Procedural Justice and Legitimacy in Adolescent Offenders: Associations with Mental Health, Psychopathic Features, and Offending

by

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Abstract

Procedural justice is defined as the fairness of the process and procedures used to make legal decisions. Theories of procedural justice suggest that when individuals experience respectful and fair decision-making procedures, they are more likely to view the law as legitimate and, in turn, are less likely to reoffend. However, when individuals come into contact with the legal system, they are not blank slates. They possess beliefs, personalities, and characteristics that may systematically influence their assessment of procedural justice and legitimacy. To date, little attention has been paid to the impact of these intra-individual differences on perceptions of procedural justice and legitimacy. Moreover, studies validating models of procedural justice have largely relied on samples of adults. Few studies have examined the relationship between procedural justice, legitimacy, and offending in youth, and none have examined whether procedural justice continues to predict offending when other, well-established risk factors for offending are controlled. The current study followed a sample of 92 male and female youth on probation in British Columbia, Canada, for 6 months. Results indicated that youth who had higher scores on the Massachusetts Youth Screening Instrument-Second Version (MAYSI-2) Drug/Alcohol Use and Traumatic Experiences scales experienced the justice system as less fair and legitimate. Youth who scored higher on the Interpersonal, Lifestyle, and Antisocial subscales of the Hare Psychopathy Checklist: Youth Version (PCL-YV) reported believing less strongly in the legitimacy of the law. Perceptions of procedural justice predicted self-reported offending at 3 months, but not 6 months, and youths’ beliefs about the legitimacy of the law did not mediate the relationship between procedural justice and offending. Results also showed that procedural justice accounted for unique variance in self-reported offending over and above the predictive power of well-established risk factors for offending (i.e., peer delinquency, substance abuse, psychopathy, and age at first contact with the law). Directions for future research and practical implications of these findings are discussed.

Keywords: Procedural Justice; Legitimacy; Young Offenders; Offending; Psychopathy; Mental Health
To my grandfather.
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Preface

In its declaration of principles, Canada's *Youth Criminal Justice Act* (2002, c. 1) states that the youth justice system is intended to promote crime prevention and the rehabilitation of young offenders (Section 3[a]). It further emphasizes the need to ensure that young offenders are treated fairly and notes that special consideration must be given to young offenders’ “right to be heard in the course of and to participate in the processes... that lead to decisions that affect them” (Section 3[d(i)], p. 7). One avenue through which policy-makers may achieve greater success in fulfilling both of these aims—crime prevention and rehabilitation, as well as the encouragement of young people’s legal participation—is by focusing on youths’ experience of procedural justice.

Procedural justice is defined as the fairness of the process and procedures used to make legal decisions. Theories of procedural justice suggest that when individuals experience respectful and fair decision-making procedures, such as being given the chance to voice their opinions, they are more likely to voluntarily comply with social and legal regulations (Tyler, 1987; 2000; Tyler, Sherman, Strang, Barnes, & Woods, 2007). In other words, young offenders who experience the justice system as fair, impartial, and respectful may be less likely to reoffend.

The term procedural justice was coined and first explored by John Thibaut and Laurens Walker in the late 1970s. These two scholars demonstrated that individuals’ satisfaction with and willingness to accept dispute outcomes was strongly influenced by their perceptions of procedural justice, irrespective of whether the outcome itself was in their favour (Thibaut & Walker, 1975). The literature on procedural justice has steadily grown since that time. Tom Tyler and Allan Lind were at the forefront of procedural justice research in the 1980s, and continue to be highly influential in this area. However, following the publication of their comprehensive review of the literature on procedural justice in 1988, interest in the topic ballooned. At present, the finding that individuals are highly concerned about the fairness with which they are treated has been replicated in cross-cultural research, experimental research, clinical research and in a wide variety of domains and settings. As noted by MacCoun (2005), “the basic phenomena of procedural justice have been documented across dozens of social, legal, and organizational contexts involving every major demographic category in the United
States, and almost every major industrial country in North America, Asia, and Europe” (p. 173). As of December 2011, the PsychInfo database contained 1373 articles with the phrase “procedural justice” in the abstract, only 31 of which were published before 1988. Further, this does not include the numerous business, medical, sociological and legal journals in which research on procedural justice has been published.

Within the field of forensic psychology, one of the most frequently cited propositions from the procedural justice literature is that experiences of procedurally fair treatment by legal authorities leads individuals to view the law and legal authorities as more legitimate, which in turn leads to lower rates of reoffending. Legitimacy is defined as the belief that legal institutions or authorities are entitled to be obeyed, and that individuals have an obligation to comply with the laws those institutions create. While the relationship between procedural justice, legitimacy, and offending is well supported in the adult literature, research examining the effects of procedural justice in the context of childhood and adolescence is scarce. While there are a few isolated studies that suggest that youth who feel fairly treated are more likely to feel personally obligated to obey the law (Fagan & Tyler, 2005; Harvell, 2009; Piquero, Fagan, Mulvey, Steinberg, & Odgers, 2005), conclusive links between procedural justice, legitimacy, and recidivism rates in youth do not exist. Additionally, many other aspects of the procedural justice literature beyond this core proposition have yet to be replicated or even examined in the context of adolescents. Although it is possible that findings from the adult literature may generalize to adolescents, there is now substantial evidence that processes relevant to perceptions of procedural justice, such as psychosocial maturity, moral reasoning, executive functioning, and perspective-taking, among others, are still in a state of development during adolescence (Cruise et al., 2008; Paus, 2005; Steinberg, 2007; Yurgelun-Todd, 2007). As a consequence, adolescents’ perceptions of procedural justice and the relationship between procedural justice, related constructs (e.g., legitimacy) and behaviour (e.g., offending) may vary throughout development.

The following chapters serve to fill some of the gaps in the extant literature on procedural justice in youth. First, it is important to understand whether individual differences systematically affect perceptions of procedural justice and legitimacy. Research to date has largely ignored the influence of individual differences, meaning that observed relationships between procedural justice, legitimacy, and offending are not
being understood in context, but in isolation. As such, chapter 1 examines possible predictors of procedural justice and legitimacy in youth, including those that have been examined before, such as demographic and legal history variables, as well as mental health and personality variables whose associations with procedural justice and legitimacy are currently unknown. In doing so, chapter 1 merges the foundational social psychology literature on procedural justice with a clinical perspective. In particular, findings in clinical psychology and psychiatry emphasize that rates of mental illness are high in adolescent offenders and that psychopathic features are more often evident in these youth (Teplin et al., 2006). As such, the relationship between mental health issues and young offenders’ perceptions of procedural justice and legitimacy are particularly salient in this population. Although the intra-individual variables identified for examination in chapter 1 are by no means exhaustive, they represent an important first step towards broadening our understanding of how youths’ subjective perceptions of procedural justice and legitimacy can be influenced by factors other than their objective treatment.

Chapter 2 goes on to examine whether young offenders’ perceptions of procedural justice is related to their offending behaviour. This chapter also explores the possible mediating role of beliefs about the legitimacy of the law on this relationship. While a small handful of studies with youth, and many studies with adults, have shown that procedural justice is related to legitimacy, and that legitimacy is related to offending, none have directly examined a mediating model. Chapter 2 also examines whether procedural justice continues to predict offending once the predictive power of well-established risk factors for offending, such as psychopathic features, have been accounted for. Like chapter 1, this chapter is informed by several areas of psychological research, including social psychology, clinical psychology, and forensic psychology.

Finally, chapter 3 (the General Discussion) summarizes the key findings from the above studies and outlines some areas for future research. Chapter 3 notes that there are some conceptual and theoretical issues related to procedural justice that have yet to be fully resolved. It also highlights the need for further emphasis on the measurement of procedural justice, as this is an area that has received little attention, particularly in studies of youth. Other areas for future research include a continued focus on adolescence and the need for longitudinal research that examines how developmental
changes influence youths’ perceptions of procedural justice. Finally, chapter 3 emphasizes the need for continued research on individual differences and their effect on perceptions of procedural justice and legitimacy.

**Preface References**


1. Chapter 1. Questioning Fairness: Mental Health and Psychopathic Features as Predictors of Procedural Justice and Legitimacy in Young Offenders

1.1. Abstract

Theories of procedural justice suggest that individuals who experience the processes and procedures used to make legal decisions as fair are more likely to perceive the legal system as legitimate, and in turn, are less likely to offend. However, when individuals come into contact with the legal system, they are not blank slates. They possess beliefs, personalities, and characteristics that may systematically influence their assessment of procedural justice and legitimacy. The current study examined predictors of procedural justice and legitimacy in a sample (N = 92) of male and female youth on probation in BC, Canada. Results indicated that youths’ scores on the MAYSI-2 Drug/Alcohol Use and Traumatic Experiences subscales were inversely related to their perceptions of procedural justice and legal legitimacy. Youths who scored higher on the Interpersonal, Lifestyle, and Antisocial subscales of the PCL-YV also reported believing less strongly in the legitimacy of the law. These findings suggest that examining the relationship between procedural justice, legitimacy, and offending without taking intra-individual variables into account may amount to neglecting important contextual factors that may influence observed relationships.
1.2. Introduction

Theories of procedural justice have long held that individuals who experience the processes and procedures used to make legal decisions as fair are more likely to perceive the legal system as a whole to be legitimate (Sunshine & Tyler, 2003; Tyler & Huo, 2002; Tyler & Wakslak, 2004; Wells, 2007). Procedural justice is defined as individuals’ perceptions of the fairness of their treatment by legal authorities or institutions, and legitimacy is the broader belief that those institutions or authorities are entitled to be obeyed—that is, that the individual has an obligation to comply with the laws they create (e.g., Tyler, 2006a). In other words, while procedural justice is a judgment about a circumscribed past experience, legitimacy is a global judgment about the status of legal organizations. Although these two constructs are conceptually distinct, procedural justice and legitimacy are strongly correlated in most research, including research with youth (Fagan & Tyler, 2005; Harvell, 2009; Hinds, 2007; Piquero, Fagan, Mulvey, Steinberg, & Odgers, 2005; Reisig & Lloyd, 2009).

Procedural justice models further suggest that specific instances of fair or unfair treatment by legal authorities can, through their effect on legitimacy beliefs, impact that likelihood that an individual will offend (Levi, Sacks, & Tyler, 2009; Murphy & Gaylor, 2010; Murphy, Hinds, & Fleming, 2008; Reisig, Bratton & Gertz, 2007; Tyler, 2004, 2006a; Tyler, Sherman, Strang, Barnes, & Woods, 2007). That is, perceptions of procedural justice are believed to engender greater trust in the law and a greater obligation to obey the law based on one’s value and beliefs, and thus lead people to defer to the law out of a sense of duty or correctness. The implication of this model is that deference to laws can be encouraged not only through threat of punishment—which is costly and time-consuming—but also by providing individuals with fair processes that affect their perceptions of legal legitimacy. Recently, researchers have extended and begun to examine the validity of this model in youth and young offenders as well.

However, it is possible that the pathways modeled by theories of procedural justice—from individual experiences of fairness, to broader beliefs in the legitimacy of
the law, to voluntary compliance—may be systematically influenced by intra-individual differences. When individuals come into contact with the justice system, they are not blank slates. They possess beliefs, personalities, and characteristics that may influence their assessment of the fairness of their treatment and their global beliefs about legal legitimacy, irrespective of their actual, objective treatment by legal authorities. Indeed, in documenting the major limitations of the research on procedural justice and legitimacy, Smith (2007) notes that current studies in this area “focus on a small number of factors” in their explanatory models, and that “a wide range of other factors not covered by the studies could also have an important influence on beliefs” (p. 32). If unknown variables are influencing individuals’ perceptions of procedural justice and legitimacy, these variables may also be influencing the likelihood of the future compliance with the law, directly or indirectly.

Few of these intra-individual factors have been studied in adults, and fewer still in youth. The dearth of empirical research on predictors of procedural justice and legitimacy in youth is particularly perplexing given the presumably heightened importance of procedural fairness to youth, as compared to adults. Theories of legal socialization state that adolescence is a time when attitudes toward the legal system are developing (Fagan & Tyler, 2005; Lind & Tyler, 1988) suggesting that experiences of procedural justice or injustice during this period may have a disproportionately strong impact on adult attitudes toward and compliance with the law. This is compounded by the fact that adolescents may be particularly sensitive to issues of fairness and respect in justice system dealings (Woolard, Harvell, & Graham, 2008) and may have more difficulty objectively evaluating the fairness of their treatment since they struggle with perspective-taking (Steinberg & Cauffman, 2006) and tend to be present-focused (Scott, Repucci, & Woolard, 1995). Given that adolescence is a critical period for the development of life-long attitudes toward the law and legal authorities, and that adolescents may be particularly sensitive to perceived injustices, it is important to understand the factors that predispose youth to feel fairly or unfairly treated.

The most commonly examined correlates of legitimacy and procedural justice in youth are demographic, primarily because most studies explore whether demographic characteristics need to be controlled in primary analyses. In terms of gender, three studies of youth found no difference between boys’ or girls’ perceptions of legitimacy
(Fagan & Tyler, 2005; Hinds, 2007; Reisig & Lloyd, 2009), whereas two found that females believed more strongly in the legitimacy of the law than males (Piquero et al., 2005; Murphy & Gaylor, 2010).

Studies of the effects of age on perceptions of procedural justice and legitimacy have produced similarly mixed results. One cross-sectional study of community-based 10-16 year olds found that legitimacy beliefs declined from ages 10/11 to 14 and then stabilized (Fagan & Tyler, 2005); Piquero et al.’s (2005) cross-sectional study of a large sample of serious young offenders similarly found that age was inversely related to legitimacy ratings. Woolard et al. (2008), who examined anticipatory injustice, or youths’ expectations of unfair treatment, reported that, among African American youth, older youth expected less fair treatment and more punishment than younger youth. In contrast, Hinds (2007) and Murphy and Gaylor (2010) reported no significant relationships between age and legitimacy, and Harvell (2009) found that age was not related to legitimacy or procedural justice.

Despite the contradictory nature of the research on age and procedural justice and legitimacy, there are theoretical reasons to believe that age could influence these beliefs and perceptions. For example, studies of adolescent competency demonstrate that youths’ understanding of legal proceedings improves with age, with younger adolescents more likely to have compromised competency than older adolescents (Grisso et al., 2003). If adolescents’ perception of procedural justice or their beliefs about the legitimacy of the law are related to their ability to understand legal proceedings or legal concepts, relative ratings of these variables may vary with age. Additionally, theories and research on legal socialization indicate that youths’ perceptions of legal authorities become less idealized over time (Fagan & Tyler, 2005). Perceptions of procedural justice and legitimacy may, accordingly, become more negative over time.

Examinations of the effect of ethnicity on perceptions of procedural justice or legitimacy beliefs are likewise inconclusive. Piquero et al. (2005) reported that African American youth believed less in the legitimacy of the law than did Caucasian or Hispanic youth. Woolard et al. (2008) somewhat similarly found that African American youth and Latino youth were more likely to anticipate some type of unfair treatment, although this effect only existed among youth with no justice system experience. Other authors found
no relationship between ethnicity and procedural justice or legitimacy (Fagan & Tyler, 2005; Harvell, 2009; Hinds, 2007). Unfortunately, interpretation of these inconsistent findings is complicated by the fact that ethnicity can be operationalized in a variety of ways depending on the ethnic composition of the jurisdiction, sample size, and researchers’ preferences. For example, Piquero et al. (2005) divided their sample into Caucasian, Hispanic, and African-American youth; Harvell (2009) broadly dichotomized youth as either Caucasian or ‘Minority;’ and Hinds (2007) characterized ethnicity as either Australian or non-Australian. The fact that Canada, where the current study was conducted, has a very different ethnic profile than the United States or Australia also makes it difficult to compare the current research to past studies.

However, studies that do find an effect of ethnicity are consistent in that minority youth had more negative perceptions of the justice system than majority youth. These findings are echoed by the national Monitoring the Future study, which asked a community sample of American high school seniors how well the country’s courts, justice system and police were doing (Pastore & Maguire, 2003). This study found a stark ethnic contrast: African American youth were less likely to think that these justice system players and processes were doing a ‘good’ or ‘very good’ job than Caucasian youth. Tyler and Huo (2002) similarly reported that adult minority individuals were less trusting of justice system authorities and less confident that they would be fairly treated by the justice system. Indeed, minority youth may have good reason to expect unfair treatment by legal authorities or believe the justice system to be less just, as recent research suggests that these youth may be processed and treated in a negatively-biased fashion by youth justice systems (Bishop, Leiber, & Johnson, 2010; Davis & Sorensen, 2010; Kempf-Leonard, 2007).

In Canada, the minority population that is overrepresented in the youth justice system is Aboriginal. A recent census identified that, although only 6% of youth in Canada self-identify as Aboriginal, 24% of youth on probation are Aboriginal as are 36% of youth in custody (Calverley, Cotter, & Halla, 2010). As such, it may be this subpopulation of youth who are particularly vulnerable to experiences of perceived or actual procedural injustice.
A select few legal history variables have also been examined in the context of predictors of procedural justice and legitimacy. In Piquero et al.’s (2005) study, youth with the lowest legitimacy scores also had the highest number of prior arrests, and Hinds (2007) found that number of past negative experiences with police was inversely related to youths’ perceptions of legitimacy. Woolard et al. (2008) showed that youth with justice system experience expected greater injustice than those without justice system experience. This latter finding is supported by another study examining individuals’ confidence in state and local courts. The authors of that study found that individuals whose lives were relatively unaffected by the outcomes of court decisions (e.g., jurors) had more confidence in the courts than did those whose lives were heavily affected by court decisions (e.g., defendants) (Benesh & Howell, 2001). These preliminary findings suggest that legal history variables represent an important domain for further exploration to better understand the individual difference factors that influence youths’ perceptions of procedural justice and legitimacy.

Only one study has examined whether factors internal to youth—such as differences related to youths’ mental health or value system—are related to legitimacy. Trickner, Cohn, Rebellon, and Van Gundy (2011) found that, among a community-based sample of youth, moral reasoning was related to youths’ beliefs about the legitimacy of the law. Other possible predictors of procedural justice and legitimacy, such as mental health status and personality style, have yet to be examined. Mental health status may be an important variable to consider because previous research has demonstrated that individuals involved with the justice system who also have a mental illness are particularly sensitive to issues of procedural justice. For example, McCluskey (2003) found that adults who were high on irrationality—that is, who displayed strong emotions, were mentally ill, or who were abusing drugs or alcohol—were more likely to react negatively to experiences of perceived disrespect by police but were also more likely to react to respectful police treatment with compliance. Given recent research indicating that between 60% and 80% of justice system-involved youth meet criteria for a mental disorder (Shufelt & Cocozza, 2006; Teplin, Abram, McClelland, Dulcan, & Mericle, 2002) it is important to consider whether youth with certain mental health profiles perceive themselves to be less fairly treated by the justice system than youth without a mental illness. Although McCluskey (2003) used a broad definition of mental illness, it will be
important to determine whether specific mental health concerns, such as depression, substance use/abuse, or anxiety, among others, are related to perceptions of procedural justice and legitimacy.

