

University of Nevada, Reno

Voice, neutrality, respect, and trust: Assessing the association between observed measures of procedural justice at adjudication and youth outcomes in juvenile court cases

A dissertation submitted in partial fulfillment of the requirements for the degree of Doctor of Philosophy in
Social Psychology

by

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Abstract

With nearly 850,500 juveniles appearing in court each year, it is important to examine how court proceedings might be associated with juveniles' outcomes. Procedural justice suggests that how individuals and their problems are handled by the court system, greatly influences whether they accept and follow court rulings. Research has primarily explored perceived procedural justice; however, it is important that juveniles are not merely perceiving procedural justice when the court processes are objectively unfair. This study examined how observed procedural justice, judge-juvenile interactions/conversations, juvenile/judicial demographics and demographic match were associated with juveniles' short-term behavioral outcomes. Participants ($n = 86$) were juveniles with cases adjudicated at Pima County Juvenile Court Center in Arizona and data was collected via audio recorded adjudication hearings and case file review. First, results suggest that an increase in explaining court etiquette/rules at the beginning of the hearing, providing an overview of what might happen during court, and using plain language to explain case procedure/outcomes were associated with increased odds of successful termination. Additionally, an increase in using plain language to explain case procedure/outcomes was associated with an increase in continuances and case length. An increase in providing an explanation for their actions was associated with a decrease in system contact, case length, and continuances. Second, longest conversation was associated with an increase in using plain language to explain the case procedure/outcome. Additionally, number of interactions and percent of hearing conversation in a trial were associated an increase in; and number of conversations was associated with a decrease in explaining court etiquette/rules at the beginning of the hearing. Lastly, race of the judge and female judges

were associated with a decrease in; and years on bench was associated with an increase in average length of judge-juvenile conversation. Additionally, race of the juvenile was associated with a decrease in number of judge-juvenile interactions. Female juveniles and prior system involvement were associated with an increase in; and juvenile age was associated with a decrease in shortest judge-juvenile conversation. These results suggest that observed procedural justice and aspects of judge-juvenile interaction are key factors in short-term success for justice involved juveniles.

Dedication

For my mom and dad. Thank you for all of the sacrifices you have made as well as your love and support. Thank you for helping me get to a point where I could stand on my own feet and go through graduate school doing so. Mom, thank you for showing me where hard work and dedication can lead you, and Dad, thank you for encouraging me to live life to its fullest and enjoy myself.

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Chapter 1: Introduction

From 1960 to 2016 the number of juvenile delinquency cases handled each day in the United States rose 110% from about 1,100 to 2,300 (Hockenberry & Puzzanchera, 2018). However, from 2005 to 2016 there was been a downward trend in the number of juvenile delinquency cases that were actually processed for a total decrease of 49% (Hockenberry & Puzzanchera, 2018). Despite this downward trend, the number of delinquency cases handled by juvenile jurisdiction courts remains substantial, with nearly 850,500 total cases in the United States in 2016 (Hockenberry & Puzzanchera, 2018). Of these 850,500 cases, approximately 36,100 juveniles were adjudicated and 6,100 were detained (Hockenberry & Puzzanchera, 2018).

What is troubling about these statistics is that within one year of release from state incarceration, an average of 55% of juveniles are rearrested and 24% are reincarcerated and re-confined (Snyder & Sickmund, 2006). Whereas these statistics should be interpreted with caution due to differences in measuring recidivism, they paint a troubling picture of patterned delinquent behavior. Despite the complexities and difficulties associated with recidivism rates, these rates offer insight into how the system is functioning and can help determine the impact of programs, policies, or practices (Sickmund & Puzzanchera, 2014). One of the primary goals of the justice system, particularly the juvenile system, is rehabilitation. This orientation assumes that individuals can be treated and return to a lifestyle free of criminal behavior, thus, it is important to be able to measure the success of differing programs, policies, or practices that help achieve this goal. One such practice that can contribute to deterring future

criminal acts is the utilization of a procedural justice framework to increase juveniles' acceptance and adherence to court rulings in the short- and long-term.

In general, procedural justice theory suggests that how individuals and their problems are handled by the court system (i.e., procedural fairness) greatly influences their evaluation of their court experience, more so than the actual outcome of their case (Tyler, 2007). Further, procedural justice theory suggests that individuals' perceptions of procedural justice impacts whether they accept and follow court rulings in the short- and long-term (Tyler, 2007). Willingness to accept and follow court rulings is a key factor in procedural justice. In conjunction with the justice system's goal of rehabilitation, it is the court's intention to handle individuals' problems in such a way that they are more likely to accept and abide by the court's decisions (Tyler, 2007). Utilizing a procedural justice framework can assist courts in these ultimate goals.

Studies that have applied procedural justice theory to children and youth generally suggest that they are similar to adults in that they value fairness in procedures (Weisz, Wingrove, & Faith-Slaker, 2007). Similar to adults, procedural justice factors contribute to youth's satisfaction with the procedures and outcomes of a case (Hicks & Lawrence, 1993). Research that has examined procedural justice in children specifically has also found that interactions with legal actors contributed to children's positive and negative views about the law and its institutions' legitimacy (Fagan & Tyler, 2005). Further, these positive perceptions of the legal system's legitimacy were associated with lower self-reported delinquency (Fagan & Tyler, 2005).

The majority of research examining procedural justice in justice involved juveniles has mainly focused on relationships between perceptions of procedural justice, legitimacy of authority, legal cynicism, and belief in a just world (Tatar, Kaasa, & Cauffman, 2012; see Fagan & Tyler, 2005; Otto & Dalbert, 2005; Piquero et al., 2005). However, limited research has examined the association between procedural justice and behavioral outcomes such as completion of assigned consequences and whether they were successfully terminated from the juvenile justice system. Furthermore, research which has examined the relationship between procedural justice and behavioral outcomes has only utilized juveniles' perceptions of procedural justice (Augustyn, 2013; Tatar et al., 2012), however, this is not enough. It is important to ensure that juveniles are not merely perceiving procedural justice when in reality their court processes are objectively unfair. Instead, observed measures must be used to determine if procedural justice is occurring regardless of the juveniles' perceptions. Observed measures such as whether the judge introduced themselves, whether the judge expressed interest in the defendant's success, and whether the judge acted in a way that appeared respectful are just a few examples of observable procedural justice. Although juveniles' perceptions of their experience with procedural justice are important, observed measures might better predict behavioral outcomes such as compliance with court orders.

Researchers have suggested that there is the potential that decision makers (e.g., judges) can intentionally or unintentionally use elements of procedural justice to promote the appearance of procedural justice when objectively, that is not the case (e.g., an individual is encouraged to provide ideas for appropriate sanctions, however, the decision maker does not intend to consider the individual's ideas; Lind, Kanfer, & Earley, 1990).

Within the justice system, judges are the primary decision makers and as such, their actions might intentionally or unintentionally promote the appearance of procedural justice. Research suggests that even when individuals making a fairness judgement have no direct control over a decision, being able to voice their opinion (voice effect) enhances perceptions of procedural fairness (Lind et al., 1990). The voice effect can be used to give the perception of control by providing the individual the impression that they can affect a decision or outcome and that their opinions will be heard (Cohen, 1989). In giving the appearance of voice, individuals might be encouraged to express their opinions to the decision maker despite the decision maker having no intention of considering their opinions (Lind et al., 1990). The individual's perception of control and voice could lead them to believe that there was procedural justice when objectively, the procedure was unfair (Lind et al., 1990). Furthermore, it is possible that juveniles with previous juvenile justice experience might have a low or high bar for what justice entails due to prior treatment or experience, thus, being susceptible to reporting respectively high or low subjective justice, when objective measures might suggest otherwise.

Therefore, it is important to examine whether legal actors have observably provided procedural justice rather than just the perception of procedural justice. Research which only measures juveniles' perceptions of procedural justice could be confounded by illusions of procedural justice, and therefore lead to erroneous results which might indicate a relationship between perceptions of procedural justice (without determining whether it was actually present or not) and behavioral outcomes. Utilizing observed measures of procedural justice would eliminate this potential confounding variable and allow researchers to determine if the presence of observed procedural justice is associated

with behavioral outcomes. Measuring whether procedural justice observably occurred could better illuminate the relationship between procedural justice and behavioral outcomes in juveniles in the justice system.

In order to address the possibility of giving juveniles the subjective perception of rather than observable procedural justice, this study examined whether observed measures of procedural justice were associated with behavioral outcomes in juveniles in the justice system. The purpose of this study was to address these gaps in the literature by examining observable procedural justice to better illuminate the relationship between judge's use of procedural justice elements and behavioral outcomes in juveniles in the justice system.

Research Questions and Hypotheses

The scarcity of research examining the relationship between observable measures of procedural justice and behavioral outcomes in juveniles in the justice system suggest that research questions are warranted. There are three such research questions.

Primary Research Question

Research question #1: Are observed measures of procedural justice in court associated with juvenile offenders' short-term behavioral outcomes while controlling for offense severity?

This research question aims to determine if actions taken by judges in the courtroom are associated with short-term behavioral outcomes (e.g., completion of assigned consequences, successful termination from probation). Observed measures such as whether the judge introduced themselves, whether the judge expressed interest in the

juvenile's success, and whether the judge acted in a way that appeared respectful are just a few examples of observably assessing procedural justice. Answering this research question is important as it could contribute to one of the primary goals of the justice system – rehabilitation. Determining the success of utilizing procedural justice elements in judges' courtroom procedures could inform judicial actions, court procedures, and best practices.

Auxiliary Research Questions

Research question #2: Are aspects of judge-juvenile interactions (i.e., number of interactions and conversations) associated with observed measures of procedural justice while controlling for offense severity?

This research question aims to determine if the amount of interaction (e.g., number of times the judge spoke directly to the juvenile) is associated with observed measures of procedural justice. The amount of interaction between the judge and juvenile is presumably associated with procedural justice as it contributes to the various elements from which procedural justice is composed. Specifically, as the amount of interactions that the judge and juvenile have increase, the more likely that the various elements of procedural justice (voice, neutrality, respect, and trust) would be observed; for example, increased interaction is presumably associated with allowing more time for the juvenile to tell their side of the story. A single interaction was defined as a judge directing a question or statement at the juvenile with the intent that the juvenile should respond back, regardless of whether it was within a series of exchanges on the same topic. Instances in which the judge is interacting with the juvenile multiple times within a single

conversation (i.e., for a sustained period of time) were counted as one conversation.

Answering this question is important as results could contribute judicial actions and best practices.

Research question #3: Is demographic match (e.g., male juvenile/male judge) associated with judge-juvenile interaction while controlling for offense severity?

Subquestions: (a) Are judicial characteristics associated with judge-juvenile interaction while controlling for offense severity?

(b) Are juvenile characteristics associated with judge-juvenile interaction while controlling for offense severity?

This research question aims to determine if specific demographics of the judge and juvenile affects their interaction. Although judges and juveniles typically cannot alter their characteristics, results from this question can inform behavioral outcome trends by judicial caseload and juvenile characteristics as well as the literature at large. Research suggests that judges' demographics such as gender (Bazemore & Dicker, 1994), age (Myers, 1988), political orientation (Gibson, 1978; Nagel, 1961, 1963), years on the bench, and previous work experience (Bazemore & Feder, 1997) can shape unequal court outcomes. Additionally, research suggests that juveniles are processed differently within the justice system based on different demographic factors such as race (Bridges & Steen, 1998; Feld, 1999), gender (Feld, 2009; Gaarder, Rodriguez, & Zatz, 2004; Kempf-Leonard & Sample, 2000; Rosenbaum & Chesney-Lind, 1994), family and class (Gaarder et al., 2004), and location (Feld, 1993; Snyder & Sickmund, 1995). As such, it seems

logical then that judge and juvenile characteristics could also be associated with the amount of interaction they have.

Further, the match or non-match between some of these characteristics (i.e., race and gender) might also be associated with the interaction that judges and juveniles have. This is an important research question as there is conflicting research which indicates a potential for in-group preferential treatment (Chen & Li, 2009) as well as more severe punishment for in-group members (Depew, Eren, & Mocan, 2016). Determining whether match versus non-match cases are associated with more positive judge-juvenile interaction (more interactions for longer periods of time) in addition to judge and juvenile demographics individually, would add to the literature and contribute to judicial training and actions.

A Social Psychology Problem

Although this study can provide valuable information to various disciplines including criminal justice and social work, this study primarily examines a social psychological issue. Social psychology is commonly defined as a discipline used “to understand and explain how the thoughts, feelings, and behavior of individuals are influenced by the actual, imagined, or implied presence of others” (Allport, 1985; p. 3). This study is focused at the individual level with both the judge and juvenile. A key aspect of this dissertation is the actual presence of and interaction between the judge and juvenile which is inherently a social interaction – a critical tenant of social psychology. Further, this dissertation examines various potential factors which could influence juveniles its relationship with juveniles’ behavioral outcomes in the short-term.

Summary

With numerous juveniles experiencing the juvenile justice system and appearing in court, it is important to examine if and how court proceedings might be associated with juveniles' behavioral outcomes in the context of the case and the legal system at large. Considering the estimated rates at which juveniles in the justice system commit future criminal acts, and the justice system's goal of rehabilitation, it is important to be able to measure the success of differing programs, policies, or practices that help achieve this goal. One such practice that research suggests could contribute to positive behavioral outcomes is utilization of a procedural justice framework. Specifically, it is important to determine if judges observably utilizing procedural justice elements during court proceedings is associated with more positive short-term behavioral outcomes. Previous research examining procedural justice in juveniles is severely limited in number and has only explored the relationship between perceived (subjective) procedural justice and youth behavioral outcomes. This research addresses gaps in the literature surrounding procedural justice in juveniles in the justice system by utilizing observed measures of procedural justice and examining their association with behavioral outcomes during the course of the case.

In the next chapter I detail the juvenile court process as well as review the literature associated with procedural justice, bias, personal characteristics, and behavioral outcomes. Then, Chapter 3 discusses the methodology used including detailing the data collection site, participants, procedures, measures, and assumptions made. Chapter 4 presents item refinement and data analysis decisions as well as the results from the research questions; non-hypothesized results are also presented. Chapter 5 presents a

synthesis of the results as well as a discussion, implications, strengths, limitations, future directions and conclusions.

Chapter 2: Literature Review

There are many elements which might affect the association between observed procedural justice and behavioral outcomes in justice involved juveniles including how procedural justice is measured, the quality and quantity of judge-juvenile interaction, bias, and personal characteristics. This chapter covers these elements at length. First, a brief overview of the juvenile court process is examined to better frame the overall literature review. Next, procedural justice is examined with subsections covering the elements of procedural justice, the difference between objective and subjective procedural justice, and procedural justice in the youth population. Finally, to better understand the factors which might affect the association between observed procedural justice and behavioral outcomes in justice involved juveniles, a review of research on judge-juvenile interaction, bias, and personal characteristics are given.

The Juvenile Court Process

The juvenile court process can be a lengthy one. There are many points at which a juvenile interacts with the judge and the court system at large. The process begins when a juvenile is arrested for a particular delinquent act. The juvenile is then either released to their parent(s)/guardian(s) or detained. If the juvenile is detained, a hearing is held to determine if there is probable cause to continue holding the juvenile until an adjudicatory hearing occurs; this detention hearing typically occurs within 1-3 days of detention. After the detention hearing the juvenile either remains in or is released from detention. The juvenile, regardless of whether he was released to his parent, released from detention, or remained in detention, is then given an arraignment hearing which is considered the “initial hearing”.

The arraignment or “initial hearing” is where the juvenile is presented with the formal charges against him that are alleged in the petition in which the juvenile must admit or deny the charges. Next, an adjudication hearing occurs in which the juvenile can again decide to admit or continue to deny the charges. If the juvenile continues to deny the charges, then the adjudication hearing acts as the fact-finding stage of the juvenile’s case where the judge weighs the evidence to determine if the facts prove the alleged charges. Results of the adjudication hearing can either be ‘no finding of delinquency’ (the charges are dismissed) or ‘finding of delinquency’ (the judge has determined that the facts proved the alleged charges; the juvenile is adjudicated). If the charges are dismissed, the case is closed. If the juvenile admits to the charges or is adjudicated delinquent, the juvenile is either released to his parents or is placed/remains in the detention facility. A disposition hearing is then held and is similar to a sentencing hearing in adult criminal court. During the disposition hearing, the judge determines the appropriate treatment and sanctions (consequences) after hearing from potential stakeholders (e.g., juvenile, juvenile’s parents, the defense, probation staff, victims, etc.).

The juvenile is then required to abide by the imposed treatments and consequences given by the judge which could involve fines, community service, probation, placement in a residential treatment facility, detention, or other department of corrections program; during this time, the juvenile is in the post-disposition period. At this point, there can be a variety of hearings and procedures which occur until the juvenile is no longer under the supervision of any state agency (from which they were transferred as a result of the case) or juvenile court. After a period of time the judge considers the juvenile’s actions throughout the life of the case and determines whether

the juvenile is successfully terminated from the juvenile justice system. In some instances, a judicial decision of successful termination is based upon successful completion of the consequences and treatment imposed by the judge. As a result, the juvenile's case is then discharged and considered closed.

During the adjudicatory hearing there are several things which happen. First, the judge introduces the case to the courtroom, providing basic information on who is charged and what for. Second, the prosecution presents information about the case followed by the juvenile and/or defense council. Third, the judge queries the parties about the information that is and is not presented, and subsequently determines whether the juvenile is adjudicated delinquent. In instances in which the juvenile decides to admit to the charges, the adjudication hearing acts as a determination of whether the juvenile is making a knowing and voluntary admission.

However, despite the prescribed process of the juvenile justice system, there are many points at which factors can change or lengthen this process. All cases are subject to new subsequent charges being added due to the juvenile's actions while the case is still open; if subsequent delinquent acts are committed, they are added to the juvenile's case, lengthening the process. Additionally, juvenile justice cases are frequently subject to continuances which can occur for a variety of reasons from the first hearing until the case is closed. Continuances can occur due to the juvenile's parent/guardian, prosecution, probation officer, or juvenile request, good cause exists, new counsel is being appointed, etc. Data examining the length of time a juvenile justice case is open and the number of hearings that occur within this time is limited, however, there are states which impose

statutes regarding overall case length limits. Specifically, Kansas imposed a 12 month limit for misdemeanor charges, 15 months for low- to moderate-risk offenders adjudicated for a felony, and 18 months for high-risk offenders adjudicated for a felony (K.S.A. § 38-2391, 2016). During the length of the case, the court experiences that the juvenile has can affect their outcomes in the short- and long-term, particularly when elements of procedural justice are utilized.

Procedural Justice

Procedural justice theory emerged from two prominent social psychological theories: social exchange theory and equity theory (Neff, 2004). Procedural justice theory suggests that individuals place importance on both the processes and procedures of decision-making as well as the outcomes (Thibaut & Walker, 1975). Perceptions of procedural fairness are affected by the amount of control an individual has over the process which is an important predictor of satisfaction with the outcome (Thibaut & Walker, 1975). As it pertains to the court system, procedural justice theory suggests that how individuals and their problems are handled by the court system (i.e., procedural fairness), greatly influences their evaluation of their court experience more so than the actual outcome of their case (Tyler, 2005). Further, procedural justice theory suggests that individuals' perceptions of procedural justice impacts whether they accept and follow court rulings in the short- and long-term (Tyler, 2005). Willingness to accept and follow court rulings is a key factor in procedural justice as it is the court's intention to handle individual's problems in such a way that they are more likely to accept and abide by the court's decisions (Tyler, 2005).

Individuals are more likely to accept decisions when they are made fairly (see Tyler, 2000). One way that authorities and society can get individuals to accept decisions and gain cooperative behavior is by shaping the costs (i.e., punishments) and benefits (i.e., incentives) associated with cooperation, however, this can be costly and unwieldy (Tyler, 2000). Instead, society benefits when cooperation is voluntary, out of commitment or identification with a group (Tyler, 2000). When individuals judge procedures and decisions to be made fairly, it encourages them to voluntarily cooperate (Tyler, 2000). Willingness to cooperate with decisions made by an authority is derived from perceptions of the authority's legitimacy (Tyler, 2000). Perceptions of fairness of decision-making procedures contributes to perceptions of how legitimate an authority is as well as how much to defer to them and their decisions (Tyler, 2000). As a result, fair decision-making procedures leads to legitimacy of authorities and their decisions as well as voluntary cooperation (Tyler, 2000). Fair decision-making procedures lead to voluntary cooperation via identification, loyalty, and commitment towards society in addition to the belief that authorities are legitimate (Tyler, 2000).

The procedural justice effect of long-term rule abiding is evident in longitudinal data from the Australian Reintegrative Shaming Experiments (RISE) which examined adults who were arrested for drunk driving (Tyler, Sherman, Strang, & Barnes, 2007). Participants were either assigned to a restorative justice conference or the traditional court adjudicative procedure (Tyler et al., 2007). Tyler et al. (2007) hypothesized that these restorative justice conferences would be more effective at creating feelings of reintegrative shaming and procedural justice compared to the traditional court processes. When these aspects of the restorative justice conferences are activated, they will motivate

compliance with and support for the law in the future (Tyler et al., 2007). Thus, legal procedures which are perceived as procedurally fair and encourage reintegrative shaming will lead to decreases in reoffending in the long term (Tyler et al., 2007).

When participants' obedience to the law was measured four years later (via self-report and police record) results suggested that for participants who were assigned to the restorative justice conferences, when the psychological mechanisms of procedural justice were activated, there were reductions in recidivism (Tyler et al., 2007). After participating in the restorative justice conference, adults charged with drinking and driving were less likely to reoffend than individuals who participated in traditional court procedures (Tyler et al., 2007). Participants who perceived their hearings as fairer and as a result, the law as more legitimate, reoffended at about 25% the rate of those in traditional court procedures (Tyler et al., 2007). The effects of experiencing a fairer hearing extended to a reduction in recidivism up to at least four years after (Tyler et al., 2007). Due to the short- and long-term benefits that procedural justice can produce, it is important to determine what aspects of the court experience are critical for court actors to emphasize.

Elements of Procedural Justice

Early work examining elements of procedural justice suggested that assessments of fairness were comprised of seven aspects which each made independent contributions including, bias from authorities, if there was an opportunity to appeal a decision, the quality of the decision, opportunities for representation, if behavior aligned with ethical standards, and if the authorities made efforts to be fair (Tyler, 1988). Furthermore, these

aspects were determined to comprise two factors – one that focused on qualities of the experience (i.e., accuracy of the decision, impartiality, representation) and the other that focused on external factors (i.e., consistency in experiences of oneself and others, as well as external standards; Tyler, 1988). However, more recent research suggests that there are four key elements to procedural justice: voice, neutrality, respect, and trust (Goodman-Delahunty, 2010; Ribeiro & Antrobus, 2017; Tyler, 2000, 2007).

Voice. Voice refers to opportunities for participation; whether individuals feel that they have been allowed to be involved in the court processes and provide their thoughts, opinions, and suggestions about the resolution of their conflict (Goodman-Delahunty, 2010; Tyler, 2000, 2007). Voice as an element has been considered one of the most influential in procedural justice (Hirschman, 1974). Individuals have a more positive experience with the legal system when they feel that the authority considered their arguments sincerely before making their decision, regardless of the outcome (Tyler, 2007). Individuals feel they have more voice when they perceive that what they are saying is helping shape the outcome of a dispute (Tyler, 2000). Furthermore, individuals value voice even when there is little or no influence on the outcome (Tyler, 2000).

Research further suggests that even when individuals making a fairness judgement have no direct control over a decision, being able to voice their opinion (voice effect) enhances perceptions of procedural fairness (Lind et al., 1990). Individuals place value in sharing the discussion about the issues relating to their conflict rather than solely controlling the decision about how it should be handled (Tyler, 2000). When individuals are allowed voice, their perceptions of fairness and satisfaction with outcomes is higher

than if they were allowed no voice (Folger, 1977). Research investigating the relationship between voice and perceptions of procedural justice has examined incarcerated females' perceptions of voice in their most recent encounter with police (Baker & Gau, 2018). Results suggest that female offenders perceived greater levels of procedural justice when they perceived that the police allowed them to be heard despite the negative outcome of ultimately being incarcerated (Baker & Gau, 2018).

Neutrality. Neutrality refers to whether the authorities act without bias; that their decisions are made with consistency, even-handedness, transparency, impartially, and objectivity (Goodman-Delahunty, 2010; Tyler, 2000, 2007). Individuals believe that authorities should make decisions based off of rules and facts rather than allow personal opinions or values as well as biases to affect their decisions (Tyler, 2000, 2007). Furthermore, that these rules should apply consistently across cases and individuals (Tyler, 2007). Individuals desire a system in which no one is unfairly disadvantaged (Tyler, 2000). When individuals perceive that authorities are being impartial and making objective decisions, they perceive procedures to be more fair (Tyler, 2000). Suggestions about emphasizing neutrality in court emphasize judges being transparent and describing why relevant rules are being applied and how decisions are being made (Tyler, 2007).

Research examining staff neutrality in a prison investigated the Belgian detention regime in a Dutch institution (Boone & Kox, 2014). Results suggest that consistency in how rules are applied, a key aspect of neutrality, is an important aspect of prison life (Boone & Kox, 2014). However, the authors do note that individualized decisions about exceptions to the rules are okay as long as they are neutrally applied and do not lead to

inequality between prisoners (Boone & Kox, 2014). Individualized decisions that are neutrally applied refer to decisions that are based off of fair criteria and not affected by decision-makers' personal opinions (Boone & Kox, 2014).

