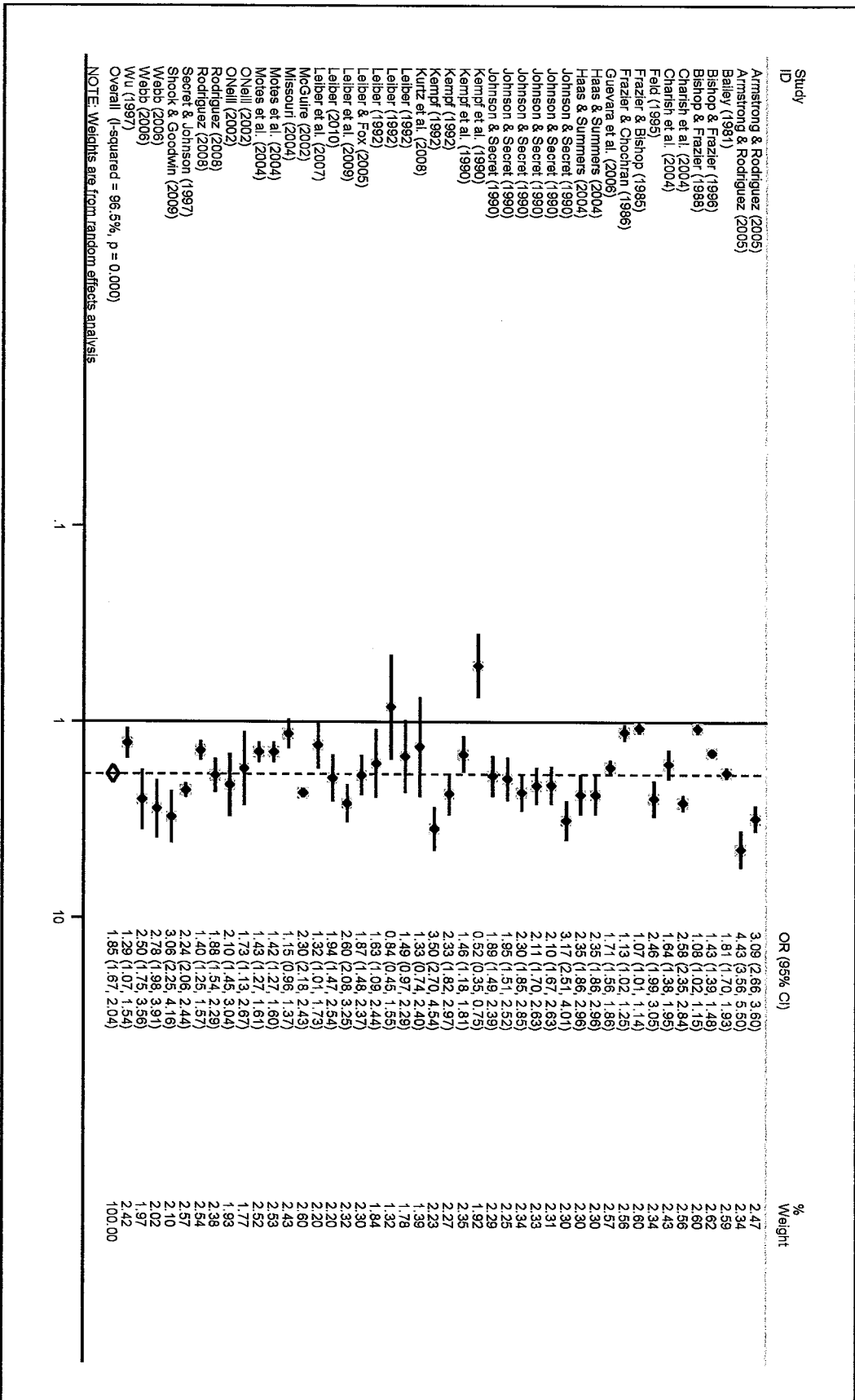
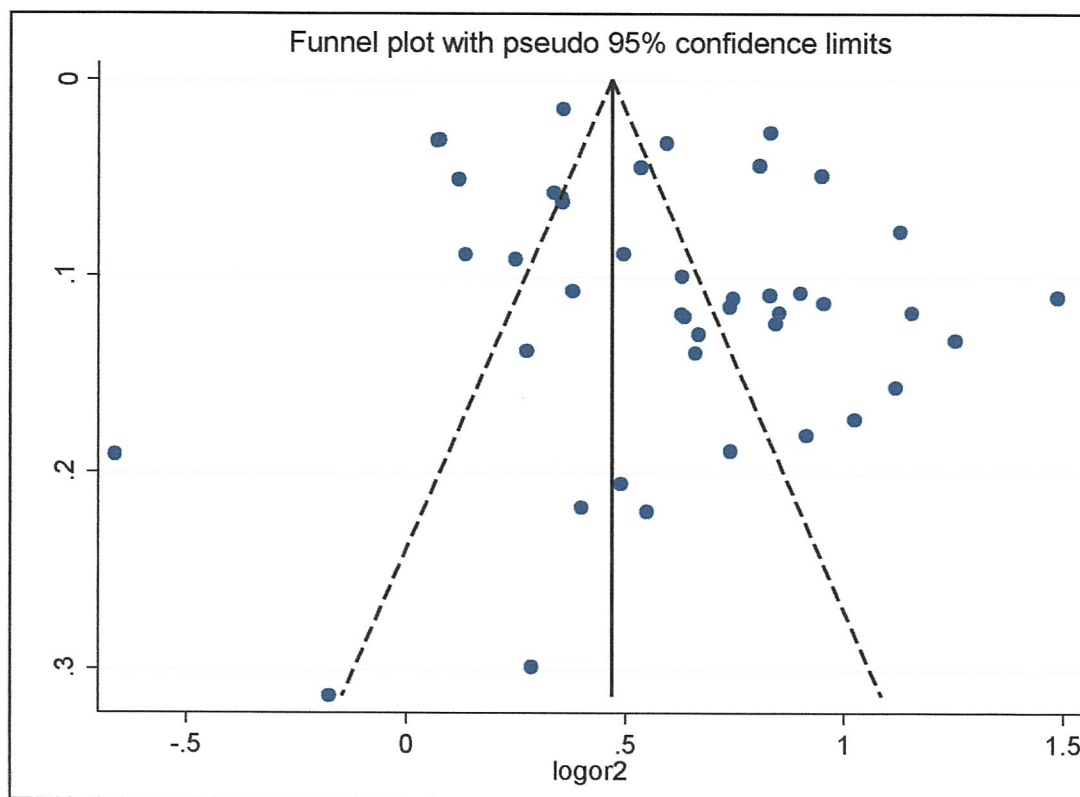