Youth with psychopathic personality characteristics may also be less likely to feel fairly treated by justice system authorities and to believe that the law is legitimate. Psychopathy is a personality disorder that is characterized by a lack of guilt or remorse, a tendency to weigh personal gain or the rights and welfare of others, and a lack of moral concern (Cleckley, 1976; Hare, 2003). The core features of psychopathy include deficits in interpersonal (e.g., manipulation for personal gain) and affective domains (e.g., callous/lack of empathy). In addition, psychopathy is associated with behavioural problems (e.g., parasitic orientation), as well as antisocial or socially deviant traits (e.g., juvenile delinquency) (Neumann, Kosson, Forth, & Hare, 2006), although there is some debates as to whether antisocial features should be included within the definition (Skeem & Cooke, 2010). Starting in the 1990s, this term was extended from adults to juveniles despite the concern expressed by some scholars about applying pejorative personality styles to youth, who are still in a state of development (e.g., Edens & Vincent, 2008).

Youth high on psychopathic traits have been shown to be deficient in their ability or inclination to take the perspective of another (Blair et al., 1995; Nelson, Smith, & Dodd, 1990; Smetana, 1990), to be developmentally immature in their moral judgments (Stams et al., 2006), to tend to live according to their own rules, and to show contempt for social norms (Neumann, et al., 2006). Given that legitimacy is related to both morality and a respect for the standards set by society (Trickner et al., 2011), and that assessing procedural justice involves gauging the fairness of one’s treatment relative to how others are treated, youth with psychopathic features may be less likely to endorse being fairly treated or to believe the law to be legitimate. Although a relationship between psychopathic features and procedural justice makes theoretical sense, to date no published studies in the adolescent or adult literature have examined this relationship.

Not only may individual differences influence youths’ perceptions of procedural justice and legitimacy, the context in which youth experience fair treatment may impact
its significance. Tyler, a leading authority in the field of procedural justice, has suggested that procedural justice may only be important in certain contexts, and irrelevant in others (2004). To date, most research on procedural justice in youth has focused on only one or two justice system players. Several have examined youths’ perceptions of police fairness (Hinds, 2007; 2009; Murphy & Gaylor, 2010; Reisig & Lloyd, 2009) while others have expanded their scope to include the police and courts (Piquero et al., 2005), police, courts, and institutional staff (Harvell, 2009), or police, school security staff, and store security staff (Fagan & Tyler, 2005). However, the role of other justice system players, like probation officers, has yet to be examined. This makes it difficult for scholars and policymakers to determine when procedural justice matters the most in terms of its impact on youth, although arguably treating youth fairly should be a justice system priority under all circumstances. By asking youth who they were thinking of when they made their assessment of procedural justice, this study will be able to determine whether there are certain legal authorities whose treatment of youth may have a proportionally greater impact on youths’ beliefs about the fairness of the justice system as a whole. For example, given the substantial amount of time that many youth spend with their probation officers, youth may report thinking of their treatment by their probation officers when making their procedural justice judgments. Since youth likely spend considerably less time with their lawyer, and particularly the prosecuting lawyer, youth may not report considering their treatment by lawyers when evaluating the fairness of the justice system.

1.2.1. The Current Study

The current study aims to extend the small body of research examining correlates of legitimacy and procedural justice in youth. It is the only one to date that examines whether clinical features, such as mental health status and psychopathic personality features, systematically influence the degree to which youth experience the justice system as fair and legitimate. The preponderance of extant research evidence has focused on the impact of procedural justice and legitimacy beliefs on outcome factors such as recidivism rates, and has largely ignored the factors that affect these constructs. This study serves to partially fill this missing piece in the procedural justice theoretical framework and is particularly unique in its examination of internal, clinical
factors. The current study will also inform our understanding of which justice system players influence youths’ global beliefs about the fairness of the legal system.

Given that procedural justice and legitimacy beliefs are expected to correlate strongly in this study, as they have in other studies, hypotheses regarding predictors apply to both procedural justice and legitimacy. In terms of demographic characteristics, it was hypothesized that:

1. No differences would be found based on gender.

2. If age differences exist, there would be an inverse relationship between age and procedural justice and legitimacy, although this relationship may stabilize in the later teen years.

3. If differences were found based on ethnicity, they would be in direction of minority groups feeling less fairly treated and believing less in the legitimacy of the law than majority youth.

In terms of legal history variables, it was hypothesized that:

1. Number of previous arrests would be inversely related to procedural justice and legitimacy ratings, in line with past research (Hinds, 2007; Piquero et al., 2005).

2. Youth who were younger at first arrest and those who had a longer history of contact with the justice system would rate their experiences with the justice system as less procedurally fair and the justice system itself as less legitimate.

In terms of internal variables (i.e., mental health and personality characteristics), it is difficult to predict what types of symptom profiles may be related to procedural justice and legitimacy given the absence of previous studies in this area. Generally, it was hypothesized that:

1. Mental health symptoms, such as anxiety, depression, anger/irritability, and substance use, would be inversely related to perceptions of procedural justice and legitimacy.
2. Psychopathic personality traits would be inversely related to procedural justice and legitimacy.

Finally, in terms of which legal authorities would impact youths’ perceptions of procedural justice, it is hypothesized that:

1. The majority of youth would report that they were thinking of the police, judge, and probation officer when they made their judgments about the fairness of their treatment by the justice system as a whole. Only a minority of youth would report thinking about the defense or prosecuting lawyer.

1.3. Method

1.3.1. Participants

Participants in this study were youth on probation in the province of British Columbia, Canada. Of the 102 youth who participated, 10 did not complete an adequate number of items on the procedural justice and legitimacy measures (i.e., 75% or more) for their data to be included, leaving a total final sample of 92. Youth were aged 12-17 (\(M = 15.87, SD = 1.21\)). The majority of youth were male (\(n = 67, 72.83\%\)) and the largest ethnic group was Caucasian (\(n = 39, 42.39\%\)), although a substantial proportion (\(n = 30, 32.61\%\)) identified as at least partially Aboriginal. Youth were charged with an average of 2.51 index offenses (\(SD = 2.09\)), with a range from 1 to 10 offenses. Youth had been on probation for an average of 9.30 months (\(SD = 5.44\)) for their index offense at the time of interview. Demographic characteristics of the sample can be found in Table 1.

1.3.2. Procedures

Simon Fraser University, BC Youth Justice/Youth Forensic Psychiatric Services, and the BC Ministry of Child and Family Development provided ethics approval for this research. All methods in this research project complied with ethics procedures. Probation officers and research assistants provided potential participants with preliminary information about the study and what participation would involve. A
description of the procedure by which youth were recruited into the study follows, and Figure 1 provides a pictorial depiction of this process.

At the time of data analysis, 367 youth had been approached from the 11 probation offices in the Lower Mainland of BC. Of these, 338 (92.10%) expressed initial interest in volunteering for the study and 29 (7.90%) did not. Of those who expressed interest, 128 (37.87%) were eligible to participate and became enrolled in the study. Two hundred and ten youth did not become enrolled, most commonly because they did not meet eligibility criteria \( (n = 91, 26.92\%) \), which included that they must be from the Greater Vancouver Regional District, that they must be on probation, and that they must be between the ages of 12 and 17, inclusive. The majority of ineligible participants were too old \( (n = 54, 14.7\%) \) or outside of the catchment area \( (n = 23, 6.3\%) \); the remainder were primarily ineligible because of their justice system status (e.g., not yet adjudicated, on bail, etc.). The second most common reason that youth did not become enrolled was that they declined to participate after hearing about study requirements in greater detail (e.g., the time commitment) \( (n = 51, 15.09\%) \). Seventeen youth \( (14.5\%) \) could not be reached after initial contact at the probation office, and several could not participate because their guardian either declined \( (n = 13; 11.1\%) \) or could not be reached \( (n = 11; 9.4\%) \). One hundred and two of these youths continued on to complete their second interview with the study, which is considered the initial interview for the purposes of this study.

Active consent was obtained from youth and their legal guardians. Legal guardians were provided with information packages about the study and this information package was reviewed with guardians via phone to ensure that they understood what their child/ward’s participation would involve. Additionally, to facilitate youths’ understanding of study procedures and to ensure that any misconceptions about participation were corrected, youth were asked to respond to questions about what their participation would involve. Youth who demonstrated difficulty understanding consent information had this information reviewed with them again, after which interviewers retested their comprehension.

Research assistants documented youths’ legal history and coded risk assessment tools following extensive training related to both the study protocol and the
standardized risk assessment tools. For the risk assessment tools, research assistants were provided with 2 days of training, were required to complete a minimum of four risk assessments using mock cases, and then joined an experienced interviewer on a buddy case in which the interrater reliability on risk assessment tools between research assistants was assessed. Only once a research assistant demonstrated adequate reliability, operationalized as achieving total scores +/- 5 points from the gold standard rating, were they permitted to work independently. Participants were informed that confidentiality would be maintained unless a youth reported a plan to harm themselves or someone else, if they reported child abuse, or if a court subpoena occurred, and all documents were coded using non-identifiable study numbers.

Participants completed the Procedural Justice Scale and the Legitimacy Scale in the context of their participation in a larger research project that evaluated youths’ mental health, risks/needs assessment tools, strengths and a variety of other variables. Data collection was completed in several waves.

1.3.3. **Materials**

1.3.3.1. **Procedural Justice**

Given the absence of Procedural Justice measures that have been validated in samples of young offenders, a Procedural Justice Scale was adapted for the purpose of this study, titled the Youth Justice System Procedural Justice Scale (referred to as the Procedural Justice Scale from here on in). The Procedural Justice Scale is based upon Tyler’s (2000) theoretical conceptualization of the four primary aspects of procedural justice—participation, impartiality, trustworthiness, and respect—and represents only a slight modification of Peterson-Badali, Care, and Broeking’s (2007) Perceptions of Fairness in Lawyer-Client Interactions scale. Peterson-Badali et al.’s (2007) scale was developed to assess delinquent youths’ perceptions of procedural justice as related to their experiences with their lawyer; the present adaptation is a parallel version that directs youth to report on their overall experience of procedural fairness within the youth justice system—that is, within court or with the judge, with the police, with the defense and prosecuting lawyers, and with their probation officer. The reason for this adaptation was that the current study aimed to examine youths’ perceptions of fairness within the justice system generally, rather than restricting the examination to only one justice
system player (e.g., lawyers). The Procedural Justice Scale was sent to two consultants during its development: a Canadian clinical/forensic researcher and an American developmental/social psychology researcher with legal training for suggestions on content and wording. Both of these individuals have research expertise in procedural justice in children and adolescents and did not recommend any substantive alterations to survey items.

The Procedural Justice Scale consisted of 20 opinion items rated on a four-point Likert scale (Strongly Disagree to Strongly Agree) with five items tapping each of the four facets of Procedural Justice (Tyler, 2000). Five additional items asked youth to reflect upon which justice system players they were thinking of when they made their evaluation (e.g., “were you thinking of the judge?” yes/no). A summary score—calculated by averaging all 20 scale items—was used to represent youths’ perceptions of procedural justice (see Table 2 for the descriptive characteristics of all measures). The internal reliability of this scale as measured by Cronbach’s alpha was excellent (.93) (Cronbach, 1990; Nunnally, 1978). Given the lack of empirical validation of the Procedural Justice Scale and that measurement validity, generally, is an issue within the field of procedural justice, an analysis of convergent validity was conducted with another procedural justice measure, the Court Fairness Scale (Kaasa et al., 2008). This scale is an adaptation of the procedural justice measure used by Piquero et al. (2005), who similarly adapted it from Tyler’s (1997) Procedural Justice Inventory. The Court Fairness Scale is a 15-item questionnaire assessing youth’s perceptions of the fairness of their trial, their judge, the prosecutor, and their lawyer. Analyses of the relationship between total Court Fairness Scale scores and Procedural Justice Scale summary scores produced a strong positive correlation ($r = .70$, $p < .01$) (Cohen, 1988), providing evidence of good convergent validity between the two measures and strengthening the psychometric support for the Procedural Justice Scale.

1.3.3.2. Legitimacy

While legitimacy has been measured in a variety of ways, in the legal domain it is often viewed as being comprised of two distinct but related concepts: individuals’ perceived obligation to obey the law and their support for the law and legal authorities (Sunshine & Tyler, 2003; Tyler & Blader, 2003; Tyler, 2006a). A legitimacy scale
developed for this project and titled the Youth Justice System Legitimacy Scale (referred to as the Legitimacy Scale from here on in) was adapted from Tyler’s (2006a) legitimacy measure used in the Chicago Study based on the recommendations from the two survey development consultants referred to above. Minor changes altered the scale so that it referred to the youth justice system rather than the specific players in the adult criminal system in Chicago. For example, rather than asking whether youth agree with the statement “On the whole, Chicago judges are honest” youth were asked whether they believed “On the whole, justice officials (e.g. policemen, probation officers, judges, lawyers) are honest.” Six items tapped youths’ perceived obligation to obey the law (e.g., “Disobeying the law is seldom justified”) and seven tapped their support for the law and legal authorities. The latter seven questions were divided into support for the court (3 items; e.g., “The basic rights of citizens are well-protected in the courts”) and support for legal authorities (e.g., “On the whole, justice officials [e.g. policemen, probation officers, judges, lawyers] are honest”). Respondents rated each statement using a four-point Likert scale ranging from Strongly Disagree to Strongly Agree. A summary score representing youths’ perceptions of legitimacy was calculated by averaging across all items. The internal reliability of this scale as measured by Cronbach’s alpha was good at .89 (Cronbach, 1990; Nunnally, 1978).

1.3.3.3. Legal History

To determine whether legal history was a significant correlate of perceptions of procedural justice and legitimacy beliefs, several variables were examined. Youth were asked to self-report on their age at first arrest to determine whether youth who were younger when they first came into contact with the justice system had more negative beliefs about the justice system’s legitimacy and the fairness of their treatment. Indeed, this variable likely represents when youth recalled first coming into contact with police, as opposed to when they were first officially arrested. Youths’ self-reported number of

¹ Youth self-reported on their age of first arrest and number of lifetime arrests, and research assistants coded the PCL-YV, approximately 3 months prior to the interview during which youth completed the other measures examined in this study. The mean number of days between these two interviews was 108 (SD = 28).
lifetime arrests was also examined as this variable was found to be related to legitimacy beliefs by Piquero et al. (2005). Although most youth reported having been arrested between 1 and 50 times, there were a few outlier youth who reported having been arrested more than 100 times. As such, the median number of arrests was 5.00 but the mean was 15.73. The number of years youth had been involved with the justice system was calculated by deducting their age at first arrest, as per self-report, from their current age. Hypothetically, if older youth perceived their treatment by the justice system to be less fair than younger youth, and if their ratings of the legitimacy of the law were similarly lower, this effect could be a by-product of simply having more years of experience with the justice system.

1.3.3.4. Mental Health

The Massachusetts Youth Screening Instrument-Second Version (MAYSI-2; Grisso & Barnum, 2006) was used to assess mental health status. The MAYSI-2 has been shown to have good psychometric properties, including good interrater reliability, test-retest reliability, construct validity, and concurrent validity (Archer, Stredny, Mason, & Arnau, 2004; Grisso, Barnum, Fletcher, Cauffman, & Peuschold, 2001), and was designed specifically for use with justice system-involved youth. Youth responded yes or no to 52 items that comprised six clinical scales: Alcohol/Drug Use, Angry-Irritable, Depressed-Anxious, Somatic Complaints, Suicide Ideation, and Thought Disturbance (boys only). The MAYSI-2 also measured the lifetime prevalence of Traumatic Events, with separate scales for boys and girls. All scales on the MAYSI-2 were examined to determine whether mental health symptoms were related to perceptions of procedural justice in youth. The internal reliability (coefficient alphas) of these scales ranged from .46 for the Suicidal Ideation scale to .82 for the Anger/Irritability scale. Previous studies have found that the internal reliability of the MAYSI-2 scales generally ranged from .60 to .86 (Archer et al., 2004; Cruise, Dandreaux, & Marsee, 2004; Grisso & Barnum, 2006; Grisso et al., 2001; Kerig, Moeddel, & Becker, 2011), with lower values sometimes being found for the Thought Disturbances scale (around .50). In the current sample, the internal reliability of the Thought Disturbance scale was adequate at .70, but two scales’ internal reliabilities fell below .60: Somatic Complaints (.55) and Suicidal Ideation, as noted above. While these reliabilities are somewhat lower than expected, the sample for the current study is substantially smaller than those in the other studies noted above.
1.3.3.5. Psychopathic Features

The Hare Psychopathy Checklist: Youth Version (PCL:YV; Forth, Kosson, & Hare, 2003) was used to assess psychopathic characteristics in youth. This structured, clinical rating tool was designed for youth aged 12 through 18 and is based upon the Hare Psychopathy Checklist—Revised (PCL-R; Hare, 2003). The 20 items of the PCL:YV tap the interpersonal, affective, lifestyle, and behavioural domains of psychopathy and were coded based on both official probation file information and youth self-report. Although three-factor and four-factor latent variable models have been proposed to represent the factor structure underlying the PCL:YV (Hare & Neumann, 2006; Jones, Cauffman, Miller, & Mulvey, 2006; Kosson, Cyterski, Steuerwald, Neumann, & Walker-Matthews, 2002; Salekin, Neumann, Leistico, & Zalot, 2004, Vitacco, Neumann, Caldwell, Leistico, & Van Rybroek, 2006) some recent research has concluded that the four-factor model is superior (Neumann et al., 2006). As such, when examining PCL:YV subscales the four-factor model was employed. These subscales are: (1) interpersonal, (2) affective, (3) lifestyle, and (4) antisocial tendencies.

Previous research has found that the intrarater reliability of the PCL:YV (as per a single-rater intraclass correlation; ICC 1) ranged from .82 (Spain, Douglas, Poythress & Epstein, 2004) to .96 (Forth et al., 2003) when coders were provided with adequate training. In the current study, an IRR of .89 (two-way random effects model, absolute agreement for single raters) was found between raters, suggesting that the training procedures employed in this study (detailed below) met the standards set by previous studies. In terms of internal consistency, the coefficient alpha for the PCL:YV in previous research ranged from .73 (Skeem & Cauffman, 2003) to .94 (Forth et al., 2003; O’Neill, Lidz, & Heilbrun, 2003). The internal consistency of the PCL:YV in the current study was .87 as measured by Cronbach’s alpha, adding further weight to the notion that the PCL:YV items are measuring a homogeneous construct.

1.4. Power Analyses

Power analyses were undertaken to determine what effect sizes planned data analyses could be expected to detect. Statistical tests used in this study included correlation, independent samples t-tests, ANOVAs, and linear regression. Power was
sufficient (i.e., .80 or greater) to detect medium to large correlations, defined as $r \geq .30$ and .50 respectively, but not small correlations (i.e., $r \leq .10$) (Cohen, 1988). T-tests had sufficient power to detect medium or large effects, defined as Cohen’s $d$ of .50 and .80, respectively (Cohen, 1988), but not small effects. One-way ANOVAs had sufficient power to detect large effect sizes, defined as $f$ values of .40 or greater (Cohen, 1988), but not small or medium-sized effects. Finally, all linear regressions—containing from one to five predictor variables—had sufficient power to detect medium or large effect sizes, defined as $f^2$ values of .15 and .35, but not small effect sizes ($f^2$ values $\leq .02$). In sum, most analyses could be expected to detect medium to large effects, if they existed, but not small effects.

1.5. Results

First, the relationship between procedural justice and legitimacy was examined. These two constructs demonstrated a strong positive correlation ($r = .67$, $p < .01$), aligning with previous research and supporting the use of parallel hypotheses for both procedural justice and legitimacy.