Respect. Respect refers to individuals being treated with dignity, whether they are taken seriously, and whether their input is valued and attended to; whether the individual feels that they have been shown respect in relation to their rights and status in society (Goodman-Delahunty, 2010; Tyler, 2000; Tyler & Lind, 1992). Respect can be conveyed in a number of ways including general courtesy and politeness as well as providing information about the often confusing legal system such as what to do and where to go (Tyler, 2007). When legal actors interact with individuals, they are conveying important messages about the individual's status in society (Tyler, 2007). When a person and their rights are given respect, it affirms their value and importance as a person (Tyler, 2007). Individuals want to feel as though themselves and their issues will be taken seriously in the legal system (Tyler, 2007). Research examining the relationship between respect and procedural justice indicates that judgements of fairness are enhanced by respectful treatment (Heuer & Stroessner, 2011).

Trust. Trustworthiness of the authorities refers to assessments of motives – whether the decision-making authority seriously considered the individual's arguments, are concerned with their situation, are sincere, honest, open, and attempt to do what is right for them (Goodman-Delahunty, 2010; Tyler, 2000, 2007). Given that third-party decision-makers are allowed discretion in implementing rules and formal procedures, there is the potential that varying decisions are made (Tyler, 2000). As a result,

individuals are concerned with the motivation which underlies their decisions and seek to determine if authorities are trustworthy (Tyler, 2000). The importance of trustworthiness is closely related to voice (i.e., opportunity to participate) as individuals only value voice if they perceive the authority to be honestly considering their input (Tyler, 2000). One study examining the relationship between trust and procedural justice investigated court cases in the Netherlands in which litigants' trust in judges and perceptions of procedural justice were examined (Grootelaar & van den Bos, 2018). Results suggest that there is a strong positive relationship between trust in judges and perceived procedural justice (Grootelaar & van den Bos, 2018). These elements of procedural justice can be examined to determine whether procedural justice has occurred either objectively, subjectively, or both.

Objective Versus Subjective

Thibaut and Walker (1975) have suggested that there are two kinds of procedural justice – objective and subjective. In other words, there is a difference between the actual state of affairs (objective) and an individual's psychological response (subjective; Lind & Tyler, 1988). Legal procedures can both be fair (objective) and appear fair (subjective; Lind & Tyler, 1988). Objective justice refers to when the procedure and outcomes meet standards of consistency and fairness as well as accuracy of the decisions (Lind & Tyler, 1988). Objective decision-making is characterized by decisions which use information that is neutral and unbiased; rules are applied consistently across situations and individuals (Tyler, 2003). When there is objective procedural justice the decision-making process is fair, it is free of bias or prejudice, and therefore conforms to the normative standards of justice (Lind & Tyler, 1988). Whereas subjective justice refers to

judgements of procedural justice, satisfaction, approval and endorsement of the institution, and compliance with rules (Lind & Tyler, 1988). When there is subjective procedural justice the procedure enhances judgements of fairness (Lind & Tyler, 1988).

However, it is more difficult to evaluate objective than subjective justice (Lind & Tyler, 1988). Evaluating objective justice is difficult for two reasons, the first is establishing objective criteria to evaluate procedures (Lind & Tyler, 1988). Due to the nature of the legal system, it is difficult to accurately measure whether an individual is truly guilty or not (Lind & Tyler, 1988). The second difficulty is determining which objective criteria are most important (Lind & Tyler, 1988). Often times there is one procedure that addresses one criterion the best whereas another procedure addresses a different criterion the best leading to a decision about which criterion and procedure to choose (Lind & Tyler, 1988).

Objective justice. Compared to subjective measures, little research has focused on objective measures of procedural justice. The limited research that has examined objective justice has been uneven. Research on the reintegrative shaming experiments (RISE) conducted in Australia utilized observational data to examine procedural justice (Barnes, Hyatt, Angel, Strang, & Sherman, 2015). The reintegrative shaming experiments compared the effects of standard court procedures to diversionary conferences which were restorative justice focused in adult, young adult, and juvenile offenders (Barnes et al., 2015). Barnes et al. (2015) used observational methods to examine procedural justice through three specific elements: ethicality, representation, and participation. Ethicality focused on communication during the hearing, representation focused on whether

individuals were allowed to participate in the process, and participation focused on the presence of participants and decision-makers at each of the events (this last element, participation, was not gathered via observation, rather through offender interviews; Barnes et al., 2015).

As it pertains to the ethicality element, results suggest that participating in the diversionary conferences, rather than standard court procedures, was associated with a significant increase in time spent discussing and resolving the matter (Barnes et al., 2015). Individuals assigned to the diversionary conferences were treated with more expressions of respect, were treated less like criminals, and the presiding official used less directive behavior and created a less dominating environment (Barnes et al., 2015). However, despite individuals in diversionary conferencing being treated with more respect and less like criminals, these individuals experienced more harassment, were shouted at more, and had more stigmatizing names and labels used on them (Barnes et al., 2015).

As it pertains to the representation element, results suggest that individuals assigned to the diversionary conferencing were afforded more opportunities to participate as noted via minutes the offenders spent speaking, the length of the hearing, and the proportion of each event that the offender actually spoke (Barnes et al., 2015). Furthermore, in most cases, the primary speaker at each event was the offender whereas the authority figure (i.e., conference facilitator or judge) primarily acted to facilitate the conversation between victim and offender (Barnes et al., 2015). Additionally, diversionary conferencing was associated with offenders contributing more often in

determining the outcome which was mutually acceptable (Barnes et al., 2015). As it pertains to the participation element, results suggest that cases assigned to the diversionary conferencing had a greater number of participants including the offender's friends and family (Barnes et al., 2015). The authors argue that these results could be seen as promoting procedural fairness by allowing more participants to play an active role in decision-making and increase impartiality (Barnes et al., 2015).

Although Barnes et al. (2015) results seem promising, they should be interpreted with caution for a few reasons. First, Barnes et al. (2015) characterizes procedural justice via three elements, ethicality, representation, and participation, however, these are not identical elements of procedural justice utilized by other studies of procedural justice (Tyler, 1990, 2000, 2007) and therefore might be lacking comprehensive or complete indicators. Second, in measuring fairness objectively via observation, and not examining outcome data, Barnes et al. (2015) results do not allow for determining aspects of procedural justice like consistency and correctability (Barnes, 1999). The present study addresses this gap in the limited research by examining outcome data in addition to objectively measuring procedural justice through review of recorded hearings.

Although objective procedural justice is important, subjective perceptions are essential; in addition to offenders being exposed to objective fairness, they must also perceive that they are being treated fairly (Barnes et al., 2015). Objective procedural justice contributes to subjective procedural justice. Tyler (2003) suggests that the quality of decision making is important such that when decisions are made using objective indicators, rather than personal views, then individuals perceive a decision to be fair,

neutral, and unbiased. In other words, when decision-makers use objectivity, it enhances perceived fairness (Tyler & Lind, 1992). Objective procedural justice leads to individuals more likely perceiving procedures to be neutral (Tyler, 2003). Tyler (2003) suggests that individuals are less likely to infer bias when decision-makers operate in consistent, neutral, and objective ways.

Subjective justice. There is research however which suggests that differences in objective control, can produce similar perceptions of control and judgements of fairness (Lind et al., 1990). The vast majority of procedural justice research uses perceptions as means of measuring procedural justice and its elements. Participants are often asked to provide ratings on Likert scale questions like, “The court considered the evidence/viewpoints in this incident fairly” or “The court used evidence that was fair and neutral” (Augustyn, 2013). Studies utilize questions like these to gauge procedural justice, however, it is important to note that these studies are measuring perceptions of procedural justice and that there is a difference between the actual state of affairs (objective) and an individual’s psychological response (subjective; Lind & Tyler, 1988).

Classic research investigating perceptions of procedural justice in court examines defendants in traffic and misdemeanor court (Tyler, 1984). Results suggest that perceived fairness in court was a major determinant of attitudes and satisfaction with courts and judges (Tyler, 1984). More recent research has also found a relationship between public perceptions of fairness and assessments of local court handling of criminal cases (Buckler, Cullen, & Unnever, 2007). Other studies confirm this by noting that participants’ perceptions of judge’s honesty and the participant’s opportunity to be heard

significantly predicted procedural justice perceptions about the courts in female inmates (Baker, Pelfrey, Bedard, & Golden, 2014).

Pitfalls of subjective justice. However, what is particularly concerning about subjective perceptions of justice is that they might be inaccurate (Lind & Tyler, 1988). Subjective procedural justice can lead to a “false consciousness” in which a procedure is believed to be fair but is not by objective standards (Lind & Tyler, 1988). Researchers have suggested that there is the potential that legal actors can intentionally or unintentionally use elements of procedural justice to promote the appearance of procedural justice when objectively there is none (Lind et al., 1990). There is the potential that legal actors can give individuals the perception of control by giving the impression that the individual’s opinions will be heard and that they can affect a decision or outcome (Cohen, 1989) when in reality, the decision maker has no intention of considering their opinions (Lind et al., 1990). This illusion of control could lead individuals to believe that there was procedural justice when in reality the procedure contained no objective justice (Lind et al., 1990). Despite the potential downfalls of subjective justice, utilizing procedural justice can be beneficial for a variety of populations including youth.

Procedural Justice in Youth

Research examining procedural justice in youth is sparse compared to research focusing on adults. Studies that have applied procedural justice theory to children and youth generally suggest that they are similar to adults in that they value procedural fairness (Weisz et al., 2007). Similar to adults, procedural justice factors contribute to

youth's satisfaction with the procedures and outcomes of a case (Hicks & Lawrence, 1993).

Research suggests that there is a developmental process by which youth develop ties to the law and legal actors (i.e., legal socialization; Fagan & Tyler, 2005). This process of legal socialization as well as procedural justice attributions contribute to perceptions of procedural fairness when interacting with legal actors (Fagan & Tyler, 2005). Results suggest that when children view interactions with legal actors as harsh or unfair, they report greater legal cynicism (Fagan & Tyler, 2005). Further, interactions with legal actors contributed to youth's views about the law and its institutions' legitimacy (Fagan & Tyler, 2005). Importantly, positive perceptions of the legal system's legitimacy were associated with lower self-reported delinquency (Fagan & Tyler, 2005). These results suggest that interactions with judges as legal actors in court could contribute to juveniles' reduction in delinquency.

Research on procedural justice in juveniles in the justice system is limited; the majority of the literature revolves around children and adolescent's participation in abuse/neglect/foster-care court proceedings, mediation, or interactions with police. Further, research on this population has primarily focused on relationships between perceptions of procedural justice, legitimacy of authority, legal cynicism, and belief in a just world (Tatar, Kaasa, & Cauffman, 2012; see Fagan & Tyler, 2005; Otto & Dalbert, 2005; Piquero et al., 2005). However, as noted above, it is important to determine if procedural justice is associated with behavioral outcomes such as completion of assigned

consequences and whether they are successfully terminated from the juvenile justice system.

One of the few studies that has explored the relationship between procedural justice in juveniles and outcomes examined females in the juvenile justice system and focused specifically on the relationship between perceived procedural justice and emotional, attitudinal, and behavioral outcomes (Tatar et al., 2012). Participants were young adult and adolescent females who were incarcerated in a high security juvenile facility (Tatar et al., 2012). The results suggest that incarcerated females were affected by perceived procedural injustice at not only an emotional level but also on a behavioral level (Tatar et al., 2012). Specifically, perceived procedural injustice was related to an increased level of depressive symptoms as well as behavioral issues (i.e., substance use within the facility and institutional offending; Tatar et al., 2012). These results were even more pronounced for females who were incarcerated for longer periods of time (Tatar et al., 2012). The authors argue that once the offender is incarcerated, perceived injustice in court proceedings could have long lasting effects in judicial settings (Tatar et al., 2012).

Augustyn (2013) furthered this line of research by examining recidivism as a behavioral outcome of perceived procedural justice among juveniles in the justice system. Specifically, juveniles who were considered to have “serious criminal charges and arrest histories” (p. 67) were examined. Recidivism was measured as either arrest (which was determined via official criminal records), violent offending, income generating offending, or substance use which were all determined via self-report at interviews. These measures of recidivism were calculated at six months as well as one year after the initial interview.

Contrary to expectations, Augustyn (2013) found weak evidence that perceptions of procedural justice reduced recidivism in juveniles such that procedural justice was only sporadically related to self-reported recidivism in the form of violent offending and drug use but not when perceptions of procedural justice and legitimacy were held constant.

However, upon further analyses, results suggest that perceptions of procedural justice were better at predicting recidivism in juveniles who only recidivate with one criminal act (novice offenders) versus juveniles who recidivate with multiple criminal acts (more serious offenders; Augustyn, 2013). Furthermore, perceptions of legitimacy were better at predicting recidivism in the form of self-reported substance use (a recidivism measure) for juveniles who did not use drugs compared to those who did (Augustyn, 2013). Lastly, the results suggest that the experience of procedural justice with the judge (e.g., whether the juvenile felt like the judge let them tell their side of the story, treated them the same what they treat others the juvenile's age, considered the evidence fairly, etc.) did not predict recidivism but was related to perceptions of legitimacy (Augustyn, 2013).

The research results suggesting experiences of procedural justice with the judge are related to perceptions of legitimacy (Augustyn, 2013) are promising however, considering other research which suggests that individuals' views of legitimacy impacts whether they accept and follow court rulings in the short- and long-term (Tyler, 2007). As such, it is important to further examine the relationship between experience of procedural justice with the judge and behavioral outcomes such as adherence to probation, completion of court mandated substance abuse treatment, etc., rather than

recidivism in terms of subsequent charges. Although Augustyn's (2013) results that procedural justice does not predict recidivism are contrary to expectations, there are several reasons why this may be, including the short time frame with which recidivism was measured (six months and one year), the sample makeup (examining only juveniles who had serious criminal charges and arrest histories), or only utilizing perceptions of procedural justice as a predictor variable (rather than objective measures of procedural justice).

However, these studies examining procedural justice in juveniles in the justice system have only examined perceptions of procedural justice (subjective) rather than observed procedural justice. Whereas subjective measures of procedural justice provide important information about the concept of procedural justice as a whole, it is not the entire picture. First, the observed presence of procedural justice and its effects must be examined as it is an important and ethical step in providing adults and juveniles procedural fairness. Observed measures must be used to determine if procedural justice is occurring regardless of the juveniles' perceptions.

Further, observed measures might better predict behavioral outcomes such as compliance with court orders. It is important to examine whether legal actors have observably provided procedural justice rather than just the appearance of procedural justice. Research which only measures perceptions of procedural justice could be confounded by illusions of procedural justice, and therefore lead to erroneous results which might indicate a relationship between perceptions of procedural justice (without determining whether it was actually present or not) and behavioral outcomes. Utilizing

observed measures of procedural justice will eliminate the potential confounding variable (uncertainty of whether there is only perceived rather than observed procedural justice) and allow researchers to determine if the presence of actual procedural justice is associated with behavioral outcomes. Measuring whether procedural justice observably occurred will better illuminate the relationship between procedural justice and behavioral outcomes in juveniles in the justice system. As the third-party decision maker in court cases, judges have the ability to implement these procedural justice elements when interacting with the juvenile, however, more information is needed on how these interactions might affect the juvenile's outcomes.

Judge-Juvenile Interaction

Only one study has been conducted examining the interaction between judges and juveniles and how such interactions might play an integral role in the juvenile's outcomes. There are, however, a few studies examining judge-adult interactions. Research examining judge-adult interactions in drug courts suggests that frequency of interactions with judges can have an effect on outcomes depending on the adult (Festinger et al., 2002; Marlowe, Festinger, Lee, Dugosh, & Benasutti, 2006). Specifically, more frequent interactions with judges do not produce better outcomes for *all* adults (Marlowe, Festinger, Dugosh, & Lee, 2005; Marlowe et al., 2003). Rather, specific types of participants benefit from more frequent interactions with judges (Festinger et al., 2002; Marlowe et al., 2006). More frequent interactions with judges produce better outcomes for adults who meet criteria for antisocial personality disorder whereas as-needed interaction with judges produce better outcomes for adults without antisocial personality disorder (Festinger et al., 2002). Furthermore, adults with a history

of substance abuse treatment had better outcomes when there was a higher frequency of interaction with the judge (Festinger et al., 2002).

Additional research suggests that higher risk adults who had frequent interactions with judges had better outcomes than lower risk adults with as-needed interactions with judges (Marlowe et al., 2006). Within this body of research, frequency of interaction was measured by number of times the adult and the judge met; research examining frequency of interaction within a single meeting is even more sparse. There is yet to be consensus however, whether judge-adult defendant interaction can affect outcomes. Gottfried, Carbonell, and Miller (2014) found that communication between judge and adult defendant, measured via court observation of whether the judge ever spoke to the defendant directly, is not enough to influence outcomes.

Conversely, Salvatore, Hiller, Samuelson, Henderson, and White (2011) examined judge-juvenile interaction via a continuous measure of length in minutes, a categorical measure of length of review sessions ranging from less than one minute to seven minutes or greater, and categorical measures of the judge's demeanor from tense/relaxed, stern/friendly, closed/open, scolding/encouraging, and dismissive/attentive. Results suggest that judge-juvenile interactions were brief and that judges maintained a neutral demeanor (Salvatore et al., 2011). Salvatore et al. (2011) argue that the judge-juvenile interaction does not significantly influence judicial workload which addresses a critical concern for the court system. Furthermore, Salvatore et al. (2011) argue that although the cross-sectional nature of the study does not allow for cause-effect analysis, judge-juvenile interaction might affect juvenile's behavior as well as influence

perceptions of the judge as being fair and respectful – key components of procedural justice. Research examining judicial demeanor in judge-defendant interactions and legitimacy argue that judicial demeanor can communicate impartiality and procedural fairness (Mack & Anleu, 2010). However, there is also the potential that the judge-juvenile interaction could allow for factors such as lack of basic understanding of adolescent development and child witness techniques or biases to influence court processes and outcomes meaning that extra-legal factors could be playing a role and affecting the observed procedural justice that juveniles are receiving.

Bias

Because judges are human, they are susceptible to bias (Kang et al., 2012). When a judge is interacting with a juvenile, there is the potential for biases to influence the judge's behaviors and ultimately the court processes as well as the juvenile's outcomes. Bias can exist on several levels; bias can be a feeling, opinion, inclination, or tendency, all of which is without merit. Furthermore, biases can be explicit or implicit. Explicit biases are those which are expressed or demonstrated clearly, leaving nothing to be implied. Explicit biases are endorsed consciously such that the individual is aware that they are acting for a specific reason (Greenwald & Krieger, 2006) as well as endorsed as appropriate (Kang et al., 2012). Implicit biases are those which individuals do not always have intentional control over or are not conscious of (Greenwald & Krieger, 2006; Kang et al., 2012). Implicit bias is a combination of implicit attitudes and stereotypes which create inequitable biases (Greenwald & Krieger, 2006). Implicit attitudes refer to an evaluative disposition of liking/disliking and favorability/unfavorability towards an individual (Greenwald & Krieger, 2006). Implicit stereotypes refer to a mental

association between a favorable/unfavorable trait and a group (Greenwald & Krieger, 2006).

Further, bias can be either unfavorable or favorable (Greenwald & Krieger, 2006). Ingroup bias is that which favors groups to which the individual belongs (Greenwald & Krieger, 2006). However, as a result of favoring an ingroup, other groups are at a discriminatory disadvantage (Greenwald & Krieger, 2006). Even more concerning is the reality that the practice of ingroup favoritism is often unrecognized in the individual practicing it (Greenwald & Pettigrew, 2017). Research examining bias favoring advantaged groups suggests that implicit attitudes are more biased than explicit (Greenwald & Krieger, 2006).

Furthermore, implicit attitudes can be expressed through action. Attitudes become explicit when an individual understands that their actions result from their attitudes (Greenwald & Krieger, 2006). However, there are instances when an individual's implicit and explicit attitudes do not match (Greenwald & Krieger, 2006). Research examining implicit versus explicit bias suggests that the majority (42%) of individuals display attitudinal neutrality on explicit measures whereas only 18% display attitudinal neutrality on implicit measures (Greenwald & Krieger, 2006). Implicit biases can be problematic as it can lead to behavior that differs from explicit beliefs, attitudes, and intentions (Greenwald & Krieger, 2006). Research suggests that implicit biases can produce discriminatory behavior (Greenwald & Krieger, 2006). One study which examined this relationship focused on how White undergraduate students interacted separately with Black and White experimenters (McConnell & Leibold, 2001). Results suggest that

participants who had stronger implicit negative attitudes towards Blacks compared to Whites, reported more explicit negative prejudices towards Blacks as well as had more negative social interactions with a Black compared to White experimenter (McConnell & Leibold, 2001).

Judicial Bias

Limited research has examined implicit bias in judges (Kang et al., 2012); one study that has suggests that implicit biases affect sentencing (Rachlinski, Johnson, Wistrich, & Gunthrie, 2009). Judges were asked to take an implicit measure of racial bias and results indicated that White judges displayed strong implicit attitudes that favored Whites over Blacks (Rachlinski et al., 2009). Rachlinski et al. (2009) further examined if these implicit biases affected the judges' behavior by giving three different vignettes, one of which mentioned the defendant and victim's races with no subliminal primes (a battery case), and two which did not mention race but which included subliminal primes (a shoplifting case and a robbery case). Judges were then asked various questions about likelihood of recidivism, recommended verdict, and the judge's confidence level (Rachlinski et al., 2009).

The results were mixed; White judges who received the vignette that mentioned the defendant and victim's races were equally likely to convict the defendant regardless of the defendant's race whereas Black judges were more likely to convict the defendant if they were described as White versus Black (Rachlinski et al., 2009). Furthermore, judges who displayed strong implicit biases which favored Whites were not more harsh to the Black defendant (Rachlinski et al., 2009). When researchers probed deeper they found an

interaction between the judge's race, their implicit bias score, and the defendant's race such that Black judges that displayed a preference for Blacks on implicit bias measures were less likely to convict the Black defendant versus the White defendant whereas Black judges that displayed a preference for Whites on the implicit bias measure were more likely to convict the Black defendant (Rachlinski et al., 2009). This interaction was not found for White judges however (Rachlinski et al., 2009).

Judges who received the other two vignettes which subliminally primed race were, in general, not found to be harsher on defendants (Rachlinski et al., 2009). However, there was some evidence which indicated that when primed, judges who had implicit attitudes which favored Blacks over Whites were less harsh on defendants whereas judges who had implicit attitudes which favored Whites over Blacks were more harsh on defendants (Rachlinski et al., 2009). Rachlinski et al. (2009) note that these findings could be, in part, due to participants identifying the researchers' motives, leading White judges to attempt to correct potential unfairness and Black judges to feel less of a need to signal racial fairness. Despite this potential confound, Rachlinski et al. (2009) provide some evidence which suggests that implicit biases might be influencing judicial behavior (Kang et al., 2012). Taking implicit biases into consideration is important as this extra-legal factor can affect judicial behaviors and in turn, behavioral outcomes for juveniles, according to procedural justice. Thus, judicial bias training is necessary. Other extra-legal factors which might affect judicial behaviors and juvenile behavioral outcomes as a result include court actor and juvenile characteristics such as gender, race, age, political affiliation, and rural/urban location.

Personal Characteristics

Judge Demographics

Different judge characteristics such as gender, race, age, political affiliation, and rural/urban location have been found to contribute to disparate processing of juveniles which could as a result, affect juvenile behavioral outcomes according to procedural justice. Research has found that in general, men are more punitive than women (D'Angelo, 2002) which suggests that male judges might be more punitive when sentencing juveniles (Bazemore & Dicker, 1994). Additionally, some research suggests that minority authority figures are less punitive than non-minority authority figures (Tittle & Curran, 1988; Walker, 1985). Even age has been shown to affect sentencing decisions in judges, with judges imposing lighter sentences as they age (Myers, 1988).

Research has also found that Democratic judges are more lenient than Republican judges (Gibson, 1978; Nagel, 1961, 1963). Additionally, there are mixed results on whether judges' rural versus urban court location influences their sentencing decisions. Some researchers suggest that rural judges are more punitive due to a higher prevalence of conservative beliefs in rural areas (Johnson & Scheuble, 1991) whereas other researchers suggest that urban courts are more punitive due to more formal procedures within urban courtrooms (Feld, 1991). Further factors such as years on the bench have also been examined but with mixed results (Bazemore & Feder, 1997). Past work experience has also been shown to affect sentencing with judges who previously worked as prosecutors being found to be more punitive and less defense-oriented (Bazemore & Feder, 1997).

Some researchers suggest that this disparate processing of different groups of juveniles might stem from the juvenile justice systems concept of *parens patriae* and judges' orientation towards this concept based off of early socialization in the justice system which is associated with age (Bazemore & Feder, 1997). For example, older judges might be more committed to the idea of *parens patriae* and the best interests of the child compared to younger judges whose socialization was more modern (Bazemore & Feder, 1997). In addition to judge's demographic characteristics, judges' perceptions of juveniles can also shape unequal court outcomes.

Perceptions and Unequal Court Outcomes

Researchers suggest that juvenile court judges might consider extra-legal factors when sentencing juveniles despite these considerations being contrary to the law (D'Angelo, 2002). Judges as professionals use perceptions to shape mental processes by using the information to meaningfully classify clients (Bridges & Steen, 1998). Clients are classified based off of perceived similarities which result in similar treatment (Bridges & Steen, 1998). As such, inequalities in perceptions can create inequalities in treatment (Bridges & Steen, 1998). What is particularly concerning however, is that these perceptions and attributional processes turn the accused individual into an offender where their personal attributes are then used to influence further legal processes (Bridges & Steen, 1998). Even in instances where standardized instruments for legal decision-making were put in place to reduce bias and increase fairness, judges often overrode the standardized instrument due to not agreeing with its outcome as they were skeptical about the instrument's ability to adequately predict future behavior (Shook & Sarri, 2007). Although it can be difficult to determine the causal role of implicit bias (Greenwald &

Krieger, 2006), sentencing disparities can also act as evidence that judges are susceptible to bias. In addition to judicial characteristics and perceptions, the juvenile's own characteristics might affect their outcomes in the judicial system

Juvenile Demographics

Unfortunately, individuals including juveniles are commonly processed differently within the justice system based on different demographic factors such as race, gender, family and class, and location.