Figure 11. Youth-of-Color/White Contrasts: Funnel Plot with Pseudo 95% Confidence Limits (n=44)



Appendix A: Coding Database

Data Entry Forms

Eligibility Study Sample-Context Outcome Effect Size Datasheets Queries

Eligibility

Coder

Checker

Study ID

Authors Last Names

Publication Year

Meets Criteria?

Fails Criteria

Effect Size Info?

No Effect Size Info


Independent Data?

Overlap?

☐ Contact Authors?

☐ Use in Study?

Notes:



Record: 14 of 196 No Filter Search

* These database forms were created by Dr. Iva Kosutic.

Data Entry Forms

Eligibility Study Sample-Context Outcome Effect Size Datasheets Queries

Study

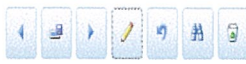
Study ID:

Publication Type:

of Samples:

Decision Points:

Notes:



Data Entry Forms

Eligibility Study Sample-Context Outcome Effect Size Datasheets Queries

Sample-Context

Study ID:

Context ID:

Jurisdiction:

Jurisdiction Type:

Region:

Data Years:

Unit of Analysis:

Mean Age:

% Female:

Sample Size: # Detained: # Not Detained:

White: # White: # White:

Minority: # Minority: # Minority:


Black: # Black: # Black:

Latino: # Latino: # Latino:

Other:

Notes:

Sample Size in Multivariate Analysis:



Record: 14 of 54 | No Filter | Search

Data Entry Forms

Eligibility Study Sample-Context **Outcome** Effect Size Datasheets Queries

Outcome

Study ID:

Context ID:

Outcome ID:

Outcome label:

Analysis description:

Predictors:

Offense Variables:

☐ # Offenses

Severity:

Description:

☐ drugs

☐ weapons

☐ person

☐ property

Prior Record Variables:

☐ Prior Record "Yes/No"

☐ # Priors

☐ Prior Offense Severity

Description:

Controls:

☐ age

☐ gender

☐ SES

☐ family stat

☐ school

☐ urban

☐ Interactions with race

interaction terms:

Interactions significant?

☐ Selection bias:

Notes:

Record: 4 of 55 of 55 No Filter Search

Data Entry Forms

Eligibility Study Sample-Context Outcome **Effect Size** Datasheets Queries

Effect Size

Study ID:

Context ID:

Outcome ID:

Effect Size ID:

Race Contrast:

Offense:

Harsher for Minority?

Significant?

Type of ES:

B:

exp(b):

SE:

Wald, z:

Reference Group:

Detention coding:

Notes:

Record: 4 of 75 of 75 No Filter Search

Appendix B: Excluded Studies by Reason

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Appendix C: Article

The Effect of Race on Preadjudication Detention in the Juvenile Justice System:

A Meta-Analysis

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ABSTRACT

Research has shown that youth of color are over-represented at every stage of the U.S. juvenile justice system. While researchers have generated an immense body of literature in the search for contributing factors, they have yet to agree on reasons for this disparity. Because single studies rarely resolve the inconsistencies of social science research, this study fulfills the need for a comprehensive empirical review of racial and ethnic disparities in the juvenile justice system by systematically reviewing all available research – published and unpublished – that met eligibility criteria. There are two main research questions: (1) Are youth of color detained in the juvenile justice system more often than Whites even after controlling for prior delinquent history and severity of current offense? If so, what is the magnitude and strength of this difference? and (2) What extralegal (i.e., status variables: SES, family status; sample characteristics: age, gender), legal (i.e., offenses related to drugs, person, weapon) and contextual (i.e., jurisdiction, region) variables are related to the likelihood that racial disparity will occur? This meta-analysis revealed that discriminatory race-effects were evident across multiple studies spanning more than 30 years and that a proportion of variability in study results is explained by extralegal and contextual factors.

Introduction

Research has shown that youth of color are over-represented at every stage of the U.S. juvenile justice system. Over the last several decades, researchers have generated an immense body of literature in search of contributing factors but have yet to agree on the reasons for this disparity. Researchers have found that identifying and explaining the reasons for disproportionate minority contact (DMC) in the juvenile justice system is a much more complicated process than merely showing that it exists (Kempf-Leonard, 2007). The driving force of DMC research began after 1988 when Congress passed an amendment to the Juvenile Justice and Delinquency Prevention (JJDP) Act of 1974 (Public Law 93-415, 42 USC 5601 et seq.) requiring states to address disproportionate minority confinement/contact in their state plans by identifying the extent and causes of DMC or to risk losing federal funds (Cabaniss, Frabutt, Kendrick, & Arbuckle, 2006). In addition, it broadened the definition of DMC beyond confinement to contact. Initial contact within the system is a key entry point where decisions are made that that can lead to youth penetrating further into the juvenile justice system (Kakar, 2006; Kempf-Leonard, 2007; Mallicoat, 2007).