1.5.1. Demographic Predictors of Procedural Justice and Legitimacy

Next, demographic predictors of perceptions of procedural justice and legitimacy beliefs were examined. The first hypothesis related to demographic predictors—that no differences would be found between male and female youth—was supported: independent samples $t$-tests found no differences in participants’ average scores on either the Procedural Justice Scale, $t(90) = -.46$, $p = .64$, or the Legitimacy Scale, $t(90) = -.17$, $p = .86$, based on gender (Table 3).

The second hypothesis—that age would be inversely related procedural justice and legitimacy, potentially stabilizing in the later teen years—was only partially supported. Two one-way ANOVAs were used to determine whether legitimacy and procedural justice ratings differed by age, with youth categorized as either 12-14, 15, 16, or 17 years old. Age was categorized in this manner to make the $n$ between cells more equal, rather than for theoretical reasons. Neither the ANOVA for Procedural Justice,
\( F(3, 88) = .86 , p = .47, \) nor Legitimacy, \( F(3, 88) = 1.84 , p = .15 , \) reached significance. However, a repeated contrast test (used to compare adjacent levels of the age variable) found that youth aged 12-14 reported believed more strongly in the legitimacy of the law than did 15 year old youth \( (p < .05) \), but no differences were found between 15 and 16 year old youths’ Legitimacy Scale ratings, or 16 and 17 year old youths’ ratings. Although Procedural Justice ratings followed this same pattern, with 12-14 year olds demonstrating more positive views about the fairness of their treatment than older youth, the difference was not significant (Figure 2).

The third and final demographics-related hypothesis—that if differences were found based on ethnicity, minority youth would feel less fairly treated and believe less in the legitimacy of the law than majority youth—was unsupported by the data. Two one-way ANOVAs found no differences in youths’ experiences of procedural justice, \( F(2, 89) = .32, p = 0.73, \) or beliefs about the legitimacy of the law, \( F(2, 89) = 1.12, p = 0.33, \) based on ethnicity, with this variable trichotomized as: Caucasian, Other/Mixed, and Aboriginal (Table 4). The Other/Mixed category included youth who endorsed a minority ethnicity or any mix of ethnicities, other than a mix that included an Aboriginal ethnicity. Youth who endorsed being even partly Aboriginal were placed in the Aboriginal category, as it was hypothesized that youth who identified at all with an Aboriginal ethnicity may have experienced the justice system as less fair and the law as being less legitimate than youth of other ethnicities. Aboriginal youth were further categorized into Status\(^2\) Aboriginal youth vs. non-Status Aboriginal youth. Independent samples t-tests found no difference in perceptions of procedural justice or legitimacy based on this differentiation, nor was there any difference when comparing Status Aboriginal youth to Caucasian youth.

\(^2\) In Canada, an individual registered under the *Indian Act* (1985) is recognized by the federal government as having Indian (or Aboriginal) "Status" and is entitled to a wide range of programs and services. Individuals must meet certain criteria to become registered. As such, some youth may identify as Aboriginal without having applied for or been eligible for official Status.
1.5.2. **Legal History Predictors of Procedural Justice and Legitimacy**

None of the legal history hypotheses were supported. Youths’ self-reported number of previous arrests, age at first arrest, and length of justice system involvement were not significantly correlated with perceptions of procedural justice or legitimacy beliefs (Table 5).

1.5.3. **Mental Health and Personality Predictors of Procedural Justice and Legitimacy**

Next, exploratory correlational analyses were undertaken to determine which mental health variables warranted further attention. The relationship between each of the seven MAYS1-2 subscale total scores and summary procedural justice and legitimacy scale scores were examined (Table 6) and subscales with significant correlations were retained for regression analyses.

Two MAYS1-2 subscales were related to both procedural justice and legitimacy: the Alcohol/Drug Use and Traumatic Experiences scales. As expected, these correlations were negative; in other words, youth endorsing a greater number of items on the Alcohol/Drug Use and Traumatic Experiences scales were more likely to feel unfairly treated by justice system officials and to have less faith in the legitimacy of the law. These subscales were entered as independent variables into regression equations with Procedural Justice Scale scores and Legitimacy Scale scores as outcome variables, respectively. For procedural justice, this analysis produced a significant model, $F(2, 85) = 3.37, p < .05$, with the mental health scales explaining 7% ($R^2 = 0.07$) of the variance in procedural justice scores. Neither of the independent variables was uniquely predictive of procedural justice over and above their shared variance. For legitimacy, the analysis also produced a significant model, $F(2, 85) = 5.51, p < .01$, with the mental health scales explaining 12% ($R^2 = 0.12$) of the variance in legitimacy scores. In this case, the Traumatic Experiences scale predicted significant unique variance in Legitimacy Scale scores ($\beta = -0.25, p < .05$), even when controlling for the shared predictive power of the scales.
Next, the same procedures used for MAYSI-2 subscale scores were employed for PCL:YV subscale scores. First, exploratory correlational analyses were undertaken to determine whether PCL:YV subscale or total scores warranted further attention based on their relationship to Procedural Justice Scale and Legitimacy Scale scores (Table 7). None of the PCL:YV subscales or PCL:YV total scores were related to Procedural Justice, so no further analyses examining the relationship between psychopathic features and procedural justice were undertaken. However, three of the four PCL:YV subscales as well as PCL:YV total scores correlated with legitimacy ratings. A linear regression demonstrated that PCL:YV total scores significantly and inversely predicted legitimacy ratings, \(F(1, 90) = 8.33, \ p < .01, \ \beta = -0.29\), meaning that youth who scored higher on the psychopathy index reported weaker beliefs in the legitimacy of the law. The \(R^2\) was 0.09, meaning that PCL:YV scores accounted for 9% of the variance in legitimacy scores. When entered together as predictors into a multiple regression, the Interpersonal, Lifestyle, and Antisocial subscales scores were also significantly associated with legitimacy, \(F(3, 88) = 3.86, \ p < 0.05\). None of these three latter variables predicted significant variance in legitimacy scores over and above their shared predictive power. The \(R^2\) for this model was .12, meaning that these three subscales combined accounted for 12% of the variance in legitimacy scores. These results suggest that while PCL:YV total scores as well the Interpersonal, Lifestyle, and Antisocial factors of the PCL:YV are inversely associated with beliefs about the legitimacy of the law, the three subscales alone are better predictors of legitimacy as they account for more variance in Legitimacy Scale scores. The strength of the association between PCL:YV total scores and legitimacy may have been weakened by the inclusion of items on the Affective subscale, which was not correlated with legitimacy.

Finally, the Alcohol/Drug Use and Traumatic Experiences scales along with the Interpersonal, Lifestyle, and Antisocial subscales of the PCL-YV scores were entered into a final regression equation to determine their combined ability to predict legitimacy. The model was significant, \(F(5, 82) = 2.99, \ p < 0.05\), and the \(R^2\) was .15, meaning that these variables were together able to predict 15% of the variance in Legitimacy Scale scores, compared to 12% for the PCL-YV or mental health scale scores in isolation. Even in this larger model, the Traumatic Experiences scale continued to predict
significant unique variance in Legitimacy Scale scores ($\beta = -0.25, p < .05$), suggesting that a history of trauma is a powerful predictor of beliefs about the legitimacy of the law.

1.5.4. **Which Justice System Players do Youth Think About When Evaluating Procedural Justice?**

Most youth reported thinking about the police (76.1%) and their probation officer (76.9%) when making their evaluations of the fairness of the justice system as a whole. Somewhat fewer youth reported thinking about the judge (58.7%), and fewer still reported considering their treatment by the defense or prosecuting lawyers (44.4% and 48.4%, respectively). These findings largely align with hypotheses, which were that the majority of youth would consider their treatment by the police, probation officer, and judge when evaluating the fairness of the justice system, but that only a minority would consider their treatment by the defense and prosecuting lawyers. Not taking type of justice authority into account, 7 (7.61%) youth said they considered 0 people when making their determinations, 8 (8.70%) said they considered only 1, 16 (17.39%) said they considered 2, 24 (26.09%) said they considered 3, 19 (20.65%) said they considered 4, and 18 (19.57%) said they considered all 5.

1.6. **Discussion**

Research on Procedural Justice has largely focused on the conceptual relationship between procedural justice, legitimacy, and outcome variables such as recidivism, legal compliance, and cooperation with laws and legal authorities. Although researchers have begun to examine how intra-individual differences systematically influence individuals’ perceptions of these constructs, research to date has been inconclusive. For example, studies have examined whether basic demographic characteristics, like ethnicity, age, and gender, are related to procedural justice or legitimacy beliefs, and while some studies have found significant effects (e.g., Fagan & Tyler, 2005; Piquero et al., 2005), others have largely failed to (Harvell, 2009; Hinds, 2007; Reisig et al., 2007), and others still have found interactions among these variables (Woolard et al., 2008).
Beyond basic demographic characteristics, few predictors of procedural justice or legitimacy have been examined, save for a small number of legal history variables. The current study aligned with past research by examining the effects of demographic characteristics and legal history variables on perceptions of procedural justice and legitimacy. However, it also substantially and uniquely expanded on the extant literature by exploring how mental health symptoms and psychopathic personality traits affect youths’ experience of justice system fairness and their beliefs about the legitimacy of the law.

### 1.6.1. Demographic Predictors of Procedural Justice and Legitimacy

In terms of demographic factors, the hypothesis that gender would be unrelated to procedural justice or legitimacy beliefs was supported. This is not surprising, given that most studies have likewise found no relationship. Although female youth on probation represent only about a quarter of the youth in the current study, the greater power associated with a higher \( n \) per cell or overall \( N \) is not expected to have changed the present findings, as male and female youth reported virtually identical perceptions of procedural justice and legitimacy.

The hypothesis that age would be inversely related to procedural justice and legitimacy was only partially supported. Youth aged 12-14 believed more strongly in the legitimacy of the law than 15 year old youth, but there were no differences between 15 and 16 year-old youth, or between 16 and 17 year old youth. This partially aligns with Fagan and Tyler’s (2005) finding that legitimacy beliefs declined from ages 12 to 14 and then were stable from 14 to 16, and with Piquero et al.’s (2005) finding of an inverse relationship between age and legitimacy ratings. Although procedural justice ratings followed the same general trend as legitimacy ratings (higher at ages 12-14 and then declining at age 15), a repeated contrast test was non-significant. Conceptually, a decline in beliefs about the legitimacy of the law from early adolescence to mid-adolescence makes sense. In their discussion of the process of legal socialization, Fagan and Tyler (2005) noted that “early orientations toward law and government [are]... characterized by idealized and overly benevolent views about authority” whereas “the later views of adolescents... [are] both more cognitive and less idealized in form” (p.
It is possible that youths’ global beliefs about the legitimacy of the legal system are affected by the process of development from early to later adolescence, but that youths’ assessments of fair treatment in interactions with justice system authorities are less influenced by their developmental stage and more by other factors, such as the influence of their peers or the affective response the interaction elicits.

In terms of ethnicity, although previous research has compared minority to majority youth, this is the first study to examine procedural justice and legitimacy in a Canadian population and to include a substantial minority of Aboriginal youth, whose ethnic group is marginalized within Canadian society. It was hypothesized that Aboriginal youth would feel more unfairly treated and believe less strongly in the legitimacy of the law than Caucasian youth, given that minority youth are sometimes processed and treated in a negatively biased fashion by youth justice systems (Bishop et al., 2010; Davis & Sorensen, 2010; Kempf-Leonard, 2007). However, no differences were found between majority youth, minority youth, and youth of mixed ethnicities in the current sample, nor were there any differences between Status and non-Status Aboriginal youth, or Caucasian youth and Status Aboriginal youth.

Unfortunately, there were notable difficulties in organizing youth in this study by ethnicity, and substantial variability between categories existed. For example, youth within the mixed ethnicity category identified with a wide variety of different ethnic backgrounds, including Vietnamese, Lebanese, Afghani, Polynesian, and Hawaiian among others. Given this variability, it is difficult to draw any conclusions about the beliefs of youth who fall into this category because they are so heterogeneous. Further, youth were placed into the Aboriginal category whether or not they also identified themselves as having another ethnic background, as did one third of this group (n = 10; 21.9%), and irrespective of which Aboriginal band they identified with. As a result of this within-category variability, it is difficult to determine whether the lack of significant differences between youth based on ethnicity is the product of an absence of true differences in the population, or whether it is a by-product of measurement ambiguity. Unfortunately, without far more substantial numbers of youth from each ethnic category, more fine-grained analyses were not possible.
1.6.2. **Legal History Predictors of Procedural Justice and Legitimacy.**

Contrary to hypotheses, legal history variables (number of prior arrests, age at first arrest, and length of contact with the justice system) were not related to procedural justice or legitimacy. One previous study found that number of previous arrests was inversely related to legitimacy ratings (Piquero et al., 2005), but that result was not replicated here. This suggests that the sheer quantity of contacts with the justice system may not be related to youths’ appraisal of it, and that youth with extensive justice system histories may not feel more negatively about the fairness of their treatment by justice system authorities or about the legitimacy of the law than youth newer to the system. However, this study examined justice system experiences quantitatively; given that another study found that previous negative contacts with police was associated with lower legitimacy ratings (Hinds, 2007), it is possible that the quality of justice system contact may be more important than the quantity.

1.6.3. **Mental Health and Personality Predictors of Procedural Justice and Legitimacy**

Among mental health symptoms, the MAYSI-2 subscales tapping Drug/Alcohol Use and a history of Traumatic Experiences together predicted Procedural Justice Scale scores and Legitimacy Scale scores. In the latter case, the Traumatic Experiences scale maintained significant predictive power even when controlling for the shared power of the two scales combined. These results suggest that youth who struggle with substance abuse issues and who have a history of trauma are at greater risk of feeling unfairly treated by the justice system and are less likely to believe that the law and legal officials are legitimate. It will be important for future researchers to employ more in-depth measures of mental health symptoms, such as structured diagnostic tools, to confirm and expand on these findings. Results of the current study align with McCluskey’s (2003) observation that individuals who have a mental illness are particularly sensitive to experiences of procedural unfairness.

While these results are preliminary and require replication, they suggest that youth with certain constellations of mental health symptoms may systematically appraise the justice system and their experiences therein differently than their peers. In the case
of a history of trauma, recent research indicates that around 10% of youth in custody have post-traumatic stress disorder (PTSD; Abram et al., 2007), 30-50% of youth in custody meet at least partial criteria for PTSD (Cauffman, Feldman, Waterman, & Steiner, 1998; Erwin, Newman, McMackin, Morrissey, & Kaloupek, 2000; Steiner, Garcia, & Mathews, 1997) and that up to 85% have histories of trauma (Wasserman et al., 2004). Drug and alcohol use disorders are also strikingly common among young offenders. Around half of youth in detention meet criteria for a substance use disorder (Teplin et al., 2006; Wasserman et al., 2004), and substance use problems are even more common among youth with PTSD. For example, Abram et al. (2007) found that, among youth with PTSD, nearly 80% had either an alcohol use or a drug use disorder. Given the high prevalence rates of both trauma histories and substance use disorders, it is important to consider why youth with these issues experience the justice system as less fair and legitimate, as well as whether and how this might impact their likelihood of reoffending.

It is possible that youth with trauma histories may be predisposed to perceive themselves as being unfairly treated because of their experiences of victimization. These youth may be hypervigilant to new potential experiences of victimization, including being treated in a biased fashion by the criminal justice system. Indeed, research has demonstrated that youth with histories of trauma have a cognitive bias whereby they are more attentive to potential sources of threat in their environment and do not adequately attend to relevant non-hostile cues (Dodge, Pettit, Bates, & Valente, 1995; Fani, Bradley-Davino, Ressler, & McClure-Tone, 2010). Research has also shown that youth with histories of trauma are more egocentric in their thinking and struggle more to take the perspective of others than other youth (Burack et al., 2006). Given that one of the components of procedural justice is perceived impartiality, youth must be able to objectively evaluate their treatment relative to the treatment of their peers to feel fairly treated. Youth with histories of trauma may have difficulty not viewing their treatment from an egocentric point of view, and thus may be more susceptible to believing their treatment was unjustly punitive.

Alternatively, youth with trauma histories and those with substance use problems may be accurate in their perception that they are treated less fairly by justice officials and may rightly have less faith in the legitimacy of the law. For example, one study has
shown that probation officers see youth with abuse histories as more dangerous, more difficult to supervise, and more in need of placement in a secure residential facility (Vidal & Skeem, 2007). However, other studies have found that when youths’ delinquent behaviour is attributed to a history of abuse, it mitigates the punitiveness with which they are treated (Bridges & Steen, 1998; Horwitz, Widom, McLaughlin, & White, 2001) and leads probation officers to recommend treatment services more often and ‘go the extra mile’ in supervision (Vidal & Skeem, 2007). Parallel research with substance abusing youth has yet to be conducted.

Finally, this study showed that youths' total scores on a measure of psychopathy, the PCL-YV, predicted their beliefs about the legitimacy of the law. These results suggest that youth with more psychopathic characteristics are less likely to believe they have an obligation to obey the law. When the PCL-YV subscales were examined more closely, three out of four were found to predict legitimacy: the interpersonal, lifestyle, and antisocial subscales. The affective traits associated with psychopathy (e.g., a lack of remorse, shallow affect, and callousness) were not related to perceptions of legal legitimacy. Interestingly, current research and psychopathy theory suggest that affective deficits are a necessary component of psychopathy (Hare, 1998b, 2003), and a chief predictor of severe antisocial behaviour in youth (Barry et al., 2000; Loeber, Burke, & Lahey, 2002; Vitacco, Rogers, & Neumann, 2003). Research with adults demonstrates that affective deficits best discriminate psychopathic adults from normal controls across cultures (Cooke & Michie 1997, 1999), and research with children and youth has found that callous-unemotional traits are better predictors of aggression, thrill-seeking behaviours and deficits in response-modulation than ADHD or conduct problems (Barry et al., 2000; Frick, Cornell, Barry, Bodin, & Dane 2003). Neuroimaging studies also suggest that psychopathy is related to amygdala dysfunction and resultant emotional processing difficulties (Blair, 2003; Viet et al., 2002). This body of research has led scholars to propose that “a specific focus on the affective and interpersonal dimensions of psychopathy could be critical for developmental models of psychopathy” and allow for greater specificity in early identification (Frick & Marsee, 2006, p. 360). Given that the one subdomain of psychopathy not related to legitimacy beliefs was affective deficits, it may be that beliefs about the legitimacy of the law are more related to youths’ antisocial behavioural choices than true ‘psychopathy’.
It is perhaps unsurprising that traits associated with the psychopathy are related to legitimacy. Moral reasoning abilities have previously been found to be associated with legitimacy beliefs (Trickner et al., 2011) and one of the characteristics of psychopathy, in youth as well as adults, is a lack of moral concern and a tendency toward moral disengagement (Cleckley, 1976; Hare, 2003; Saltaris, 2002; Stevens, 2010). Youth endorsing the interpersonal, lifestyle, and antisocial characteristics associated with psychopathy likely tend to live according to their own rules and shun social norms, as is seen in adults with psychopathic characteristics (Hare, 1998a). Believing in the legitimacy of the law, in contrast, is inherently intertwined with a respect for social norms that supersedes one’s own values, beliefs, and opinions (Tyler, 2006b). Given that adolescents are still in the process of moral development, they are more likely to behave in ways that are self-serving and less likely to act upon society’s standards than adults generally (Shaffer & Kipp, 2009). As such, acting based on prosocial values rather than in favour of one’s own best interests may be especially challenging for adolescents who possess psychopathic characteristics.