Race. Race is a primary extra-legal factor which contributes to disparate processing in the juvenile justice system. Minority offenders are seen as more villainous and deserving of severe penalties when they are stereotyped as predatory or chronic criminal offenders (Bridges & Steen, 1998). Research suggests that Black youth are often portrayed differently than White youth in court reports such that White youth were depicted as being influenced by their environment whereas negative attitude and personality traits were attributed to Black youth (Bridges & Steen, 1998). These results suggest that often African American delinquency is attributed to internal causes whereas White delinquency is attributed to external causes (Bridges & Steen, 1998). Evidence suggests that rather than focusing on the severity of the crime or previous criminal history, court officials focused on negative internal attributions of minorities when determining likelihood of recidivism (Bridges & Steen, 1998). Furthermore, these negative attributes assigned to minority youth shaped assessments of future threat and ultimately sentencing recommendations further affecting these minority youth (Bridges & Steen, 1998).

Research suggests that racial biases have been plaguing juvenile courts for over 30 years with court actors treating minority youth more severely than White youth (Bridges & Steen, 1998). Minority youth are found to be disproportionately overrepresented at all stages of the juvenile justice process with racial disparities being present at various stages (Feld, 1999). Indirect and direct race effects are present such that disparate processing is not always directly based on race; some courts sentence youth based on extra-legal factors such as social status (e.g., socioeconomic status) which is a race-related characteristic (Feld, 1999). As such, minority juveniles are indirectly receiving more severe dispositions than White juveniles due to their personal conditions and characteristics (Feld, 1999).

Gender. In addition to race, gender plays a significant role in disparate processing such that Black women and girls are more likely than White women and girls to be targeted for arrest and processed more severely (Gaarder et al., 2004). Gender is another prominent extra-legal factor which affects unequal court outcomes. Whereas self-report evidence suggests that girls and boys commit status offences in the same numbers, the rate at which girls are arrested and referred to juvenile court is much higher than boys (Gaarder et al., 2004). Probation officers even suggest that girls are processed differently in the juvenile justice system than boys, with girls being more likely to be referred for domestic violence offenses, probation violations, truancy, drugs, prostitution, and status offenses (Gaarder et al., 2004). The probation officers also suggested that girls are punished for sexual behavior whereas boys are likely to be rewarded for it (Gaarder et al., 2004).

In interviews with probation officers, they indicated that “girls are involved with the court process more for their best interests, not necessarily because she is a danger to the community, but for her own safety” (Gaarder et al., 2004, p. 566) which suggests that court actors are operating under the orientation of *parens patriae* and the best interests of the child rather than more modern approaches. Researchers suggest that cultural and police policy changes likely led to a higher tendency to arrest girls for minor violent offenses (Feld, 2009). The rise in girls arrested for violent crimes has been linked to gender-specific policy changes which has led to a greater likelihood of disproportionately charging girls for assault on less serious forms of conduct, criminalizing intimate violence, and a diminished tolerance of girls’ acting out behavior (Feld, 2009).

Researchers suggest that disparate processing for girls is due to a disconnect between what court officers believe girls should stereotypically behave like and how the girls actually behave (Gaarder et al., 2004). Within case files girls are often being depicted negatively (Gaarder et al., 2004) which could ultimately influence judicial decisions. Rosenbaum and Chesney-Lind (1994) found that girls’ casefiles routinely included notes on their physical appearance and sexuality, but not for boys. Furthermore, juvenile court judges were being influenced by mentions of manipulative actions from girls but not from boys (Kempf-Leonard & Sample, 2000). In reading case files, researchers found that officers went beyond describing girls’ behaviors as manipulative to ascribing personality traits (Gaarder et al., 2004). Attaching labels like being difficult to work with as well as other stereotypes has also been found to lead to differential treatment of girls (Belknap, Holsinger, & Dunn, 1997; Gaarder et al., 2004).

In interviews with probation and other court officers, Gaarder et al. (2004) found that they often have perceptions of girls as being whiny and manipulative with 16.5% of girls being characterized as manipulators and liars and 20% as sexually promiscuous. Officers described how girls were too needy, had too many issues, and were harder to work with (Gaarder et al., 2004). Even more concerning is evidence which suggests that some officers' believe that girls' stories of abuse were exaggerated or untrue or that they were partially to blame for being abused (Gaarder et al., 2004). The idea that girls' sexuality is inappropriate has led to the idea that they need to be protected from dangers which might be associated with their sexuality (Gaarder et al., 2004).

Family and class. Additionally, families' socioeconomic status has also been a factor in unequal court outcomes (Gaarder et al., 2004). Within case files, officers noted their perceptions of these girls' families were that they were trashy, irresponsible, manipulative, and liars, even describing mothers as sluts and promiscuous (Gaarder et al., 2004). However, no officers commented on the fathers' physical attire, sexual activities, or marital status (Gaarder et al., 2004). Class was also an important contributor to perceptions of girls' families, particularly in cases where the family was homeless (Gaarder et al., 2004). Girls living in homeless families were punished with probation violations when they did not attend treatment sessions or missed appointments with their probation officer, labeling them as delinquent as a result of their homelessness (Gaarder et al., 2004).

Rural versus urban. Furthermore, the location the youth live and go to court in has been shown to affect sentencing outcomes (Feld, 1993). Urban youth often receive

more severe sentences than rural youth as urban courts have more access to detention facilities (Feld, 1993). However, more minority youth live in urban areas where they are disproportionately arrested for drug and violent crimes (Snyder & Sickmund, 1995). Extra-legal factors such as juveniles' race and gender have been shown to contribute to disparate processing and case dispositions (Feld, 1999; Gaarder et al., 2004). However, there are tactics such as the use of a procedural justice framework which can help combat the potential for bias to impact court procedures and outcomes.

Outcomes

Behavioral outcomes are important indicators for the juvenile's future. Assessing juveniles' behavioral outcomes allows researchers to make conclusions about important variables of interest such as the use of procedural justice during court hearings. The majority of studies examining behavioral outcomes typically focus on recidivism or the repetition of criminal behavior (Sickmund & Puzzanchera, 2014). However, recidivism rates should be interpreted with caution due to measurement differences. Repeated offending can be measured in multiple ways including arrest, conviction, correctional commitment, court referral, correctional status changes, and even via self-report (Sickmund & Puzzanchera, 2014). As a result, recidivism rates can vary dramatically. Further complicating interpretation of recidivism statistics is that rates can be measured across any given period of time causing statistics to potentially be misleading (i.e., shorter measurement periods often have lower rates of recidivism due to less opportunity to offend; Sickmund & Puzzanchera, 2014).

Due to the difficulties of measuring recidivism, the present study examines short-term behavioral outcomes such as completion of assigned consequences and whether they were successfully terminated from the juvenile justice system. These behavioral outcomes indicate the juvenile's success throughout the case and act as indicators for more long-term outcomes. These short-term outcomes are important in the bigger picture as they measure various aspects and areas of the juvenile's successes rather than tallying the number of failures. Furthermore, measuring behavioral outcomes via various successes better illuminates and targets associations between procedural justice and specific behavioral outcomes.

The relationship between these short-term indicators such as completion of assigned consequences (often community service is assigned as one of the various consequences) and more long-term outcomes is evidenced by research which suggests that there are positive outcomes of volunteering service for both youth who engage voluntarily as well as involuntarily (Kim & Morgul, 2017). Specifically, voluntary youth service was positively associated with psychological benefits and adult service whereas both voluntary and involuntary youth service was positively associated with educational attainment as well as earnings when measured in young adulthood (Kim & Morgul, 2017). A relationship also exists between termination from the juvenile justice system, a short-term indicator, and long-term outcomes (Stein, Deberard, & Homan, 2013). A meta-analysis of success and failure in juvenile drug treatment courts found that an adolescent's successful graduation from a drug court was associated with lower recidivism rates in the year following (Stein et al., 2013). Although these results (Stein et al., 2013) are limited in nature due to the issues with measuring recidivism, it indicates

that successful termination from legal requirements can be associated with more long-term outcomes.

One of the primary goals of the justice system, particularly the juvenile system, is rehabilitation. This orientation assumes that individuals can be treated and return to a lifestyle free of criminal behavior, thus, it is important to be able to measure the success of differing programs, policies, or practices that help achieve this goal. One such practice that could contribute to deterring future criminal acts is utilization of a procedural justice framework to affect better behavioral outcomes in the short-term, such as completion of assigned consequences and whether they were successfully terminated from the juvenile justice system, as well as the long-term for juveniles.

Summary

As it pertains to the court system, procedural justice theory suggests that how individuals and their problems are handled by the court system (i.e., procedural fairness), greatly influences their evaluation of their court experience more so than the actual outcome of their case and further, whether they accept and follow court rulings in the short- and long-term. Previous research examining procedural justice in juveniles is severely limited in number and has only explored the relationship between perceived (subjective) procedural justice and youth behavioral outcomes. However, it is important to ensure that juveniles are not merely perceiving procedural justice when in reality their court processes are unfair. Instead, observed measures must be used to determine if procedural justice is occurring regardless of the juveniles' perceptions as this may better predict behavioral outcomes such as compliance with court orders.

The present study examines procedural justice in an observable way by focusing on the interaction between the judge and the juvenile. Further, the potential for bias to influence the judge's behaviors and ultimately the court processes as well as the juvenile's outcomes during judge-juvenile interactions are examined via both the judge's and juvenile's demographic characteristics. In other words, the present study examines how variables such as procedural justice, amount of judge-juvenile interactions, judicial characteristics, juvenile characteristics, and judge-juvenile characteristic match versus non-match are associated with juvenile's behavioral outcomes such as length of contact with the system, case length, continuances, completion of assigned consequences, and whether they were successfully terminated from the juvenile justice system.

Chapter 3: Method

This chapter details the data collection site, data access considerations, participants, procedure, measures, and assumptions utilized in the study.

Data Collection Site

The Pima County Juvenile Court Center served as the data collection site for this study. Pima County is located in Southern Arizona along the United States-Mexico border. Pima County encompasses Tucson and a portion of the Tohono O’Odham Nation Reservation. The Pima County Juvenile Court Center is led by a group of 14 judges tasked solely with handling juvenile justice and child welfare cases. It is their mission to “ensure children are protected, youth are rehabilitated, and the community is safe by administering timely and impartial justice and providing innovative services” (Pima County Juvenile Court Center, n.d.). From 2013 to 2017 the Pima County Juvenile Court Center’s number of total referrals decreased from just over 8,500 to nearly 6,600 with offenses ranging in severity from felony, violent crimes against a person (3.1% in 2017), to status offense (19.5% in 2017; Pima County Juvenile Court Center, n.d.).

Data collection occurred from August 5-19, 2019 (11 days) for approximately 8 hours/day. The additional coders and I collected data in a cubicle with a secure filing cabinet to store case files (only I and other court staff possessed a key) and a single secure computer from which to access the audio from the recorded hearings (additional details on coders is available later in this chapter under the Procedure section). The coders and I used the same computer to simultaneously listen to the recorded hearings with headphones.

Data Access Considerations

I identified the Pima County Juvenile Court as the research site given (a) an existing relationship between my advisor/chair and the presiding judge, (b) the site's demonstrated history of interest and involvement in research, and (c) the fact that the court records their hearings. To gain access to the data I contacted the Pima County Juvenile Court Center and was directed to the Deputy Court Administrator and the manager of their Research and Evaluation Unit. I was instructed to complete a research request application and provide a research proposal with information regarding the purpose of the proposed study, population, data collection methods, and products. Upon Pima County Juvenile Court Center's review of the research request application and research proposal, they provided valuable feedback about the feasibility of some aspects detailed in the research proposal. In talking with my advisor, I made the necessary adjustments based off of the feedback. I responded to their feedback and detailed the adjustments that would be made to address these aspects. After reviewing my adjustments, the Pima County Juvenile Court Center approved my request to do research at their court site. Upon receiving my dissertation committee approval, I acquired approval to conduct the research from the University of Nevada, Reno's Institutional Review Board (IRB; Project Number: 1456403-1). See Appendix A for IRB Approval Letter.

Participants

The larger population of interest for this study was juveniles in the justice system. Due to various limitations, described below, it was necessary to use a nonprobability convenience sample. Data was collected via stratified sampling of juveniles in the Pima

County juvenile court justice system whose court hearings were audio recorded, whose cases were closed at some point during the last three years, and whose cases were handled by the Pima County Juvenile Court Center. Initially, I planned to only examine cases which began no earlier than the year 2008 and closed no later than 2018. However, due to time and resource constraints within the courthouse, cases from 2014 to 2019 were analyzed; the limitations associated with this are discussed below. Including cases from 2014 to 2019 ensured that data was gathered from recent cases. Estimating that 10 of the 14 judges at Pima County Juvenile Court Center hear juvenile delinquency cases, data was collected from 6-12 juveniles/cases per judge. Each stratum was composed of one judge.

The sampling frame that was provided by Pima County Juvenile Court Center was initially constrained by removing cases that appeared to have multiple adjudication hearings to ensure that there was case equivalence; cases with only one adjudication hearing in the sampling frame were selected as it seemed logical the effects of a judge-juvenile interaction and instances of procedural justice might be more impactful to juveniles with only one adjudication hearing rather than several. Additionally, this eliminated the problem of having different judges presiding over different adjudication hearings for one juvenile. However, despite intentionally trying to remove cases with multiple adjudication hearings, the sampling frame was not comprehensive. There were several instances in which there were multiple adjudication hearings that were not indicated in the sampling frame (potentially leading to biased sample selection) as well as instances in which the most recent adjudication was not indicated (leading to some

selected cases needed to be removed later due to a different judge presiding over the hearing).

There were various judges with cases between 2014-2019. After constraining the sampling frame thus far, the number of cases per judge was assessed. The number of cases from each judge ranged from 2-24. The ten judges that had the most cases were selected making the range of cases per judge 13-24. Due to the limited number of female juveniles in the sampling frame, every female juvenile's case was selected. This was done to ensure that there were enough juveniles/cases for important demographic features (i.e., juvenile gender). There was a lack of heterogeneity in juvenile race and thus, the sample might not be representative of census population for Pima County. From each stratum (judge), male juveniles were randomly selected with a random number generator.

Due to the time and resource constraints of the Pima County Juvenile Court Center and the researcher, data was collected from a total of 86 cases/juveniles. Refer to Table 1 for a summary of demographic data. For juveniles, the sample consisted of 62 males (72%) and 24 females (28%). The juveniles ranged in age from 11 to 17 years old (age was recorded when their charges were first filed for their most current adjudication; $M = 15.37$, $SD = 1.51$). Most of the juveniles were classified by the court as White (61%), followed by Asian/Oriental (18%), Black (13%), Other (5%), and American Indian (2%). Additionally, the majority of juveniles had prior juvenile justice system involvement (56%).

Table 1. Descriptive Statistics

	<i>N</i>	<i>%</i>	<i>Mean</i>	<i>Range</i>
Judges	10			
Gender				
<i>Male</i>	5	50		
<i>Female</i>	5	50		
Race				
<i>White</i>	8	80		
<i>Asian/Oriental</i>	1	10		
<i>Other</i>	1	10		
Years on the Bench			6.23	1-18
Number of Cases/Juveniles			8.98	6-12
Juveniles	86			
Gender				
<i>Male</i>	62	72		
<i>Female</i>	24	28		
Race				
<i>White</i>	50	88		
<i>Asian/Oriental</i>	15	18		
<i>Black</i>	11	13		
<i>American Indian</i>	2	2		
<i>Other</i>	4	5		
Age			15.37	11-17
Prior System Involvement	48	56		

Of the 10 adjudicating judges in the sample, the number of cases examined per judge ranged from 6 to 12 cases ($M = 8.98$, $SD = 1.87$). The sample consisted of 5 male (50%) and 5 female (50%) judges. However, of the cases examined, 45 (52%) were adjudicated by a female judge and 41 (48%) were adjudicated by a male judge. Most of the judges were classified as White (80%), followed by Asian/Oriental (10%) and Other (10%). The number of years that the judge was on the judicial bench (determined when the juvenile's charges were first filed for their most recent adjudication) ranged from 1 to 18 years ($M = 6.23$, $SD = 4.28$).

Procedure

The procedure was two part, including file review and review of recorded hearing.

File Review

The first part of the procedure was data collection from court and case files. During this part of the procedure I examined the juvenile's case as a whole, rather than looking at occurrences during a specific hearing. Data was gathered via their court and case files which includes all relevant documents with information about such things as time in the system, probation violations, new adjudicated charges, continuances, and completion of assigned consequences. Specifically, data was collected from the closed court and case files of the same juveniles whose court hearings were examined. Data points were collected using the measure described below (see Appendix B).

Review of Recorded Court Hearing

The second part of the procedure was data collection on court hearings at the Pima County Juvenile Court Center. Specifically, I reviewed the adjudication court hearing via audio recordings at the Pima County Juvenile Court Center. The adjudicatory hearing was selected because it acts as the first hearing in the juvenile's case in which the judge is most likely to engage with the juvenile; during the adjudicatory hearing the juvenile has the opportunity to present information about the case to the judge and the judge queries the juvenile. Additionally, if the juvenile admits to the charges or takes a plea, the judge queries whether the juvenile is making a knowing and voluntary admission. Hearings that typically occur prior to the adjudication hearing include the detention hearing and arraignment hearing. The detention hearing is not an ideal hearing

to examine as it typically transpires within 48-72 hours after detention occurs and is primarily focused on determining if continued detention is necessary pending an adjudicatory hearing. The arraignment hearing is also not an ideal hearing to examine as it primarily focuses on reading the juvenile's formal charges in which they must admit or deny.

However, the adjudicatory hearing is focused on the judge receiving and weighing the evidence of the case in order to determine whether the juvenile committed the act for which they were charged and for juveniles that admit or plea, that they are making a knowing and voluntary decision. It is in the adjudicatory hearing that a judge is most likely to meaningfully engage with the juvenile for the first time; during the adjudicatory hearing the juvenile has the opportunity to present information about the case to the judge and the judge queries the juvenile. Thus, data was collected from the adjudicatory hearing using the measures described below. For each juvenile/case, the court hearing was listened to at the Pima County Juvenile Court Center and data points were recorded using a physical copy of the measure (see Appendix C).

Coder training information. Three additional coders were utilized; they were Psychological Science juniors or seniors at the University of Arizona in Tucson, AZ. The additional coders were recruited via an email script constructed by me and disseminated by a professor in the Psychology department at the University of Arizona. Training occurred over the course of an hour and was conducted in the our assigned cubical at the Pima County Juvenile Court Center. Due to limitations discussed below two coders, in addition to me, coded a subset (40%) of the sample; 25% of the total sample is deemed

acceptable (Kennedy-Costantini & Nielsen, 2018). All data was recorded using a physical copy of the measure. For each juvenile/case, data from each part was aggregated such that data from the juvenile's hearing corresponded with the data from their court and case files.

The training of additional coders occurred in several steps. First, I presented the Review of Recorded Hearing Measure to the additional coders and covered each item individually to provide clarity and explanation; on items which might be particularly subjective, I provided a definition (e.g., concern is indicated by things such as care, interest, or worry). I provided common examples of how each item might occur during the audio recording of the hearing. I asked them to write notes as they saw fit to enhance their understanding. Second, I had them read it over at their own pace and asked them to critically review their understanding of the measure. I asked if they had any questions or needed clarification on certain items. Third, I randomly selected a case outside of the sample. I presented the audio recording of the case to the additional coders and had them code the audio recording in real-time (along with myself).

I then calculated the inter coder reliability which was above .75. With a 95% confidence interval, an intraclass correlation coefficient between .75 and .90 was achieved which indicated "good" reliability (Fleiss, 1986; Koo & Li, 2016; Trevethan, 2017). If the reliability was below .75, I would have asked again if there are questions or clarifications needed; if so, these would have been addressed, and coding would have commenced on a second training case. This process would have repeated until inter coder reliability is at or above .75. The additional coders proceeded to code 40% of the sample.

Measures

The measures used in this study are described below. Further detail about these measure and associated procedures are included in the Appendices. Appendix B contains the file review measure. Appendix C contains the review of recorded hearing measure. Appendix D contains the variables of interest broken down by type, name, and structure. Appendix E contains the conceptual model.

Dependent Variables

The dependent variables of interest included length of contact with the system, case length, continuances, completion of assigned consequences, and end reason (i.e., successful termination; see Appendix D).

Length of contact with the system. Length of contact with the system was measured continuously in days from the date the petition was filed until the last documented contact with the system. This variable was calculated with information provided in the court file. *Length of contact with the system* indicates how long each juvenile was in direct contact with the juvenile justice system.

Case length. Case length was measured continuously in days from the date the petition was filed until the case was considered closed (i.e., when the juvenile was discharged). This variable was calculated with information provided in the court file as well as through metrics provided by court staff. *Case length* indicates how long each juvenile's case was an active part of the juvenile justice system.

Continuances. Continuances were measured continuously via number of continuances issued by the judge from the date the petition was filed until the case was

considered closed. This variable was calculated with information provided in the court file. *Continuances* indicates how many times the judge lengthened the court process for the juvenile for various reasons including, the juvenile's parent/guardian, prosecution, probation officer, or juvenile requests it, good cause exists, new counsel is being appointed, etc., from the first hearing until the case was considered closed.

Completion of consequences. Completion of consequences that were assigned by the judge was measure dichotomously as yes or no. This variable was calculated with information provided in the court file as well as through metrics provided by court staff. *Completion of consequences* indicates whether the juvenile complied with court orders and completed their assigned consequences.

End reason. End reason was measured dichotomously as whether the juvenile was successfully terminated or had another end reason (e.g., case transferred to adult court, the juvenile turned 18 years old, etc.). This variable was calculated with information provided in the court file as well as through metrics provided by court staff. *End reason* indicates whether the juvenile was successfully terminated from the juvenile justice system.

Independent Variables

Procedural justice elements. Procedural justice was measured using a procedural justice scale adapted from two sources including: the Center for Court Innovation's Measuring Perceptions of Fairness: An Evaluation Toolkit (Gold & Jensen, 2015) and Sunshine and Tyler (2016) which were modified and tailored by myself to juvenile court hearings (the original measures were aimed at adult court hearings) by examining

whether each of the items uniquely and objectively contributed to the concept of procedural justice; if they did, they were included. For example, one measure utilized a question that asked, “The judge provided some overview of what might happen during court and/or how decisions would be made.” Later in the same measure, there were two similar questions asked: “At the beginning of court sessions, the court’s bench officers provide a summary of what will happen during the appearance” and “The court’s bench officers explain the process by which decisions would be made”. In an effort to only include questions that uniquely and objectively contributed to the concept of procedural justice, only the latter two questions were used as the first question was both double-barreled and was reiterated in the latter two questions (i.e., did not uniquely and objectively contribute). Additionally, if wording changes or clarifications were needed (e.g., to reflect the juvenile population), then the items were adjusted accordingly. I created three items as I deemed these items to directly related to procedural justice, but which were not present in the existing measures (i.e., B2, DH2, O1).

Procedural justice encompasses four elements including voice, respect, trust, and neutrality. Voice refers to opportunities for participation; whether individuals feel that they have been allowed to be involved and provide their thoughts, opinions, and suggestions about the resolution of their conflict. Respect refers to individuals being treated with dignity, whether they are taken seriously, and whether their input is valued and attended to; whether the individual feels that they have been shown respect in relation to their rights and status in society. Respect can be conveyed in a number of ways including, general courtesy and politeness, as well as providing information about the often-confusing legal system, such as what to do and where to go. Trustworthiness of

the authorities refers to assessments of motives – whether the decision-making authority seriously considered the individual’s arguments, are concerned with their situation, are sincere, honest, open, and attempt to do what is right for them. Neutrality refers to whether the authorities were acting without bias; that their decisions were made with consistency, even-handedness, transparency, impartially, and objectivity.

The entire scale included 22 items (4 items for voice, 9 items for respect, 4 items for trust, 5 items for neutrality) such as, “The judge gave the juvenile or their lawyer a chance to tell their side of the story.” Items were rated on a Likert type scale from 1 (Strongly Disagree) to 5 (Strongly Agree).

Judge-juvenile interaction. Judge-juvenile interactions were measured in eight ways. First, a continuous measure using a count of the number of times the judge and the juvenile verbally interacted, regardless of the length. Second, the shortest conversation between the judge and juvenile out of all of the conversations. Third, the longest conversation between the judge and juvenile out of all of the conversations. Fourth, the average length of conversation between the judge and juvenile out of all of the conversations. Fifth, the percent of the total hearing length in which the judge and juvenile had a conversation – for adjudication hearings that were a trial (rather than the juvenile admitting or taking a plea). Sixth, the percent of the total hearing length in which the judge and juvenile had a conversation – for adjudication hearings in which the juvenile was admitting or taking a plea (rather than having a trial). The fifth and sixth measures were extrapolated from a single ‘percent of conversation variable’ as there was a significant difference in total hearing length between adjudicatory hearings that were a

trial versus plea/admittance. As such, these variables are mutually exclusive. Seventh, the amount of time from the start of the hearing until the judge and juvenile had a conversation. Eighth, the number of conversations the judge and juvenile had.