Since the initial clarion call, state governments have spent a vast amount of time and money on research to address DMC in the juvenile justice system. This research has produced mixed results regarding the reason for the overrepresentation of youth of color. Some studies have found that youth of color

are treated more severely than Whites at various juvenile justice decision points, even after controlling for legal factors such as severity of crime or prior criminal history (Armstrong & Rodriguez, 2005, Webb, 2006). Conversely, other researchers have reported just the opposite – youth of color are treated more leniently than white youth as a result of such influences as correction of bias, where juvenile justice officials show leniency to a youth of color in order to correct for what they perceive as the juvenile's disadvantages. (Ray and Alarid, 2004). Still other researchers have found no discrimination and have determined that racial disparity exists because of differential involvement – youth of color are involved in more crime and more serious crime (Tracy, 2005).

Single studies rarely resolve the inconsistencies of social science research. The goal of this meta-analysis is to make sense of divergent study outcomes by quantitatively analyzing over 30 years of research in order to present the current state of DMC knowledge and to elucidate contributing factors of racial disparity in the juvenile justice system. Because of prior limitations in extant reviews, this study fulfills the need for a comprehensive empirical review of racial and ethnic disparities in the juvenile justice system by systematically reviewing all available research (both published and unpublished) that met eligibility criteria.

Research on juvenile justice system processing has focused on seven major decision points: arrest, intake, detention, adjudication, disposition, transfers to an adult criminal court, and secure confinement in public institutions. This

research focuses on placement in preadjudication detention. This decision point was selected because individual studies have revealed two robust relationships: (a) juveniles of color are more likely to be placed in pretrial detention, and (b) juveniles thus placed in pretrial detention are more likely to receive restrictive outcomes at adjudication (Bishop & Frazier, 1988; Kempf-Leonard, 2007; Leiber & Fox, 2005). Moreover, research has found that juvenile justice decisions at early decision points (e.g., arrest, intake, and pretrial detention) have significant and *compound* effects on later stages of juvenile justice processing (Kakar, 2006; Ray & Alarid, 2004). This summative effect, which is referred to as bias amplification, creates more extensive minority disproportionality at later stages (Bishop, 2005; Fenwick, 1982, Fagan et al., 1987; Shook & Goodkind, 2009; Pope & Feyerherm, 1990; Sampson & Lauritsen, 1997).

One of the most often studied decision points (Bishop, 2005), preadjudication detention involves a high level of discretion. Unlike adjudication decisions (effected through sentencing in juvenile court), the decision to detain prior to trial does not involve a judicial review (Bishop, 2005; Webb, 2006). Despite clear guidelines, pretrial detention decisions are often left to the discretion of juvenile justice personnel. Some scholars have referred to pretrial detention as one of the chief abuses of power in the juvenile justice system (Frazier & Bishop, 1988). Research has shown that incarceration can disrupt a youth's social and developmental trajectories as well as prolong delinquency, affect mental health, increase the likelihood of future offending, and affect a

juvenile's education and employment (Holman & Zeidenberg, 2006, Johnson, Whitbeck, & Hoyt, 2005).

Literature Review

A consistent theme in the juvenile justice system is the overrepresentation of youth of color in preadjudication detention and in every other decision point. Over the last 50 years, researchers have generated a substantial body of literature in search of contributing factors but results are inconclusive. DMC is defined as occurring when the proportion of minority juveniles detained or confined in secure detention facilities, secure correctional facilities, jails, and lockups exceeds the proportion of the group represented in the general population (Hsia, Bridges, & McHale, 2002). As a result, crime rates do not simply quantify criminal acts, but rather, reflect race-effects in the juvenile justice system.

Public policy and academic discourse have focused on two divergent theses – differential treatment and differential offending – to explain the disproportionate rate at which youth of color make contact with the justice system (Bishop, 2005; Tracy, 2005). The differential treatment thesis posits that youth of color are more likely to be arrested, detained, adjudicated, and incarcerated regardless of the nature, extent and severity of the delinquent act and prior criminal history (Leiber, 2003; Tracy, 2005). Alternatively, the differential offending thesis asserts that minorities are overrepresented at every stage of the

juvenile justice system because they commit more crimes, more serious crimes, and for an extended period of their lives (Piquero, 2008).

Most researchers use one of two frameworks to interpret criminological/delinquency research findings (Leiber, 2003; Leiber, Fox, & Lacks, 2007). Consensus theory emphasizes individual responsibility for acts of deviance (Walker, Spohn, & DeLone, 2004). Thus, detention is viewed as the direct consequence of an individual's delinquent behavior and its severity. Instead of discrimination, disparity in the treatment of youth in the juvenile justice system is viewed as a consequence of differential offending with youth of color committing more crime and more severe crime (Leiber & Fox, 2005).

In contrast, conflict theory is rooted in the positivist paradigm that assumes norms and values differ among groups. Here, the focus is on "social reaction" or how social and governmental institutions respond to crime and delinquency. Responses emphasize social control that is used to protect those with power (the dominant group) (Leiber, 2003; Tittle & Curran, 1988). Conflict results from competition among social classes and other societal groups (e.g., race, ethnicity). In conflict theory, structural forces - social and political institutions – are the underlying cause of crime rather than an individual's criminal tendencies. Dominant social and political institutions seek to control those in the minority by formulating laws that define what is considered a *crime*. The result is differential treatment and overrepresentation of youth of color in the juvenile justice system.

Some theorists further posit that differential treatment is not fully explained by the view that the dominant majority exerts economic and political power over less dominant minority groups. Rather, responses by those in the majority are conditioned by the perceived threats they perceive from people of color.

Reinforced by negative stereotypes, youth of color are viewed as posing a symbolic threat to middle class values and public safety (Leiber & Fox, 2005).

According to Tittle and Curran (1988), officials stereotype youth of color as undisciplined, aggressive, overly sexual, dangerous, products of single female-headed households, drug offenders, and delinquents (Feld, 1999).

A number of studies have offered support for this formulation. In particular, studies of drug offenses, violent crime, family status, family income, age, and geography/jurisdiction have shown results that support the symbolic threat (differential treatment) thesis.