Further, as noted above, perceiving that one is treated equitably requires the ability to objectively compare one’s treatment to that of others. Given that adults high on psychopathic traits have deficits in perspective taking (Glenn et al., 2009), and that adolescents are still in the process of developing advanced social perspective-taking skills (Kuttler, Parker, & La Greca, 2002; Selman, Beardslee, Schultz, Krupa, & Podorefsky, 1986), youth with psychopathic features may struggle not to view the world from an egocentric point of view. As such, they may be particularly vulnerable to believing their treatment to be unjustly harsh as compared to that of their peers, as is possible for youth with trauma histories. Finally, youth high on psychopathic personality traits may also be more likely to exhibit a hostile attribution bias. A hostile attribution bias is defined as the tendency to interpret ambiguous behaviour as having a hostile intent, and research with adults has demonstrated a positive relationship between symptoms of psychopathy and hostile attributions (Serin, 1991; Vitale, Newman, Serin, & Bolt, 2005). If youth high on psychopathy symptoms view the world with the cognitive distortion that others, including justice officials, are ‘out to get’ them, they may also be less likely to believe that one should respect justice officials, that obeying them and the law is justified, that the courts make fair decisions, and so on.
However, it may also be that youth with psychopathic characteristics have less reason to have faith in the legal system than their peers. Studies have found that the presence of psychopathy-like features in youth has a small influence on judges’ dangerousness ratings and leads them to recommend longer sentences for youth (Chauhan, Burnette, & Repucci, 2005; Salekin et al., 2002). Probation officers consider youth with psychopathic personality features to be more likely to commit future crime and remain engaged in criminal activity as an adult (Murrie, Cornell, & McCoy, 2005), and probation officers are more likely to adopt a strict supervision style with these youth (Vidal & Skeem, 2007). At the same time, studies have shown that the presence of psychopathic features either does not affect or increases the likelihood that probation officers will recommend treatment services (Cruise, Colwell, Lyons, & Baker, 2003; Murrie et al., 2005) and judges and probation officers are no more likely to recommend transfer to adult court for these youth than their peers (Chauhan et al., 2005; Murrie et al., 2005).

In sum, although a body of research has demonstrated that youths’ experience of fair treatment, or procedural justice, by legal authorities has important implications for their beliefs about the legitimacy of the law and their future law-related behaviour, the overarching role of intra-individual factors on these constructs has not been well-addressed. The current study suggests that age, mental health symptoms, and psychopathic characteristics all contribute to youths’ beliefs about the legitimacy of the law and legal authorities. Mental health symptoms were additionally related to youths’ evaluations of the fairness of their treatment by authorities. Evaluating the relationship between procedural justice, legitimacy, and behaviour without first understanding the influence of intra-individual characteristics neglects an important piece of the procedural justice puzzle: the context in which youths’ beliefs and perceptions exist.

1.6.4. Which Justice System Players do Youth Think About When Evaluating Procedural Justice?

Results indicated that, when youth were asked to evaluate the fairness of the justice system, most (around 70%) considered their treatment by the police and their probation officer. This is perhaps unsurprising given that youth likely have the most contact with these justice system players (Siegel, Welsh & Senna, 2003). More than half
of youth also reported considering their treatment by the judge. Although the amount of contact between young offenders and judges is limited, the impact that judges can have on a young offender’s life is substantial in that they make decisions regarding sentencing. It may be this proportionately greater influence on youths’ lives that led so many youth to consider their treatment by the judge when making procedural justice ratings. Finally, just under half of youth reported thinking about the defense and prosecuting lawyers when evaluating their experience of procedural justice. Youth may not consider their treatment by lawyers as much as other officials because they spend less time with them and may not perceive them to have as great of an impact on their futures. Notably, two thirds of youth considered at least three justice system players when making their procedural justice ratings, suggesting that research examining youths’ perceptions of procedural justice in the context of only one or two justice officials may not adequately capture youths’ experiences of justice system fairness.

1.6.5. Implications for Future Research

This study is the first to examine the impact of mental health variables on youths’ perception of procedural justice and legitimacy. The finding that mental health and personality variables are related to youths’ experience of justice system fairness and their broader beliefs about the legitimacy of the law has important theoretical implications for our understanding of the procedural justice model as well as practical implications for youth justice systems.

Research on procedural justice and legitimacy thus far has focused largely on how perceptions of fairness and legitimacy beliefs impact outcome variables, such as the willingness to assist authorities and the likelihood of future offending. The current study suggests that mental health and personality characteristics may predispose youth to feeling less fairly treated, providing important contextual information about why some youth may perceive the justice system to be more or less fair, or the law more or less legitimate. While examining the relationships between procedural justice, legitimacy, and offending is important work, if scholars and policy-makers hope to influence youths’ beliefs and behaviour, they must first understand the factors that make youth vulnerable to feeling unfairly treated or that undermine youths’ trust in the law. Individual differences may also be implicated in the relationship between procedural justice and
offending. For example, if psychopathic characteristics in youth lead them to view the justice system as less trustworthy and legitimate, and also increase the likelihood that they will reoffend, a causal relationship may appear to exist between legitimacy and reoffending, when in fact psychopathic characteristics may account for the relationship.

Practically, this research suggests that youth, such as those with substance use issues and a history of trauma, may be treated differently by justice systems or that these youth may be prone to experiencing the justice system as less fair and balanced. Whichever the case, if we are invested as a society in providing youth with a justice system in which their rights are ensured, we will need to delve deeper into the nature of this relationship. If justice officials do, in fact, treat youth with certain mental health symptoms in a discriminatory manner, this warrants systemic intervention. Conversely, if these youth are prone to experiencing the justice system as less fair and believing that the law is less legitimate, we may want to work harder to identify these youth so that their experience of fairness can be addressed directly (e.g., they could be given the opportunity to voice their opinions more explicitly). This may be particularly important if experiences of procedural justice and beliefs about legal legitimacy are related to offending, as some research with youth suggests. In this case, youth with substance use disorders and histories of trauma may be more vulnerable to reoffending by virtue of their experiences and related cognitive features.

1.6.6. **Limitations**

There are some notable limitations to this research. First, despite the number of analyses undertaken there was no familywise error control. As noted by Tamhane (2009), family wise error control tends to be conservative and is best reserved for confirmatory analyses as opposed to exploratory analyses. Not controlling for family wise error in this study means that Type I errors may exist, but the percentage of statistically significant findings in the current study (20%) exceed the number that would be expected by chance (5%), making it unlikely that Type I errors account for most significant findings. Second, the sample size in this study was relatively small, reducing the likelihood that small effects were detected. Unfortunately, given the absence of consistent past findings, it is difficult to know what effect sizes should be expected. As such, the third limitation is that, for most tests, the power to detect large or medium
effects was adequate, but the power to observe small effects was well below the cut-off of 0.8 (Mazen, Hemmasi, & Lewis, 1987). Fourth, the categorization of ethnicity, as noted above, was muddied by a highly heterogeneous sample. A larger sample size would have helped to distinguish between youth of different ethnic backgrounds.

Perhaps the greatest limitation of the current study is the inability to tease apart directionality in the observed relationships. Do youth with mental health issues and more psychopathic personality profiles simply perceive the justice system to be less fair and legitimate, or are they treated in a systematically different way than their peers? This question is one that requires a true experimental design and a more detailed examination of the nature of the relationship between these constructs. For example, youth with different personality and mental health conditions, as well as control youth, could be asked to watch videos or read scenarios in which a youth on probation interacts with their probation officer, and then rate the fairness of the youth’s treatment. This procedure has been effectively used to examine the hostile attribution bias in children and youth and may provide a good framework for examining procedural justice. Continued field research focused on the treatment of youth with mental health issues or psychopathic personality traits would also help to further clarify these issues.

1.7. References


2.1. Abstract

Theories of procedural justice suggest that individuals who experience respectful and fair legal decision-making procedures are more likely to believe in the legitimacy of the law, and, in turn, are less likely to reoffend. However, few studies have examined these relationships in youth. In the current longitudinal study, we found that perceptions of procedural justice predicted self-reported offending at 3 months in a sample of youth on probation in BC, but that youths’ beliefs about the legitimacy of the law did not mediate this relationship. Results also showed that procedural justice continued to account for unique variance in self-reported offending over and above the predictive power of well-established risk factors for offending (i.e., peer delinquency, substance abuse, psychopathy, and age at first contact with the law). This research has both theoretical and practical implications. Theoretically, the current study provides evidence that models of procedural justice developed for adults are only partially replicated in a sample of youth; practically, this research speaks to whether simple alterations in the manner in which young offenders are treated can decrease their risk for recidivism.

2.2. Introduction

Laws in society are effective in regulating human behaviour only to the extent that they are followed. For laws to have any power over human behaviour, individuals in society must voluntarily adhere to them. For lawmakers and law enforcers, an understanding of why individuals comply with laws or, in other cases, break them, is crucial to their efforts to convince individuals in society to be law-abiding. While instrumental perspectives on legal compliance suggest that individuals obey laws
because of the incentives associated with compliance and the punishments associated with noncompliance (Tyler, 2006a), a normative perspective asserts that individuals’ experiences, beliefs, and attitudes influence whether or not they obey the law. This latter perspective suggests that changing the way that people think and feel about laws will influence their behaviour. This paper discusses one avenue through which legal authorities may be able to positively impact the way that young offenders feel about the law and legal authorities: by enhancing their experience of procedural justice.

Research on procedural justice suggests that individuals who experience the legal system or legal authorities as fair are more likely to perceive the law to be legitimate (Fagan & Tyler, 2005; Harvell, 2009; Hinds, 2007; Kaasa, Malloy & Cauffman, 2008; Murphy, 2009; Murphy & Gaylor, 2010; Piquero, Fagan, Mulvey, Steinberg, & Odgers, 2005; Sunshine & Tyler, 2003; Tyler & Huo, 2002; Tyler & Wakslak, 2004; Wells, 2007) and, in turn, are more likely to comply with laws and regulations (Fagan & Tyler, 2005; Murphy & Gaylor, 2010; Murphy, Hinds, & Fleming, 2008; Reisig, Bratton & Gertz, 2007; Tyler, 2006a). Indeed, this relationship between fair treatment and offending was already believed to exist, despite a paucity of empirical evidence, at the time of In re Gault (1967). In that judgment, the court cited a sociology report that stated, “unless appropriate due process of law is followed, even the juvenile who has violated the law may not feel that he is being fairly treated and may therefore resist the rehabilitative efforts of court personnel” (p. 26, citing Wheeler & Cottrell, 1966).

Contemporary procedural justice theories can be viewed as adhering to the normative perspective on legal compliance because they suggest that changing individuals’ subjective experiences of the legal system will influence their attitudes toward the law as well as their future law-related behaviours.

While substantial strides in research on procedural justice have been made over the past 30 years, the vast majority of research has been conducted using adults. Much less research has been conducted with youth, limiting our understanding of how procedural justice functions throughout development. It is unwise to assume that procedural justice models developed from adult studies will apply equally well to youth. A large body of research has established that children and adolescents are very different from adults both cognitively and at a basic biological level (Coalition for Juvenile Justice, 2006; Giedd et al., 1999). Adolescents’ abstract thinking and decisional capabilities
(Grisso et al., 2003; Scott, Reppucci, & Woolard, 1995; Steinberg & Cauffman, 1996), their perspective-taking abilities, (Steinberg & Cauffman, 1996), and their capacity to understand and participate in legal proceedings are all immature compared to adults (Burnett, Noblin, & Prosser, 2004; Cowden & McKee, 1995; Grisso et al., 2003; Kruh, Sullivan, Ellis, Lexcen, & McClellan, 2006; McKee & Shea, 1999). These developmental differences may have serious implications for the manner in which procedural justice models function in adolescence and may also influence youths’ absolute perceptions of procedural justice.

For example, adolescents’ potentially compromised legal competency and ability to understand legal processes may influence their perceptions of procedural justice because they are more likely to misunderstand legal proceedings and events. This may lead adolescents to perceive legal proceedings to be less fair than would adults (without necessarily having direct implications for the procedural justice model). Deficits in perspective-taking and an egocentric orientation may, similarly, have negative repercussions for adolescents’ absolute ratings of procedural justice. Finally, the fact that adolescents are in a state of developmental flux may mean that their perceptions of justice system fairness may change more rapidly than is seen in adults, which may make the prediction of future behaviour based on youths’ attitudes less reliable (Harvell, 2009).

The following sections review the current status of the empirical literature on procedural justice as it relates to the relationship between procedural justice and offending and the possible role of legitimacy in mediating this relationship. Given the paucity of research on procedural justice in youth—at present, there are only seven extant studies that evaluate theories of procedural justice in youth in the context of the legal system and offending behaviour (Fagan & Tyler, 2005; Harvell, 2009; Hinds, 2007; Hinds, 2009; Kaasa et al., 2008; Piquero et al., 2005; Reisig & Lloyd, 2009)—research conducted with adults is presented as well.

2.2.1. **Procedural Justice and Behaviour**

Research since the 1970s has demonstrated that individuals’ beliefs about the fairness of their treatment has important implications for their future behaviour. For example, in the context of child custody agreements, research has shown that parents
were more likely to pay court-ordered child support if they felt the agreement was reached through fair procedures (Kitzmann & Emery, 1993). A study on civil commitment demonstrated that individuals mandated to enter therapy were more likely to have positive therapeutic outcomes if they felt their civil commitment hearings were fair (Cascardi, Poythress, & Hall, 2000). The positive effects of experiences of procedural fairness extend to areas of research even farther afield—fired employees were less likely to sue their former employers if they felt the termination process was handled fairly (Lind, Greenberg, Scott, & Welchans, 2000), and individuals accused of evading their taxes were more likely to comply with government authorities if they experienced procedural justice (Murphy, 2004).

Legal compliance in criminal contexts is also affected by perceptions of procedural justice (Tyler, 2006a). One study found that men who came into contact with police as a consequence of reported spousal abuse were less likely to reoffend if they felt that the police officers treated them fairly (Paternoster, Bachman, Brame, & Sherman, 1997). In this study, perceptions of procedural fairness had a greater impact on future offending than the actual outcomes themselves (i.e., whether men were arrested, fined, or taken to the police station). Other research on procedural justice in the context of policing has also shown that when police are evaluated as being fair in the exercise of their authority, people are more likely to cooperate with them and comply with the law (Sunshine & Tyler, 2003). Conversely, when police are evaluated as behaving disrespectfully or unfairly (e.g., using threats), individuals are less inclined to cooperate with them (Mastrofski, Snipes, & Supina, 1996; McCluskey, Mastrofski, & Parks, 1999; McCluskey, 2003).

Importantly, research on procedural justice also suggests that its effect on behaviour is not short-lived. For example, Pruitt et al. (1993) found that the fairness of mediated sessions continued to impact the extent to which individuals complied with their mediated agreement 4 and 8 months later. Similarly, in Paternoster et al.’s (1997) study, individuals were tracked for an average of 14 months, suggesting that fair treatment by police has a long-term effect on offending. The persistence of the procedural justice effect is in part responsible for the interest this construct has generated in the research community, and suggests that being treated fairly can produce
lasting changes in the extent to which individuals ‘buy into’ or voluntarily comply with decisions, regulations, and laws.

While research with adults suggests that experiences of procedural justice are related to future behaviour, little parallel research has been conducted with youth. This is despite the potentially heightened relevance of procedural justice to youth. For example, theories of legal socialization state that adolescence is a time when attitudes toward the legal system are being developed (Fagan & Tyler, 2005; Lind & Tyler, 1988). Legal socialization begins early in life and is described as “the process through which individuals acquire attitudes and beliefs about the law, legal authorities, and legal institutions” (Piquero et al., 2005, p. 1). The basic premise of this theory is that attitudes toward the law developed in childhood and adolescence affect one’s lifelong attitudes and orientation toward the law and legal authorities. This, in addition to the fact that adolescents are particularly likely to be sensitive to issues of fairness and respect (Woolard, Harvell, & Graham, 2008), means that youths’ experiences of justice system fairness during the adolescent years may have a substantial impact on their lifelong risk of offending.

The sole study that examined the relationship between procedural justice and conduct problems or offending behaviour in youth aligned with the adult literature in that it demonstrated a relationship between perceptions of procedural justice and legal compliance: the more unfairly treated male young offenders felt in their last court appearance, the more likely they were to show a wider variety and greater frequency of behaviour problems in custody 2 weeks later (Kaasa et al., 2008). However, this study had some considerable limitations, including the use of behavioural infractions in custody as an outcome measure rather than actual reoffending or probation violations, and the use of a short-term longitudinal design. One other study found that Jamaican high school students who believed police acted in a procedurally just manner were more likely to say they would help the police combat crime; however, this study did not examine behavioural compliance with the law, per se (Reisig & Lloyd, 2009). More research is needed to determine whether perceptions of procedural justice influence youths’ actual levels of offending and whether these effects hold over time.
A major limitation of the research on procedural justice and legal compliance in adults as well as youth is the inability of most studies to control for risk factors related to offending. Most studies examine the influence of basic demographic factors like age and ethnicity, but none have examined whether perceptions of procedural justice make a unique contribution to the prediction of legal compliance over and above the predictive power of well-known risk factors for offending. For example, studies to date have not examined whether the inclusion of mental health difficulties related to future offending, such as psychopathic characteristics (Corrado, Vincent, Hart, & Cohen, 2004; Edens, Campbell, & Weir, 2007; Frick, Cornell, Barry, Bodin, & Dane, 2003; Gretton, Hare, & Catchpole, 2004; Salekin, 2008; Vaughn, Litschge, DeLisi, Beaver, & McMillen, 2008; Vincent, Odgers, McCormick, & Corrado, 2008) and substance use or addictions (Douglas, Epstein, & Poythress, 2008; Fried & Reppucci, 2002; Grisso, 2004; O'Donnell, Hawkins, & Abbot, 1995; Repucci, Fried, & Schmidt, 2002) in a regression model eliminates the predictive power of procedural justice on behavioural outcomes. Other factors strongly predictive of recidivism in youth, such as a younger age at first contact with the law (Cottle, Lee, & Heilbrun, 2001; Dahlberg & Simon, 2006; Douglas et al., 2008; Farrington, 2003; Fried & Reppucci, 2002; Knight, Little, Losoya, & Mulvey, 2004; Moffitt, Caspi, Dickson, Silva, & Stanton, 1996) and the presence of delinquent peers (Elliott & Menard, 1996; Knight et al., 2004; Lipsey & Derzon, 1998; Moffitt et al., 1996) have also been ignored thus far. As such, whether procedural justice continues to account for unique variance in future offending over-and-above the predictive power of established risk factors for offending is unknown. The current study will make a significant contribution to the extant literature by examining whether the inclusion of these variables in a regression model negates procedural justice’s ability to predict offending.

2.2.2. Legitimacy as a Mediator of the Relationship between Procedural Justice and Behaviour

Given the relationship between perceptions of procedural justice and offending or legal compliance, researchers have endeavoured to understand the mechanisms by which procedural justice influences behaviour. Recently, researchers have suggested that procedural justice is an important predictor and antecedent of legitimacy beliefs, and that legitimacy beliefs may account for the relationship between procedural justice and
legal compliance (Levi, Sacks, & Tyler, 2009; Tyler, 1997; 2003; Tyler, Sherman, Strang, Barnes, & Woods, 2007)). Legitimacy refers to individuals’ sense of obligation and self-reported willingness, based on their values and beliefs, to obey authorities (Levi et al., 2009) and can be described as “social influence induced by feelings of ‘should,’ ‘ought to,’ or ‘has a right to’—namely, by appealing to an ‘internalized norm or value’” (French & Raven, 1959, p. 16).