A single interaction was defined as a judge directing a question or statement at the juvenile with the intent that the juvenile should respond back regardless of whether it was within a series of exchanges on the same topic. Instances in which the judge is interacting with the juvenile multiple times within a single conversation (i.e., for a sustained period of time) were counted as one conversation. The number of interactions and conversations variables were continuous count variables. The shortest, longest, average, and time to first conversation variables are cumulative such that the minutes and seconds are calculated from each conversation. The percent variables were calculated by dividing the total length of conversations (in minutes and seconds) by the total length of the hearing.

The various judge-juvenile interaction variables are utilized as they each provide information that is not covered by the other; for example, if information is only gathered on the number of times the judge and juvenile interacted, then there is not information to indicate whether these interactions were simple yes/no responses from the juvenile or a more in-depth conversation. *Judge-juvenile interaction* indicates to what level the judge and the juvenile interacted with one another, getting at issues of dosage (i.e., how much and how often), which might be associated with the behavioral outcomes of the juvenile.

Judge characteristics. Judge characteristics were measured categorically and continuously depending on the variable. This information was gathered via the court administrator. Characteristics that were measured categorically included gender and race.

Gender was categorized by the court as either male or female. Race was categorized by the court as White, Black, Asian/Oriental, or American Indian. The characteristic that was measured continuously was length of time on the juvenile bench in years. *Judge characteristics* indicates different attributes that each judge possesses which might be associated with the behavioral outcomes of the juvenile via processes related to bias and discrimination associated with specific characteristics (e.g., race).

Juvenile characteristics. Juvenile characteristics were measured categorically and continuously depending on the variable. This information was gathered via the casefiles as well as the court administrator. Characteristics that were measured categorically include gender, race, and prior juvenile justice system involvement. Gender was categorized by the court as either male or female. Race was categorized by the court as White, Black, Asian/Oriental, or American Indian. The characteristic that were measured continuously was age in years. *Juvenile characteristics* indicates different attributes that each juvenile possesses which might be associated with the behavioral outcomes of the juvenile.

Judge-juvenile characteristic match. Judge-juvenile characteristic match was measured categorically. Characteristics of the judge and juvenile were calculated as being either a match (i.e., the judge and juvenile have the same characteristic of interest) or a non-match (i.e., the judge and juvenile do not have the same characteristic of interest). Characteristics of interest include gender and race. *Race match* indicates a judge and juvenile who are of the same race whereas *race non-match* indicates a judge and juvenile who are not of the same race. *Gender match* indicates a judge and juvenile who are of the

same gender whereas *gender non-match* indicates a judge and juvenile who are not of the same gender. *Judge-juvenile characteristic match* indicates whether the judge and juvenile have similar or different characteristics which might be associated with the behavioral outcomes of the juvenile via processes of bias and discrimination associated with ingroup favoritism.

Control Variable

The control variable, offense severity, was measured categorically (i.e., any felony charges, only misdemeanor charges). Information was gathered via the casefile. *Offense severity* indicates the seriousness of their charges which might be associated with whether they have better or worse behavioral outcomes. Additionally, some analyses included the control variable juvenile age, which was measured continuously at the time their case was first filed. This was done to account for significant correlations between juvenile age and some observed measures of procedural justice as well as their short-term outcomes.

Assumptions

There are several assumptions that were central to this study. First, it was assumed that the adjudicatory hearing is the hearing which is most likely to be associated with positive outcomes for juveniles in the justice system. As discussed above, the adjudicatory hearing was selected because it acts as the first hearing in the juvenile's case in which the judge is most likely to meaningfully engage with the juvenile. If the juveniles are denying the charges, the adjudicatory hearing is focused on the judge receiving and weighing the evidence of the case in order to determine whether the

juvenile committed the act for which they were charged. Additionally, if juveniles are admitting or taking a plea, the adjudicatory hearing is focused on ensuring that the juvenile is making a knowing and voluntary admission. It is in the adjudicatory hearing that a judge is most likely to have substantial interactions with the juvenile for the first time. However, it is conceivable that another hearing later on in the case might be more likely to be associated with positive outcomes for juveniles in the justice system. These later hearings were not examined as they are not consistent in timing or occurrence across juveniles' cases.

Second, it was assumed that judge-juvenile engagement was consistent, as determined by similar quality and quantity of interaction, throughout all of the juvenile's hearings. It is conceivable that the judge's engagement waivers depending on outside factors such as the day, due to having a large docket, or experiences of secondary traumatic stress, as well as for the juvenile depending on factors such as traffic or mental health. However, it seemed more likely that judge-juvenile engagement would stay relatively consistent in quality and quantity across the life of the case. Third, it was assumed that the judge remained the same for the entire length of the case (i.e., a new judge did not take over the case). Occasionally, depending on court policies and practices, judges are only residing on the juvenile court for a specified amount of time (e.g., one year) or the judge experiences a personal event which causes them to take a leave absence. Although it is generally the court's goal to maintain consistency across the life of the case in regard to all court actors, particularly the judge, this inconsistency in assignment does occur in some cases.

Fourth, it was assumed that the observable aspects of procedural justice encompass objective procedural justice. It is conceivable that there are aspects of objective procedural justice that cannot be observed and therefore could not be gathered in the present study. Fifth, it was assumed that the observed procedural justice that the juvenile received was uniquely associated with the juvenile's behavioral outcomes regardless of the juvenile's perception of the procedural justice that they received. Several studies examine only subjective procedural justice without accounting for observed procedural justice. This study assumed that the juvenile's perception does not entirely account for behavioral outcomes, rather observed procedural justice might be better associated with these behavioral outcomes.

Sixth, it was assumed that the juvenile did not experience an event with other legal actors which might have affected the association between procedural justice and the juvenile's behavioral outcomes. It is possible that interactions with other legal actors such as probation officers might influence the juvenile's objective and subjective procedural justice and therefore affect the association between procedural justice and behavioral outcomes. It is conceivable that the objective procedural justice that other legal actors provide might be more influential than that of the judge on behavioral outcomes. However, as judges are the primary decision makers throughout the juvenile's case and the importance of receiving procedural justice from the third-party decision maker is an important tenant within the concept of procedural justice, this assumption seemed allowable. Violation of these assumptions could considerably alter the validity of the data collected and results reported here.

Chapter 4: Results

Preliminary analyses were conducted to begin forming a picture of the data. P-P plots were examined to assess the normality of each variable via a visual inspection of the residuals. The majority of the variables were largely normally distributed. In instances where variables were not normally distributed, transformations were performed to increase the normality in these variables. In all but two variables the transformations did not improve the normality; however, for the length of the hearing and the length of contact with the system, normality was increased as a result of transformations. Ultimately, the decision was made to perform analyses without these two transformed variables for two reasons: first, although the transformations increased the normality, overall, they were still not normally distributed; and second, using the transformed variables would make interpreting complex results even more difficult. For all analyses in which judge or juvenile race was significant, follow-up analyses examined each race individually as well as dichotomously (i.e., White, Non-White). Refer to Appendix F for the analysis map.

Procedural Justice Item Refinement

The sub-sample ($N = 34$) of recorded court hearings that were coded by two additional coders was assessed for inter-rater reliability. The intraclass correlation (ICC) analysis was used to assess inter-rater reliability. Analysis indicated that there was a range in reliability such that based on a 95% confidence interval, various variables encompassed ICC values .0-.50 indicating poor reliability, .5-.75 indicating moderate reliability, .75-.90 indicating good reliability, and .9-1.00 indicating excellent reliability

(Koo & Li, 2016). Procedural justice item B1 (a respect component; “The judge introduced him/herself by name”) was eliminated as there was no variability.

Variables with excellent reliability were as follows: hearing start time, hearing end time, the number of judge-juvenile interactions, shortest judge-juvenile conversation, longest judge-juvenile conversation, average length of judge-juvenile conversation, time to the first judge-juvenile conversation, number of judge-juvenile conversations, procedural justice item B2 (a respect component; “The judge thanked audience members for being present”), and procedural justice item O5 (a neutrality item; “The judge avoided showing preferences towards certain prosecutors or defense attorneys [e.g., cutting off, rushing, talking over, etc. one attorney but not the other within the same case]”).

Variables with good reliability were as follows: procedural justice items B4 (a respect component; “The judge or other court staff explained court etiquette and rules at the beginning of the court session”), DH2 (a trust component; “The judge indicated concern for the juvenile’s situation”), PD1 (a voice component; “The judge solicited suggestions from the juvenile when deciding what to do”), PD3 (a trust component; “The judge indicated they are trying to do what is best for the juvenile GENERAL”), PD6 (a neutrality component; “The judge assured the juvenile that they would base their decisions upon facts”), and D3 (a respect component; “The judge described what the juvenile must do to comply with the court order or sentence”).

Variables with moderate reliability were as follows: procedural justice items B3 (a respect component; “The judge provided some overview of what might happen during court”), DH1 (a voice component; “The judge gave the juvenile or their lawyer a chance

to tell their side of the story”), PD2 (a trust component; “The judge indicated that they are trying to find the best solutions for the juvenile’s problems SPECIFIC”), PD4 (a neutrality component; “The judge explained the process by which decisions will be made”), PD5 (a neutrality component; “The judge assured the juvenile that all of the admissible evidence would be considered before making any decision”), D1 (a voice component; “The judge indicated that they considered the juvenile’s opinions when deciding what to do”), D2 (a trust component; “The judge gave an explanation for their actions”), and O3 (a respect component; “The judge and/or other legal actors used plain language [i.e., non-legal jargon] to explain the case procedure and outcome”).

The following variables had poor reliability: procedural justice items D4 (a respect component; “The judge asked the juvenile to repeat back his/her understanding of the sentence and/or next steps”), D5 (a respect component; “The juvenile was provided oral reminders about future court dates”), O1 (a respect component; “The judge and/or other legal actors were polite to the juvenile”), O2 (a voice component; “The judge and/or other legal actors asked open-ended questions [versus yes/no questions] to solicit questions from the juvenile”), and O4 (a neutrality component; “The judge and/or other legal actors did not make jokes or other commentary that could be perceived as derogatory or insensitive to certain class of court users [e.g., gender, race]”).

Only my data was utilized for subsequent analyses. The additional coders only coded a subset of the cases and due to the poor inter-rater reliability, the ability to generalize findings across cases was deemed more important than using aggregate scores on a portion of cases. Furthermore, the reliability of my own scores was deemed to be

greater than that of the coders due to my familiarity with the measure and underlying concepts. There were also various issues associated with the additional coders as discussed in the limitations section.

Procedural Justice Items as a Whole

As the original intent was to examine procedural justice as a whole, followed by sub-scales based on component (i.e., voice, neutrality, respect, trust), and finally as individual items, I began by conducting an exploratory factor analysis with varimax rotation of all variables; items PD1, PD2, PD3, PD5, and D1 were excluded due to a high number of missing values which was the result of the items being minimally relevant to the adjudication hearing in the majority of cases. The results indicated seven distinct categories much different than the previous research indicated; these items were drawn for previous research (Gold & Jensen, 2015; Sunshine & Tyler, 2016). Results indicated that component 1 encompassed items PD4 (Neutrality; Gold & Jensen, 2015; Sunshine & Tyler, 2016), PD6 (Neutrality; Sunshine & Tyler, 2016), and D2 (Trust; Sunshine & Tyler, 2016). Component 2 encompassed items O1 (respect; I created this item); O2 (voice; Gold & Jensen, 2015), and D4 (respect; Gold & Jensen, 2015). Component 3 encompassed items O4 and O5, both neutrality (Gold & Jensen, 2015). Component 4 encompassed items B2 (respect; I created this item), D5 (respect; Gold & Jensen, 2015), and D3 (respect; Gold & Jensen, 2015). Component 5 encompassed items DH1 (voice; Gold & Jensen, 2015), DH2 (trust; I created this item), and O3 (respect; Gold & Jensen, 2015). Component 6 encompassed item B4 (respect; Gold & Jensen, 2015). Component 7 encompassed item B3 (respect; Gold & Jensen, 2015). As evidenced by this exploratory

factor analysis the items adapted from previous research (Gold & Jensen, 2015; Sunshine & Tyler, 2016) did not fall within the components given from those sources (i.e., voice, neutrality, respect, trust) for the present study.

To combat this issue an exploratory factor analysis with varimax rotation that constrained the components to five and then ultimately four components was analyzed. The four-component model indicated that Component 1 encompassed items PD4 (neutrality; Gold & Jensen, 2015; Sunshine & Tyler, 2016), PD6 (neutrality; Sunshine & Tyler, 2016), D2 (trust; Sunshine & Tyler, 2016), O1 (respect; I created this item), and O3 (respect; Gold & Jensen, 2015). Component 2 encompassed items DH1 (voice; Gold & Jensen, 2015), DH2 (trust; I created this item), D3 (respect; Gold & Jensen, 2015), D4 (respect; Gold & Jensen, 2015), and O2 (voice; Gold & Jensen, 2015). Component 3 encompassed items O4 and O5, both neutrality (Gold & Jensen, 2015). Component 4 encompassed items B2 (respect; I created this item), B3 (respect; Gold & Jensen, 2015), B4 (respect; Gold & Jensen, 2015), and D5 (respect; Gold & Jensen, 2015). As evidenced by this exploratory factor analysis (specifically Components 1 and 2) the items adapted from previous research (Gold & Jensen, 2015; Sunshine & Tyler, 2016) did not fall within the components given from those sources (i.e., voice, neutrality, respect, trust) for the present study. Thus, the decision was made to not examine these procedural justice items as a whole (i.e., single) scale which was originally anticipated.

Procedural Justice Items as Sub-Scales

Although the results from these exploratory factor analyses did not indicate that the sub-scales (i.e., voice, neutrality, respect, trust) would be reliable, reliability was

assessed. Each reliability test gave a Cronbach's alpha (Cronbach, 1951); researchers commonly state that a Cronbach's alpha $\geq .7$ is minimally acceptable (Nunnally, 1978). The voice sub-scale was examined, and results suggested that internal reliability of the 4-item scale (DH1, PD1, D1, and O2) to have a Cronbach's alpha equal to .41, however the deletion of DH1 would increase the Cronbach's alpha to .71 which would be acceptable reliability. The neutrality sub-scale was examined, and results suggested that internal reliability of the 5-item scale (PD4, PD5, PD6, O4, and O5) to have a Cronbach's alpha equal to .10; Cronbach's alpha would only increase to .31 with the deletion of O4 and O5. The respect sub-scale was examined, and results suggested that internal reliability of the 8-item scale (B2, B3, B4, D3, D4, D5, O1, and O3) to have a Cronbach's alpha equal to .28; Cronbach's alpha would only increase to .41 with the deletion of D4, O1, and O3. Finally, the trust sub-scale was examined, and results suggested that internal reliability of the 4-item scale (DH2, PD2, PD3, and D2) to have a Cronbach's alpha equal to .79 which would be acceptable reliability. The results further suggested that the deletion of D2 would increase Cronbach's alpha to .90 however, I decided to keep this item in as I felt that this item represented the trust component uniquely; trustworthiness of the authorities refers to assessments of motives – whether the decision-making authority seriously considered the individual's arguments, are concerned with their situation, are sincere, honest, open, and attempt to do what is right for them. The judge providing an explanation for their actions could indicate the judge's motives.

Analyses for research questions 1 and 2 were conducted with the voice and trust sub-scales. Results indicated that these sub-scales were not statistically significant in any analyses which is likely due to the previously stated issue that the items adapted from

previous research (Gold & Jensen, 2015; Sunshine & Tyler, 2016) did not fall within the components given from those sources (i.e., voice, neutrality, respect, trust) for the present study. Additionally, the resulting sub-scales included so few items that (voice = 3; trust = 4) that removing the previously stated items PD1, PD2, PD3, PD5, and D1, which had a high number of missing values as a result of the items being minimally relevant to the adjudication hearing in the majority of cases, would have led to an even smaller number of variables within each sub-scale (voice = 1; trust = 2; additionally, there are not enough items to be considered a scale). As a result of including these variables that had a high number of missing values, the voice sub-scale only had 16 valid cases and the trust sub-scale only had 13 valid cases. For these reasons, the procedural justice sub-scales were not utilized in analyses.

Procedural Justice Items as Individual Items

The decision was made to not utilize the voice and trust sub-scales but rather to only examine the procedural justice items individually. However, as a result of the relatively small sample size ($N = 86$), not all individual items could be used due to concern for power of each analysis. Concerns pertaining to power as well as lack of resources (i.e., lack of time and funds prohibiting the re-collection of data by myself or additional coders) led to this research being exploratory in nature. As previous research does not indicate what items are most important to procedural justice and this research being based off of limited previous research regarding observed procedural justice, exploratory analyses were conducted to determine which procedural justice items were of importance. Although it was not ideal to include items with only moderate reliability,

these items were included in analyses. Due to the exploratory nature of the research, moderate reliability items were included to gain a better understanding of observed procedural justice, which has been minimally examined, and how it might be associated with juveniles' short-term outcomes, rather than to provide conclusive results. Thus, variables with moderate to excellent reliability were included for further analyses.

For the continuous dependent variables (i.e., length of contact with system, case length, continuances) multiple regressions were performed to determine which procedural justice elements were of importance. Stepwise multiple regressions were performed first with each step containing one procedural justice component (i.e., voice, neutrality, respect, trust); second, standard multiple regressions were performed with all of the procedural justice components (i.e., voice, neutrality, respect, trust) entered simultaneously; and third, individual multiple regressions were performed with one procedural justice component (e.g., all trust items) entered simultaneously. For the dichotomous dependent variables (i.e., completion of consequences and successful termination), stepwise binomial logistic regressions were performed with each step containing one procedural justice component (i.e., voice, neutrality, respect, trust); second, standard binomial regressions were performed with all of the procedural justice components (i.e., voice, neutrality, respect, trust) entered simultaneously; and third, individual multiple regressions were performed with one procedural justice component (e.g., all trust items) entered simultaneously.

Results from these regressions indicated that items B3 (a respect component with moderate reliability; "The judge provided some overview of what might happen during

court”), B4 (a respect component with good reliability; “The judge or other court staff explained court etiquette and rules at the beginning of the court session”), D2 (a trust component with moderate reliability; “The judge gave an explanation for their actions”), and O3 (a respect component with moderate reliability; “The judge and/or other legal actors used plain language [i.e., non-legal jargon] to explain the case procedure and outcome”) were continually statistically significant ($p < .05$). Thus, the decision was made to proceed with these four procedural justice items to represent observed procedural justice in this study.

Due to the exploratory nature of this research and the issues with scale reliability discussed above, the decision was made to consider and report statistical tests which have a significance level of $p \leq .10$. Exploratory research occurs when investigating a situation which is not clearly defined. Due to the lack of research on observed procedural justice, the goal of this study was to gain a better understanding of it, rather than conclusive results, thus, supporting the use of a more lenient p -value. The following analyses will depict this decision. However, results should be interpreted with caution for the above reasons.

Data Analysis Decisions

Analyses were initially conducted using multilevel modeling analyses due to cases appearing to be nested within judges. In other words, there were two levels to the data (i.e., the judge level and the juvenile level). There were 12 judges and each judge had 6-12 cases that were examined. Each case was handled by only one judge; thus, the results of each judge’s cases could have been affected by that individual judge. This

could make the 6-12 cases of one judge more similar to each other than a case from another judge. In order to address these various levels, multilevel modeling analysis was initially conducted. However, upon further inspection, it was discovered that cases were randomly assigned to each judge's docket which eliminated the need for multilevel modeling analyses.

Research Question 1

Are observed measures of procedural justice in court associated with juvenile offenders' short-term behavioral outcomes while controlling for offense severity?

The data is nested in nature; juveniles nested within judges. In other words, it is possible that the juvenile's outcomes are somewhat dependent on who their adjudicating judge was. To account for the nested nature of the data, I used multilevel modeling to examine the associations between observed procedural justice items and juveniles' short-term outcomes, while accounting for the nesting variable, the adjudicating judge. The multilevel models examined items pertaining to whether the judge provided some overview of what might happen during court; the judge or other court staff explained court etiquette and rules at the beginning of the hearing; the judge gave an explanation for their actions; the judge and/or other legal actors used plain language to explain the case procedures and outcomes; as well as control variables – juvenile age and offense severity. The juveniles' short-term outcomes included, length of contact with the system, case length, continuances, completion of consequences, and successful termination from probation. However, none of the multilevel models were statistically significant ($p < .10$), indicating that there were not significant differences in juvenile short-term outcomes by

the adjudicating judge. Thus, analyses were conducted to examine the data without accounting for the nested nature.

First, the strength and direction of the linear relationships were examined via a Pearson's product-moment correlation between all continuous dependent variables (i.e., length of contact with system, case length, continuances) and procedural justice items B3 (a respect component; “The judge provided some overview of what might happen during court”), B4 (a respect component; “The judge or other court staff explained court etiquette and rules at the beginning of the court session”), D2 (a trust component; “The judge gave an explanation for their actions”), and O3 (a respect component; “The judge and/or other legal actors used plain language [i.e., non-legal jargon] to explain the case procedure and outcome”). The following correlations were not significant: length of contact with the system and items B3 and B4; case length and items B3, B4, and D2. Refer to Table 2 for all correlations. Outliers were not removed for these analyses as the analyses were primarily descriptive in nature.

Table 2. Correlations Among Variables of Interest

Variable	1	2	3	4	5	6	7	8	9
1 B3	1								
2 B4	.04	1							
3 D2	.22**	.17	1						
4 O3	.14	-.05	.07	1					
5 Length of Contact with the System	-.15	-.06	-.26**	.23**	1				
6 Case Length	-.05	.11	-.12	.24**	.75***	1			
7 Continuances	-.22**	-.25**	-.18*	.22**	.51***	.44***	1		
8 Complete Consequences	-.10	.00	-.15	.00	-.03	-.06	.07	1	
9 Successful Termination	.14	.18*	-.08	.22**	.09	.23**	.07	-.03	1
10 Number of J-J Interact	.02	-.21*	-.07	.39***	.26**	.29***	.41***	.13	.12
11 Shortest J-J Convo	-.09	.07	-.05	.09	.03	.04	-.10	-.05	.01
12 Longest J-J Convo	.04	-.22**	-.06	.48***	.24**	.21**	.34***	.17	.15
13 Average J-J Convo	.12	-.20*	-.11	.36***	.15	.11	.11	.12	.19*
14 Percent J-J Convo - Trial	-.22	-.43*	-.08	-.15	-.20	-.30	-.45**	-.06	-.22
15 Percent J-J Convo - Plea/Admit	.12	.20	-.19	.03	-.00	.01	.08	.28**	.18
16 Time to First J-J Convo	.03	.39***	.14	-.20*	.03	-.02	-.03	-.14	.06
17 Number of J-J Convos	-.09	-.16	.13	.33***	.09	.16	.17	.09	.00
18 Gender Match	-.02	.03	.12	.02	-.04	.05	.15	-.03	.16
19 Race Match	.18	.24**	.01	.13	.02	.04	-.15	-.24**	.17
20 Judge Years on Bench	.04	-.15	-.08	.11	.00	-.08	-.11	-.22*	-.12
21 Female Judge	-.05	-.12	-.10	-.08	-.10	-.14	-.16	-.03	-.03
22 Juvenile Age	.33***	-.08	.27***	-.16	-.24**	-.33***	-.23**	-.23**	-.05
23 Female Juvenile	-.12	-.06	.03	-.18*	.08	-.03	-.06	-.13	-.07
24 Prior System Involvement	.25**	-.12	.13	.05	-.23**	-.23**	-.20*	-.36***	-.12
25 Felony Charges	-.15	-.03	.04	.19*	.18*	.18*	.24**	-.20*	.17

Note. *** $p \leq .01$, ** $p \leq .05$, * $p \leq .10$. ^c = Mutually exclusive variables. B3: “The judge provided some overview of what might happen during court”. B4: “The judge or other court staff explained court etiquette and rules at the beginning of the court session”. D2: “The judge gave an explanation for their actions”. O3: “The judge and/or other legal actors used plain language [i.e., non-legal jargon] to explain the case procedure and outcome”.

Table 2 Continued. Correlations Among Variables of Interest

Variable	10	11	12	13	14	15	16	17	18
1 B3									
2 B4									
3 D2									
4 O3									
5 Length of Contact with the System									
6 Case Length									
7 Continuances									
8 Complete Consequences									
9 Successful Termination									
10 Number of J-J Interact	1								
11 Shortest J-J Convo	-.17	1							
12 Longest J-J Convo	.74***	-.03	1						
13 Average J-J Convo	.46***	.42***	.73***	1					
14 Percent J-J Convo - Trial	.31	-.17	.52**	.30	1				
15 Percent J-J Convo - Plea/Admit	.40***	.11	.53***	.37***	. ^c	1			
16 Time to First J-J Convo	-.50***	.16	-.45***	-.35***	-.47**	-.47***	1		
17 Number of J-J Convos	.63***	-.34***	.42***	.02	.37	.06	-.35***	1	
18 Gender Match	.03	.12	.02	.05	-.23	-.03	.10	-.11	1
19 Race Match	.10	-.03	.00	.04	.11	.06	.08	-.05	-.15
20 Judge Years on Bench	-.01	.17	.03	.15	.13	-.17	-.14	-.08	-.05
21 Female Judge	-.07	-.11	-.07	-.08	.53**	-.11	-.13	.14	-.45***
22 Juvenile Age	-.15	-.25**	-.06	-.10	.28	-.09	-.06	-.12	.07
23 Female Juvenile	-.12	-.00	-.04	-.11	.25	.10	-.10	.01	.08
24 Prior System Involvement	-.04	-.03	-.02	.08	.44*	-.16	-.20*	-.23**	-.05
25 Felony Charges	.12	.15	.18*	.08	-.17	-.13	.03	.06	.08

Note. *** $p \leq .01$, ** $p \leq .05$, * $p \leq .10$. ^c = Mutually exclusive variables. B3: “The judge provided some overview of what might happen during court”. B4: “The judge or other court staff explained court etiquette and rules at the beginning of the court session”. D2: “The judge gave an explanation for their actions”. O3: “The judge and/or other legal actors used plain language [i.e., non-legal jargon] to explain the case procedure and outcome”.