Drug Offenses

Leiber and Fox (2005) used multivariate analysis to examine 5,554 juvenile court records in Iowa's largest county (home to the largest minority community in the state) and found that African-American juveniles charged with a drug offense had a 16% lower likelihood of being released at intake compared to white youth. In contrast, a drug-offense charge was not a significant predictor of a decision to release Whites.

Violent Crime

In a sample of 1,195 youth in an urban Michigan county, Shook & Goodkind (2009) found significant racial disproportionality in detention decisions among juveniles who had committed violent delinquencies even after controlling for legal factors (e.g., prior offenses, offense severity). Of the juveniles who were arrested for violent offenses, 82 % of African-American juveniles were detained while only 58% of white juveniles received detention. The researchers cite these findings as support for the symbolic-threat hypothesis, which presupposes that African Americans are viewed by juvenile justice decision makers as more threatening than similarly situated Whites.

Family Income

Using a hierarchical generalized linear model, Armstrong and Rodriguez (2005) examined individual and contextual factors affecting preadjudication detention of 8,289 juvenile delinquents in 65 counties in a northeastern state and found that higher levels of family income significantly decreased the likelihood of preadjudication detention by a factor of .13 (Armstrong & Rodriguez, 2005). Armstrong and Rodriguez (2005) interpreted this finding as supporting the symbolic-threat thesis because lower SES is often associated with race/ethnicity.

Family Status

Family status is another factor thought to potentially challenge middle class values. This is the case when a two-parent family living arrangement is contrasted with one-parent homes, group homes, or foster homes. Leiber and

Fox (2005) found that family status had a statistically significant contrasting effect on both Whites and African Americans in juvenile justice decision making. Whites from a single-parent home had a 6% greater chance of being released whereas African American youth from single-parent homes had a 6% decreased chance of being released. Leiber and Fox (2005) interpreted their overall study findings as consistent with symbolic-threat thesis in that African Americans are perceived as dangerous and must be detained for the safety of the middle class.

Age

In a study of all juvenile delinquency petitions filed in an Iowa county in 2003-2004, Leiber et al. (2007) found support for the symbolic-threat hypothesis that older youth of color are perceived as more threatening than older white youth. In an examination of different racial groups, age increased the odds of receiving an intake petition by 43 % for Native Americans, 25 % for African Americans, and 27 % for minority youth classified as other. These minority percentages were in contrast to 13 % for older Whites. In other words, older minority youth had a two to three times greater risk of being petitioned at intake than older White juveniles.

Geography/Jurisdiction

Finally, adherents to the symbolic threat (differential treatment) thesis have noted that race-effects vary geographically across and within jurisdictions (Bray, Sample, & Kempf-Leonard, 2005). Referred to as *justice by geography*, different regions with differing socio-historical and political contexts allocate

power and resources differentially to dominant and minority racial groups (Feld, 2005; Kempf-Leonard, 2007; Omni & Winant, 1994). Using quantitative and qualitative methodology, Leiber (2003) found that stereotyping varies by jurisdiction and youth of color who do not abide by middle-class standards (as in dress, demeanor, or family status) were viewed as more threatening and dangerous in particular geographic areas. Leiber et al. (2007) called for more research that takes into account varying contexts across jurisdictions to better understand the implications of social control in juvenile justice decision making.

Critique of Prior Research Reviews

The six most commonly cited reviews of DMC research have provided invaluable information for the advancement of understanding race-effects in the juvenile justice system. However, these reviews (Egen et al, 2002; Leiber, 2002; Liska & Tausig, 1979; Pope & Feyerherm, 1990; Pope, et al., 2002; Tittle & Curran, 1988) are hampered by important limitations. Five of the six reviews were traditional narrative qualitative reviews. Of these, only Pope and Feyerherm (1990) was comprehensive in nature and included both published and unpublished research.

Contemporary scholars have been quite critical of traditional qualitative narrative reviews. Their criticisms include: the selective inclusion of studies grounded in personal judgments; rare use of systematic techniques to ensure that all relevant literature was located and information gathered accurately; reliance on statistical significance that is influenced by sample size (statistical

tests often fail to reject the null hypothesis because of a lack of statistical power); lack of scientific rigor; subjective differential weighting of studies; failure to examine study characteristics as possible explanations of synthesized results; and failure to consider moderating variables (Borenstein et al, 2009; Cooper, 2010; Cooper & Hedges, 1994; Lipsey & Wilson, 2001; Rosenthal, 1991; Wolf, 1986).

Only the DMC review by Egen et al. (2002) conducted an empirical synthesis of existing DMC studies. Unfortunately, this empirical review was not comprehensive in nature and was susceptible to two types of biases. First, this review included only studies published in peer-reviewed journals. In their defense, Egen et al. (2002) argue that there is no reason to expect that excluded unpublished studies differ systematically from the included published ones. However, Cooper (2010) disagrees and makes the case that published research is susceptible to bias against null findings. In other words, journals are more likely to publish research that has significant findings. Lipsey and Wilson (1993) examined 92 meta-analyses presenting treatment effects in both published and unpublished reports and found evidence of bias against null findings where the published estimates were about one-third greater than unpublished estimates.

Egen et al.'s (2002) review also was predisposed to confirmatory bias. This occurs when researchers with findings that conflict with widely held beliefs are less likely to submit their results for publication (Cooper, 2010). Because of the possibility of these two biases, Cooper (2010) recommends that reviewers

not limit their research syntheses to only published primary studies. Moreover, Egen et al.'s review is now more than 11 years old. Even though the study produced some significant findings, they might no longer be applicable and relevant today.

The meta-analysis conducted in the present study is unique in that it is the first DMC review that comprehensively includes both published and unpublished studies and is empirical. Specifically, this meta-analytic review examines race-effects on preadjudication detention. Additionally, this study goes beyond the question of whether racial disparity exists to address the question of why this may be the case.