Theoretically, the fact that procedural justice has been demonstrated to have a long term impact on behaviour lends weight to the notion that legitimacy may influence this relationship. In order for procedural justice to lead individuals to “buy into” the law, it cannot simply alter their short-term, affective sentiments towards legal authorities. Procedural justice must help change the way individuals think about the law more globally, for example, by engendering greater commitment to the legal system itself (Tyler & Blader, 2003). If circumscribed experiences of procedural justice can lead individuals to be more trusting in the law and view it as created by legitimate authorities on a global, general level, this would explain how procedural justice is able to impact long-term behaviour.

Studies thus far have supported the notion that perceptions of procedural justice are related to legitimacy beliefs. Studies with adults have shown that when the actions of legal authorities are viewed as being fair and unbiased (i.e., procedurally just), these authorities are more likely to be perceived by citizens as legitimate (Murphy et al., 2008; Reisig et al., 2007; Sunshine & Tyler, 2003; Tyler & Huo, 2002) and to have public support (Cohn, White, & Sanders, 2000; Gibson, 2002). Conversely, when legal authorities engage in unjust procedures such as using unnecessary force, they are less likely to enjoy public support or to be viewed as rightfully obeyed (Seron, Pereira, & Kovath, 2004). Studies demonstrating a relationship between fair legal treatment and perceptions of legal legitimacy have also been conducted in the context of trial procedures (Adler, Hensler, Nelson, & Rest, 1983; Casper, Tyler, & Fisher, 1988; Lind, Kulik, Ambrose, & de Vera Park, 1993; MacCoun, Lind, Hensler, Bryant, & Ebener, 1988; Tyler, 1984; Tyler, Casper, & Fisher, 1989) as well as in more general studies relating to the law, legal system, and legal authorities (Tyler & Caine, 1981; Tyler, Rasinski, & McGraw, 1985; Tyler, 2006a; Tyler, 1997).
Research with adolescents has aligned with the adult literature thus far in that it has supported the relationship between procedural justice and legitimacy. Kaasa et al.’s (2008) small study of incarcerated youth found that the more unfairly treated male young offenders felt in their last court appearance, the more likely they were to hold negative views of the legal system generally as well as of the incarceration facility and staff; however, this study did not measure 'legitimacy' specifically—just general attitudes (Kaasa et al., 2008). Piquero et al. (2005) found that serious young offenders’ perceptions of procedural justice in their experiences with the police and courts were positively related to legitimacy beliefs, and Harvell (2009) found that custodial youths’ experiences of procedural justice in courts, with the police, and with detention centre staff was predictive of their beliefs about the legitimacy of the law. Similarly, Hinds (2007) and Reisig and Lilloyd (2009) both found that high school students’ perceptions of procedural justice with the police were related to their beliefs about police legitimacy. Fagan and Tyler (2005) demonstrated that, in a community sample of youth, perceptions of fairness in youths’ experiences with police, school disciplinary personnel, and security guards were positively correlated with their ratings of the legitimacy of the courts and police. These findings suggest that, as with adults, adolescents’ and adolescent offenders’ situational experiences with the police, courts, and other legal authorities may influence their evaluations of those authorities and their beliefs about the legitimacy of the law more generally.

Studies have also supported the notion that individuals’ legitimacy beliefs are related to their actual, behavioural level of compliance with laws. Social psychology research on governments has found that citizens’ beliefs about government legitimacy are positively related to civil obedience (Lind, Tyler, & Huo, 1997; Tyler & Wakslak, 2004; Tyler, 2006b), and research on business organizations has found that employees are more likely to comply with organizational rules and authorities when they perceive those authorities to be legitimate (Tyler & Blader, 2003). In the legal domain, studies have found that individuals’ perceptions of the legitimacy of legal authorities are negatively related to offending behaviour (Tyler, 2006a) and positively related to cooperation with police (Murphy et al., 2008; Reisig et al., 2007; Sunshine & Tyler, 2003; Tyler & Huo, 2002). One study using teenaged subjects similarly found that youth who believed more strongly in the legitimacy of the law reported being more willing to assist
police (Hinds, 2009) although another found no relationship between legitimacy beliefs and reported police cooperation (Reisig & Llloyd, 2009). Finally, Fagan and Tyler (2005) found that legitimacy ratings were negatively related to levels of offending behaviour in their community sample of youth.

Although research with adults and youth has largely supported the propositions that procedural justice affects offending and other legal compliance behaviours, that procedural justice is an important antecedent of legitimacy beliefs, and that legitimacy beliefs are also related to legal compliance, studies have yet to examine whether legitimacy beliefs mediate the relationship between procedural justice and behaviour. Recently, Murphy & Gaylor (2010) surveyed Australian secondary school students aged 12 to 17 and found that legitimacy mediated the relationship between procedural justice and a reported willingness to cooperate with police, but these authors examined only self-reported behaviour among non-offending youth, rather than actual compliance with laws in adolescents involved in the justice system.

2.2.3. The Current Study

The current study aims to address several of the central drawbacks that currently limit the conclusions that can be drawn from this literature. First, it examined procedural justice, legitimacy, and offending behaviour in a broad sample of young offenders. Much of the previous research has been conducted on adults, community-based youth (Fagan & Tyler, 2005; Murphy & Gaylor, 2010) or on small subsets of young offenders, like incarcerated juveniles (Harvell, 2009; Kaasa et al., 2008), and serious adolescent offenders (Piquero et al., 2005). This study examined youth who were on probation at the outset of their participation, including adolescent offenders adjudicated and placed directly on probation, and those placed on probation following a period of custody. This permitted an examination of the procedural justice meditational model in a broad sample of young offenders, as the majority of youth who are convicted of an offense in Canada must undergo a period of probation.

Second, this study employed a six-month longitudinal design. Whereas previous studies have used cross-sectional designs (e.g., Fagan & Tyler, 2005) or very short-term (i.e., 2-week) longitudinal designs (e.g., Harvell, 2009), this study was able
prospectively examine the impact of experiences of perceived procedural justice and beliefs about legitimacy on future legal compliance at 3 and 6 month time points, allowing for an investigation of how the effects of procedural justice may change over time.

Third, the outcome measure in this study was offending, rather than custodial behavioural infractions or self-reported willingness to comply with authorities. The relationship between behavioural infractions committed while in custody and recidivism is weak (Lovell, Johnson, & Cain, 2007), and recidivism rates are likely a much more important outcome variable for lawmakers and enforcers than behavioural problems in custody or willingness to comply with police. Although one previous study examined offending (Fagan & Tyler, 2005), it relied entirely on a cross-sectional design, so the relationship between experiences of perceived procedural justice and future offending behaviour could not be examined. In addition, this study examines both self-reported and official offending. Previous studies have relied exclusively on self-reports, which are subject to error and bias, and youth in particular may struggle to provide accurate, reliable, and valid self-reports of their observable behaviour (Loeber, Green, Lahey, & Stouthamer-Loeber, 1989). Official offending reports are limited as well, because youth are caught and charged with only a small proportion of the crimes they commit (Brame, Fagan, Piquero, Schubert, & Steinberg, 2004; Cohen, 1986). By coding self-reported offending as well as official offending, this study also was able to avoid the pitfalls inherent in any one measurement method.

Fourth, the current study is unique in that it not only examined whether experiences of procedural justice influenced the likelihood of young offenders reoffending, it also examined whether legitimacy beliefs mediated this relationship. Previous research has tended to examine only one or two associations between these constructs (e.g., the association between procedural justice and legitimacy, procedural justice and behaviour, or legitimacy and behaviour) rather than attempting to validate the meditational model suggested by contemporary procedural justice theorists.

In the current study it was hypothesized that:
1. Procedural justice would predict offending behaviour at 3 and 6 months following the initial interview.

2. Legitimacy beliefs would mediate the relationship between perceptions of procedural justice and reoffending.

Additionally, this study examined whether procedural justice and legitimacy beliefs continued to predict reoffending once the predictive power of documented risk factors for offending were taken into account. These research questions build on those posed in chapter 1, which examined predictors of procedural justice. While chapter 1 explored how individual difference variables affect youths’ perceptions of procedural justice, the current chapter will provide a greater understanding of the interplay between individual difference variables and procedural justice in predicting offending behaviour. In this way, the two chapters together illustrate the role of individual differences at several points in the procedural justice model.

Given that innumerable variables have been associated with future offending in youth, this study included a maximum of one variable from each of eight broad categories of predictors (including demographic information, offense history, family and social factors, educational factors, intellectual and achievement scores, substance use history, clinical factors, and formal risk measures) as laid out by Cottle et al. (2001) in their meta-analysis. Variables were chosen based on the strength of their association with recidivism, the clarity and consistency of their definitions across studies, and the size of the research base supporting the association. The variables chosen were: age at first contact with the law, substance use problems, peer delinquency, and levels of psychopathy. There is substantial support for all of these variables and their relationship to offending, as noted above. It was hypothesized that:

3. Procedural justice and legitimacy beliefs would make a unique contribution to the prediction of recidivism over and above the contributions of these risk factors.

Although research has yet to include these variables in studies of procedural justice, it is believed that the predictive power of procedural justice and legitimacy are separable and independent of the effects of traditionally documented risk factors.
2.3. Method

2.3.1. Participants

Participants in this study were youth on probation in the province of British Columbia, Canada. Of the 102 youth who participated, 10 did not complete an adequate number of items on the procedural justice and legitimacy measures (i.e., 75% or more) for their data to be included, leaving a total final sample of 92. Youth were aged 12-17 ($M = 15.87$, $SD = 1.21$). The majority of youth were male ($n = 67$, 72.83%) and white ($n = 39$, 42.39%), although a substantial proportion ($n = 30$, 32.61%) identified as at least partially Aboriginal. Youth were charged with an average of 2.51 index offenses ($SD = 2.09$), with a range from 1 to 10 offenses. Youth had been on probation for an average of 9.30 months ($SD = 5.44$) for their index offense at the time of interview. Demographic characteristics of the sample can be found in Table 8.

Since the current study is a 6-month longitudinal study, samples of youth at each time point are slightly different due to both attrition and missed interviews. Eighty-five youth completed the 3 month follow-up interview, representing a loss of 7 data points between the initial interview and the 3 month interview, and 74 youth completed the 6 month follow-up interview, representing a loss of 18 data points between the 3 month and 6 month interviews.

2.3.2. Attrition

To determine whether youth who remained in the study differed systematically from youth who dropped out, attrition analyses were undertaken. Independent samples t-tests were used to determine whether youth differed on any of the variables outlined in Table 8 (except for ethnicity and gender, which were examined using chi square analyses), or on the measures used in this study (e.g., procedural justice, legitimacy, PCL-YV scores, etc.). No significant differences at the $p < .05$ level were found at either the 3 month or 6 month follow-up.
2.3.3. **Procedures**

Simon Fraser University, BC Youth Justice/Youth Forensic Psychiatric Services, and the BC Ministry of Child and Family Development provided ethics approval for this research. All methods in this research project complied with ethics procedures. Probation officers and research assistants provided potential participants with preliminary information about the study and what participation would involve. A description of the procedure by which youth were recruited into the study follows, and Figure 3 provides a pictorial depiction of this process.

At the time of data analysis, 367 youth had been approached from the 11 probation offices in the Lower Mainland of BC. Of these, 338 (92.10%) expressed initial interest in volunteering for the study and 29 (7.90%) did not. Of those who expressed interest, 128 (37.87%) were eligible to participate and became enrolled in the study. Two hundred and ten youth did not become enrolled, most commonly because they did not meet eligibility criteria (n = 91, 26.92%), which included that they must be from the Greater Vancouver Regional District, that they must be on probation, and that they must be between the ages of 12 and 17, inclusive. The majority of ineligible participants were too old (n = 54, 14.7%) or outside of the catchment area (n = 23, 6.3%); the remainder were primarily ineligible because of their justice system status (e.g., not yet adjudicated, on bail, etc.). The second most common reason that youth did not become enrolled was that they declined to participate after hearing about study requirements in greater detail (e.g., the time commitment) (n = 51, 15.09%). Seventeen youth (14.5%) could not be reached after initial contact at the probation office, and several could not participate because their guardian either declined (n = 13; 11.1%) or could not be reached (n = 11; 9.4%). One hundred and two of these youths continued on to complete their second interview with the study, which is considered the initial interview for the purposes of this study.

Active consent was obtained from youth and their legal guardians. Legal guardians were provided with information packages about the study and this information package was reviewed with guardians via phone to ensure that they understood what their child/ward’s participation would involve. Additionally, to facilitate youths’ understanding of study procedures and to ensure that any misconceptions about
participation were corrected, youth were asked to respond to questions about what their participation would involve. Youth who demonstrated difficulty understanding consent information had this information reviewed with them again, after which interviewers retested their comprehension.

Research assistants documented youths’ legal history and coded risk assessment tools following extensive training related to both the study protocol and the standardized risk assessment tools. For the risk assessment tools, research assistants were provided with 2 days of training, were required to complete a minimum of four risk assessments using mock cases, and then joined an experienced interviewer on a buddy case in which the interrater reliability on risk assessment tools between research assistants was assessed. Only once a research assistant demonstrated adequate reliability, operationalized as achieving total scores +/- 5 points from the gold standard rating, were they permitted to work independently. Participants were informed that confidentiality would be maintained unless a youth reported a plan to harm themselves or someone else, if they reported child abuse, or if a court subpoena occurred, and all documents were coded using non-identifiable study numbers.

Participants completed the Procedural Justice Scale and the Legitimacy Scale in the context of their participation in a larger research project that evaluated youths’ mental health, risks/needs assessment tools, strengths and a variety of other variables. Data collection was completed in several waves.

2.3.4. Materials

2.3.4.1. Procedural Justice

Given the absence of Procedural Justice measures that have been validated in samples of young offenders, a Procedural Justice Scale was adapted for the purpose of this study, titled the Youth Justice System Procedural Justice Scale (referred to as the Procedural Justice Scale from here on in). The Procedural Justice Scale is based upon Tyler’s (2000) theoretical conceptualization of the four primary aspects of procedural justice—participation, impartiality, trustworthiness, and respect—and represents only a slight modification of Peterson-Badali, Care, and Broeking’s (2007) Perceptions of Fairness in Lawyer-Client Interactions scale. Peterson-Badali et al.’s (2007) scale was
developed to assess delinquent youths’ perceptions of procedural justice as related to their experiences with their lawyer; the present adaptation is a parallel version that directs youth to report on their overall experience of procedural fairness within the youth justice system—that is, within court or with the judge, with the police, with the defense and prosecuting lawyers, and with their probation officer. The reason for this adaptation was that the current study aimed to examine youths’ perceptions of fairness within the justice system generally, rather than restricting the examination to only one justice system player (e.g., lawyers). The Procedural Justice Scale was sent to two consultants during its development: a Canadian clinical/forensic researcher and an American developmental/social psychology researcher with legal training for suggestions on content and wording. Both of these individuals have research expertise in Procedural Justice in children and adolescents and did not recommend any substantive alterations to survey items.

The Procedural Justice Scale consisted of 20 opinion items rated on a four-point Likert scale (Strongly Disagree to Strongly Agree) with five items tapping each of the four facets of Procedural Justice (Tyler, 2000). A summary score—calculated by averaging all 20 scale items—was used to represent youths’ perceptions of procedural justice (see Table 9 for the descriptive characteristics of all measures). The internal reliability of this scale as measured by Cronbach’s alpha was excellent (.93) (Cronbach, 1990; Nunnally, 1978). Given the lack of empirical validation of the Procedural Justice Scale and that measurement validity, generally, is an issue within the field of procedural justice, an analysis of convergent validity was conducted with another procedural justice measure, the Court Fairness Scale (Kaasa et al., 2008). This scale is an adaptation of the procedural justice measure used by Piquero et al. (2005), who similarly adapted it from Tyler’s (1997) Procedural Justice Inventory. The Court Fairness Scale is a 15-item questionnaire assessing youth’s perceptions of the fairness of their trial, their judge, the prosecutor, and their lawyer. Analyses of the relationship between total Court Fairness Scale scores and Procedural Justice Scale summary scores produced a strong positive correlation (r = .70, p < .01) (Cohen, 1988), providing evidence of good convergent validity between the two measures and strengthening the psychometric support for the Procedural Justice Scale.
2.3.4.2. Legitimacy

While legitimacy has been measured in a variety of ways, in the legal domain it is often viewed as being comprised of two distinct but related concepts: individuals’ perceived obligation to obey the law and their support for the law and legal authorities (Sunshine & Tyler, 2003; Tyler & Blader, 2003; Tyler, 2006a). A legitimacy scale developed for this project and titled the Youth Justice System Legitimacy Scale (referred to as the Legitimacy Scale from here on in) was adapted from Tyler’s (2006a) legitimacy measure used in the Chicago Study based on the recommendations from the two survey development consultants referred to above. Minor changes altered the scale so that it referred to the youth justice system rather than the specific players in the adult criminal system in Chicago. For example, rather than asking whether youth agree with the statement “On the whole, Chicago judges are honest” youth were asked whether they believed “On the whole, justice officials (e.g. policemen, probation officers, judges, lawyers) are honest.” Six items tapped youths’ perceived obligation to obey the law (e.g., “Disobeying the law is seldom justified”) and seven tapped their support for the law and legal authorities. The latter seven questions were divided into support for the court (three items; e.g., “The basic rights of citizens are well-protected in the courts”) and support for legal authorities (e.g., “On the whole, justice officials [e.g. policemen, probation officers, judges, lawyers] are honest”). Respondents rated each statement using a four-point Likert scale ranging from Strongly Disagree to Strongly Agree. A summary score representing youths’ perceptions of legitimacy was calculated by averaging across all items. The internal reliability of this scale as measured by Cronbach’s alpha was good at .89 (Cronbach, 1990; Nunnally, 1978).

2.3.4.3. Offending Behaviour

Youths’ offending behaviour was measured both via a self-report tool and an official file review. Youth completed the Self-Report of Offending (SRO), originally developed by Huizinga, Esbensen, & Weiher (1991). The current version was slightly adapted from that used in the Pathways to Desistance study (Knight et al., 2004) and asked youth how often they had committed each listed crime in the past 3 months. Youth responded using a 5-point Likert scale with the following response options: Never, Once, Two or Three Times, Four Times, or Five or more times. Commonly endorsed
offenses including being in a fight, damaging or destroying property, buying, selling or receiving stolen goods, stealing goods from a store, and selling marijuana.

Five different measures of offending were used to measure outcomes at each time point (3 months and 6 months). First, youth were categorized dichotomously as offending or not based on both self-reported offending and official charges in the previous 3 months (0 = non-offender, 1 = offender). If youth self-reported offending but official records contained no charges, youth’s self-report was retained, whereas if official records indicated offending but the youth did not self-report any offending, official records were retained. In essence, if there was any report of offending anywhere, that report was retained. In some cases, only self-report or official records were available. In those cases, whatever information was available was relied upon. Table 10 outlines the distribution of offending data available across youth.