Table 2 Continued. Correlations Among Variables of Interest

Variable	19	20	21	22	23	24	25
1 B3							
2 B4							
3 D2							
4 O3							
5 Length of Contact with the System							
6 Case Length							
7 Continuances							
8 Complete Consequences							
9 Successful Termination							
10 Number of J-J Interact							
11 Shortest J-J Convo							
12 Longest J-J Convo							
13 Average J-J Convo							
14 Percent J-J Convo - Trial							
15 Percent J-J Convo - Plea/Admit							
16 Time to First J-J Convo							
17 Number of J-J Convos							
18 Gender Match							
19 Race Match	1						
20 Judge Years on Bench	-.18	1					
21 Female Judge	-.17	.34***	1				
22 Juvenile Age	.08	.09	.04	1			
23 Female Juvenile	-.22**	.02	.08	-.02	1		
24 Prior System Involvement	.27**	.28***	.14	.47***	-.07	1	
25 Felony Charges	.01	.05	-.11	-.00	-.22**	-.07	1

Note. *** $p \leq .01$, ** $p \leq .05$, * $p \leq .10$. ^c = Mutually exclusive variables. B3: “The judge provided some overview of what might happen during court”. B4: “The judge or other court staff explained court etiquette and rules at the beginning of the court session”. D2: “The judge gave an explanation for their actions”. O3: “The judge and/or other legal actors used plain language [i.e., non-legal jargon] to explain the case procedure and outcome”.

Pearson's Correlations

The Pearson's product-moment correlations were performed, and assumptions were assessed for each. Unless otherwise noted, each analysis showed the relationship to be linear, although both variables were not normally distributed, as assessed by Shapiro-Wilk's test ($p < .05$). However, the residuals were normally distributed, as assessed by a visual inspection. Additionally, Pearson's product-moment correlation is robust in regard to deviations from normality (LaerdStatistics, 2018).

For length of contact with the system and item D2, there were nine possible outliers. There was a statistically significant, small ($.1 < |r| < .3$) negative correlation between item D2 and length of contact with system, $r(79) = -.26$, $p = .02$, with item D2 explaining 7% of the variation in length of contact with system. For length of contact with the system and item O3, there were two possible outliers. There was a statistically significant, small ($.1 < |r| < .3$) positive correlation between item O3 and length of contact with system, $r(84) = .23$, $p = 0.03$, with item O3 explaining 5% of the variation in length of contact with system. For case length and item O3, there were four possible outliers. There was a statistically significant, small ($.1 < |r| < .3$) positive correlation between item O3 and case length, $r(82) = .24$, $p = .03$, with item O3 explaining 6% of the variation in case length.

For continuances and item B3, there were two possible outliers. There was a statistically significant, small ($.1 < |r| < .3$) negative correlation between item B3 and continuances, $r(84) = -.22$, $p = 0.04$, with item B3 explaining 5% of the variation in continuances. For continuances and item B4, there were two possible outliers. There was

a statistically significant, small ($.1 < |r| < .3$) negative correlation between item B4 and continuances, $r(84) = -.25$, $p = 0.02$, with item B4 explaining 6% of the variation in continuances. For continuances and item D2, there were six possible outliers. There was a statistically significant, small ($.1 < |r| < .3$) negative correlation between item D2 and continuances, $r(79) = -.18$, $p = .10$, with item D2 explaining 3% of the variation in continuances. For continuances and item O3, there were two possible outliers. There was a statistically significant, small ($.1 < |r| < .3$) positive correlation between item O3 and continuances, $r(84) = .22$, $p = 0.04$, with item O3 explaining 5% of the variation in continuances.

Multiple Regression

Second, multiple regression was used to predict each of the continuous dependent variables (i.e., length of contact with system, case length, continuances) based off of procedural justice items B3 (a respect component; “The judge provided some overview of what might happen during court”), B4 (a respect component; “The judge or other court staff explained court etiquette and rules at the beginning of the court session”), D2 (a trust component; “The judge gave an explanation for their actions”), and O3 (a respect component; “The judge and/or other legal actors used plain language [i.e., non-legal jargon] to explain the case procedure and outcome”) while controlling for offense severity. The multiple regression analyses were performed, and assumptions were assessed for each. Unless otherwise noted, each analysis showed linearity which was assessed by partial regression plots as well as a plot of studentized residuals against the predicted values. There was homoscedasticity, which was assessed by visual inspection

of a plot of studentized residuals versus unstandardized predicted values. There was no evidence of multicollinearity, which was assessed by tolerance values greater than .1 as well as correlations greater than .7. The assumption of normality was met, which was assessed by a Q-Q Plot.

The first multiple regression was performed to predict length of contact with the system from procedural justice items B3, B4, D2, and O3 while controlling for offense severity. There was independence of residuals, which was assessed by a Durbin-Watson statistic of 2.33. There were two outliers which was assessed by two of the following criteria: standardized residuals greater than ± 3 standard deviations, leverage values $[(2*k)/N]$ greater than .1235, and values for Cook's distance $[4/N-k-1]$ above .0533, which were removed. The multiple regression model statistically significantly predicted length of contact with system, $F(5, 73) = 4.19, p = 0.002, R^2 = 0.22$. One of the four variables added statistically significantly to the prediction, $p \leq .05$. The results suggested that, when controlling for offense severity, whether the judge gave an explanation for their actions was significantly negatively associated with length of contact with the system such that the judge giving more of an explanation for their actions was associated with a decrease in length of contact with the system by 34.66 days. For regression coefficients and standard errors refer to Table 3.

Table 3. Research Question 1: Multiple Linear Regressions

Variable	Length of Contact with System			Case Length			Continuances		
	<i>B</i>	<i>SE_B</i>	β	<i>B</i>	<i>SE_B</i>	β	<i>B</i>	<i>SE_B</i>	β
Intercept	312.11	69.62		274.77	94.31		2.02	.65	
B3	-27.39	20.09	-.15	-11.48	27.19	-.05	-.28	.19	-.16
B4	0.09	11.37	.00	3.85	15.71	.03	-.21	.11	-.21**
D2	-34.66	13.69	-.27***	-34.96	18.62	-.21*	-.21	.13	-.18
O3	19.60	12.42	.17	47.70	16.34	.32***	.30	.11	.28***
Felony Charges	81.34	34.27	.26**	71.25	46.18	.17	.43	.32	.15
<i>R</i> ²		.22			.18			.23	
<i>F</i>		4.19***			3.22***			4.44***	

Note. *** $p \leq .01$, ** $p \leq .05$, * $p \leq .10$. Tolerance was assessed and determined by assessing correlations and variance inflation factors and determined to be acceptable. B3: "The judge provided some overview of what might happen during court". B4: "The judge or other court staff explained court etiquette and rules at the beginning of the court session". D2: "The judge gave an explanation for their actions". O3: "The judge and/or other legal actors used plain language [i.e., non-legal jargon] to explain the case procedure and outcome".

The second multiple regression was performed to predict case length from procedural justice items B3, B4, D2, and O3 while controlling for offense severity. There was independence of residuals, which was assessed by a Durbin-Watson statistic of 2.33. There was one outlier which were assessed by two of the following criteria: standardized residuals greater than ± 3 standard deviations, leverage values $[(2*k)/N]$ greater than .1266, and values for Cook's distance $[4/N-k-1]$ above .0548, which was removed. The multiple regression model statistically significantly predicted case length, $F(5, 72) = 3.22$, $p = 0.01$, $R^2 = 0.18$. Two of the four variables added statistically significantly to the prediction, $p \leq .07$. The results suggested that the judge giving more of an explanation for their actions was associated with a decrease in case length by 34.96 days and that the more the judge or other legal actors used plain language to explain the case procedure and outcome was associated with an increase in case length by 47.70 days.

The third multiple regression was performed to predict continuances from procedural justice items B3, B4, D2, and O3 while controlling for offense severity. There

was independence of residuals, which was assessed by a Durbin-Watson statistic of 2.06. There was one outlier which was assessed by two of the following criteria: standardized residuals greater than ± 3 standard deviations, leverage values $[(2*k)/N]$ greater than .1235, and values for Cook's distance $[4/N-k-1]$ above .0533, which was removed. The multiple regression model statistically significantly predicted continuances, $F(5, 74) = 4.441, p = .001, R^2 = 0.23$. Two of the four variables added statistically significantly to the prediction, $p \leq .05$. Specifically, the results indicated that the judge or court staff explaining court etiquette and rules at the beginning of the hearing more was associated with a decrease in the number of continuances by 21%. Additionally, when the judge or other legal actors used plain language to explain the case procedure and outcome more, there was an association with an increase in continuances by 30%.

Binomial Logistic Regression

Third, binomial logistic regression was used to predict each categorical dependent variable (i.e., completion of consequences, successful termination from the juvenile justice system) based off of procedural justice items B3 (a respect component; “The judge provided some overview of what might happen during court”), B4 (a respect component; “The judge or other court staff explained court etiquette and rules at the beginning of the court session”), D2 (a trust component; “The judge gave an explanation for their actions”), and O3 (a respect component; “The judge and/or other legal actors used plain language [i.e., non-legal jargon] to explain the case procedure and outcome”) while controlling for offense severity. The binomial logistic regression to predict completion of consequences was not significant.

A binomial logistic regression was performed to determine the association between procedural justice items B3, B4, D2, and O3 and the likelihood that participants were successfully terminated from the juvenile justice system (end reason) while controlling for offense severity. Linearity of the continuous variables in respect to the dependent variable logit was assessed using the Box-Tidwell (Box & Tidwell, 1962) procedure. A Bonferroni correction was applied using all ten terms in the model which resulted in statistical significance being accepted when $p < .005$ (Tabachnick & Fidell, 2014). Based on this assessment, all continuous independent variables were linearly related to the dependent variable logit. There was one outlier with either high leverage points or highly influential points, which was removed from the analysis. The logistic regression model was statistically significant, $\chi^2(5) = 16.89, p = 0.01$.

The model explained 26% (Nagelkerke R^2) of the variance in end reason and correctly classified 69% of cases. For this binomial logistic regression sensitivity was 80%, specificity was 61%, positive predictive value was 52% and negative predictive value was 52%. Of the four predictor variables only three were statistically significant: items B3, B4, and O3 (as shown in Table 4). The results suggested that when the judge provided an overview of what would happen in court more, there was an association with an increase in odds of successful termination by 1.84; when the judge or court staff explained court etiquette and rules at the beginning of the hearing more, there was an association with an increase in odds of successful termination by 1.72; and when the judge or other legal actors used plain language to explain the case procedure and outcome more, there was an association with an increase in odds of successful termination by 1.60.

Table 4. Research Question 1: Binomial Logistic Regressions

Variable	Complete Consequences						Successfully Terminated from Juvenile Justice System					
	<i>B</i>	<i>SE</i>	Wald	Odds Ratio	95% C.I. for Odds Ratio		<i>B</i>	<i>SE</i>	Wald	Odds Ratio	95% C.I. for Odds Ratio	
					Lower	Upper					Lower	Upper
Constant	1.78	1.16	2.35	5.95			-2.35*	1.26	3.47	.10		
B3	-.43	.35	1.47	.65	.33	1.30	.61*	.35	3.05	1.84	.93	3.64
B4	.14	.19	.57	1.15	.80	1.65	.54**	.23	5.42	1.72	1.09	2.72
D2	-.22	.24	.87	.80	.50	1.28	-.37	.24	2.50	.69	.43	1.09
O3	.03	.20	.02	1.03	.70	1.51	.47**	.21	4.96	1.60	1.06	2.41
Felony Charges	-1.03*	.55	3.54	.36	.12	1.04	.88	.57	2.43	2.41	.80	7.30
Pseudo R ²		.12						.26				
Model χ^2		6.46							16.89***			

Note. *** $p \leq .01$, ** $p \leq .05$, * $p \leq .10$. A Bonferroni correction was applied using all terms in the model. B3: "The judge provided some overview of what might happen during court". B4: "The judge or other court staff explained court etiquette and rules at the beginning of the court session". D2: "The judge gave an explanation for their actions". O3: "The judge and/or other legal actors used plain language [i.e., non-legal jargon] to explain the case procedure and outcome".

Research Question 2

Are aspects of judge-juvenile interactions (e.g., number interactions and conversations) associated with observed measures of procedural justice while controlling for offense severity?

Again, to address the nested nature of the data, I used multilevel modeling to examine the associations between judge-juvenile interactions and observed procedural justice items, while accounting for the nesting variable, the adjudicating judge. The multilevel models examined items pertaining to the judge and juvenile interactions, including number of judge-juvenile interactions, shortest judge-juvenile conversation, longest judge-juvenile conversation, average length of judge-juvenile conversation, percentage of the trial hearing that the judge and juvenile had a conversation, percentage of the plea/admittance hearing that the judge and juvenile had a conversation, amount of time to the first judge-juvenile conversation, and number of judge-juvenile conversations as well as control variables – juvenile age and offense severity. The observed procedural justice items included whether the judge provided some overview of what might happen during court; the judge or other court staff explained court etiquette and rules at the beginning of the hearing; the judge gave an explanation for their actions; and the judge and/or other legal actors used plain language to explain the case procedures and outcomes. However, none of the multilevel models were statistically significant ($p \leq .10$), indicating that there were not significant differences in observed procedural justice items by the adjudicating judge. Thus, analyses were conducted to examine the data without accounting for the nested nature.

Pearson's Correlation

First, the strength and direction of the linear relationships were examined between all judge-juvenile interaction variables (i.e., number of judge-juvenile interactions, shortest judge-juvenile conversation, longest judge-juvenile conversation, average length of judge-juvenile conversation, percentage of the trial hearing that the judge and juvenile had a conversation, percentage of the plea/admittance hearing that the judge and juvenile had a conversation, amount of time to the first judge-juvenile conversation, number of judge-juvenile conversations) and procedural justice items B3 (a respect component; "The judge provided some overview of what might happen during court"), B4 (a respect component; "The judge or other court staff explained court etiquette and rules at the beginning of the court session"), D2 (a trust component; "The judge gave an explanation for their actions"), and O3 (a respect component; "The judge and/or other legal actors used plain language [i.e., non-legal jargon] to explain the case procedure and outcome") while controlling for offense severity.

The following correlations were not significant: item B3 and each judge-juvenile interaction variable; B4 and shortest judge-juvenile conversation, percentage of the plea/admittance hearing that the judge and juvenile had a conversation, and the number of conversations the judge and juvenile had; D2 and each judge-juvenile interaction variable; as well as O3 and shortest judge-juvenile conversation, percentage of the trial hearing that the judge and juvenile had a conversation, and percentage of the plea/admittance hearing that the judge and juvenile had a conversation. The Pearson's product-moment correlations were performed, and assumptions were assessed for each.

Unless otherwise noted, each analysis showed the relationship to be linear, although both variables were not normally distributed, as assessed by Shapiro-Wilk's test ($p < 0.05$). However, the residuals were normally distributed, as assessed by a visual inspection. Additionally, Pearson's product-moment correlation is robust with regards to deviations from normality (LaerdStatistics, 2018). Refer to Table 2 for all correlations.

Item B4. A Pearson's product-moment correlation was performed to assess the relationship between item B4 and the number of judge-juvenile interactions. There were no possible outliers. There was a statistically significant, small ($.1 < |r| < .3$) negative correlation between item B4 and the number of judge-juvenile interactions, $r(84) = -.21$, $p = 0.06$, with item B4 explaining 4% of the variation in the number of judge-juvenile interactions. A Pearson's product-moment correlation was performed to assess the relationship between item B4 and the longest judge-juvenile conversation. There were possible outliers, however, they were not removed. There was a statistically significant, small ($.1 < |r| < .3$) negative correlation between item B4 and the longest judge-juvenile conversation, $r(84) = -.22$, $p = .05$, with item B4 explaining 4% of the variation in the longest judge-juvenile conversation. A Pearson's product-moment correlation was performed to assess the relationship between item B4 and the average amount of time the judge and juvenile had a conversation. There were possible outliers, however, they were not removed. There was a statistically significant, small ($.1 < |r| < .3$) negative correlation between item B4 and the total time of judge-juvenile conversation, $r(84) = -.20$, $p = 0.07$, with item B4 explaining 3% of the variation in average amount of time the judge and juvenile had a conversation.

A Pearson's product-moment correlation was performed to assess the relationship between item B4 and the percentage of the trial hearing that the judge and juvenile had a conversation. There were no possible outliers. There was a statistically significant, moderate ($.3 < |r| < .5$) negative correlation between item B4 and the percentage of the trial hearing that the judge and juvenile had a conversation, $r(17) = -.43, p = .07$, with item B4 explaining 4% of the variation in the percentage of the trial hearing that the judge and juvenile had a conversation. A Pearson's product-moment correlation was performed to assess the relationship between item B4 and the amount of time to the first judge-juvenile conversation. There were possible outliers, however, they were not removed. There was a statistically significant, moderate ($.3 < |r| < .5$) positive correlation between item B4 and the amount of time to the first judge-juvenile conversation, $r(83) = .39, p < .001$, with item B4 explaining 13% of the variation in the amount of time to the first judge-juvenile conversation.

Item O3. A Pearson's product-moment correlation was performed to assess the relationship between item O3 and the number of judge-juvenile interactions. There were no possible outliers. There was a statistically significant, moderate ($.3 < |r| < .5$) positive correlation between item O3 and the number of judge-juvenile interactions, $r(84) = .39, p < .001$, with item O3 explaining 13% of the variation in the number of judge-juvenile interactions. A Pearson's product-moment correlation was performed to assess the relationship between item O3 and the longest judge-juvenile conversation. There were possible outliers, however, they were not removed. There was a statistically significant, moderate ($.3 < |r| < .5$) positive correlation between item O3 and the longest judge-juvenile conversation, $r(84) = .48, p < .001$, with item O3 explaining 20% of the variation

in the longest judge-juvenile conversation. A Pearson's product-moment correlation was performed to assess the relationship between item O3 and the average length of judge-juvenile conversation. There were possible outliers, however, they were not removed. There was a statistically significant, moderate ($.3 < |r| < .5$) positive correlation between item O3 and the average length of judge-juvenile conversation, $r(84) = .36, p = .001$, with item O3 explaining 11% of the variation in the average length of judge-juvenile conversation.

A Pearson's product-moment correlation was performed to assess the relationship between item O3 and the amount of time to the first judge-juvenile conversation. There were possible outliers, however, they were not removed. There was a statistically significant, small ($.1 < |r| < .3$) negative correlation between item O3 and the amount of time to the first judge-juvenile conversation, $r(83) = -.20, p = .07$, with item O3 explaining 3% of the variation in the amount of time to the first judge-juvenile conversation. A Pearson's product-moment correlation was performed to assess the relationship between item O3 and the number of judge-juvenile conversations. There were six possible outliers, however, they were not removed. There was a statistically significant, moderate ($.3 < |r| < .5$) positive correlation between item O3 and the number of judge-juvenile conversations, $r(84) = .33, p = .002$, with item O3 explaining 10% of the variation in the number of judge-juvenile conversations.

Multiple Regression

Second, multiple regression was used to predict procedural justice items B3 (a respect component; “The judge provided some overview of what might happen during

court”), B4 (a respect component; “The judge or other court staff explained court etiquette and rules at the beginning of the court session”), D2 (a trust component; “The judge gave an explanation for their actions”), and O3 (a respect component; “The judge and/or other legal actors used plain language [i.e., non-legal jargon] to explain the case procedure and outcome”) based off of all of the judge-juvenile interaction variables (i.e., number of judge-juvenile interactions, shortest judge-juvenile conversation, longest judge-juvenile conversation, average length of judge-juvenile conversation, percentage of the plea/admittance hearing that the judge and juvenile had a conversation, amount of time to the first judge-juvenile conversation, number of judge-juvenile conversations) while controlling for offense severity. The percentage of the trial hearing that the judge and juvenile had a conversation variable was not included in any of the following analyses due to a small *N* (i.e., 19 juveniles/cases).

The following multiple regressions were not significant: the judge-juvenile interaction variables and item B3 and D2. The multiple regressions were performed, and assumptions were assessed for each. Unless otherwise noted, each analysis showed linearity which was assessed by partial regression plots as well as a plot of studentized residuals against the predicted values. There was homoscedasticity, which was assessed by visual inspection of a plot of studentized residuals versus unstandardized predicted values. There was no evidence of multicollinearity, which was assessed by tolerance values greater than .1 as well as correlations greater than .7. The assumption of normality was met, which was assessed by a Q-Q Plot. A post-hoc G*Power analysis for a multiple regression using eight predictors was conducted in order to determine if there was

appropriate power for the analyses; it was determined that using an alpha of .05 and a large effect size ($f^2 = .35$; Faul, Erdfelder, Buchner, & Lang, 2013), that power = 1.00.

The first multiple regression was performed to predict item B4 from the judge-juvenile interaction variables while controlling for offense severity. There was independence of residuals, which was assessed by a Durbin-Watson statistic of 1.84. There was one outlier which was assessed by two of the following criteria: standardized residuals greater than ± 3 standard deviations, leverage values $[(2*k)/N]$ greater than .2540, and values for Cook's distance $[4/N-k-1]$ above .0741, which was removed. The multiple regression model statistically significantly predicted item B4, $F(8, 53) = 2.09$, $p = .05$, $R^2 = .24$. Three of the seven variables added statistically significantly to the prediction, $p \leq .10$. Specifically, an increase in the number of judge-juvenile interactions was associated with the judge or court staff giving more of an explanation of court etiquette and rules at the beginning of the hearing by .30. Additionally, an increased percent of the entire hearing length that judge-juvenile conversation encompassed during a trial was associated with a 2.61 increase in the judge or court staff giving more of an explanation of court etiquette and rules at the beginning of the hearing. Lastly, an increased number of judge-juvenile conversations was associated with a .12 decrease in the judge or court staff giving more of an explanation of court etiquette and rules at the beginning of the hearing. For regression coefficients and standard errors refer to Table 5.

Table 5. Research Question 2: Multiple Linear Regressions

Variable	B3			B4			D2			O3		
	<i>B</i>	<i>SE_B</i>	β	<i>B</i>	<i>SE_B</i>	β	<i>B</i>	<i>SE_B</i>	β	<i>B</i>	<i>SE_B</i>	β
Intercept	2.04	.58		.73	.77		3.82	.96		1.46	.86	
Number of J-J Interact	.03	.02	.39*	.03	.02	.29*	.01	.02	.07	-.01	.02	-.06
Shortest J-J Convo	.00	.02	.06	-.02	.02	-.15	-.01	.02	-.10	.01	.03	.07
Longest J-J Convo	-.00	.00	-.13	.00	.00	.10	.00	.00	.07	.01	.00	.35*
Average J-J Convo	.00	.01	.06	-.01	.01	-.21	-.00	.01	-.04	.00	.01	.06
Percent J-J Convo - Trial	.20	1.13	.04	2.61	1.40	.33*	-1.69	1.51	-.21	-.43	1.50	-.05
Time to First J-J Convo	.00	.00	.04	.00	.00	.16	.00	.00	.08	.00	.00	.22
Number of J-J Convos	-.07	.05	-.29	-.12	.06	-.36**	-.01	.07	-.02	.09	.06	.24
Felony Charges	-.05	.24	-.03	-.56	.31	-.23*	.09	.34	.04	-.09	.34	-.04
<i>R</i> ²		.10			.24			.09			.23	
<i>F</i>		.74			2.09**			.57			1.98*	

Note. *** $p \leq .01$, ** $p \leq .05$, * $p \leq .10$. Tolerance was assessed and determined by assessing correlations and variance inflation factors and determined to be acceptable. B3: “The judge provided some overview of what might happen during court”. B4: “The judge or other court staff explained court etiquette and rules at the beginning of the court session”. D2: “The judge gave an explanation for their actions”. O3: “The judge and/or other legal actors used plain language [i.e., non-legal jargon] to explain the case procedure and outcome”.

The second multiple regression was performed to predict item O3 from the judge-juvenile interaction variables while controlling for offense severity. There was independence of residuals, which was assessed by a Durbin-Watson statistic of 2.12. There were two outliers which were assessed by two of the following criteria: standardized residuals greater than ± 3 standard deviations, leverage values $[(2*k)/N]$ greater than .2540, and values for Cook's distance $[4/N-k-1]$ above .0741, which were removed. The multiple regression model statistically significantly predicted item O3, $F(8, 52) = 1.98, p = .07, R^2 = .23$. One of the seven variables added statistically significantly to the prediction, $p \leq .08$. The results indicated that a one second increase in the longest judge-juvenile conversations was associated with a .01 increase in the judge or other legal actors using plain language to explain the case procedure and outcome.

Research Question 3

Is demographic match (e.g., male juvenile/male judge) associated with judge-juvenile interaction while controlling for offense severity?

Subquestions: (a) Are judicial characteristics associated with judge-juvenile interaction while controlling for offense severity?

(b) Are juvenile characteristics associated with judge-juvenile interaction while controlling for offense severity?