Research Questions

This study examined two research questions:

Research Question 1: Are youth of color detained in the juvenile justice system more often than Whites? If so, what is the magnitude and strength of this difference? It was expected that juveniles of color would receive pretrial detention more often than Whites, even after controlling for legal variables (such as prior delinquent history and severity of current offense)

Research Question 2: What extralegal variables such as status variables (SES, family status), sample characteristics (age, gender), legal factors (offenses related to drugs, person, or weapon) and contextual factors (jurisdiction, region/geography) are related to the likelihood that racial disparity will occur? It was expected that racial disparities in detention would be greatest in

cases where youth of color pose the greatest symbolic threats. This includes older males, youth accused of drug-related offenses, youth accused of person- or weapon-related offenses, and youth who reside in urban areas and in southern states.

In summary, a significant finding that youth of color receive pretrial detention more often than Whites, after controlling for legal variables, would support the differential treatment over the differential offending explanation as to why DMC exists. Additionally, finding that disparities in detention are significantly greater in juvenile cases where extralegal variables (older males, drug-related offenses, person- or weapon-related offenses, residing in urban areas or southern states) are present, would support the symbolic threat explanation for DMC.

Methods

This study conducted a meta-analysis of both published and unpublished studies examining overrepresentation of youth of color in preadjudication detention. The steps followed were those outlined by Cooper (2010) in his recent model of meta-analysis.

Search Strategy

To ensure that the sample of studies in the proposed synthesis was representative of all research on the topic, a broad and exhaustive literature search was conducted. This step included: (1) a search of computerized bibliographic databases, (2) a hand-search of relevant journals not available

online but obtained at the library, (3) the use of the snowball technique to examine references of prior reviews and of eligible studies to identify additional studies, (4) an investigation of conference programs obtained from online index searches, from pertinent societies and associations, or directly from the presenter(s), (5) phone calls to each state's DMC representative to obtain government technical reports, and (6) contacting professional leaders and researchers in the field to identify any missed studies.

Searches were conducted using keywords such as juvenile justice system, detention, disproportionate minority contact, DMC, racial disparity, African Americans, detention reforms, detention research, minority youth, youth of color, and racial bias. In addition, state agencies were contacted to locate any internal evaluations of juvenile justice detention practices in regard to racial disparities.

Inclusion and Exclusion Criteria for Studies

From an initial result of more than 600 potential professional DMC-related citations, selection for inclusion in this meta-analysis was narrowed using several criteria. Each study included had to examine pretrial detention decisions for juvenile justice cases in the U.S. (i.e., U.S. adult criminal justice system cases were excluded), (2) control for seriousness of offense or prior history, (3) estimate the direct influence of race on pretrial detention decisions, (4) be available before Jan. 1, 2011, (5) come from an independent, non-overlapping data set, and (6) be written in English, the primary language of the U.S. juvenile justice system. A total of 28 studies met all established criteria and were retained

for further analysis. The main reason for study exclusion: (1) did not examine the direct race effects on preadjudication detention, (2) were not empirical analyses or did not sufficiently report their results, (3) did not control for seriousness of offense and prior history, and (4) did not measure the unmoderated influence of race. When insufficient data was reported, primary study authors were contacted and asked to provide additional detail. Several authors failed to respond to the request for additional information.

Data Analyses

Meta-analysis involves two types of variables: (1) effect-sizes of variables of primary interest (i.e., dependent variable), and (2) descriptive variables (i.e., independent variables) that characterize the effect sizes and the studies that generate them (Lipsey & Wilson, 2001). This systematic review will discuss the analysis of effect-size estimates as well as which moderators are associated with variability in effect size (i.e., disparity in pretrial detention for youth of color).

Effect-Size Analysis. To combine effect sizes across studies, a common effect size must be chosen to estimate the summary or main effect size. The odds ratio was chosen as the proper measure of effect size for this meta analysis. Each study can be viewed as an individual 2 x 2 contingency table (Harris et al., 2008; Sterne et al., 2001; Fleiss, 1993):

	Non-White	White	Total
Detained	a	b	N1
Not Detained	c	d	N0

The odds ratio (OR) for a single study, then, is:

$$OR = (ad) / (bc)$$

And, the log odds ratio (Log OR):

$$\text{Log OR} = \log (OR)$$

The standard error (SE) for the Log OR:

$$SE (\text{Log RR}) = \sqrt{(1/a + 1/b + 1/c + 1/d)}$$

Calculating Weighted Mean Effect Sizes. Before calculating the summary effect, each study contrast must be weighted to reflect precision (e.g., in terms of sample size and study design). For example, a study contrast with a larger sample would be given more weight. Two different approaches are used to determine how much weight is given to each study in a meta-analysis: the random effects model and the fixed effect model (Borenstein et al., 2009). In this study, the random-effects model was used. The random-effects model, in which the true effect can vary across studies, has the primary goal of estimating the mean of a distribution of true effects (Borenstein et al., 2009). In this study, effect sizes were estimated with Stata™ statistical package using a random-effects approach.

Moderator Variable Analysis. Moderator analyses were conducted to determine whether coded legal and extralegal variables (e.g., drug offenses, age, and family status) were related to effect size and whether there were interesting interrelationships among them. Moderators are variables that affect the direction and/or strength of the relationship between an independent variable and a

dependent variable (Baron & Kenny, 1986). As stated by Baron and Kenny, a moderator effect exists if the interaction term explains a significant amount of variance in the criterion variable. An interaction effect occurs when the effect of one variable is not the same at all levels of the other variable (Guevara, Spohn, & Herz, 2004).

Results

Descriptive Analyses

Three racial and ethnic categories that were used in previous studies were used as comparisons to Whites: African Americans, Latinos and minorities. In addition to these racial and ethnic groupings, a new category, entitled “youth of color,” was created so that racial and ethnic data from *all* 28 eligible studies could be aggregated into two variables (e.g., youth of color and white).

The descriptive statistics for the meta-analytic sample revealed that half (50%) of the detention contexts were comprised of data pertaining to cities and counties while 50% were based on state-wide data. The majority (81.82%) of the detention data came from non-Southern states.