The remaining four measures of offending were all based on offending frequency. First, a total self-reported offending score was calculated for each youth by summing across all 23 items of the SRO. Second and third, items on the SRO were broken down into income offenses (10 items on the SRO) and offenses involving violence (10 items on the SRO). Income-related offenses were those used to generate revenue, gain material goods, or involved a transaction of some kind (e.g., using cheques or credit cards illegally, selling drugs, theft, etc.). Violent offenses were those involving aggression (e.g., fighting, taking something from someone by force, etc.) and could be viewed as more impulsive whereas income offenses may be more premeditated, although this general distinction is not absolute. Youths’ responses on items in each category were summed to create a self-reported income offending score and self-reported violent offending score.

Fourth, youths’ total number of official charges in the previous 3 months was added up to create a total official offending score. The correlation between total official offending and total self-reported offending was non-significant, with youth typically self-reporting far more delinquent activity than was reflected in official charges (see Table 10). This aligns with previous research suggesting that self-report is far more sensitive to offending behaviour than official records (see, e.g., Farrington, Jolliffe, Loeber, & Homish, 2007, who found an 80:1 ratio of self-reported vs. court petitioned offenses in a
large sample of juvenile delinquents). Originally, youths’ official offending was to be broken down into income and violent offending to mirror the self-report data; however, only four youth were charged with a violent offense and three with an income offense in the first follow-up period. Given this very low n per cell, it was decided to only examine total official offending. Descriptive data for youths’ offending across follow-up periods is provided in Table 11.

There was substantial positive skew within all offending frequency variables. For example, the total self-reported offending variable (3 months) had a skewness of 4.26 and kurtosis of 23.15, whereas a normal distribution should have skewness and kurtosis values ideally between 0 and +/-1 (Osborne, 2002). Given that regression assumes that variables are normally distributed, transformation was used to normalize the data with a value of 1 added to each score to eliminate any 0 values. While a square root transformation was not sufficiently powerful to normalize the self-report or official record scores, a natural logarithm transformation as well as logarithmic transformation with base 10 produced normal datasets (i.e., skewness and kurtosis within the 0 to +/-1 range) for all self-report data. However, the log10 transformation resulted in a greater loss of resolution (i.e., the variables were more compact and had less variance) suggesting that the natural logarithm, with its lower base, was the preferred method (Osborne, 2002). Even with transformation, the official offending data deviated somewhat from a normal distribution (e.g., at 3 months: skewness = 2.04, kurtosis = 3.68). Therefore, a more stringent significance level (p < .01) was adhered to for tests involving this variable given that the regression coefficient would be less reliable (Lumley, Diehr, Emerson, & Chen, 2002).

2.3.4.4. Risk Factors for Offending

In their meta-analysis, Cottle et al. (2001) found that age at first contact with the law was a significant predictor of recidivism. There was substantial convergent evidence for this variable despite the fact that it has been variously operationalized as age at first arrest (Hanson, Henggler, Haefele, & Rodick, 1984; Wierson & Forehand, 1995), age at first offense (Archwamety & Katsiyanni, 1998; Benda, Corwin, & Toombs, 2001), age at first conviction or first adjudication (Minor, Hartmann, & Terry, 1997; Myner, Santman, Cappelletty, & Perlmutter, 1998; Towberman, 1994), and age at first commitment
For the purposes of the current study, age at first contact with the law was represented by youths’ self-reported age at first arrest as this was believed to be the most sensitive indicator of contact with the legal system\(^3\).

The Delinquent Peers Scale was used to assess peer delinquency. This scale was developed by Thornberry, Lizotte, Krohn, Farnsworth, and Jang (1994) for the Rochester Youth Development Study and those authors found that scores were significantly predictive of recidivism. The scale consists of eight items that measure the proportion of the youths’ friends who were involved in various types of delinquent behaviors (e.g., theft, assaults). Youth responded using the following four-point Likert scale: (1) None of them, (2) Very few of them, (3) Some of them, and (4) Most of them. Values were summed and divided by the total number of items for each respondent. In their original article, Thornberry et al. (1994) reported the scale’s internal consistency to be .88 as measured by Cronbach’s alpha, and a more recent study reported an alpha of .93 (Le & Stockdale, 2005). Similarly, the internal consistency of the Delinquent Peers Scale in the current study was .91, indicating excellent reliability.

The Massachusetts Youth Screening Instrument-Second Version (MAYSI-2; Grisso & Barnum, 2006) Alcohol/Drug Use scale was used to assess substance use problems. Youth responded yes or no to 52 items that comprised six clinical scales, one of which is an Alcohol/Drug Use scale. Youth received one point for each alcohol/drug item they positively endorsed. The MAYSI-2 has been shown to have good psychometric properties, including good interrater reliability, test-retest reliability, construct validity, and concurrent validity (Archer, Stredny, Mason, & Arnau, 2004; Grisso, Barnum, Fletcher, Cauffman, & Peuschold, 2001), and was designed specifically for use with justice system-involved youth. The internal reliability of the Drug/Alcohol Use scale in the current study was good with a coefficient alpha of .75.

\(^3\) Youth self-reported on their age of first arrest and research assistants coded the PCL-YV, approximately 3 months prior to this study’s baseline interview. The mean number of days between these two interviews was 108 (SD = 28).
Each youth’s total score on the Psychopathy Checklist –Youth Version (PCL-YV; Forth, Kosson, & Hare, 2003) was used to represent levels of psychopathic personality traits. The construct of psychopathy has historically been considered to be comprised of deficits in interpersonal (e.g., manipulation for personal gain), affective (e.g., callous/lack of empathy), and behavioural domains (e.g., parasitic orientation), as well as antisocial or socially deviant traits (e.g., juvenile delinquency), although recent research has suggested that the interpersonal and affective components may be more central to the construct (Neumann, Kosson, Forth, & Hare, 2006). The term ‘psychopathy’ has been extended from adults to apply to juveniles despite the concern expressed by some scholars about applying pejorative personality styles to youth, who are still in a state of development (e.g., Edens & Vincent, 2008). The PCL-YV is the predominant measure of psychopathy in youth and contains 20 items. In the present study, these items were coded based on both file information and youths’ self-reported information by research assistants. The average PCL-YV score was 15.77 (SD = 7.3), although scores ranged widely from 3 to 32.

Previous research suggested that the intrarater reliability of the PCL:YV (as per a single-rater intraclass correlation; ICC 1) ranged from .82 (Spain, Douglas, Poythress & Epstein, 2004) to .96 (Forth et al., 2003) when coders were provided with adequate training. In the current study, an IRR of .89 (two-way random effects model, absolute agreement for single raters) was found between raters, suggesting that the training procedures employed in this study (detailed above) met the standards set by previous studies. In terms of internal consistency, the coefficient alpha for the PCL:YV in previous research has ranged from .73 (Skeem & Cauffman, 2003) to .94 (Forth et al., 2003; O’Neill, Lidz, & Heilbrun, 2003). Cronbach’s alpha for the PCL:YV total score in the current study was .87, suggesting that PCL:YV items are internally consistent. Total scores, rather than factor scores, were used in the current study because previous studies have found total scores to be predictive of recidivism in youth (e.g., Brandt, Wallace, Patrick, & Curtin, 1997; Gretton, McBride, Hare, O’Shaughnessy, & Kumka, 2001, Gretton et al., 2004; Salekin, 2008). Although recent research suggests that individual PCL-YV factors may be related to particular types of offending in youth (Corrado et al., 2004; Vincent, Vitacco, Grisso, & Corrado, 2003; Vincent et al., 2008), a
consensus as to the nature of these relationships has yet to be reached and the purpose of the current study is to control for well-established risk factors for offending.

2.4. Data Analyses

Data analyses examined whether procedural justice predicted each of the five types of offending across both follow-up periods. Further, analyses sought to examine whether any observed relationships between procedural justice and offending was mediated by youths’ beliefs about the legitimacy of the law. Mediation exists when a direct effect appears to exist between an independent variable (X) and a dependent variable (Y) (Figure 4), but when this relationship is accounted for by a mediator (M) that lies in between them (Figure 5). The causal steps strategy for testing mediation, popularized by Baron and Kenny (1986), is the most frequently employed in psychological research. Although some variability in applying this strategy exists, Preacher and Hayes (2004) recommend that analyses fulfil the following requirements: that X significantly predicts Y, that X significantly predicts M, and that M significantly predicts Y when controlling for X. Further, by testing the effect of X on Y when controlling for M, one can determine whether perfect mediation is occurring (i.e., if the effect of X on Y is reduced to zero) or if there is only partial mediation.

In line with these recommendations, for each dependent variable (i.e., offending behaviour at each time point) a simple mediation model was run that used regression to estimate four different parameters: (1) the total effect of the independent variable (i.e., procedural justice) on the dependent variable (i.e., reoffending) (Figure 4, path c) (2) the direct effect of the independent variable on the proposed mediator (i.e., legitimacy) (Figure 5, path a), (3) the direct effect of the mediator on the dependent variable, controlling for the independent variable (Figure 5, path b), and (4) the direct effect of the independent variable on the dependent variable, controlling for the mediator (Figure 5, path c’).

However, reviews of mediation analyses suggest that there are flaws in Baron and Kenny’s methods and that the Sobel test of mediation (Sobel, 1982), which tests the indirect effect of X on Y through M, is more statistically rigorous (Holmbeck, 2002;
The indirect effect is defined as the effect of the independent variable on the dependent variable via the mediator. Sobel’s test examines the strength of this effect and compares it to the null hypothesis that the indirect effect is 0. So long as there is a total direct effect of X on Y\(^4\), a significant indirect effect suggests mediation. As described by Preacher and Hayes (2004),

\[
\text{The indirect effect of } X \text{ on } Y \ldots \text{ is the product of the } X \rightarrow M \text{ path (a) and the } M \rightarrow Y \text{ path (b), or } ab. \text{ In most situations, } ab = (c - c'), \text{ where } c \text{ is the simple (i.e., total) effect of } X \text{ on } Y, \text{ not controlling for } M, \text{ and } c' \text{ is the } X-Y \text{ path coefficient after the addition of } M \text{ to the model (p. 718).}
\]

Unfortunately, there are certain assumptions upon which Sobel’s test relies (e.g., that \(ab\) is normally distributed under the null hypothesis) that may easily be violated in small samples such as the one used in this study. As such, in addition to generating a point estimate of the indirect effect using Sobel’s test, planned analyses included using a bootstrapped sample of 5000 to estimate the true indirect effect within a 95% confidence interval. Bootstrapping is a nonparametric resampling (with replacement) procedure that circumvents non-normality concerns by mimicking a large-scale, normally distributed sample. A macro developed by Preacher and Hayes (2004) for SPSS was used in the current study to enable bootstrapping in that software. The indirect effect is considered to be significantly different from zero at the \(p < .05\) level (i.e., mediation exists) if zero is not contained within the 95% confidence interval (Preacher & Hayes, 2004, 2008). Primary analyses employed the causal steps strategy for testing mediation, and Sobel’s test was used as a secondary test to confirm primary analyses.

In addition, power analyses were undertaken to determine what effect sizes planned primary data analyses could be expected to detect. The minimum odds ratio logistic regressions could be expected to detect was 2.25 for the 3 month follow-up, and 2.42 for the 6 month follow-up. All linear regressions—containing from one to five

\(^4\) Although the need for a significant total effect has been disputed, in this paper I have chosen to require it. For further discussion of whether a total effect is necessary, see Collins, Graham, and Flaherty (1998), MacKinnon (2000), and Shrout and Bolger (2002).
predictor variables—had sufficient power (i.e., .80 or greater) to detect medium or large effect sizes, defined as $f^2$ values of .15 and .35, but not small effect sizes ($f^2$ values $\leq .02$) (Cohen, 1988).

2.5. Results

2.5.1. Demographic Variables and Offending

First, the relationship between each offending variable and two demographic variables—age and gender—were examined using correlation, chi square analyses, and independent samples t-tests, as needed, to determine whether either of these variables would need to be controlled for in subsequent analyses. Neither was related to the dichotomized offending variable, frequency of self-reported total, income, or violent offending, or frequency of official offending at 3 months. At 6 months, age was related to offending, dichotomized, with youth who offended being younger on average ($M = 15.71$, $SD = 1.32$) than those who did not ($M = 16.36$, $SD = .76$). None of the other relationships were significant. As such, age was controlled for in primary analyses involving the dichotomized offending variable.

2.5.2. Does Procedural Justice Predict Offending?

Logistic regression was used to determine whether procedural justice predicted offending with the latter as a dichotomized variable. The model chi square for offending at 3 months was significant ($\chi^2 (1) = 14.21, p < .01$) and the Hosmer and Lemeshow Test was non-significant ($\chi^2 (8) = 6.30, p = .61$), suggesting that procedural justice had a significant effect on the model and that the model’s estimates fit the data acceptably well. Nagelkerke’s $R^2$ of .22 indicated a modest relationship between procedural justice and the dichotomized offending variable, and prediction success increased from 69.0% in the constant-only model to 73.8% in the full model, again suggesting only a weak improvement in the classification error rate based on the inclusion of procedural justice in the model. However, the Wald criterion indicated that procedural justice made a significant contribution to prediction, and the $e^\beta$ value was 0.15 which, when inverted to account for the inverse relationship between predictor and criterion, was 6.67. This indicated that when procedural justice scores are raised by one unit (e.g., raising a
youth’s score from 1 to 2) the odds ratio is 6.67 times as large and therefore youth are 6.67 times more likely to fall into the nonoffender category (Table 12). In contrast, the relationship between procedural justice and the dichotomized offending variable at 6 months, controlling for age, was non-significant (Table 12).

Next, a series of simple linear regressions was used to determine whether procedural justice predicted frequency of reoffending at 3 and 6 months— that is, whether there was a significant total effect of X on Y. Both the causal steps strategy and Sobel’s (1982) tests of mediation require this significant total effect for mediation analyses to be undertaken. Results indicated that procedural justice was significantly and inversely predictive of self-reported offending frequency, including the frequency of total offending, income offending, and violent offending at the 3 month follow-up (see Table 13). Procedural justice was not related to the frequency of official offending at 3 months based on the use of a more stringent \( p < .01 \) value, which was employed due to the non-normality of this variable. Procedural justice was not related to any of the offending frequency variables at 6 months. As such, mediation analyses were undertaken only for the self-reported offending frequency variables that were administered at the 3 month follow-up.

### 2.5.3. Do Legitimacy Beliefs Mediate the Relationship Between Procedural Justice and Offending?

The second requirement of the causal steps strategy for testing mediation is that a direct effect exists between the independent variable and the mediator variable. As such, a regression was used to examine whether procedural justice (X) predicted legitimacy (M). Results indicated that procedural justice was strongly and positively predictive of legitimacy, \( F(1, 90) = 126.35, p < .01 \), allowing analyses to continue.

The third requirement of the causal steps strategy is that a direct effect exists between the mediator variable and the dependent variable, when controlling for the independent variable. The third set of regression analyses thus examined whether legitimacy (M) predicted each of the self-reported offending frequency variables at 3 months (Y) when controlling for procedural justice (X). Results from hierarchical regression analyses indicated that legitimacy did not predict total self-reported offending, self-reported income offending, or self-reported violent offending at 3 months when
controlling for the predictive power of procedural justice (Table 14). This suggested that legitimacy did not mediate the relationship between procedural justice and offending.

To confirm this finding, Sobel’s test was employed. The true indirect effect of procedural justice on self-reported total offending at 3 months via legitimacy beliefs was estimated, with bootstrapping, to lie between -.712 and .180. Given that zero was contained within the 95% confidence interval, Sobel’s test aligns with the causal steps finding and suggests that mediation did not occur. Likewise, the indirect effect of procedural justice on self-reported income and violent offending at 3 months via legitimacy was estimated to lie between -.689 and .080, and between -.432 and .393, respectively. As such, in all three cases, the indirect effect of procedural justice on offending via the mediator, legitimacy, was not significantly different from 0 at $p < .05$, indicating that the total effect of procedural justice on self-reported offending is not better accounted for by the proposed meditational model.

2.5.4. Does Procedural Justice Continue to Predict Offending When Controlling for Other Risk Factors?

A second set of analyses was undertaken to determine whether procedural justice continued to be associated with offending frequency even after the predictive power of well-known risk factors for offending was accounted for. Given that legitimacy did not mediate the relationship between procedural justice and offending, in contrast to predictions, this construct was eliminated from analyses.

First, it was necessary to determine whether the chosen risk factors were related to offending in the current sample of youth on probation. Although a younger age at first contact with the law, association with delinquent peers, substance use difficulties, and psychopathic features have all been associated with offending in other studies, findings are rarely entirely consistent (see Cottle et al., 2001, for a review). As such, exploratory

Note that, although Procedural Justice Scale and Legitimacy Scale scores were strongly correlated ($r = .67, p < .01$), collinearity diagnostic tests indicated no multicollinearity problems in this regression equation (tolerance = .42, VIF = 2.36).
correlational analyses were undertaken to determine which of these four variables were associated with offending at both follow-up periods (Table 15). Although procedural justice did not predict frequency of official offending at 3 months or any of the measures of offending at 6 months, these variables were included in correlational analyses as a manipulation check. That is, the absence of a relationship between procedural justice and offending at 6 months, in contrast to the strong and highly significant relationship between procedural justice and offending at 3 month, could be indicative of an effect that truly diminishes over time, or it could be related to psychometric problems with the 6 month offending variables themselves (e.g., because of attrition between follow-ups, lower internal reliabilities of the scales, less offending variability, etc.). If the latter explanation is true, then one would not expect to find a relationship between well-established risk factors for offending and offending at 6 months. As such, correlational analyses were undertaken with all offending variables, although subsequent hierarchical regression analyses were only performed with those offending variables with which procedural justice was related.

Results indicated that all four risk factors were associated with self-reported total offending and violent offending at 3 months, and that self-reported income offending was associated with the presence of delinquent peers, psychopathic features, and alcohol/drug use, but not age at first arrest. Subsequent hierarchical regression analyses only included variables that were significantly correlated with the offending type of interest. The remaining offending variables—official offending at 3 months, and self-reported and official offending at 6 months—also demonstrated strong correlations with well-established risk factors for offending. The exception was age at first arrest, which was only associated with official offending at 3 and 6 months, but none of the self-reported offending at 6 months variables. These findings suggested that the 6 month offending variables were functioning adequately, and that the absence of an association between procedural justice and offending at 6 months is not related to measurement issues.

Three hierarchical multiple regression analyses examined whether procedural justice added unique predictive power to models in which risk factors for offending were controlled. For the 3 month follow-up, the risk factors associated with each self-reported offending outcome variable were, in combination, significantly predictive of offending in
all three cases (self-reported total, income, and violent offending). However, procedural justice contributed unique predictive power across the models even after controlling for the other risk factors for offending. As can be seen in Table 16, age at first arrest, PCL-YV scores, MAYSI-2 Alcohol-Drug Use scores, and Delinquent Peers scale scores together accounted for 35.7% of the variability in total self-reported offending, while procedural justice scores in isolation accounted for an additional 8.3% of the variability. Similarly, PCL-YV scores, MAYSI-2 Alcohol-Drug Use scores, and Delinquent Peers scale scores together accounted for 27.8% of the variability in self-reported income offending, with youths’ scores on the Procedural Justice Scale adding 4.8%. Finally, youths’ age at first arrest, PCL-YV scores, MAYSI-2 Drug/Alcohol Use scores, and Delinquent Peers scale scores together accounted for 29.1% of the variability in self-reported violent offending, and Procedural Justice Scale scores accounted for an additional 7.2% of unique variability.