To again address the nested nature of the data, I used multilevel modeling to examine the associations between judge-juvenile demographic match (i.e., gender, race), judicial characteristics, and juvenile characteristics with judge-juvenile interaction variables, while accounting for the nesting variable, the adjudicating judge. The

multilevel models included control variables juvenile age and offense severity. The judge-juvenile interaction variables included number of judge-juvenile interactions, shortest judge-juvenile conversation, longest judge-juvenile conversation, average length of judge-juvenile conversation, percentage of the trial hearing that the judge and juvenile had a conversation, percentage of the plea/admittance hearing that the judge and juvenile had a conversation, amount of time to the first judge-juvenile conversation, and number of judge-juvenile conversations. However, none of the multilevel models were statistically significant ($p \leq .10$), indicating that there were not significant differences in judge-juvenile interaction by the adjudicating judge. Thus, analyses were conducted to examine the data without accounting for the nested nature.

Multiple regressions were performed, and assumptions were assessed for each. Unless otherwise noted, each analysis showed linearity which was assessed by partial regression plots as well as a plot of studentized residuals against the predicted values. There was homoscedasticity, which was assessed by visual inspection of a plot of studentized residuals versus unstandardized predicted values. There was no evidence of multicollinearity, which was assessed by tolerance values greater than .1 as well as correlations greater than .7. The assumption of normality was met, which was assessed by a Q-Q Plot. A post-hoc G*Power analysis for a multiple regression using eight predictors was conducted in order to determine if there was appropriate power for the analyses; it was determined that using an alpha of .05, a large effect size ($f^2 = .35$; Faul et al., 2013), that power = 1.00.

Demographic Match

First, multiple regression was used to predict each judge-juvenile interaction variable (i.e., number of judge-juvenile interactions, shortest judge-juvenile conversation, longest judge-juvenile conversation, average length of judge-juvenile conversation, percentage of the trial hearing that the judge and juvenile had a conversation, percentage of the plea/admittance hearing that the judge and juvenile had a conversation, amount of time to the first judge-juvenile conversation, number of judge-juvenile conversations) based off of demographic match (e.g., gender match: female juvenile/female judge; race match: White juvenile/White judge) while controlling for offense severity. None of the multiple regressions were statistically significant. For regression coefficients and standard errors refer to Table 6.

Table 6. Research Question 3 Demographic Match: Multiple Linear Regressions

Variable	Number of J-J Interact			Shortest J-J Convo			Longest J-J Convo			Average J-J Convo		
	<i>B</i>	<i>SE_B</i>	β	<i>B</i>	<i>SE_B</i>	β	<i>B</i>	<i>SE_B</i>	β	<i>B</i>	<i>SE_B</i>	β
Intercept	17.05	3.10		9.14	1.75		149.66	23.24		46.73	6.21	
Gender Match	1.72	3.15	.06	-1.01	1.78	-.07	8.22	23.58	.04	4.73	6.19	.90
Race Match	3.12	3.14	.11	-2.27	1.78	-.15	1.12	23.52	.01	2.61	6.19	.05
Felony Charges	4.29	3.19	.15	-1.52	1.83	-.10	47.57	23.90	.22**	4.36	6.25	.08
<i>R</i> ²		.04			.03			.05			.02	
<i>F</i>		1.04			.82			1.41			.40	

Note. *** $p \leq .01$, ** $p \leq .05$, * $p \leq .10$. Tolerance was assessed and determined by assessing correlations and variance inflation factors and determined to be acceptable. B3: “The judge provided some overview of what might happen during court”. B4: “The judge or other court staff explained court etiquette and rules at the beginning of the court session”. D2: “The judge gave an explanation for their actions”. O3: “The judge and/or other legal actors used plain language [i.e., non-legal jargon] to explain the case procedure and outcome”.

Table 6 Continued. Research Question 3 Demographic Match: Multiple Linear Regressions

Variable	Percent J-J Convo - Trial			Percent J-J Convo - Plea/Admit			Time to first J-J Convo			Number of J-J Convos		
	<i>B</i>	<i>SE_B</i>	β	<i>B</i>	<i>SE_B</i>	β	<i>B</i>	<i>SE_B</i>	β	<i>B</i>	<i>SE_B</i>	β
Intercept	.03	.01		.49	.04		736.64	409.95		5.59	.67	
Gender Match	-.01	.01	-.22	-.00	.04	-.01	9.05	419.39	.00	-.82	.68	-.14
Race Match	.00	.01	.10	.02	.04	.06	-32.37	418.19	-.01	-.50	.68	-.08
Felony Charges	-.01	.01	-.20	-.04	.04	-.13	315.47	423.22	.09	1.11	.69	.18
<i>R</i> ²		.09			.02			.01			.05	
<i>F</i>		.47			.42			.19			1.35	

Note. *** $p \leq .01$, ** $p \leq .05$, * $p \leq .10$. Tolerance was assessed and determined by assessing correlations and variance inflation factors and determined to be acceptable. B3: “The judge provided some overview of what might happen during court”. B4: “The judge or other court staff explained court etiquette and rules at the beginning of the court session”. D2: “The judge gave an explanation for their actions”. O3: “The judge and/or other legal actors used plain language [i.e., non-legal jargon] to explain the case procedure and outcome”.

Judge Characteristics

Second, multiple regression was used to predict each judge-juvenile interaction variable (i.e., number of judge-juvenile interactions, shortest judge-juvenile conversation, longest judge-juvenile conversation, average length of judge-juvenile conversation, percentage of the trial hearing that the judge and juvenile had a conversation, percentage of the plea/admittance hearing that the judge and juvenile had a conversation, amount of time to the first judge-juvenile conversation, number of judge-juvenile conversations) based off of judge characteristics (i.e., judge gender, judge race, number of years on the court bench) while controlling for offense severity. The following multiple regressions were not significant: number of judge-juvenile interactions, shortest judge-juvenile conversation, longest judge-juvenile conversation, percentage of the trial hearing that the judge and juvenile had a conversation, percentage of the plea/admittance hearing that the judge and juvenile had a conversation, amount of time to the first judge-juvenile conversation, and number of judge-juvenile conversations.

A multiple regression was performed to predict the average length of judge-juvenile conversation from judge characteristics while controlling for offense severity. There was independence of residuals, which was assessed by a Durbin-Watson statistic of 1.57. There were three outliers which were assessed by two of the following criteria: standardized residuals greater than ± 3 standard deviations, leverage values $[(2*k)/N]$ greater than .0930, and values for Cook's distance $[4/N-k-1]$ above .0494, which were removed. The multiple regression model statistically significantly predicted the average length of judge-juvenile conversation, $F(4, 78) = 2.43, p = .06, R^2 = 0.11$. Three of the

four variables added statistically significantly to the prediction, $p \leq .10$. The results suggested that judge gender and race were significantly negatively associated; and years on the bench was significantly positively associated with the average length of judge-juvenile conversation when controlling for offense severity. Specifically, female judges were associated with a 10.53 second decrease in the average length of judge-juvenile conversations. Judge race was associated with a 6.35 second decrease in the average length of judge-juvenile conversation. Further analyses examining race dichotomously (i.e., White, Non-White), indicated that having a White judge was associated with a 23.39 second increase in average length of judge-juvenile conversation. Additionally, each one-year increase in years on the bench was associated with a .07 second increase in the average length of judge-juvenile conversation. For regression coefficients and standard errors refer to Table 7.

Table 7. Research Question 3 Judge Characteristics: Multiple Linear Regressions

Variable	Number of J-J Interact			Shortest J-J Convo			Longest J-J Convo			Average J-J Convo		
	<i>B</i>	<i>SE_B</i>	β	<i>B</i>	<i>SE_B</i>	β	<i>B</i>	<i>SE_B</i>	β	<i>B</i>	<i>SE_B</i>	β
Intercept	21.38	3.65		6.69	1.70		185.78	28.39		60.27	7.05	
Female Judge	-1.15	3.22	-.04	.03	1.58	.00	-21.05	25.16	-.10	-10.53	6.31	-.20*
Judge Race	-1.70	1.42	-.14	-.40	.55	-.09	-17.28	9.43	-.20*	-6.35	2.35	-.30***
Judge Years on Bench	.15	.37	.05	.06	.18	.04	1.79	2.87	.07	1.23	.72	.20*
Felony Charges	3.21	3.08	.12	-.63	1.44	-.05	38.56	23.71	.18	-.38	5.97	-.01
<i>R</i> ²		.03			.01			.08			.11	
<i>F</i>		.67			.22			1.70			2.43*	

Note. *** $p \leq .01$, ** $p \leq .05$, * $p \leq .10$. Tolerance was assessed and determined by assessing correlations and variance inflation factors and determined to be acceptable.

Table 7. Research Question 3 Judge Characteristics: Multiple Linear Regressions

Variable	Percent J-J Convo - Trial			Percent J-J Convo - Plea/Admit			Time to first J-J Convo			Number of J-J Convos		
	<i>B</i>	<i>SE_B</i>	β	<i>B</i>	<i>SE_B</i>	β	<i>B</i>	<i>SE_B</i>	β	<i>B</i>	<i>SE_B</i>	β
Intercept	.02	.02		.54	.05		1249.50	509.58		4.65	.71	
Female Judge	.02	.01	.48*	-.02	.04	-.07	-222.73	452.51	-.06	1.17	.63	.22*
Judge Race	-.00	.00	-.13	-.01	.02	-.10	-199.56	169.44	-.13	.19	.26	.08
Judge Years on Bench	.00	.00	.08	-.00	.01	-.11	-20.67	51.78	-.05	-.10	.07	-.17
Felony Charges	-.01	.01	-.31	-.03	.04	-.11	497.69	426.24	.13	.80	.60	.15
<i>R</i> ²		.35			.05			.04			.07	
<i>F</i>		1.91			.71			.84			1.34	

Note. *** $p \leq .01$, ** $p \leq .05$, * $p \leq .10$. Tolerance was assessed and determined by assessing correlations and variance inflation factors and determined to be acceptable.

Juvenile Characteristics

Third, multiple regression was used to predict each judge-juvenile interaction variables (i.e., number of judge-juvenile interactions, shortest judge-juvenile conversation, longest judge-juvenile conversation, average length of judge-juvenile conversation, percentage of the trial hearing that the judge and juvenile had a conversation, percentage of the plea/admittance hearing that the judge and juvenile had a conversation, amount of time to the first judge-juvenile conversation, number of judge-juvenile conversations) based off of juvenile characteristics (i.e., juvenile gender, juvenile race, juvenile age at the beginning of the case, prior involvement in the system) while controlling for offense severity. The following multiple regressions were not significant: longest judge-juvenile conversation, average length of judge-juvenile conversation, percentage of the trial hearing that the judge and juvenile had a conversation, percentage of the plea/admittance hearing that the judge and juvenile had a conversation, amount of time to the first judge-juvenile conversation, and number of judge-juvenile conversations. For regression coefficients and standard errors refer to Table 8.

Table 8. Research Question 3 Juvenile Characteristics: Multiple Linear Regressions

Variable	Number of J-J Interact			Shortest J-J Convo			Longest J-J Convo			Average J-J Convo		
	<i>B</i>	<i>SE_B</i>	β	<i>B</i>	<i>SE_B</i>	β	<i>B</i>	<i>SE_B</i>	β	<i>B</i>	<i>SE_B</i>	β
Intercept	43.98	16.72		39.45	9.69		199.77	131.63		90.75	32.64	
Female Juvenile	-4.85	3.56	-.15	3.87	1.91	.22**	-24.11	28.00	-.10	-7.87	6.93	-.13
Juvenile Race	-2.81	1.51	-.22*	-.71	.80	-.11	12.33	13.01	.11	3.40	2.99	.14
Juvenile Age	-1.18	1.11	-.13	-2.20	.63	-.42***	-4.27	8.79	-.06	-3.35	2.14	-.20
Prior System Involvement	-.47	3.59	-.02	3.38	1.97	.22*	15.80	27.82	.08	14.90	7.00	.28**
Felony Charges	3.66	3.13	.13	-.37	1.76	-.02	44.01	24.31	.21	3.81	6.15	.07
<i>R</i> ²		.12			.19			.07			.09	
<i>F</i>		2.00*			3.39***			1.11			1.46	

Note. *** $p \leq .01$, ** $p \leq .05$, * $p \leq .10$. Tolerance was assessed and determined by assessing correlations and variance inflation factors and determined to be acceptable.

Table 8 Continued. Research Question 3 Juvenile Characteristics: Multiple Linear Regressions

Variable	Percent J-J Convo - Trial			Percent J-J Convo - Plea/Admit			Time to first J-J Convo			Number of J-J Convos		
	<i>B</i>	<i>SE_B</i>	β	<i>B</i>	<i>SE_B</i>	β	<i>B</i>	<i>SE_B</i>	β	<i>B</i>	<i>SE_B</i>	β
Intercept	-.02	.07		.52	.23		222.51	2323.20		2.08	4.15	
Female Juvenile	.01	.01	.17	.03	.05	.08	-262.12	494.60	-.06	.03	.83	.00
Juvenile Race	.00	.01	.11	.02	.02	.13	176.85	231.21	.10	-.16	.37	-.05
Juvenile Age	.00	.00	.17	-.00	.02	-.02	45.03	150.97	.04	.31	.27	.14
Prior System Involvement	.02	.01	.46	-.04	.05	-.13	-683.84	497.45	-.19	-2.33	.83	-.37***
Felony Charges	-.00	.01	-.04	-.05	.04	-.15	222.05	431.71	.06	.38	.73	.06
<i>R</i> ²		.30			.08			.06			.11	
<i>F</i>		1.01			.93			.91			1.77	

Note. *** $p \leq .01$, ** $p \leq .05$, * $p \leq .10$. Tolerance was assessed and determined by assessing correlations and variance inflation factors and determined to be acceptable.

A multiple regression was performed to predict the number of judge-juvenile interactions from juvenile characteristics while controlling for offense severity. There was independence of residuals, which was assessed by a Durbin-Watson statistic of 1.89. There was one outlier which was assessed by two of the following criteria: standardized residuals greater than ± 3 standard deviations, leverage values $[(2*k)/N]$ greater than .1220, and values for Cook's distance $[4/N-k-1]$ above .0526, which was removed. The multiple regression model statistically significantly predicted the number of judge-juvenile interactions, $F(5, 75) = 2.00, p = .09, R^2 = .12$. One of the four variables added statistically significantly to the prediction, $p \leq .07$. The results suggested that juvenile race was significantly negatively associated with number of judge-juvenile interactions when controlling for offense severity such that differences in race was associated with a 2.81 decrease in number of judge-juvenile interactions. Further analyses examining race dichotomously (i.e., White, Non-White), did not produce statistically significant results, however, this could be due to having few non-white juvenile participants.

A multiple regression was performed to predict the shortest judge-juvenile conversation from juvenile characteristics while controlling for offense severity. There was independence of residuals, which was assessed by a Durbin-Watson statistic of 1.66. There were four outliers which was assessed by two of the following criteria: standardized residuals greater than ± 3 standard deviations, leverage values $[(2*k)/N]$ greater than .1220, and values for Cook's distance $[4/N-k-1]$ above .0526, which were removed. The multiple regression model statistically significantly predicted the shortest judge-juvenile conversation, $F(5, 72) = 3.39, p = 0.01, R^2 = 0.19$. Three of the four variables added statistically significantly to the prediction, $p \leq .09$. Juvenile gender and

prior justice system involvement were significantly positively associated; and juvenile age was significantly negatively associated with the shortest judge-juvenile conversation when controlling for offense severity. Results indicated that being a female juvenile was associated with a 3.87 second increase in the shortest judge-juvenile conversation. Additionally, having prior justice system involvement was associated with a 3.38 second increase in the shortest judge-juvenile conversation. Finally, a one-year increase in juvenile age was associated with a 2.20 second decrease in the shortest judge-juvenile conversation.

Non-Hypothesized Results

After collecting data there were several unanticipated variables of interest which I suspected of having statistically significant relationships. Thus, several additional analyses were conducted. Refer to Appendix G for all exploratory analysis tables. Although, these analyses were not hypothesized they could act as the genesis for future research.

For the exploratory analyses, I used multilevel modeling to examine the associations with judge-juvenile demographic match (i.e., gender, race); judicial characteristics; juvenile characteristics; whether the juvenile admitted to any charges, had any adjudicated charges (that were not admitted), and had any subsequent charges; and the number of initial charges, subsequent charges, adjudicated charges (that were not admitted), charges that they admitted to, and dismissed charges between juveniles' short-term outcomes as well as observed procedural justice items, while accounting for the nesting variable, the adjudicating judge. The juveniles' short-term outcomes included,

length of contact with the system, case length, continuances, completion of consequences, and successful termination from probation. The observed procedural justice items included whether the judge provided some overview of what might happen during court; the judge or other court staff explained court etiquette and rules at the beginning of the hearing; the judge gave an explanation for their actions; and the judge and/or other legal actors used plain language to explain the case procedures and outcomes. However, none of the multilevel models were statistically significant ($p \leq .10$), indicating that there were not significant differences in juveniles' short-term outcomes or observed procedural justice items by the adjudicating judge. Thus, analyses were conducted to examine the data without accounting for the nested nature.

Multiple regression was used to predict each of the continuous dependent variables (i.e., length of contact with system, case length, continuances) based off of various independent variables of interest while controlling for offense severity. Additionally, multiple regressions were used to predict procedural justice items B3 (a respect component; "The judge provided some overview of what might happen during court"), B4 (a respect component; "The judge or other court staff explained court etiquette and rules at the beginning of the court session"), D2 (a trust component; "The judge gave an explanation for their actions"), and O3 (a respect component; "The judge and/or other legal actors used plain language [i.e., non-legal jargon] to explain the case procedure and outcome") based off of various independent variables of interest while controlling for offense severity. Refer to Table 9 for all variable correlations.

The multiple regressions were performed, and assumptions were assessed for each. Unless otherwise noted, each analysis showed linearity which was assessed by partial regression plots as well as a plot of studentized residuals against the predicted values. There was homoscedasticity, which was assessed by visual inspection of a plot of studentized residuals versus unstandardized predicted values. There was no evidence of multicollinearity, which was assessed by tolerance values greater than .1 as well as correlations greater than .7. The assumption of normality was met, which was assessed by a Q-Q Plot. Finally, binomial logistic regression was used to predict each of the categorical dependent variables (i.e., completion of consequences, successful termination) based of the same various independent variables while controlling for offense severity. For multiple regression coefficients and standard errors refer to Tables 10-14.

Length of Contact with System

All multiple regressions were statistically significant. The first multiple regression was performed to predict length of contact with system from demographic match variables (e.g., gender match: female juvenile/female judge; race match: White juvenile/White judge) while controlling for offense severity. There was independence of residuals, which was assessed by a Durbin-Watson statistic of 2.20. There was one outlier which was assessed by two of the following criteria: standardized residuals greater than ± 3 standard deviations, leverage values $[(2*k)/N]$ greater than .0732, and values for Cook's distance $[4/N-k-1]$ above .0513, which was removed. The multiple regression model statistically significantly predicted length of contact with system, $F(3, 77) = 2.19$,

$p = .05$, $R^2 = .10$. However, neither of the independent variables added statistically significantly to the prediction. For regression coefficients and standard errors refer to Table 10.

The second multiple regression was performed to predict length of contact with system from judge characteristics (i.e., judge gender, judge race, number of years on the court bench) while controlling for offense severity. There was independence of residuals, which was assessed by a Durbin-Watson statistic of 2.07. There were three outliers which were assessed by two of the following criteria: standardized residuals greater than ± 3 standard deviations, leverage values $[(2*k)/N]$ greater than .0930, and values for Cook's distance $[4/N-k-1]$ above .0494, which were removed. The multiple regression model statistically significantly predicted length of contact with system, $F(4, 78) = 2.06$, $p = .09$, $R^2 = .10$. However, none of the independent variables added statistically significantly to the prediction. For regression coefficients and standard errors refer to Table 11.

The third multiple regression was performed to predict length of contact with system from juvenile characteristics (i.e., juvenile gender, juvenile race, juvenile age at the beginning of the case, prior involvement in the system) while controlling for offense severity. There was independence of residuals, which was assessed by a Durbin-Watson statistic of 1.92. There were three outliers which were assessed by two of the following criteria: standardized residuals greater than ± 3 standard deviations, leverage values $[(2*k)/N]$ greater than .1220, and values for Cook's distance $[4/N-k-1]$ above .0526, which were removed. The multiple regression model statistically significantly predicted length of contact with system, $F(5, 73) = 5.00$, $p = .001$, $R^2 = .26$. Three of the four variables

added statistically significantly to the prediction, $p \leq .07$. A one-year increase in juvenile age was associated with a 23.61 day decrease in length of contact with the system. Prior system involvement was associated with a 69.44 day decrease in length of contact with the system. Juvenile race was associated with a 39.70 day decrease in length of contact with the system, however, analyses examining race dichotomously (i.e., White, Non-White) did not produce statistically significant results. For standard errors refer to Table 12.

The fourth multiple regression was performed to predict length of contact with system from whether the juvenile had charges that they admitted to, charges that they did not admit to but were adjudicated, and any subsequent charges while controlling for offense severity. There was independence of residuals, which was assessed by a Durbin-Watson statistic of 1.75. There were three outliers which were assessed by two of the following criteria: standardized residuals greater than ± 3 standard deviations, leverage values $[(2*k)/N]$ greater than .0976, and values for Cook's distance $[4/N-k-1]$ above .0519, which were removed. The multiple regression model statistically significantly predicted length of contact with system, $F(4, 74) = 4.03$, $p = .01$, $R^2 = .18$. One of the three variables added statistically significantly to the prediction, $p \leq .07$. Having any subsequent charges was associated with a 100.95 day increase in length of contact with the system. For standard errors refer to Table 13.

The fifth multiple regression was performed to predict length of contact with system from the number of initial charges, subsequent charges, adjudicated charges (when the juvenile did not admit/plead), and admitted charges while controlling for

offense severity. The number of dismissed charges variable was removed due to issues with multicollinearity. There was independence of residuals, which was assessed by a Durbin-Watson statistic of 1.65. There were three outliers which were assessed by two of the following criteria: standardized residuals greater than ± 3 standard deviations, leverage values $[(2*k)/N]$ greater than .1163, and values for Cook's distance $[4/N-k-1]$ above .0500, which were removed. The multiple regression model statistically significantly predicted length of contact with system, $F(5, 77) = 4.22, p = .002, R^2 = .22$. Two of the four variables added statistically significantly to the prediction, $p \leq .05$. An increase in the number of initial charges was associated with a 31.58 day decrease in length of contact with the system. Number of admitted charges was associated with a 33.52 day increase in length of contact with the system. For standard errors refer to Table 14.

Case Length

The multiple regressions examining case length based off of judge characteristics (i.e., judge gender, judge race, number of years on the court bench) while controlling for offense severity was not significant. The first multiple regression was performed to predict case length from demographic match variables (e.g., gender match: female juvenile/female judge; race match: White juvenile/White judge) while controlling for offense severity. There was independence of residuals, which was assessed by a Durbin-Watson statistic of 1.79. There were two outliers which were assessed by two of the following criteria: standardized residuals greater than ± 3 standard deviations, leverage values $[(2*k)/N]$ greater than .0750, and values for Cook's distance $[4/N-k-1]$ above

.0526, which were removed. The multiple regression model statistically significantly predicted case length, $F(3, 74) = 3.31, p = .03, R^2 = 0.12$. However, neither of the independent variables added statistically significantly to the prediction. For regression coefficients and standard errors refer to Table 10.

The second multiple regression was performed to predict case length from juvenile characteristics (i.e., juvenile gender, juvenile race, juvenile age at the beginning of the case, prior involvement in the system) while controlling for offense severity. There was independence of residuals, which was assessed by a Durbin-Watson statistic of 1.88. There were three outliers which was assessed by two of the following criteria: standardized residuals greater than ± 3 standard deviations, leverage values $[(2*k)/N]$ greater than .1250, and values for Cook's distance $[4/N-k-1]$ above .0541, which were removed. The multiple regression model statistically significantly predicted case length, $F(5, 71) = 6.22, p < .001, R^2 = .30$. Three of the four variables added statistically significantly to the prediction, $p \leq .07$. A one-year increase in juvenile age was associated with a 39.27 day decrease in case length. Prior system involvement was associated with an 82.65 day decrease in case length. Juvenile race was associated with a 54.10 day decrease in case length. Further analyses indicated that, when examining juvenile race dichotomously (i.e., White, Non-White), being a white juvenile was associated with an 86.70 day increase in case length. For standard errors refer to Table 12.

The third multiple regression was performed to predict case length from whether the juvenile had charges that they admitted to, charges that they did not admit to but were adjudicated, and any subsequent charges while controlling for offense severity. There

was independence of residuals, which was assessed by a Durbin-Watson statistic of 2.30. There was one outlier which was assessed by two of the following criteria: standardized residuals greater than ± 3 standard deviations, leverage values $[(2*k)/N]$ greater than .0976, and values for Cook's distance $[4/N-k-1]$ above .0519, which was removed. The multiple regression model statistically significantly predicted case length, $F(4, 74) = 3.92, p = .01, R^2 = .18$. One of the three variables added statistically significantly to the prediction, $p \leq .01$. Having any subsequent charges was associated with a 160.46 day increase in case length. For standard errors refer to Table 13.