Only 11% of the coded analyses used both type of offense and severity of offense ratings to describe this important seriousness-of-offense variable. The majority of the coded analyses described severity of offense using only one variable, either common law (44%) or severity of offense (44%). Common law offenses refer to the offense type, such as drug, weapon, person, and property offenses. On the other hand, offense severity involves an ordinal rating system.

Gender (98%), age (89%), and unpublished³² (69%) were the most common types of control variables. Meanwhile, few studies controlled for SES (13%), family status (31%), school status (27%), drugs (22%), weapons (13%), or person offenses (38%).

Not surprisingly, male youth of color comprised the majority of the samples analyzed in this meta-analysis. The mean sample age was 15 years old. Males comprised at least 75% of the total samples from the primary studies. Overall rates of detention among ethnic and racial groups indicated that when comparing African Americans to Whites, African Americans comprised 23% of the samples. In Latino/White detention contrasts, Latinos represented 6% of the samples. Youth of color represented on average 32% of all the primary study samples.

Bivariate Analyses

African-American/White Contrasts. Twenty studies provided 28 effect estimates. Of these, 26 suggested a positive association (i.e. African Americans were detained more often than Whites). Also referred to as **summary estimate or summary effect, the** overall pooled estimate was $OR=1.85$ (95% $CI=1.59-2.16$) with a p -value of $p < .001$, indicating a significant effect and a rejection of the null hypothesis (that the mean effect is zero). According to this analysis, African Americans were detained more often than Whites, at an almost double rate. And, African American youth were detained at almost twice the rate of white

³² Unpublished sources of data refer to state technical reports. For this meta-analysis, sources for data can be broken down as follows: book chapter (4%), peer-reviewed journal article (64%), and technical reports (32%).

juveniles even after controlling for legal variables³³. This finding supports the hypothesis that racial disparity in pre-adjudication detention is the result of differential treatment and not differential offending.

Latino/White Contrasts. Six studies that included almost 36,000 juvenile cases were included in the meta-analysis comparing whether Latinos were detained more often than Whites. All six studies showed a positive association, with the overall OR=2.38 (95% CI=1.57-3.60) and a significance of $p < .001$. This indicates that Latinos were detained more often than Whites. In fact, Latinos were detained at more than twice the rate of white juveniles.

Similar to the findings for White/African-American contrasts, Latinos were detained at more than double the rate of white juveniles even after controlling for legal variables. Again, these findings support the hypothesis that racial disparity in pre-adjudication detention is the result of differential treatment and not differential offending.

Minority/White Contrasts. Eight studies provided 10 effect estimates comparing whether “minorities” – specifically defined as such in each of the primary studies – are detained more often than Whites. All 10 estimates showed a positive association, with the overall OR=1.56 (95% CI=1.37-1.78) and a significant value at $p < .001$. This indicates that minorities were detained one-and-a-half times more often than Whites.

³³ Control for legal variables – prior history and offense seriousness – was achieved by including only studies that controlled for these variables

This contrast again supports the differential treatment hypothesis that youth of color are detained more than white juveniles given that legal factors were controlled.

Youth of Color/White Contrasts. Twenty-eight studies provided 44 effects estimates comparing whether all racial and ethnic groups combined into a youth-of-color grouping are detained more often than Whites. Forty-two estimates showed a positive association, with the overall OR=1.85 (95% CI=1.67-2.04) with $p<.001$. The overall odds ratio indicates that youth of color were detained almost twice as often as Whites.

Youth of color were at least one-and-a-half times more likely to receive detention than their white counterparts when legal variables were held constant. These results offer overwhelming support for the hypothesis that youth of color are discriminately detained (differentially treated) prior to adjudication when compared to white youth. These findings do not support the hypothesis of differential offending.

Multivariate Analyses

African-American/White Multivariate Contrasts. Three models were run for each racial contrast category. The first model included whether the study controlled for type of offense: drugs, weapon, person offense, or property offense. The second model focused on whether the study controlled for demographic factors: age, gender, SES, family status, school problems, urban setting, and whether the study included interactions with race (e.g., race x age

interaction, race x gender interactions). The third model focused on jurisdiction and region. The standardized β estimates, SE, and p -values for the individual covariates for all three models are shown in Table 1 for the African American/White contrasts, Table 2 for the Latino/White contrasts and Table 3 for the Youth of Color/White contrasts. These contrasts show that...

Table 1

Results from Metaregression Analysis of African-American/White Contrasts
($n=28$)

	Standardized β	SE	p-value
<u>Model 1</u>			
Weapons	0.32	0.28	0.14
Person	-0.47	0.22	0.09
Drugs	0.10	0.28	0.73
Property	0.31	0.28	0.30
<u>Model 2</u>			
Gender	-0.21	0.27	0.23
Age	0.32	0.22	0.10
SES	0.48	0.27	0.04
Family status	-0.20	0.17	0.33
Urban setting	-0.41	0.23	0.11
Interaction w/race	-0.22	0.21	0.07
School problems	0.28	0.17	0.14

<u>Model 3</u>			
Jurisdiction	-0.26	0.16	0.13
Region	0.11	0.11	0.59

Model 1: Types of Offenses. No single covariate in model 1 was statistically significant.

Model 2: Demographic Factors. The joint test for all covariates was $F(7,20)=2.61$ ($p=0.04$), indicating a significant associations between the covariates and differential rates of detention for White and African-American youth. The analysis revealed that SES ($\beta = .48$, $p<0.05$) was significant, indicating that juveniles with low SES were more likely to be detained than those with high SES. No other demographic covariates were statistically significant, even though age, gender, and family status were expected to affect levels of juvenile detention.

Model 3: Jurisdiction and Region. No single covariate in this model was statistically significant.

Latino/White Multivariate Contrasts. Due to insufficient observations, not all covariates were included in this analysis (Table 2).