2.6. Discussion

The purpose of the current study was to gain a better understanding of the influence of procedural justice and legitimacy on offending in a sample of youth on probation. Specifically, it aimed to determine whether procedural justice predicted levels of offending at 3 and 6 month time-points, and whether legitimacy mediated this relationship. The current study also sought to examine whether procedural justice and legitimacy continued to be associated with offending after the predictive power of other, well-established risk factors for offending were included in analyses.

2.6.1. Does Procedural Justice Predict Offending?

Results partially supported this study’s first hypothesis, which was that procedural justice would predict offending at 3 and 6 months. Linear regression analyses demonstrated that procedural justice was significantly and inversely associated with self-reported total offending, income offending, and violent offending at the 3 month follow-up period. Procedural justice was also related to offending at 3 months when this variable was dichotomized (no offending vs. offending) based on both official and self-reports. These findings converge with the one previous study that examined the
influence of procedural justice on youths’ behavioural compliance; that study found that procedural justice ratings predicted custodial behavioural infractions 2 weeks later (Harvell, 2009). Procedural justice was not, however, related to frequency of official offending, operationalized as a youths’ total number of official charges in the previous 3 months. This is perhaps unsurprising given that self-reported and official offending were uncorrelated and that, when both self-reported and official offending data were available, self-reported offending exceeded official offending 70% of the time. Only 24% of youth for whom data was available had any official report of offending, whereas 70% of youth self-reported at least one instance of offending. These data align with previous research suggesting that youth are caught and charged for only a small proportion of the crimes they actually commit (Brame et al., 2004; Cohen, 1986; Farrington et al., 2007; Kirk, 2006), although there was a small number of youth in this sample who had official charges but self-reported no offending whatsoever.

In contrast to hypotheses, procedural justice was not related to the dichotomized offending variable or to official or self-reported frequency of offending at 6 months. It appears that the effects of experiences of procedural justice on offending behaviour wane for youth, whereas procedural justice has been shown to have more lasting effects on adult behaviour. This lends further weight to the notion that adolescents are qualitatively different from adults and highlights the need for developmentally-sensitive models of procedural justice. For example, it may be that procedural justice has a more temporary effect on offending behaviour in youth because their behaviour and opinions are more easily swayed by peers (see, for example, Gardner & Steinberg, 2005). Alternatively, it may be that, because youths’ attitudes and beliefs are generally less stable than those of adults (Alwin and Krosnick, 1991; Vollebergh, Iedema, & Raaijmakers, 2001), and because they tend to be present-focused, youth forget or disregard past experiences of procedural justice and focus primarily on the fairness of their treatment in their most recent experiences with justice officials. In this way, experiences of procedural fairness may cease to have an effect on youths’ behaviour 6 months later because subsequent experiences of fairness or unfairness with justice officials in the interim are more salient. Whatever the case, it is worthwhile to consider why effects of procedural justice on behaviour might be more time-limited for youth than adults.
The current study is the first to demonstrate that procedural justice is associated with offending in a sample of young offenders, and it additionally shows that procedural justice has an effect on youths’ offending for at least 3 months. This supports the proposition that procedural justice has the power to influence young offenders’ risk for recidivism.

2.6.2. Do Legitimacy Beliefs Mediate the Relationship Between Procedural Justice and Offending?

Although procedural justice predicted offending at 3 months and also predicted legitimacy (the first two requirements of Baron and Kenny’s [1986] meditational analyses), legitimacy did not predict self-reported offending at 3 months when controlling for procedural justice. These results suggest that legitimacy does not fully or partially mediate the relationship between procedural justice and offending. While this relationship has been hypothesized for over a decade (Tyler, 1997; 2003), and while many researchers have demonstrated links between each of these constructs individually, a full meditational model has yet to be directly examined in either the adult or youth literature. Further, there have only been a small handful of studies examining procedural justice and legitimacy in youth at all. This is despite the theoretically heightened importance of these constructs to adolescents, who are still in the process of developing beliefs and attitudes toward the law and legal authorities, a process known as legal socialization.

The results of the current study strongly support the notion that procedural justice and legitimacy are related, as has been found in a wide variety of studies with adults as well as six studies with youth (Fagan & Tyler, 2005; Harvell, 2009; Hinds, 2007; Kaasa et al., 2008; Piquero et al., 2005; Reisig & Lloyd, 2009). Whereas these previous studies examined the relationship between experiences of procedural justice in the context of particular justice system players (e.g., police), the current study suggests that this relationship exists when tapping youths’ experiences with the justice system as a whole as well (i.e., with police, judges, lawyers, & probation officers). That is, circumscribed experiences of fair treatment with justice system players are related to and may impact youths’ global beliefs about the legitimacy of the law and legal authorities. This finding represents additional convergent evidence that the manner in which youth are treated
has the power to influence youth’s sense of obligation to obey the law and the extent to which they support the justice system.

2.6.3. **Does Procedural Justice Continue to Predict Offending When Controlling for Other Risk Factors?**

When controlling for the predictive power of documented risk factors for offending (i.e., age at first contact with the law, substance use problems, peer delinquency, and levels of psychopathy), procedural justice continued to have a significant and unique relationship with self-reported offending at 3 months. The lack of control for risk factors for offending in procedural justice research is a major limitation of this literature. While studies normally examine whether demographic variables influence observed relationships between procedural justice and offending, no studies to date have examined whether the impact of procedural justice on offending is unique, or whether it is accounted for by the presence of well-known risk factors for offending.

In the current study, procedural justice continued to have a significant impact on the prediction of total self-reported offending at 3 months over and above the predictive power of youths’ age at first arrest and scores on measures of psychopathy, substance use, and peer delinquency. Procedural justice also had a unique relationship with self-reported violent offending at 3 months when controlling for youths’ scores on these same measures, and with self-reported income offending at 3 months when controlling for youths’ scores on measures of psychopathy, substance use, and peer delinquency. Notably, only some of these risk factors had a unique relationship with offending over and above their combined predictive power. In contrast, procedural justice made a unique contribution to the hierarchical regression models in all three cases and its impact was relatively equivalent to that of the other risk factors. For example, in the hierarchical regression that examined total self-reported offending frequency, the four risk factors accounted for 35.7% of the variance in offending, and procedural justice accounted for an additional 8.3% of variance on its own.

These results suggest that the relationship between procedural justice and offending is unique and not accounted for by offending risk factors. That is, it appears that individual experiences of fairness in the justice system impact the likelihood that youth will reoffend over the subsequent 3 months, and that this relationship is not a
spurious one better explained by the confounding effects of variables like psychopathy, delinquent peers, substance use issues, or an earlier age at first arrest. However, this does not discount the possibility that other confounds exist that would account for the observed relationship. Researchers should continue to explore whether other predictors of offending also influence perceptions of procedural justice.

2.6.4. Limitations

Although the current study represents an significant contribution to the literature on procedural justice, legitimacy, and offending in youth, there are some limitations worth noting. First, some of the data used were obtained cross-sectionally. Although recidivism was measured longitudinally, procedural justice and legitimacy were measured concurrently. As such, the causal relationship between procedural justice and legitimacy cannot be fully determined. While there are conceptual reasons to believe that procedural justice influences legitimacy, it is also possible that individuals who believe more strongly in the legitimacy of the law are predisposed to believe they were fairly treated by justice officials. That said, the longitudinal research that has been conducted supports the notion that experiences of procedural justice are predictive of later legitimacy beliefs (e.g., Paternoster et al., 1997; Tyler, 2006b), suggesting that the causal arrow may run in the direction predicted by procedural justice theories. Further research examining how these two variables interact over time will help to clarify this relationship.

Although the lack of a standardized procedural justice tool is another potential limitation of this study, this drawback was tempered as much as possible. For example, the tools used in the current study were altered only slightly from their original versions, and the use of a secondary procedural justice measure allowed for a demonstration of concurrent validity. The measure used was also found to be internally consistent. Future researchers may wish to develop well-validated procedural justice and legitimacy measures that will allow for greater confidence in the construct validity of these measures. The current study also had a relatively small sample size. Although the power to detect medium to large effect sizes was at or above 0.80, meeting conventional requirements, this study did not have adequate power to detect small effects. Although
the clinical meaningfulness of small effect sizes is in itself questionable in this line of research, a larger sample size would have allowed these effects to be documented.

2.6.5. **Implications**

Over the past 35 years, our understanding of the relationship between procedural justice and offending has gradually deepened. However, it is only in the past 6 years that a small but growing research base has examined how procedural justice models apply to youth. Understanding the relationship between procedural justice and recidivism in youth is certainly as important as understanding this same relationship in adults. Youth are still in the process of legal socialization—that is, they are still developing their attitudes towards the law and legal authorities as well as toward offending. Given that most adult offenders began offending during adolescence (Gomez-Smith & Piquero, 2005), if youth justice systems are able to provide youth with experiences of procedural justice, they may be able to deter a greater proportion of youth from developing into life course persistent offenders.

The current study suggests that legitimacy does not account for the observed relationship between procedural justice and offending in youth. However, previous research with adolescents has consistently found a relationship between legitimacy and other types of reported legal compliance (e.g., willingness to assist police), albeit without controlling for procedural justice. It is possible that both legitimacy and procedural justice affect youths’ willingness to obey the law, but the pathways by which these constructs influence youths’ decision-making are different. It is also possible that legitimacy beliefs are related to the way youth believe that they should behave (e.g., a youth who believes the law to be legitimate may endorse a greater willingness to cooperate with legal authorities and the belief that breaking laws is wrong) rather than the way they actually behave. For example, research on adolescent risk-taking has found that interventions designed to change youths’ attitudes or beliefs tend to change just that—their beliefs—without having a measurable effect on their actual behaviour (Steinberg, 2004; 2007). Research on morality similarly suggests that moral responsibility, defined as the need to have one’s actions reflect one’s moral judgements, develops late in adolescence (Keller & Edelstein, 1993). Finally, youths’ psychosocial immaturity, including their poorer impulse control, ability to delay gratification, regulate
their emotions, and resist peer influences, may also impact their ability to act according to their global beliefs about the legitimacy of the law (Steinberg, 2007).

In contrast, the fairness of youths’ recent experiences with justice system players may engender a more affective, rather than cognitive, response. Given that mid-adolescent youth are particularly sensitive to emotional stimuli and that there is relative imbalance during this developmental phase between socioemotional sensitivity and cognitive control (Steinberg, 2004), youth may be more likely to act on recent experiences that produced an affective response, rather than on their cognitive values. The fact that youths’ experiences of procedural justice impacted their behaviour 3 months later, but not 6 months later, further suggests that this affective response is temporary and does not result in lasting changes in youths’ behaviour.

Finally, the results of the current study suggest that examining procedural justice in isolation of other risk factors for offending should be done with caution. While procedural justice was found to have a unique relationship with offending that is not accounted for by the presence of psychopathic personality characteristics, an earlier age at first arrest, delinquent peers, and substance use difficulties, this study was far from exhaustive. There are potentially many more variables that could be associated and/or confounded with perceptions of procedural justice. While research aimed at understanding the complex relationship between youths’ perceptions of the fairness of their treatment and their subsequent behaviour are of value, it is equally important to remember that many other variables may be influencing youth and their subjective evaluation of their treatment. Further research into the relationship between procedural justice, other risk factors for offending, and personality variables is needed to better understand how procedural justice interacts with intra-individual as well as environmental factors.

2.7. References


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3. Chapter 3. General Discussion: Key Findings and Future Directions

3.1. Key Findings

The preceding chapters document some important new findings about procedural justice as it relates to young offenders. A sample of youth on probation in BC, Canada, was followed for 6 months, allowing for an examination of the influence of intra-individual characteristics on perceptions of procedural justice and legitimacy as well as the association between procedural justice, legitimacy, and offending over time.

Specifically, chapter 1 examined whether selected individual differences were associated with youths’ perceptions of procedural justice and legitimacy. Findings suggested, first, that neither basic demographic factors nor legal history variables were associated with youths’ perceptions of procedural justice and legitimacy. The one exception was that youth aged 12-14 believed more strongly in the legitimacy of the law than did 15 year olds. Second, among mental health variables, current drug/alcohol use and a history of traumatic experiences predicted youths’ perceptions of both procedural justice and legitimacy, adding further weight to the notion, first suggested in the adult literature, that mental health/emotions are an important factor in understanding how these perceptions develop. Third, the interpersonal, lifestyle, and antisocial facets of psychopathy were inversely related to youths’ perceptions of legal legitimacy. Given that this is the first time that psychopathic characteristics have been evaluated concurrently with perceptions of procedural justice, this finding warrants replication. Still, the notion that mental health and personality variables influence youths’ perceptions of the fairness of their treatment, and even their beliefs about the legitimacy of the justice system as a whole, has important implications for future research.

Chapter 2 went on to explore whether youths’ perceptions of procedural justice were predictive of later offending. Results indicated that procedural justice was significantly and inversely associated with the frequency of self-reported total offending,
income offending, and violent offending at the 3 month follow-up period but not the 6 month follow-up period. This suggests that the effect of procedural justice on behaviour may be more temporary in youth than in adults. Although legitimacy was strongly related to procedural justice, it did not mediate the relationship between procedural justice and offending. Finally, chapter 2 examined whether procedural justice continued to be associated with offending when the predictive power of well-established risk factors for offending (i.e., age at first arrest, delinquent peers, substance use, and psychopathic features) were controlled. Results indicated that procedural justice did, indeed, make a unique contribution to the prediction of offending over and above these other variables.

In sum, the current dissertation provides information both about the factors that influence youths’ perceptions of procedural justice and legitimacy, as well as mechanisms by which procedural justice affects offending behaviour. While this research makes an important contribution to the extant literature, it also leads to the consideration of new areas of study.

3.2. Future Directions for Research

3.2.1. Conceptual Clarification

Researchers studying procedural justice have yet to reach a consensus regarding two core questions: what exactly is procedural justice, and how is it related to associated constructs? In terms of what procedural justice is, Thibaut and Walker (1975) originally conceptualized procedural justice as the extent to which one is able to participate, or have a voice, in their proceedings. In this way, they viewed procedural justice as relatively unidimensional. Just over a decade later, Lind and Tyler (1988) reconceptualised procedural justice as being rooted in relational concerns (e.g., respect in interactions) and as having several distinct components (Tyler, 1989; Tyler, Degoe, & Smith, 1996). As outlined in the Preface, following Lind and Tyler’s (1988) comprehensive review of the literature on procedural justice, interest in the topic grew at a rapid rate, and studies (primarily of adults) since then have documented anywhere from one to eight or nine different facets of procedural justice (Fondacaro, Jackson, & Luescher, 2002; Lissak & Sheppard, 1983; Sheppard & Lewicki, 1987; Tyler, 1988).
However, as noted by Blader and Tyler (2003) “there has been a paucity of empirical research investigating the range of process fairness concerns and how people naturally group procedural justice’s constituent elements” (p. 748) and this has led to a general lack of consensus as to how procedural justice should be conceptualized in terms of its scope and constituent parts. While some models have become more widely accepted and utilized—in particular, Tyler’s four-component model of voice, neutrality, respect, and trust (Tyler, 2007)—others continue to be developed. Unfortunately, without a sound theoretical framework, the field may struggle to move forward in a cohesive manner.

This issue is further complicated by the fact that procedural justice models were developed with adults in mind, and there is little research examining how the construct of procedural justice changes or remains the same over the course of development. That is, whether youth consider different factors than do adults when making judgments about the fairness of their treatment is currently unknown. Further research delineating exactly what constitutes a core facet of procedural justice for both youth and adults, and what does not, would help the field operationally define procedural justice. To manage and mitigate these concerns as much as possible, the current dissertation sought to rely on a widely used model of procedural justice—namely, Tyler’s four component model, described above—and used an existing procedural justice tool developed for youth, with only slight modifications, to allow for comparisons across studies.

Not only does a theoretical framework for procedural justice need to describe its component parts, it also needs to delineate the relationship between procedural justice and related constructs. For example, studies nearly uniformly posit that experiences of procedural justice influence beliefs about the legitimacy of the law (see, for example, Sunshine & Tyler, 2003; Tyler, 2003). In contrast, distributive justice (or, the fairness of outcomes) is sometimes viewed as leading to beliefs in the legitimacy of the law (Tyler, 2007) or as a product of beliefs in the legitimacy of the law (Tyler, 2003). Distributive justice is also strongly correlated with procedural justice judgments in most studies, but the exact nature of the relationship between procedural justice and distributive justice remains controversial (Hauenstein, McGonigle, & Flinder, 2001). Studies with adults have yet to fully explain the relationship between these variables and others (e.g., instrumental justice, outcome satisfaction), and studies with youth have only begun to
explore them. A careful examination of the extant literature to determine where the preponderance of evidence lies in terms of the relationship between these constructs and to determine which relationships require further clarification would be helpful in achieving a consistent conceptualization of the procedural justice model, as a whole. The current dissertation provided further evidence that procedural justice and legitimacy are strongly related in a sample of youth, but did not explore the relationship between procedural justice and constructs like distributive justice and outcome satisfaction. However, a longitudinal study like this one would be helpful in understanding these relationships as it would allow for an examination of their interplay over time.

3.2.2. Measurement

The issue of how to conceptualize procedural justice is closely entwined with the issue of how to measure it. That is, it is virtually impossible to operationalize a construct without first knowing what one is trying to measure. Indeed, the lack of a consistent operationalization of procedural justice as well as the absence of standardized measures have been cited as some of the most notable limitations of this literature (Fondacaro et al., 2002). This problem characterizes studies of adults as well as youth. At present, a wide variety of unique measures have been developed to evaluate perceptions of procedural justice (Tyler & Lind, 1992) with authors basing their measures on previously developed tools as well as their preferred theoretical conceptualization of the construct. Indeed, one meta-analysis found that, of 63 studies using a procedural justice measure, only four procedural justice scales were used more than once, with the vast majority of studies developing their own, unique scales (Hauenstein et al., 2001). As noted above, the current dissertation adopted an existing procedural justice measure in an attempt to avoid perpetuating this pattern, although slight modifications were necessary because measures are generally designed to answer a specific question (e.g., to evaluate the fairness of youth’s treatment by police). This is problematic because it forces researchers to modify the measure based on their own research question. The development of a generic procedural justice tool would help to ameliorate this issue and would allow for the more widespread use of a single measure.

The lack of a single or consistent operationalization of procedural justice has led to concerns about the psychometric properties of the measures employed. As noted by
Henderson, Wells, Maguire, & Gray (2010), “the existing literature pays little attention to the reliability and validity of measures of perceived procedural justice, relying on an inconsistent pool of indicators and haphazard specification of the underlying structure of these perceptions” (p. 386). Concerns about the validity of measures are particularly salient. Whether different researchers are adequately tapping the construct of procedural justice wholly or partially, and whether the multifarious procedural justice measures being used demonstrate convergent validity is unknown; studies to date have largely failed to use more than one procedural justice tool to determine whether convergent validity exists.