The fourth multiple regression was performed to predict case length from the number of initial charges, subsequent charges, adjudicated charges (when the juvenile did not admit/plead), and admitted charges while controlling for offense severity. The number of dismissed charges variable was removed due to issues with multicollinearity. There was independence of residuals, which was assessed by a Durbin-Watson statistic of 1.93. There were five outliers which were assessed by two of the following criteria: standardized residuals greater than ± 3 standard deviations, leverage values $[(2*k)/N]$ greater than .1190, and values for Cook's distance $[4/N-k-1]$ above .0513, which were removed. The multiple regression model statistically significantly predicted case length, $F(5, 73) = 5.61, p < 0.001, R^2 = .28$. Two of the four variables added statistically significantly to the prediction, $p \leq .05$. An increase in number of initial charges was associated with a 33.04 day decrease in case length. An increase in the number of admitted charges associated with a .40 day decrease in case length. For standard errors refer to Table 14.

Continuances

The multiple regressions examining continuances based off of demographic match variables (e.g., gender match: female juvenile/female judge; race match: White juvenile/White judge); and juvenile characteristics (i.e., juvenile gender, juvenile race, juvenile age at the beginning of the case, prior involvement in the system) while controlling for offense severity were not significant. The first multiple regression was performed to predict continuances from judge characteristics (i.e., judge gender, judge race, number of years on the court bench) while controlling for offense severity. There was independence of residuals, which was assessed by a Durbin-Watson statistic of 2.23. There were three outliers which was assessed by two of the following criteria: standardized residuals greater than ± 3 standard deviations, leverage values $[(2*k)/N]$ greater than .0930, and values for Cook's distance $[4/N-k-1]$ above .0494, which were removed. The multiple regression model statistically significantly predicted continuances, $F(4, 78) = 2.11, p = 0.09, R^2 = 0.10$. One of the three variables added statistically significantly to the prediction, $p \leq .06$. A one-year increase in years on the bench was associated with 9% decrease in continuances. For standard errors refer to Table 11.

The second multiple regression was performed to predict continuances from whether the juvenile had charges that they admitted to, charges that they did not admit to but were adjudicated, and any subsequent charges while controlling for offense severity. There was independence of residuals, which was assessed by a Durbin-Watson statistic of 2.08. There were three outliers which were assessed by two of the following criteria: standardized residuals greater than ± 3 standard deviations, leverage values $[(2*k)/N]$

greater than .0976, and values for Cook's distance $[4/N-k-1]$ above .0519, which were removed. The multiple regression model statistically significantly predicted continuances, $F(4, 74) = 4.81, p = .002, R^2 = 0.21$. All of the three variables added statistically significantly to the prediction, $p \leq .07$. Having admitted any charges was associated with a 72% decrease in continuances. Have any charges adjudicated was associated with a 67% decrease in continuances. Having any subsequent charges was associated with an 87% increase in continuances. For standard errors refer to Table 13.

The third multiple regression was performed to predict continuances from the number of initial charges, subsequent charges, adjudicated charges (when the juvenile did not admit/plead) and admitted charges while controlling for offense severity. The number of dismissed charges variable was removed due to issues with multicollinearity. There was independence of residuals, which was assessed by a Durbin-Watson statistic of 1.85. There were five outliers which were assessed by two of the following criteria: standardized residuals greater than ± 3 standard deviations, leverage values $[(2*k)/N]$ greater than .1163, and values for Cook's distance $[4/N-k-1]$ above .0500, which were removed. The multiple regression model statistically significantly predicted continuances, $F(5, 75) = 3.04, p = 0.02, R^2 = 0.17$. One of the four variables added statistically significantly to the prediction, $p \leq .07$. An increase in the number of initial charges was associated with a 21% decrease in continuances. For standard errors refer to Table 14.

Item B3: “The judge provided some overview of what might happen during court.”

The multiple regressions examining item B3 based off of demographic match variables (e.g., gender match: female juvenile/female judge; race match: White

juvenile/White judge); judge characteristics (i.e., judge gender, judge race, number of years on the court bench); whether the juvenile had charges that they admitted to, charges that they did not admit to but were adjudicated, and any subsequent charges; and number of initial charges, subsequent charges, adjudicated charges (when the juvenile did not admit/plead), and admitted charges while controlling for offense severity were not significant. A multiple regression was performed to predict procedural justice item B3 (a respect component; “The judge provided some overview of what might happen during court”) from juvenile characteristics (i.e., juvenile gender, juvenile race, juvenile age at the beginning of the case, prior involvement in the system) while controlling for offense severity. There was independence of residuals, which was assessed by a Durbin-Watson statistic of 1.76. There were no outliers which was assessed by two of the following criteria: standardized residuals greater than ± 3 standard deviations, leverage values $[(2*k)/N]$ greater than .1220, and values for Cook's distance $[4/N-k-1]$ above .0526. The multiple regression model statistically significantly predicted item B3, $F(5, 76) = 3.31$, $p = .01$, $R^2 = .18$. One of the four variables added statistically significantly to the prediction, $p \leq .05$. A one-year increase in juvenile age was associated with a .16 increase in the judge providing some overview of what might happen during court. For standard errors refer to Table 12.

Item B4: “The judge or other court staff explained court etiquette and rules at the beginning of the session.”

The multiple regressions examining item B4 based off of demographic match variables (e.g., gender match: female juvenile/female judge; race match: White

juvenile/White judge); and judge characteristics (i.e., judge gender, judge race, number of years on the court bench) while controlling for offense severity were not significant. The first multiple regression was performed to predict procedural justice item B4 (a respect component; “The judge or other court staff explained court etiquette and rules at the beginning of the court session”) from juvenile characteristics (i.e., juvenile gender, juvenile race, juvenile age at the beginning of the case, prior involvement in the system) while controlling for offense severity. There was independence of residuals, which was assessed by a Durbin-Watson statistic of 1.78. There were three outliers which were assessed by two of the following criteria: standardized residuals greater than ± 3 standard deviations, leverage values $[(2*k)/N]$ greater than .1220, and values for Cook's distance $[4/N-k-1]$ above .0526, which were removed. The multiple regression model statistically significantly predicted item B4, $F(5, 73) = 2.03, p = .08, R^2 = .12$. Two of the four variables added statistically significantly to the prediction, $p \leq .05$. Prior system involvement was associated with a .69 decrease in the judge or other court staff explaining court etiquette and rules at the beginning of the hearing. Juvenile race was associated with a .41 decrease in the judge or other court staff explaining court etiquette and rules at the beginning of the hearing. Further analyses indicated that, when examining juvenile race dichotomously (i.e., White, Non-White), White juveniles were associated with a .85 increase in the judge or other court staff explaining court etiquette and rules at the beginning of the hearing. For standard errors refer to Table 12.

The second multiple regression was performed to predict item B4 from whether the juvenile had charges that they admitted to, charges that they did not admit to but were adjudicated, and any subsequent charges while controlling for offense severity. There

was independence of residuals, which was assessed by a Durbin-Watson statistic of 2.37. There were two outliers which were assessed by two of the following criteria: standardized residuals greater than ± 3 standard deviations, leverage values $[(2*k)/N]$ greater than .0976, and values for Cook's distance $[4/N-k-1]$ above .0519, which were removed. The multiple regression model statistically significantly predicted item B4, $F(4, 75) = 2.67, p = .04, R^2 = .13$. One of the three variables added statistically significantly to the prediction, $p \leq .10$. Having any subsequent charges was associated with a .61 decrease in the judge or other court staff explaining court etiquette and rules at the beginning of the hearing. For standard errors refer to Table 13.

The third multiple regression was performed to predict item B4 from the number of initial charges, subsequent charges, adjudicated charges (when the juvenile did not admit/plead) and admitted charges while controlling for offense severity. The number of dismissed charges variable was removed due to issues with multicollinearity. There was independence of residuals, which was assessed by a Durbin-Watson statistic of 2.21. There were five outliers which were assessed by two of the following criteria: standardized residuals greater than ± 3 standard deviations, leverage values $[(2*k)/N]$ greater than .1163, and values for Cook's distance $[4/N-k-1]$ above .0500, which were removed. The multiple regression model statistically significantly predicted item B4, $F(5, 74) = 2.27, p = .06, R^2 = .13$. However, none of the independent variables added statistically significantly to the prediction. For regression coefficients and standard errors refer to Table 14.

Item D2: “The judge gave an explanation for their actions.”

None of multiple regressions examining item D2 were statistically significant. Specifically, the independent variables of interest were demographic match variables (e.g., gender match: female juvenile/female judge; race match: White juvenile/White judge); judge characteristics (i.e., judge gender, judge race, number of years on the court bench); juvenile characteristics (i.e., juvenile gender, juvenile race, juvenile age at the beginning of the case, prior involvement in the system); whether the juvenile had charges that they admitted to, charges that they did not admit to but were adjudicated, and any subsequent charges; and the number of initial charges, subsequent charges, adjudicated charges (when the juvenile did not admit/plead), and admitted charges while controlling for offense severity. For regression coefficients and standard errors refer to Tables 10-14.

Item O3: “The judge and/or other legal actors used plain language (i.e., non-legal jargon) to explain the case procedure and outcome.”

The multiple regression examining item O3 based off of demographic match variables (e.g., gender match: female juvenile/female judge; race match: White juvenile/White judge) while controlling for offense severity was not significant. The first multiple regression was performed to predict procedural justice item O3 (a respect component; “The judge and/or other legal actors used plain language [i.e., non-legal jargon] to explain the case procedure and outcome”) from judge characteristics (i.e., judge gender, judge race, number of years on the court bench) while controlling for offense severity. There was independence of residuals, which was assessed by a Durbin-Watson statistic of 1.50. There were three outliers which were assessed by two of the following criteria: standardized residuals greater than ± 3 standard deviations, leverage

values $[(2*k)/N]$ greater than .0930, and values for Cook's distance $[4/N-k-1]$ above .0494, which were removed. The multiple regression model statistically significantly predicted item O3, $F(4, 78) = 5.42, p = .001, R^2 = 0.22$. All of the three variables added statistically significantly to the prediction, $p \leq .07$. Female judges were associated with a .53 decrease in whether the judge and/or other legal actors used plain language to explain the case procedure and outcome. A one-year increase in years on the bench was associated with a .08 increase in whether the judge and/or other legal actors used plain language to explain the case procedure and outcome. Judge race was associated with a .45 decrease in whether the judge and/or other legal actors used plain language to explain the case procedure and outcome. Further analyses indicated that, when examining judge race dichotomously (i.e., White, Non-White), being a White judge was associated with a 1.46 increase in whether the judge and/or other legal actors used plain language to explain the case procedure and outcome. For standard errors refer to Table 11.

The second multiple regression was performed to predict procedural justice item O3 from juvenile characteristics (i.e., juvenile gender, juvenile race, juvenile age at the beginning of the case, prior involvement in the system) while controlling for offense severity. There was independence of residuals, which was assessed by a Durbin-Watson statistic of 1.52. There was one outlier which was assessed by two of the following criteria: standardized residuals greater than ± 3 standard deviations, leverage values $[(2*k)/N]$ greater than .1220, and values for Cook's distance $[4/N-k-1]$ above .0526, which was removed. The multiple regression model statistically significantly predicted item B4, $F(5, 75) = 2.12, p = .07, R^2 = .12$. Two of the four variables added statistically significantly to the prediction, $p \leq .07$. Female juveniles were associated with a .64

decrease in whether the judge and/or other legal actors used plain language to explain the case procedure and outcome. A one-year increase in juvenile age was associated with a .20 decrease in whether the judge and/or other legal actors used plain language to explain the case procedure and outcome. For standard errors refer to Table 12.

The third multiple regression was performed to predict item O3 from whether the juvenile had charges that they admitted to, charges that they did not admit to but were adjudicated, and any subsequent charges while controlling for offense severity. There was independence of residuals, which was assessed by a Durbin-Watson statistic of 1.68. There were no outliers which were assessed by two of the following criteria: standardized residuals greater than ± 3 standard deviations, leverage values $[(2*k)/N]$ greater than .0976, and values for Cook's distance $[4/N-k-1]$ above .0519. The multiple regression model statistically significantly predicted item O3, $F(4, 77) = 2.81, p = .03, R^2 = .13$. Two of the three variables added statistically significantly to the prediction, $p \leq .09$. Having and charges adjudicated was associated with a .80 decrease in whether the judge and/or other legal actors used plain language to explain the case procedure and outcome. Having any subsequent charges was associated with a .59 increase in whether the judge and/or other legal actors used plain language to explain the case procedure and outcome. For standard errors refer to Table 13.

The fourth multiple regression was performed to predict item O3 from the number of initial charges, subsequent charges, adjudicated charges (when the juvenile did not admit/plead) and admitted charges while controlling for offense severity. The number of dismissed charges variable was removed due to issues with multicollinearity. There was

independence of residuals, which was assessed by a Durbin-Watson statistic of 2.01. There were four outliers which were assessed by two of the following criteria: standardized residuals greater than ± 3 standard deviations, leverage values $[(2*k)/N]$ greater than .1163, and values for Cook's distance $[4/N-k-1]$ above .0500, which were removed. The multiple regression model statistically significantly predicted item O3, $F(5, 76) = 4.28, p = .002, R^2 = .22$. However, none of the independent variables added statistically significantly to the prediction. For regression coefficients and standard errors refer to Table 14.

Completion of Consequences

For binomial logistic regression coefficients and standard errors refer to Tables 15-19. The binomial logistic regression examining item, completion of consequences, based off of judge characteristics (i.e., judge gender, judge race, number of years on the court bench) while controlling for offense severity was not significant. The first binomial logistic regression was performed to predict completion of consequences from demographic match variables (e.g., gender match: female juvenile/female judge; race match: White juvenile/White judge) while controlling for offense severity. There were no continuous independent variables so linearity of the continuous variables in respect to the dependent variable logit was not assessed. There were no outliers with either high leverage points or highly influential points. The logistic regression model was statistically significant, $\chi^2(3) = 7.39, p = .06$. The model explained 14% (Nagelkerke R^2) of the variance in completion of consequences and correctly classified 62% of cases. For this binomial logistic regression sensitivity was 66%, specificity was 58%, positive predictive

value was 51%, and negative predictive value was 50%. Of the two predictor variables only one was statistically significant: race match. Juveniles who had a judge of the same race as them had .34 lower odds of completing their consequences compared to juveniles who did not have a judge of the same race as them. For standard errors refer to Table 15.

The second binomial logistic regression was performed to predict completion of consequences from juvenile characteristics (i.e., juvenile gender, juvenile race, juvenile age at the beginning of the case, prior involvement in the system) while controlling for offense severity. Linearity of the continuous variable in respect to the dependent variable logit was assessed using the Box-Tidwell (Box & Tidwell, 1962) procedure. A Bonferroni correction was applied using all 14 terms in the model which resulted in statistical significance being accepted when $p < .00357$ (Tabachnick & Fidell, 2014). Based on this assessment, all continuous independent variables were linearly related to the dependent variable logit. There were two outliers with either high leverage points or highly influential points, which were removed from the analysis. The logistic regression model was statistically significant, $\chi^2(5) = 23.02, p < .001$. The model explained 39% (Nagelkerke R^2) of the variance in completion of consequences and correctly classified 75% of cases. For this binomial logistic regression sensitivity was 71%, specificity was 78%, positive predictive value was 53%, and negative predictive value was 49%. Of the four predictor variables only two was statistically significant: prior system involvement and gender. Juveniles who had prior system involvement had .16 lower odds of completing their consequences compared to juveniles who have prior system involvement. Additionally, females had .21 lower odds of completing their consequences compared to males. For standard errors refer to Table 17.

The third binomial logistic regression was performed to predict completion of consequences from whether the juvenile had charges that they admitted to, charges that they did not admit to but were adjudicated, and any subsequent charges while controlling for offense severity. There were no continuous independent variables so linearity of the continuous variables in respect to the dependent variable logit was not assessed. There was one outlier with either high leverage points or highly influential points, which was removed from the analysis. The logistic regression model was statistically significant, $\chi^2(5) = 23.00, p < .001$. The model explained 37% (Nagelkerke R^2) of the variance in completion of consequences and correctly classified 68% of cases. For this binomial logistic regression sensitivity was 60%, specificity was 75%, positive predictive value was 60%, and negative predictive value was 56%. Of the three predictor variables all were statistically significant. Juveniles who admitted to any of their charges had .09 lower odds of completing their consequences compared to juveniles who did not. Juveniles who had any adjudicated charges (excluding charges that were admitted to) had .27 lower odds of completing their consequences than juveniles that had no adjudicated charges (excluding charges that were admitted to). Additionally, juveniles who had any subsequent charges had .18 lower odds of completing their consequences than those who had no subsequent charges. For standard errors refer to Table 18.

The fourth binomial logistic regression was performed to predict completion of consequences from the number of initial charges, subsequent charges, adjudicated charges (when the juvenile did not admit/plead), admitted charges, and dismissed charges while controlling for offense severity. Linearity of the continuous variable in respect to the dependent variable logit was assessed using the Box-Tidwell (Box & Tidwell, 1962)

procedure. Due to zero being a valid answer for subsequent charges, adjudicated charges (when the juvenile did not admit/plead) and admitted charges zero integers were replaced with .00001 in order to ascertain linearity of these variables. A Bonferroni correction was applied using all 12 terms in the model which resulted in statistical significance being accepted when $p < .00417$ (Tabachnick & Fidell, 2014). Based on this assessment, all continuous independent variables were linearly related to the dependent variable logit. There was one outlier with either high leverage points or highly influential points, which was removed from the analysis. The logistic regression model was statistically significant, $\chi^2(6) = 10.85$, $p = .09$. The model explained 19% (Nagelkerke R^2) of the variance in completion of consequences and correctly classified 63% of cases. For this binomial logistic regression sensitivity was 69%, specificity was 58%, positive predictive value was 52%, and negative predictive value was 56%. However, none of the five predictor variables were statistically significant. For regression coefficients and standard errors refer to Table 19.

End Reason: Whether the juvenile was successfully terminated from the juvenile justice system

The binomial logistic regressions examining item end reason based off of judge characteristics (i.e., judge gender, judge race, number of years on the court bench); juvenile characteristics (i.e., juvenile gender, juvenile race, juvenile age at the beginning of the case, prior involvement in the system); whether the juvenile had charges that they admitted to, charges that they did not admit to but were adjudicated, and any subsequent charges; and the number of initial charges, subsequent charges, adjudicated charges

(when the juvenile did not admit/plead), admitted charges, and dismissed charges while controlling for offense severity were not significant.

A binomial logistic regression was performed to predict end reason from demographic match variables (e.g., gender match: female juvenile/female judge; race match: White juvenile/White judge) while controlling for offense severity. There were no continuous independent variables so linearity of the continuous variables in respect to the dependent variable logit was not assessed. There were no outliers with either high leverage points or highly influential points. The logistic regression model was statistically significant, $\chi^2(3) = 7.30, p = .06$. The model explained 11% (Nagelkerke R^2) of the variance in end reason and correctly classified 62% of cases. For this binomial logistic regression sensitivity was 79%, specificity was 40%, positive predictive value was 55%, and negative predictive value was 50%. Of the two predictor variables only one was statistically significant: race match. Juveniles who had a judge of the same race as them had 2.27 higher odds of being successfully terminated from the juvenile justice system compared to juveniles who did not have a judge of the same race as them. For standard errors refer to Table 15.

Chapter 5: Discussion

This dissertation examined how variables such as observed procedural justice, number and length of judge-juvenile interactions and conversations, juvenile and judicial characteristics, and judge-juvenile characteristic match versus non-match were associated with juvenile's short-term behavioral outcomes. In this chapter, the results are summarized and discussed. Additionally, theoretical, research, and practical implications; strengths; limitations; and future directions are examined.

Summary of the Results

Research Question #1

Overall, the results from the first research question indicate that measures of procedural justice (i.e., whether the judge provided an overview of what would happen in court; the judge or court staff explained court etiquette and rules at the beginning of the hearing; whether the judge gave an explanation for their actions; and the judge or other legal actors used plain language to explain the case procedure and outcome) were associated with the juvenile's short-term outcomes (i.e., length of contact with the system, case length, continuances, whether the juvenile was successfully terminated from the juvenile justice system).

Length of contact with the system. The results suggested that, when controlling for offense severity, whether the judge gave an explanation for their actions was significantly negatively associated with length of contact with the system such that the judge giving more of an explanation for their actions was associated with a decrease in length of contact with the system by 34.66 days.

Case length. Whether the judge gave an explanation for their actions was significantly negatively associated with; and whether the judge or other legal actors used plain language to explain the case procedure and outcome was significantly positively associated with case length, when controlling for offense severity. The results suggested that the judge giving more of an explanation for their actions was associated with a decrease in case length by 34.96 days and that the more the judge or other legal actors used plain language to explain the case procedure and outcome was associated with an increase in case length by 47.70 days.

Continuances. The results suggested that whether the judge or court staff explained court etiquette and rules at the beginning of the hearing was significantly negatively associated with; and whether the judge or other legal actors used plain language to explain the case procedure and outcome was significantly positively associated with continuances, when controlling for offense severity. Specifically, the results indicated that the judge or court staff explaining court etiquette and rules at the beginning of the hearing more was associated with a decrease in the number of continuances by 21%. Additionally, when the judge or other legal actors used plain language to explain the case procedure and outcome more, there was an association with an increase in continuances by 30%.

Successful termination. Whether the judge provided an overview of what would happen in court; the judge or court staff explained court etiquette and rules at the beginning of the hearing; and the judge or other legal actors used plain language to explain the case procedure and outcome were significantly positively associated with

successful termination when controlling for offense severity. The results suggested that when the judge provided an overview of what would happen in court more, there was an association with an increase in odds of successful termination by 1.84; when the judge or court staff explained court etiquette and rules at the beginning of the hearing more, there was an association with an increase in odds of successful termination by 1.72; and when the judge or other legal actors used plain language to explain the case procedure and outcome more, there was an association with an increase in odds of successful termination by 1.60.

Research Question #2

Overall, the results from the second research question indicate that measures of judge-juvenile interaction (i.e., number of judge-juvenile interactions, shortest judge-juvenile conversation, longest judge-juvenile conversation, average length of judge-juvenile conversation, percent of entire conversation length that judge-juvenile conversation encompassed during a trial, percent of entire conversation length that judge-juvenile conversation encompassed during a plea/admit, amount of time to the first judge-juvenile conversation, number of judge-juvenile conversations) were associated with some procedural justice elements (i.e., whether the judge provided an overview of what would happen in court; the judge or court staff explained court etiquette and rules at the beginning of the hearing; the judge gave an explanation for their actions; and the judge or other legal actors used plain language to explain the case procedure and outcome) when controlling for offense severity.

Whether the judge or court staff explained court etiquette and rules at the beginning of the hearing. The results suggested that number of judge-juvenile interactions and percent of the entire conversation length that judge-juvenile conversation encompassed during a trial were positively associated; and number of judge-juvenile conversations was negatively associated with whether the judge or court staff explained court etiquette and rules at the beginning of the hearing when controlling for offense severity. Specifically, an increase in the number of judge-juvenile interactions was associated with the judge or court staff giving more of an explanation of court etiquette and rules at the beginning of the hearing by .30. Additionally, an increased percent of the entire hearing length that judge-juvenile conversation encompassed during a trial was associated with a 2.61 increase in the judge or court staff giving more of an explanation of court etiquette and rules at the beginning of the hearing. Lastly, an increased number of judge-juvenile conversations was associated with a .12 decrease in the judge or court staff giving more of an explanation of court etiquette and rules at the beginning of the hearing.

Whether the judge or other legal actors used plain language to explain the case procedure and outcome. The longest conversation that the judge and juvenile had was significantly positively associated with whether the judge or other legal actors used plain language to explain the case procedure and outcome when controlling for offense severity. The results indicated that a one second increase in the longest judge-juvenile conversations was associated with a .01 increase in the judge or other legal actors using plain language to explain the case procedure and outcome.

Research Question #3

In general, the results from the third research question indicate that demographic match (i.e., gender, race), judge characteristics (i.e., gender, race, years on the bench), and juvenile characteristics (i.e., gender, race, age, prior system involvement) were not associated with measures of judge-juvenile interaction (i.e., number of judge-juvenile interactions, shortest judge-juvenile conversation, longest judge-juvenile conversation, average length of judge-juvenile conversation, percent of entire conversation length that judge-juvenile conversation encompassed during a trial, percent of entire conversation length that judge-juvenile conversation encompassed during a plea/admit, amount of time to the first judge-juvenile conversation, number of judge-juvenile conversations) when controlling for offense severity. However, there were three exceptions.

Number of judge-juvenile interactions. The results suggested that juvenile race was significantly negatively associated with number of judge-juvenile interactions when controlling for offense severity such that differences in race was associated with a 2.81 decrease in number of judge-juvenile interactions. Further analyses examining race dichotomously (i.e., White, Non-White) did not produce statistically significant results, however, this could be due to having few non-white juvenile participants.

Shortest judge-juvenile conversation. Juvenile gender and prior justice system involvement were significantly positively associated; and juvenile age was significantly negatively associated with the shortest judge-juvenile conversation when controlling for offense severity. Results indicated that being a female juvenile was associated with a 3.87 second increase in the shortest judge-juvenile conversation. Additionally, having prior

justice system involvement was associated with a 3.38 second increase in the shortest judge-juvenile conversation. Finally, a one-year increase in juvenile age was associated with a 2.20 second decrease in the shortest judge-juvenile conversation.

Average judge-juvenile conversation. The results suggested that judge gender and race were significantly negatively associated; and years on the bench was significantly positively associated with the average length of judge-juvenile conversation when controlling for offense severity. Specifically, female judges were associated with a 10.53 second decrease in the average length of judge-juvenile conversations. Judge race was associated with a 6.35 second decrease in the average length of judge-juvenile conversation. Further analyses examining race dichotomously (i.e., White, Non-White), indicated that having a White judge was associated with a 23.39 second increase in average length of judge-juvenile conversation. Additionally, each one-year increase in years on the bench was associated with a .07 second increase in the average length of judge-juvenile conversation.