Table 2

Results from Metaregression Analysis of Latino/White Contrasts (n=6)

	Standardized β	SE	p-value
<u>Model 1</u>			
Person	0.01	0.62	1.00

Drugs	0.40	0.76	0.70
Property	-0.85	0.74	0.34
<u>Model 2</u>			
SES	-0.20	0.16	0.50
Family status	1.20	0.13	0.08
Urban setting	-0.24	0.22	0.45
School problems	-0.36	0.13	0.25
<u>Model 3</u>			
Jurisdiction	0.81	0.27	0.14
Region	0.39	0.33	0.56

Model 1: Types of Offenses. The joint test for the 3 covariates in model 1 was $F(3,2)=0.54$, $p=0.70$ indicating no significant associations between the covariates and differential rates of detention for White and Latino youth

Model 2: Demographic Factors. Again, there were no significant associations between the covariates and differential rates of detention among White and Latino youth.

Model 3: Jurisdiction and Region. Model 3 included covariates for jurisdiction type (city/county or state), and region (South or not South). Neither covariate was statistically significant ($\beta=-0.39$, $p=0.56$).

Minority/White Multivariate Contrasts. Results for these contrasts are shown in Table 3.

Table 3

Results from Metaregression Analysis of Minority/White Contrasts (n=10)

	Standardized β	SE	p-value
<u>Model 1</u>			
Person	0.11	0.29	0.78
<u>Model 2</u>			
SES	0.21	-.29	0.68
Family status	-0.43	0.40	0.42
<u>Model 3</u>			
Jurisdiction	-0.55	0.17	0.21
Region	0.35	0.29	0.55

Model 1: Types of Offenses. Due to insufficient observations, not all covariates were included in the analyses. The single covariate, person offense, was not statistically significant.

Model 2: Demographic Factors. There were no significant associations between the covariates and differential detention of White or minority youth.

Model 3: Jurisdiction and Region. Neither the full model nor any of the individual covariates proved to be statistically significant.

Youth of Color/White Multivariate Contrasts. The standardized β estimates, SE, and *p*-values for the individual covariates for the three models are shown in Table 4.

Table 4

Results from Metaregression Analysis of Youth of Color/White contrasts (n=44)

	Standardized β	SE	p-value
<u>Model 1 (n=44)</u>			
Weapons	0.34	0.24	0.06
Person	-0.32	0.19	0.17
Drugs	0.24	0.22	0.26
Property	0.05	0.21	0.83
<u>Model 2 (n=44)</u>			
Gender	-0.28	0.28	0.06
Age	0.35	0.21	0.05
SES	0.26	0.18	0.16
Urban setting	0.04	0.17	0.84
Family status	0.01	0.15	0.97
Interaction w/race	-0.069	0.16	0.65
School problems	0.12	0.16	0.48
<u>Model 3 (n=43)</u>			
Jurisdiction	-0.22	0.12	0.17
Region³⁴	-0.301	0.13	0.04

³⁴ South was the reference group.

Model 1: Types of Offenses. No single covariate in model 1 was statistically significant.

Model 2: Demographic Factors. In this model, the only individual characteristic that was statistically significant was age ($\beta=0.35$, $p=0.05$), indicating that older youth of color were more likely to be detained.

Model 3: Jurisdiction and Region. This model included jurisdiction type (city/county or state), and region (South or not South). The joint test for the covariates was not significant $F(3,39)=0.75$ ($p=0.53$). However, the region was statistically significant ($\beta=-0.301$, $p=0.04$).

Discussion

At present, this meta-analysis is the most comprehensive quantitative review of research on disproportionate minority detention in the juvenile justice system. This meta-analytic review goes beyond the only other quantitative DMC reviews, Egen et al. (2002), by including both published and unpublished primary studies, and by including only independent, non-overlapping data.

National research reveals that the probability of a youth of color entering the juvenile justice system is substantially higher than that for White youth who commit the same offense (Huizinga et al., 2007). There is undoubtedly overrepresentation of youth of color in the juvenile justice system. Evidence reveals that youth of color are more likely than White juveniles to receive detention. This finding also was supported in this study.

Juveniles of color were found to consistently receive pretrial detention more often than Whites. This finding is even more compelling when considering that only studies that controlled for legal variables, such as prior delinquent history and severity of current offense, were included. Moreover, none of the multivariate analyses found legal factors such as... to be significant.

These findings provide strong support for the differential treatment thesis in explaining DMC in preadjudication detention. Youth of color were differentially detained (treated) more often than white youth above and beyond what would be expected by youth differential offending.

Similar to the results revealed in the quantitative DMC review by Egen et al. (2002), multivariate analysis of covariates revealed little support for the idea that race-effects can be attributed to other extralegal characteristics. In fact, this study found only one such effect. Lower socioeconomic status (SES) significantly increased the likelihood that African Americans would receive preadjudication detention.

Additionally, being older was a significant covariate found to predict differential treatment. These findings offer some support for the symbolic threat hypothesis that proposes that those in the majority are conditioned to respond to people of color as perceived threats to them and middle class values. These findings are consistent with previous studies such as Leiber et al. (2007) who found that older youth of color were perceived as more threatening than older White juveniles. Leiber found that age increased the odds of receiving an intake

petition by 43 % for Native Americans, 25 % for African Americans, and 27 % for minority youth classified as “other.” For White youth, age increased the chances by 13 %.

Interestingly, the regional covariate also was found to be significant. However, the finding was contrary to expectation. According to the multivariate analysis results, youth of color who had contact with the justice system in Southern states were less likely to receive preadjudication detention. This finding raises questions about the *justice by geography* concept raised by previous scholars and suggests that a broader examination of geopolitical and sociohistorical contextual factors is warranted.

Implication of Findings

Results of this meta-analysis showed support for the differential-treatment thesis. That is, the findings indicated that the overrepresentation of youth of color at the preadjudication detention decision point is the result of discrimination, either unconscious or conscious, even after controlling for legal factors (prior history and seriousness of offense) that are associated with differential offending. Preadjudication detention is one of the best predictors of subsequent juvenile incarceration in a correctional facility. Unwarranted preadjudication detention can amplify biased effects at later decision points. Thus, this meta-analytic review provides essential information for guiding critical decision making regarding juvenile justice policy.