Although this difficulty with measurement has plagued the adult literature since its inception 35 years ago, researchers are now beginning to attempt to ameliorate the problem (e.g., Henderson et al., 2010; Reisig, Bratton, & Gertz, 2007). The main message and caution these authors convey is that coefficient alphas and a guiding theory for a procedural justice scale are no longer enough. They suggest that many items traditionally used in procedural justice research may not discriminate between related concepts (e.g., between procedural justice and legitimacy), that items believed to reflect procedural justice may reflect a different construct altogether, and that some items may far better represent the construct of procedural justice than others, making a summated score inappropriate. In sum, the authors above suggest that continued, in-depth explorations of the nature of the procedural justice construct and the measures that reflect it are needed. Further, while steps are currently being taken to improve the psychometric properties of adult measures of procedural justice, procedural justice measures developed for youth have not yet received the same attention. Given that research on procedural justice in youth is still in its relative infancy, there is an opportunity to avoid the pitfall of continually modifying, adapting, and developing procedural justice tools without attending to issues of validity.

Given these issues related to the psychometric properties of procedural justice measures, the current dissertation required youth to respond to two procedural justice measures, the index measure as well as an additional measure used in a previous study examining procedural justice in youth (Kaasa, Malloy, & Cauffman, 2008). The strong convergent validity demonstrated by these measures, as well as the results of additional tests of the measurement of properties of these measures (i.e., internal reliability alpha),
suggested that the procedural justice tool used in this dissertation was relatively psychometrically sound. However, studies focused exclusively on the psychometric properties of procedural justice tools developed for youth are needed to fully resolve this issue.

Finally, the measurement of procedural justice, to date, has focused exclusively on subjective perceptions of fair treatment. This is understandable, given that perceptions of procedural justice are, by nature, subjective. However, objective measures of justice system fairness may give us some insight into the extent to which systematic differences in perceptions of procedural justice (e.g., based on individual differences) are related to biased subjective evaluations or true differences in the way that certain groups are treated. For example, experimental studies in which justice system officials, like probation officers, are provided with vignettes and asked to report on the manner in which they would treat the described youth have started to provide some insight into the way that personality and social history characteristics can influence youths' treatment (Bridges & Steen, 1998; Horwitz, Widom, McLaughlin, & White, 2001; Vidal & Skeem, 2007). Similar studies could be used to investigate the extent to which youth are treated with respect, given a voice, allowed to participate, and treated impartially by justice officials based on mental health status or other individual difference variables. More difficult, but perhaps more revealing, research could be conducted in the field if justice officials and youth consented to being observed during interactions. These interactions could then be coded based on the components of procedural justice and comparisons could be made between youth. However, as noted above, this research would be challenging and time-consuming.

3.2.3. Adolescence and Development

At present, our understanding of how procedural justice functions and changes over the course of adolescent development is lacking. Some studies have attempted to take developmental factors into account when studying procedural justice by examining differences by age. However, a broad body of research suggests that age is an imperfect measure of adolescents’ levels of cognitive, social, and emotional development, which together comprise youths’ “maturity of judgment” (Cauffman & Steinberg, 1995, 2000; Steinberg & Cauffman, 1999). The basic notion underlying the
maturity of judgment model is that adolescents differ from adults in their sense of personal responsibility, perspective-taking abilities, and ability to self-inhibit (Cauffman & Steinberg, 2000). All three of these psychosocial factors may have implications for the manner in which youth evaluate the fairness of their treatment, but perspective-taking skills are particularly salient. For example, one proposed aspect of procedural justice is neutrality, or the relative equivalence of youths’ treatment irrespective of their personal characteristics. Youths’ ability to gauge whether they are being treated comparably to other youth is dependent on their ability to take the perspective of others and disengage from an egocentric point of view. As such, youth may feel unfairly treated by justice officials without necessarily experiencing differential treatment. Continued longitudinal research in which youths’ psychosocial maturity and their perceptions of procedural justice are monitored would help clarify the interaction between these two constructs.

Longitudinal research will also help to better understand the relationship between perceptions of procedural justice and offending over time. For example, many studies examine the effect of procedural justice on future offending, as did the current dissertation. However, a limited number of studies have also examined the effect of offending behaviour on youths’ beliefs about the justice system—for example, Piquero, Fagan, Mulvey, Steinberg and Odgers’ (2005) study that found that youths’ number of previous arrests was inversely related to legitimacy ratings. Longitudinally studying the time ordered relationships between perceptions of procedural justice and offending would help to clarify the directionality of the relationship between these two variables and possibly reveal a reciprocal interaction. For example, while experiences of unfair treatment at the hands of justice officials may make youth more likely to offend again, youths’ decision to offend may increase the likelihood that they perceive their future treatment by justice officials as unfair. Research on cognitive dissonance—the psychological state in which one’s beliefs, attitudes and behaviours are at odds (Festinger, 1957)—suggests that behaving in a way that contradicts one’s beliefs is aversive (Elliot & Devine, 1994). It further states that individuals will be motivated to resolve this contradiction by either changing their behaviour or beliefs so that the two are aligned. Applied to the current discussion, if youth behave in a way that indicates a disregard for the justice system (i.e., by offending) they may be less likely to endorse fair treatment by the police when they are caught, for example, because their impressions
and perceptions would then be at odds with their behaviour (i.e., believing the justice system to be fair and respectful but violating laws nonetheless).

Continued longitudinal research would not only clarify the interaction between procedural justice and offending, it would also reveal whether these relationships change over the course of development. As noted above, current models of procedural justice are largely based on adult studies and have only recently been extended downward to youth. As a consequence, the models developed are static—they do not take developmental change into account. Research examining the stability of procedural justice models from childhood through adolescence, adulthood, and late adulthood may reveal important differences in the way that procedural justice functions and its correlates across development. For example, the current dissertation found that the effects of procedural justice on offending were not as long lasting in this sample of adolescent offenders than has been found in studies of adults. This is just one example of the types of developmental differences in models of procedural justice that may be discovered as research progresses.

3.2.4. Individual Differences

Finally, there appears to be increasing awareness of the potential impact of individual differences on perceptions of procedural justice. Research has started to examine both how individual differences impact perceptions of procedural justice as well as how perceptions of procedural justice can influence an individual’s emotional state (Tatar, Kaasa, & Cauffman, 2011). Although procedural justice has, historically, fallen within the purview of social psychology, it has received increasing attention from other disciplines, including forensic and clinical psychology. The scope of procedural justice research has, likewise, broadened and it has become apparent that mental health issues, in particular, are relevant to perceptions of procedural justice. Offending is a commonly used outcome measure in procedural justice research and youth who come into contact with the justice system have much higher rates of mental illness than community samples of adolescents (Teplin et al., 2006). If mental health status influences youths' perceptions of procedural justice, attempts to increase the likelihood that youth will experience their treatment as fair will need to take mental illness into account. The current dissertation examined mental health using a brief screening
measure, the MAYSI-2, however future researchers may choose to engage in a more in-depth analysis of youths’ mental health difficulties by using diagnostic measurement tools. Given that this dissertation found an association between certain mental health difficulties and procedural justice, qualitative research aimed at understanding why youth with mental health difficulties perceive the justice system to be less fair, along with using more objective measures of procedural fairness, may help us better understand the cause of observed differences. Finally, there are many other individual difference variables that have yet to be studied in the context of procedural justice (e.g., IQ, moral development, psychosocial maturity, nature of offenses, etc.). Future research should continue to expand the scope of procedural justice research so that we can gain a better appreciation of how individual difference variables influence, or are influenced by, perceptions of procedural justice.

In sum, the current dissertation, as well as past research, highlights the importance and relevance of procedural justice and legitimacy to youth. Thankfully, research is at an early stage, providing the opportunity to move forward in a way that is both systematic and cautious. Caution is required to avoid the pitfalls of the past (e.g., a lack of focus on the psychometric properties of measures) and a systematic approach will ensure that research is conducted in a manner that is logical and practical, rather than haphazard (e.g., developing a strong theoretical foundation prior to examining the relationship between constructs). However, this systematic and cautious approach does not preclude the continued exploration of many new exciting avenues of inquiry, including the examination of new and unexplored correlates of procedural justice and legitimacy, such as mental health status and personality characteristics, as well as attempting to understand the progression of procedural justice models over the course of development.

3.3. References


Appendices
## Appendix A.

### Tables for Chapter 1

**Table 1. Demographic characteristics**

<table>
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Table 2. *Descriptive characteristics of measures*

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*Note: higher scores indicate greater perceived procedural justice and legitimacy, more mental health symptoms (i.e., more “yes” responses), and more psychopathic characteristics

Table 3. Procedural Justice Scale scores and Legitimacy Scale scores by gender

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<td>SD</td>
<td>N</td>
<td>M</td>
<td>SD</td>
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<td>.44</td>
<td>.11</td>
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<td></td>
<td></td>
<td></td>
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*Note: higher scores indicate greater perceived procedural justice and legitimacy
**Table 4.** Procedural Justice Scale scores and Legitimacy Scale scores by ethnicity

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*Note: higher scores indicate greater perceived procedural justice and legitimacy

**Table 5.** Correlations between legal history variables and average Procedural Justice and Legitimacy scale scores

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<td>0.16</td>
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</table>

*p < 0.05, **p < 0.01

**Table 6.** Correlations between MAYSI-2 subscale scores and Procedural Justice and Legitimacy scale scores

<table>
<thead>
<tr>
<th>Subscale</th>
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<th>Legitimacy</th>
</tr>
</thead>
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<td>Alcohol/Drug Use</td>
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<td>-0.24*</td>
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<tr>
<td>Angry/Irritable</td>
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<td>-0.16</td>
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<td>Depressed/Anxious</td>
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<td>Thought Disturbance</td>
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<td>-0.09</td>
</tr>
<tr>
<td>Traumatic Experiences</td>
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<td>-0.31*</td>
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*p < 0.05, **p < 0.01
Table 7. Correlations between PCL:YV subscale scores and Procedural Justice and Legitimacy Scale scores

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<td>Interpersonal</td>
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<td>Affective</td>
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<td>-0.14</td>
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<td>Lifestyle</td>
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<td>-0.32**</td>
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<td>Antisocial</td>
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</tr>
<tr>
<td>Total Scores</td>
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<td>-0.29**</td>
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*p < 0.05, **p < 0.01
Appendix B.
Figures for Chapter 1

Figure 1. Flow chart of procedures by which youth on probation were recruited and enrolled in the study

367 youth were approached at probation offices

338 youth expressed interest in participating

29 youth were not interested in participating

128 youth were eligible and became enrolled

210 youth did not become enrolled

91 youth were declined because they did not meet inclusion criteria

51 youth decided they were not interested after hearing more about participation requirements

27 youth did not become enrolled for a variety of other reasons

24 youth were declined because of a lack of guardian consent

17 youth could not be reached after initial contact at the probation office

102 youth continued on to complete their 3 month interview (the current study’s baseline interview)
Figure 2. Procedural Justice Scale scores and Legitimacy Scale scores by age group.
Appendix C.

Tables for Chapter 2

Table 8. Demographic characteristics

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<td>Gender</td>
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Table 9. **Descriptive characteristics of measures***

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</tr>
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<td>0.53</td>
</tr>
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*Note: higher scores indicate greater perceived procedural justice and legitimacy, more mental health symptoms (i.e., more “yes” responses), and more psychopathic characteristics

Table 10. **Calculation of offending by type**

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Table 11. Offending descriptive data

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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Offending dichotomized (self-report and official)</td>
<td>85</td>
<td>92.4</td>
<td>58 (68.2)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total SR Offending</td>
<td>75</td>
<td>81.5</td>
<td>6.52</td>
<td>12.09</td>
<td>52 (69.3)</td>
<td>.95</td>
<td></td>
</tr>
<tr>
<td>SR Income Offending</td>
<td>75</td>
<td>81.5</td>
<td>3.12</td>
<td>5.12</td>
<td>44 (58.7)</td>
<td>.86</td>
<td></td>
</tr>
<tr>
<td>SR Violent Offending</td>
<td>75</td>
<td>81.5</td>
<td>2.96</td>
<td>6.29</td>
<td>34 (45.3)</td>
<td>.92</td>
<td></td>
</tr>
<tr>
<td>Total Official Offending</td>
<td>71</td>
<td>77.2</td>
<td>0.63</td>
<td>1.56</td>
<td>19 (26.8)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6 Month Follow-Up</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Offending dichotomized (self-report and official)</td>
<td>73</td>
<td>80.4</td>
<td>48 (65.8)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total SR Offending</td>
<td>65</td>
<td>70.7</td>
<td>4.77</td>
<td>6.80</td>
<td>42 (64.6)</td>
<td>.82</td>
<td></td>
</tr>
<tr>
<td>SR Income Offending</td>
<td>65</td>
<td>70.7</td>
<td>2.63</td>
<td>2.63</td>
<td>34 (52.3)</td>
<td>.71</td>
<td></td>
</tr>
<tr>
<td>SR Violent Offending</td>
<td>65</td>
<td>70.7</td>
<td>1.75</td>
<td>3.13</td>
<td>29 (44.6)</td>
<td>.80</td>
<td></td>
</tr>
<tr>
<td>Total Official Offending</td>
<td>50</td>
<td>54.3</td>
<td>.90</td>
<td>1.90</td>
<td>14 (28.0)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 12. Logistic regressions examining the effect of procedural justice on offending, dichotomized, at 3 months and 6 months

<table>
<thead>
<tr>
<th>Predictor</th>
<th>B</th>
<th>SE(β)</th>
<th>Wald’s χ²</th>
<th>df</th>
<th>p</th>
<th>e^β (odds ratio)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Offending at 3 months</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Constant</td>
<td>5.98</td>
<td>1.642</td>
<td>13.268</td>
<td>1</td>
<td>.000</td>
<td>395.229</td>
</tr>
<tr>
<td>Procedural Justice</td>
<td>-1.90</td>
<td>0.580</td>
<td>10.692</td>
<td>1</td>
<td>.001</td>
<td>.150</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Predictor</th>
<th>B</th>
<th>SE(β)</th>
<th>Wald’s χ²</th>
<th>df</th>
<th>p</th>
<th>e^β (odds ratio)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Offending at 6 months</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Constant</td>
<td>12.04</td>
<td>4.877</td>
<td>6.090</td>
<td>1</td>
<td>.014</td>
<td>168634.630</td>
</tr>
<tr>
<td>Age</td>
<td>- .606</td>
<td>.280</td>
<td>4.684</td>
<td>1</td>
<td>.030</td>
<td>.546</td>
</tr>
<tr>
<td>Procedural Justice</td>
<td>- .603</td>
<td>.511</td>
<td>1.393</td>
<td>1</td>
<td>.238</td>
<td>.547</td>
</tr>
</tbody>
</table>
### Table 13. Linear regressions with procedural justice as the independent variable

<table>
<thead>
<tr>
<th>Offending Type</th>
<th>3 Month Follow-up Period</th>
<th>6 Month Follow-up Period</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>b</td>
<td>SE b</td>
</tr>
<tr>
<td>Total SR Offending</td>
<td>-.933</td>
<td>.214</td>
</tr>
<tr>
<td>SR Income Offending</td>
<td>-.630</td>
<td>.183</td>
</tr>
<tr>
<td>SR Violent Offending</td>
<td>-.709</td>
<td>.188</td>
</tr>
<tr>
<td>Total Official Offending</td>
<td>-.249</td>
<td>.110</td>
</tr>
</tbody>
</table>

* scores were transformed using a natural logarithm.

*p < .05, **p < .01
**Table 14. Hierarchical regressions with legitimacy as the independent variable, controlling for procedural justice, at 3 months**

<table>
<thead>
<tr>
<th>Offending Type</th>
<th>Step 1</th>
<th></th>
<th>Step 2</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>β</td>
<td>R²</td>
<td>b</td>
<td>SE b</td>
<td>β</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Frequency of Self-Reported Offending</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total SR Offending</td>
<td>-.455</td>
<td>.207**</td>
<td>-.346</td>
<td>.334</td>
<td>-.166</td>
<td>.012</td>
</tr>
<tr>
<td>SR Income Offending</td>
<td>-.373</td>
<td>.139**</td>
<td>-.354</td>
<td>.287</td>
<td>-.205</td>
<td>.020</td>
</tr>
<tr>
<td>SR Violent Offending</td>
<td>-.401</td>
<td>.161**</td>
<td>.006</td>
<td>.291</td>
<td>.003</td>
<td>.000</td>
</tr>
</tbody>
</table>

a scores were transformed using a natural logarithm.

*p < .05, **p < .01

---

**Table 15. Correlations between risk factors for offending and offending variables at 3 and 6 months**

<table>
<thead>
<tr>
<th>Offending Type</th>
<th>3 Month Follow-Up</th>
<th>6 Month Follow-Up</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Age at First Arrest</td>
<td>PCL-YV total scores</td>
</tr>
<tr>
<td>Total SR Offending</td>
<td>-.236*</td>
<td>.383**</td>
</tr>
<tr>
<td>SR Income Offending</td>
<td>-.122</td>
<td>.284*</td>
</tr>
<tr>
<td>SR Violent Offending</td>
<td>-.345**</td>
<td>.446**</td>
</tr>
<tr>
<td>Total Official Offending</td>
<td>-.356**</td>
<td>.150</td>
</tr>
</tbody>
</table>

a scores were transformed using a natural logarithm.
*p < .05, **p < .01

Table 16. **Hierarchical regressions with risk factors for offending and procedural justice as independent variables**

<table>
<thead>
<tr>
<th>Offending Type&lt;sup&gt;a&lt;/sup&gt;</th>
<th>Age at First Arrest</th>
<th>PCL-YV total scores</th>
<th>Alcohol/Drug Use (MAYS1-2)</th>
<th>Delinquent Peers</th>
<th>( R^2 )</th>
<th>Step 2&lt;sup&gt;b&lt;/sup&gt;</th>
<th>( \Delta R^2 )</th>
</tr>
</thead>
<tbody>
<tr>
<td>Self-Reported Offending at 3 Months</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total SR Offending</td>
<td>-.126</td>
<td>.191</td>
<td>.213</td>
<td>.331**</td>
<td>.357**</td>
<td>-.301**</td>
<td>.083**</td>
</tr>
<tr>
<td>SR Income Offending</td>
<td>--</td>
<td>.172</td>
<td>.095</td>
<td>.411**</td>
<td>.278**</td>
<td>-.230*</td>
<td>.048*</td>
</tr>
<tr>
<td>SR Violent Offending</td>
<td>-.243*</td>
<td>.265*</td>
<td>.160</td>
<td>.117</td>
<td>.291**</td>
<td>-.280**</td>
<td>.072**</td>
</tr>
</tbody>
</table>

<sup>a</sup> scores were transformed using a natural logarithm.

<sup>b</sup>values reported are standardized beta coefficients

* *p < .05, **p < .01
Appendix D.

Figures for Chapter 2

Figure 3. Flow chart of procedures by which youth on probation were recruited and enrolled in the study

367 youth were approached at probation offices

338 youth expressed interest in participating

29 youth were not interested in participating

210 youth did not become enrolled

128 youth were eligible and became enrolled

102 youth continued on to complete their 3 month interview (the current study’s baseline interview)

91 youth were declined because they did not meet inclusion criteria

51 youth decided they were not interested after hearing more about participation requirements

27 youth did not become enrolled for a variety of other reasons

24 youth were declined because of a lack of guardian consent

17 youth could not be reached after initial contact at the probation office
Figure 4.  Direct effect of X on Y (Preacher & Hayes, 2004)

\[ X \rightarrow c \rightarrow Y \]

Figure 5.  Simple mediator model (Preacher & Hayes, 2004)

\[ X \rightarrow a \rightarrow M \rightarrow b \rightarrow Y \]
\[ X \rightarrow c' \rightarrow Y \]