For instance, the juvenile justice system has long been criticized for inadequate attention to the specific needs of girls. In this meta-analysis, it was not surprising to discover that gender was not significant because very few studies adequately reported gender statistics. Even when gender was reported, often it was not broken down by race/ethnicity so the data was not usable. Accurate gender-specific data is critical for the development of effective and appropriate gender-sensitive programs that address the realities of girls' lives.

In addition, this study highlighted other gaps and shortcomings that need to be addressed in future research if we are to further our understanding of the complex web of contributing factors to DMC. The following steps would help in this endeavor.

Standardize Data-Collection Systems and Key Definitions. Within the juvenile justice system, there needs to be a unified system of defining variables. There is little agreement on how to define essential terms or analyze data. For instance, there has never been a common and accepted definition of "juvenile detention."

Recognize the Complexity of Racial Categorization and National Origin. A precise and uniform definition of race and ethnicity is crucial for examining DMC. Unfortunately, there is little consensus among the juvenile justice personnel or researchers on exactly how to define race and ethnicity. As a result, the terms vary across jurisdictions. Although the U.S. Census has attempted to provide a race and ethnicity classification scheme that allows for

self-identification and multiple categories, there is inherent difficulty in classifying on the basis of external characteristics (Bishop, 2005).

Conduct Research Focused on the Effect of Gender on Juvenile

Justice Decision Making. Female juveniles are the fastest-growing population within the juvenile justice system. Yet, it is unclear whether this is the result of rising rates of criminality or differential processing leading to more arrests, prosecutions, and incarcerations (Mallicoat, 2007). A study by Guevara et al. (2006) found that the effects of race on the preadjudication detention and disposition outcomes vary by gender. With the increasing number of females within the juvenile justice system, this system faces a major challenge because of the paucity of programs designed specifically for girls (Bloom, Owen, Piper-Deschenes, Rosenbauam 2002). Many scholars and practitioners are calling for policy changes within the juvenile justice system so as to accommodate more appropriate gender-specific treatment.

Use More Rigorous Statistical Analyses. A common criticism of DMC research is that it is not sufficiently rigorous. In a literature review by Pope et al. (2002), the authors call for researchers to employ more complex research methods (e.g. multivariate analyses and hierarchical linear modeling) that control for extralegal relevant variables such as family status, age, gender, and economic status, and also examine data as finely as possible by disaggregating data.

Situate Research in a Specific Context. Defining legal and extralegal factors is important for understanding the debate over disparity in the use of words and discrimination in the juvenile justice system (Bishop, 2005). Disparity denotes between-group differences, regardless of the reason for these differences. Discrimination is defined as illegitimate factors (e.g., racism, sexism, or patriarchy) that cause disparity in juvenile justice system outcomes.

Conduct Interdisciplinary Research. To identify and understand the causes of DMC, researchers are going to need to transcend the scope of a single discipline. As Popper (1963) noted, "We are not students of some subject matter, but students of problems. And problems may cut right across the borders of any subject matter or discipline" (p. 88).

As Piquero, Moffit & Lawton (2005) noted, most criminological research on racial disparities in the juvenile justice system has neglected the familial- and individual-level factors. This is cause for concern because individual factors such as impulsivity, risk seeking, and aggressiveness are linked to antisocial and delinquent behavior. In addition, family factors such as social isolation, economic stressors, and substance abuse have all been linked to delinquency of youth, particularly those of color. It is necessary to examine how individual and familial factors interact with community factors such as a high concentration of poverty, crime, and low education to create an ecological niche where delinquent activity often becomes a means of survival. Working across disciplines, criminologists could benefit from a field such as human development that offers insight into the

biopsychosocial development of the juvenile interacting with a complex, integrated, and changing ecology (Bronfenbrenner, 1994).

DMC is a multidimensional issue and cannot be solved with a simple approach. It requires reaching outside the field of criminology to create an interdisciplinary team to examine the intersectionality of individual and cultural identities in relation to social contexts.

Conclusion

The reason that there has been such difficulty answering the question “Why does DMC continue to exist?” is that the answer is complicated. It requires multifaceted studies that examine the dynamic influence of variables over time, utilize standardized juvenile justice data, and incorporates ongoing public discourse that advances racial understanding. When race is viewed as a social construct that is not adequately captured by arbitrary categories, it becomes obvious that the DMC question is tediously complex and much more difficult to answer.

Studies have shown that DMC involves both discrimination (conscious or unconscious), and differential offending (e.g., higher rates of delinquent acts and serious offenses) that need to be studied *in situ*. Because race is not just a product of skin color but involves multilevel factors, it is imperative that researchers look at racial issues in the juvenile justice system from multiple vantage points across disciplines. This includes examining risk factors (e.g., education level, family structure, neighborhood, SES, age of mother at birth,

association with deviant peers, school performance) and protective factors (community resources, government services, positive relationship with at least one adult) as well as multilevel bioecological and sociocultural factors (e.g. reciprocal interaction with mother as infant, proper nutrition, institutional ideologies, public policies, government practices, social norms, and cultural values).

As this DMC-related literature review reveals, gaps of knowledge are evident and there is a need for more research using complex research methods that can capture intricate interaction effects with extralegal contextual factors to provide a more comprehensive understanding of DMC. Moreover, comparison of prior literature reviews to current studies reveal that some researchers have failed to incorporate existing knowledge from research reviews of earlier studies and were destined to repeat the limitations and shortcomings of previous research.

Basic to effective research is the understanding, as Kempf-Leonard and Hawkins (2005) pointed out, that racial disparity is not just a problem for the juvenile justice system or minority groups, it is our problem as a society. The answer lies not in developing an improved justice system for *their* children but in social reform focusing on prevention rather than intervention, and in collectively realizing that these are *our* children.

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