Discussion of the Findings

None of the multilevel modeling analyses were significant, indicating that there were no significant differences between judges on juveniles' short-term outcomes, the use of observed procedural justice, and the interactions between the judge and juvenile. Despite this, the results suggest that judges can have an impact on observed procedural justice and the juveniles' short-term outcomes. Each individual judge and their practices are not significantly different from the next judge. However, being in the role of judge is

important and impactful on the juveniles that they encounter in the courtroom, as discussed in the following subsections.

Research Question #1

Results related to the first research question correspond with the procedural justice literature at large which suggests that individuals' perceptions of procedural justice impact whether they accept and follow court rulings in the short- and long-term (Tyler, 2005). Although this dissertation examined observed rather than subjective procedural justice and long-term outcomes were not examined, the results align with procedural justice theory and what might be expected when juveniles are observed to receive procedural justice. The results generally suggest that procedural justice elements are associated with short-term outcomes. Based off of procedural justice research, juvenile compliance with short-term outcomes is likely due to the juvenile perceiving the procedures and decisions to be fair which encourages them to voluntarily cooperate (Tyler, 2000); this might also be the case for observed procedural justice.

The results suggest that whether the judge provided some overview of what might happen during court was associated with increased odds of being successfully terminated from the juvenile justice system. Additionally, whether the judge or other court staff explained court etiquette and rules at the beginning of the hearing was associated with increased odds of successful termination as well as a decrease in the number of continuances. Lastly, whether the judge provided an explanation for their actions was associated with a decrease in length of contact with the system and case length. These results indicate that there are three key elements that a judge can utilize during hearings

that are associated with positive juvenile outcomes. When judges observably incorporate these three elements in hearings it might signal to juveniles that their hearing procedures and decisions are fair which would then encourage them to voluntarily cooperate and have a shorter contact with the system, shorter case length, fewer continuances, and/or higher odds of successful termination.

These results further provide support for the idea that observing elements of procedural justice can be associated with outcomes, rather than just the juvenile's perceptions of procedural justice which aligns with research suggesting that differences in objective control, can produce similar perceptions of control and judgements of fairness (Lind et al., 1990). Additionally, these results suggest that the presence of objective procedural justice contributes to subjective perceptions and judgements of procedural justice. Furthermore, the results of this dissertation align with research by Tyler (2003) which suggests that the quality of decision making is important such that when decisions are made using objective indicators, rather than personal views, then individuals perceive a decision to be fair, neutral, and unbiased. In other words, when decision-makers use objectivity, it enhances perceived fairness (Tyler & Lind, 1992). This could have significant implications for future research as it might not be necessary to interact with or survey individuals to determine the association with or effect of procedural justice on outcomes. As with this dissertation, instances in which only retrospective data is available or when examining protected populations in which gaining consent or assent as well as data from participants is difficult or too coercive, utilizing audio, video, or transcript recordings might be sufficient to determine the associations with or effects of procedural justice on behavioral outcomes.

Although these results align with the procedural justice research, there were a few findings that might initially seem counterintuitive. Whether the judge or other legal actors used plain language to explain case procedures and outcomes was associated with increased odds of successful termination, however, it was also associated with an increase in case length as well as continuances. An increase in case length and continuances might not initially be perceived as positive, however, the procedural justice element of whether the judge or other legal actors used plain language was not significantly associated with length of contact with the system. Thus, although continuances and case length (which might be affected by increased continuances) were positively associated with an increased use of plain language to explain case procedures or outcomes by the judge or other legal actors, the use of plain language was not associated with the length of contact with the system (i.e., the number of days from the date the petition was filed until their last documented direct contact with the system).

In other words, although the judge or other legal actors' use of plain language to explain case procedures and outcomes was associated with increased case lengths (i.e., from the date the petition was filed until they were terminated) and more continuances, their direct contact with the system was not associated with the judge or other legal actors using plain language. The juvenile's case might have been open longer but their contact with the system was not associated with the use of plain language to explain case procedures or outcomes. One potential reason for these finding is that when a judge or other legal actor tries to explain case procedures or outcomes in plain language it takes more time to explain in layman's terms and the judge might delve even deeper to ensure

that the juvenile is actually understanding; this would logically lead to needing more interaction time, therefore causing more continuances and thus, longer case lengths.

Although these results seem promising, more research is needed. These results could be a product of this dissertation's sample, procedures, and analyses. The implications of these results should be interpreted with caution; more research examining this relationship is needed before discouraging judges and other legal actors to not utilize plain language to explain case procedures and outcomes. Furthermore, these findings should be interpreted cautiously as procedural justice theory logically suggests that utilizing plain language would contribute to the respect component such that individuals are being treated with dignity and shown respect in relation to their rights and status in society, affirming their value and importance as a person (Goodman-Delahunty, 2010; Tyler, 2000, 2007; Tyler & Lind, 1992). More research is needed.

Research Question #2

Results related to the second research question somewhat correspond to the judge interaction and procedural justice literature. Although only one study has been conducted examining the association between quantity and quality of judge-juvenile interactions it does not examine juvenile behavioral outcomes, rather it examines the behavioral outcomes of the judge (Salvatore et al., 2011). However, Salvatore et al. (2011) does suggest that judge-juvenile interaction might affect juvenile's behavior as well as influence perceptions of the judge as being fair and respectful – key components of procedural justice. Research examining judicial demeanor in judge-adult interactions and legitimacy argue that judicial demeanor can communicate impartiality and procedural

fairness (Mack & Anleu, 2010). Further, results pertaining to judge-adult interaction suggests that some adults with a history of substance abuse treatment had better outcomes the more times that the judge and adult met (Festinger et al., 2002).

Additionally, the procedural justice literature suggests that perceptions of decision-making procedures via voice (individuals being allowed to be involved in the court processes and provide thoughts, opinions, and suggestions about the resolution of the individual's conflict), neutrality (whether the authorities acted without bias; that their decisions were made with consistency, even-handedness, transparency, impartially, and objectivity), respect (whether individuals are taken seriously, and whether their input was valued and attended to; whether the individual feels that they have been show respect in relation to their rights and status in society), and trust (whether the decision-making authority seriously considered the individual's arguments, were concerned with their situation, were sincere, honest, and open, and attempted to do what is right for them; Goodman-Delahunty, 2010; Tyler, 2000, 2007; Tyler & Lind, 1992). In other words, when the decision-maker interacts with the individual and provides an explanation for their case procedures and outcomes, there is more opportunity for procedural justice elements to be observed or perceived.

The results somewhat align with the literature that judge-juvenile interaction is associated with procedural justice, specifically, the results suggest that this is true for whether the judge or other court staff explained court etiquette and rules at the beginning of the hearing as well as whether the judge or other legal actors used plain language to explain the case procedures and outcome. However, the results indicate that judge-

juvenile interactions were not associated with whether the judge provided some overview of what might happen during court or whether the judge gave an explanation for their actions. These non-significant results might be due to a diminished necessity for number and length of interactions/conversations necessary for the judge to convey what might happen during court as well as reasoning for their actions. These sentiments might be easily conveyed in a succinct way when compared to whether the judge or other court staff explained court etiquette and rules at the beginning of the hearing and whether the judge or other legal actors used plain language to explain the case procedures and outcome.

Rather, the significant findings that whether the judge or other court staff explained court etiquette and rules at the beginning of the hearing and whether the judge or other legal actors used plain language to explain the case procedures and outcome might necessitate more conversations that are longer and contain more back and forth between the judge and juvenile (interactions). Explaining court etiquette as well as using plain language to explain the case procedures and outcome might require more of a conversation, in both number and length, as well as interactions to ensure that the juvenile is truly understanding. Specifically, an increase in the longest judge-juvenile interaction was associated with whether the judge or other legal actors used plain language to explain the case procedures and outcome. Additionally, an increase in judge-juvenile interaction and percent of judge-juvenile interaction in a trial as well as a decrease in number of judge-juvenile conversations were associated with whether the judge or other court staff explained court etiquette and rules at the beginning of the hearing more so. Although the finding that a decrease in the number of judge-juvenile

conversations is associated with whether court etiquette and rules were explained at the beginning of the hearing might initially sound counterintuitive, these results might be due to the way these judge-juvenile interaction variables were measured.

A single interaction was defined as a judge directing a question or statement at the juvenile with the intent that the juvenile should respond back regardless of whether it is within a series of exchanges on the same topic. Instances in which the judge is interacting with the juvenile multiple times within a single conversation were counted as one conversation. These results might suggest that an increase in the back and forth exchange (in which the judge directs a question or statement at the juvenile with the intent that the juvenile should respond) in addition to a decrease in number of conversations are associated with explaining etiquette and rules. In other words, more back and forth interactions within fewer conversations is associated with how well the judge or other court staff explained court etiquette and rules at the beginning of the hearing. These results could be due to the tendency for individuals to explain concepts within a single conversation with multiple interactions rather than speaking back and forth with the juvenile about etiquette and rules, then deciding to talk to another individual at the hearing, and then returning back to the juvenile to again talk about etiquette and rules (multiple conversations). Implications from these results suggest that longer and fewer conversations with more interactions during those conversations might best be associated with and an increase of procedural justice aspects within the hearing – particularly those procedural justice aspects which necessitate longer and more conversations as well as more back and forth between the judge and juvenile (interactions) to ensure that the juvenile is truly understanding.

Research Question #3

In general, the results from the third research question do not correspond with the literature, but in a positive way. Literature on juvenile and judge characteristics as well as bias research suggest that these factors can influence the ways in which individuals act and interact (Bazemore & Dicker, 1994; Bazemore & Feder, 1997; D'Angelo, 2002; Rachlinski et al., 2009; Tittle & Curran, 1988; Walker, 1985). Research suggests that both judge (Bazemore & Dicker, 1994; Bazemore & Feder, 1997; D'Angelo, 2002; Rachlinski et al., 2009; Tittle & Curran, 1988; Walker, 1985) and juvenile (Bridges & Steen, 1998; Feld, 1999; Gaarder et al., 2004) characteristics can affect juveniles' outcomes in the justice system and further, that judges are susceptible to bias (Kang et al., 2012) which can influence their behaviors and ultimately the court processes as well as the juvenile's outcomes. Additionally, ingroup bias can result in favoring members who belong to the same group (e.g., judge and juvenile with the same gender), while individuals in other groups are discriminatorily disadvantaged (Greenwald & Krieger, 2006). Despite literature that indicates that characteristics and biases can be associated with differences in outcomes, it is not absolute; for some individuals the association between characteristics as well as biases and differences in outcomes can be mitigated via bias intervention trainings, conscious effort, etc. There is an emphasis on the need to eliminate bias in the legal system, thus making the results of this dissertation positive overall.

However, there were a few exceptions in which the results aligned with the judge and juvenile characteristic literature. As it pertains to the judge characteristics, the more years that judges were on the bench, the longer the average length of judge-juvenile

conversations. This positive relationship seems logical as presumably with each year that a judge is on the bench, they gain more experience and knowledge and as a result might believe that interacting more often on average is beneficial. This result might also be related to the need for the judge with more years on the bench to speak for longer periods of time on average to ensure that they are explaining things clearly and judges with more years on the bench might allow the juvenile more time to explain themselves. Years on the bench and judge age could be correlated which might make the judge speak slower, with more pauses, or the judge might be socialized with the concept of *parens patriae* (i.e., the best interests of the child) and feel the need to lecture or act as a parental figure (Bazemore & Feder, 1997). Regardless, more research is necessary to examine these results further.

Additionally, female judges had shorter average conversations with juveniles which might be due to differences in cadence and speech speed between females and males. Other potential explanations could be differences in gender on how long judges allow juveniles to explain themselves or female judges asking fewer probing questions of juveniles. Finally, judge race was associated with shorter average judge-juvenile conversations; further analyses examining each race dichotomously (i.e. White, Non-White) indicated that having a Non-White judge was associated with an increase in average length of judge-juvenile conversation. These results could be due to differences in cadence and speech speed between White and Non-White judges or potentially cultural differences between White and Non-White judges on how they speak to juveniles. Future research should utilize a more diverse sample to further examine these results.

As it pertains to the juvenile characteristics, juvenile race was associated with the number of judge-juvenile interactions, however analyses examining race dichotomously (i.e., White, Non-White) did not produce statistically significant results which could be due to having few non-white juvenile participants. Future research should utilize a more diverse sample to further examine these results. Additionally, juvenile gender, age, and prior juvenile justice system involvement were associated with the shortest judge-juvenile interaction. Specifically, prior juvenile justice system involvement was associated with an increase in the shortest judge-juvenile conversation which seems plausible as judges might feel the need to direct more comments towards the juvenile, rather than merely talking about the juvenile, due to their history of prior offenses. Another possible explanation is that juveniles with prior offenses are less attentive or eager to answer judge questions due to feelings such as helplessness, associated with being intertwined in the system for extended periods of time.

Results also indicated that female juveniles' shortest judge-juvenile conversation were longer than that of males which might be due to gender differences in how females are described in casefiles, the way that juveniles are processed in the justice system (charges that they are referred for), systematic punishment for female sexual behavior, perceptions of stereotypic ways females should behave, or judges operating under the orientation of *parens patriae* feeling the need to protect these female juveniles from dangers which might be associated with their sexuality (Gaarder et al., 2004). Lastly, the results indicated that as the juvenile ages, the shorter the judge-juvenile conversation is. These results might indicate that judges feel less of a need to explain things or that juveniles have a higher capacity for understanding.

Although the overall trend of results pertaining to judge and juvenile characteristics as well as characteristic match are promising, these results do indicate that there might still be issues with differential treatment by judge and juvenile characteristics. These results suggest that more bias training might be necessary for judges to mitigate judge-juvenile interaction differences associated with demographic characteristics. More research is necessary to further understand these results.

As discussed in the literature review, there are various other aspects of who the judge is as an individual that could influence judge-juvenile interactions, the use of procedural justice in an observable way and juveniles' short-term outcomes, including the judge's age, political affiliation, justice orientation, and rural/urban location. In particular, how punitive a judge is could have molded how often and in what way the judge interacts with the juvenile; the time an effort that dedicate to using observable measures of procedural justice; and the amount of continuances and consequences imposed, length of contact with the system, case length, and ultimately whether they were successfully terminated from probation. Future research is needed to assess the effect that judicial justice orientation as well as other judicial characteristics can have on judge-juvenile interactions, the use of procedural justice in an observable way, and juveniles' short-term outcomes.

Exploratory Analyses

Exploratory analyses were conducted, and the results reported, however, an in-depth discussion of the results is beyond the scope of this paper. I will briefly discuss some of the results that might provide more information on findings from research

questions 1-3. As it pertains to judges, there were some interesting findings in the exploratory analyses that indicated that female judges were associated with a decrease in the judge or other legal actors using plain language to explain the case procedure and outcome. This, coupled with the results from research question 3 that indicated that female judges were associated with a decrease in the average length of judge-juvenile conversation, suggest that female judges are having shorter conversations on average with juveniles which might contribute to providing less of a plain language explanation for the case procedure and outcome (an observed procedural justice measure).

Additionally, results from the exploratory analyses suggest that White judges, compared to Non-White, used plain language to explain case procedures and outcomes more often which might contribute to the results from research question 3 which indicated that White judges, compared to Non-White, had longer conversations on average with juveniles. White judges using more plain language to explain case procedures and outcome (an observed procedural justice measure) might contribute to them having longer conversations on average. Finally, as it pertains to judges, results from research question 3 indicated that the more years that the judge had on the bench, the longer average conversations they had with the juvenile. This, coupled with results from the exploratory analyses that more years on the bench was associated the judge using plain language to explain case procedures and outcomes more often potentially suggests that judges with more experience explain things in plain language more and thus, have longer conversations with the juveniles on average. Additionally, the findings from research question 3 on average conversation length and results from the exploratory analyses that more years on the bench was associated with a decrease in continuances,

potentially suggest that at the time of the hearing, judges with more experience have longer average conversations which might ultimately reduce the need for continuances. When combined, these results might suggest that judges with more experience have longer conversations with the juveniles on average and thus, are able to explain things in plain language more, potentially reducing the need for more continuances.

As it pertains to juveniles, results from research question 3 indicated that as juveniles age, the conversations between the judge and juvenile are shorter which might contribute to findings from the exploratory analyses that indicate that as juveniles age there is a decrease in judges or other legal actors using plain language to explain case procedures and outcomes. As juveniles age, having shorter conversations might be associated with a decrease in plain language use to explain case procedures and outcomes (an observed procedural justice measure). However, results from the exploratory analyses did indicate that as juveniles age, judges are providing more of an overview of what might happen during court (an observed procedural justice measure). Papers thoroughly discussing these exploratory analyses are forthcoming.

Theoretical, Research, and Practical Implications

This dissertation has theoretical, research, and practical implications for juveniles in the justice system. The results from this study support the procedural justice research in that when aspects of procedural justice were incorporated into adjudication hearings, there was an association with more positive short-term outcomes. Research suggests that juvenile compliance with short-term outcomes is likely due to the juvenile perceiving the procedures and decisions to be fair which encourages them to voluntarily cooperate

(Tyler, 2000). Furthermore, the results suggest that judge-juvenile interactions influence procedural justice but perhaps, only when these procedural justice aspects necessitate longer conversations, more conversations, and more back and forth between the judge and juvenile (interactions). Future research should examine the role that judge-juvenile interaction holds within the procedural justice framework as it might provide more concrete recommendations for judges to follow while on the bench.

Although this study only examined observed procedural justice in justice involved juveniles, the source from which the majority of the items in the observed procedural justice measure were drawn from, was designed to be used for an adult population. Due to the content of the question items remaining the same as the source measure, it is feasible that the results could indicate similar phenomenon in the adult population. Despite the developmental differences between juveniles and adults, future research should examine observed procedural justice in adults. It is possible that adults and their short-term outcomes could also benefit from judges observably providing procedural justice.

There are also some potential research implications for procedural justice research. These results indicate that it might not be necessary to interact with or survey individuals to determine the association with or effect of procedural justice on outcomes. As with this dissertation, instances in which only retrospective data is available or when examining protected populations in which gaining consent or assent as well as data from participants is difficult or too coercive, utilizing audio, video, or transcript recordings might be sufficient to determine the associations with or effects of procedural justice on

behavioral outcomes. However, it is possible that observed procedural justice uniquely contributes and/or moderates/mediates the relationship between subjective procedural justice and behavioral outcomes. Further research is necessary to understand the relationship between subjective and objective procedural justice. Additionally, the results of this research indicate that scale testing and refinement is necessary to create an adequate observed procedural justice measure, particularly for adjudication hearings.

Most importantly, there are some practical implications from this dissertation. The results suggest that judges should incorporate three important aspects of procedural justice into their juvenile justice hearings. Specifically, the results indicate that incorporating an overview of what might happen during court, explaining court etiquette and rules at the beginning of the hearing, and providing an explanation for their actions might encourage juveniles to voluntarily cooperate and have shorter contact with the system, shorter case length, fewer continuances, and/or higher odds of successful termination (i.e., positive short-term outcomes). Additionally, the results indicate that for procedural justice aspects that necessitate more interaction between the judge and juvenile to convey specific concepts, that judges should have longer and fewer conversations with more interactions during those conversations (i.e., provide the juvenile with longer, more sustained conversations). Lastly, the results suggest that juvenile court judges might need more or continued bias training to help mitigate judge-juvenile interaction differences associated with both judge and juvenile demographic characteristics.

Thus, the results from this study suggest that there are specific things that judges can do which are associated with more positive short-term outcomes for juveniles. Recommendations for judges include during adjudication hearings: (1) provide an overview of what might happen during court, (2) explain court etiquette and rules at the beginning of the hearing, (3) provide an explanation for your actions, (4) engage in more back and forth between yourself and the juvenile, (5) engage in longer conversations with the juvenile, and (6) continue bias training.

Strengths

This dissertation has several strengths that should be highlighted. First, this research is the second of its kind in that only one other study has examined observable procedural justice in juvenile offenders (Barnes et al., 2015). By utilizing observable measures of procedural justice, this study examined the relationship between procedural justice and outcomes by preventing the “false consciousness” or illusion of control in which a procedure is believed to be fair but is not objective standards (Lind et al., 1990; Lind & Tyler, 1988). This line of research is an important and ethical first step in providing juveniles procedural justice regardless of the juveniles’ perceptions, by eliminating the potential confounding variable (uncertainty of whether there is only perceived rather than observed procedural justice) and allowing researchers to determine if the presence of observed procedural justice is associated with behavioral outcomes.

Second, this dissertation furthers the literature by examining the association between observed procedural justice and short-term juvenile outcomes. There are relatively few studies which examine procedural justice in youth; research on this

population has primarily focused on relationships between perceptions of procedural justice, legitimacy of authority, legal cynicism, and belief in a just world (Tatar, Kaasa, & Cauffman, 2012; see Fagan & Tyler, 2005; Otto & Dalbert, 2005; Piquero et al., 2005). Additionally, even fewer studies have explored the relationship between procedural justice in juveniles and behavioral outcomes (Augustyn, 2013; Tatar et al., 2012). However, this dissertation helps to fill in the knowledge gaps associated with the few studies examining observed procedural justice as well as the gaps associated with the few studies examining perceived procedural justice and behavioral outcomes in justice involved juveniles.

Third, only one study has examined the effects of judge-juvenile interaction focusing on interaction length in minutes as well as judicial demeanor (i.e., tense/relaxed, stern/friendly, closed/open, scolding/encouraging, dismissive/attentive; Salvatore et al., 2011). However, this study did not examine how these interactions might be associated with juvenile behavioral outcomes. This dissertation furthers knowledge about judge-juvenile interaction by examining how judge-juvenile interactions are related to juvenile behavioral outcomes. Furthermore, this dissertation measures judge-juvenile interactions in eight different ways including the number of judge-juvenile interactions, length of the shortest judge-juvenile conversation, length of the longest judge-juvenile conversation, length of the average judge-juvenile conversation, percent of the entire conversation length that judge-juvenile conversation encompassed during a trial, percent of the entire conversation length that judge-juvenile conversation encompassed during a plea/admit, amount of time to the first judge-juvenile conversation, and number of judge-juvenile conversations. These various judge-juvenile interaction variables capture different

aspects of the interaction and provide unique and useful information. Fourth, this dissertation has fairly good variation in demographic variables for both the judges and juveniles, with the exception of race. This variation in demographic variables allows for better interpretation of the relationship between variables such as gender and the other variables of interest. As a whole, this dissertation provides a good starting point for future research, however, it is not without its limitations.

Limitations

There are several limitations within the present study. First, due to challenges finding courts with recorded hearings of interest, coupled with subsequent access controls associated with obtaining court hearing transcripts and linked closed court and case files, only one location was able to be examined limiting the generalizability of research findings to other locations. Second, access controls associated with obtaining proposed data made it necessary to use a nonprobability convenience sample for this research. This approach further limited generalizability, however, it was warranted given the exploratory nature of the study and the hard-to-reach population. Third, due to time and resource constraints, only a relatively small sample size was able to be obtained which might affect the reliability of the results. Although a larger sample size would be preferable, the present sample size was deemed sufficient enough as determined by power analyses to make inferences from the results.

Fourth, due to availability and access restrictions from Pima County Juvenile Court Center, the initially anticipated sampling frame of cases from 2008-2018 was not available. Instead only cases from 2014-2019 were analyzed which decreased the

probability that all relevant court cases were updated and included in the casefile. Additionally, the sampling frame provided by Pima County Juvenile Court Center was initially constrained by removing cases that appeared to have multiple adjudication hearings to ensure that there was case equivalence; cases with only one adjudication hearing in the sampling frame were selected as it seemed logical the effects of a judge-juvenile interaction and instances of procedural justice might be more impactful to juveniles with only one adjudication hearing rather than several.

This eliminated the problem of having different judges presiding over different adjudication hearings for one juvenile. However, despite intentionally trying to remove cases with multiple adjudication hearings, the sampling frame was not comprehensive. There were several instances in which there were multiple adjudication hearings that were not indicated in the sampling frame (potentially leading to biased sample selection) as well as instances in which the most recent adjudication was not indicated (leading to some selected cases needing to be removed later due to a different judge presiding over the most recent adjudication hearing). Furthermore, due to the limited number of female juveniles in the sampling frame, every female juvenile's case was selected. From each stratum (judge), male juveniles were randomly selected with a random number generator. This potentially biased sample limits generalizability. Similarly, due to the issues with accessing casefiles and hearing recordings while collecting data, the subset of the sample that was coded by the additional coders was not randomly selected from the sample nor was the order in which the cases were coded to account for order/sequence effects randomized.

Fifth, race was designated by Pima County Juvenile Court Center rather than by the juvenile or family. Additionally, participants in this study lacked a variation in race which limits generalizability to a wider population. Sixth, the present study only examined short-term behavioral outcomes due to time and resource constraints making a longitudinal study unfeasible. Seventh, the case file review measure had to be adjusted at the start of data collection. Due to time and resource constraints at Pima County Juvenile Court Center, I did not have prior access to an example case file; thus, I had limited knowledge of what data could be extracted. Some of the data that I wanted to collect, was feasible, however, there was some that was not.

Data that was not able to be captured as originally anticipated was completion of court ordered mental health treatment, completion of court ordered substance abuse treatment, number of “clean” and “failed” substance use tests, educational status at case closing, as well as vocational competency at the beginning of the case and at case closing. For some cases, this data was present and able to be collected, however, for the vast majority of the cases, data on these items were not present. As a result of having to reconstruct the case file review measure, I decided to include data which I thought might be beneficial for future analyses, including type of charge (e.g., attempted burglary, resisting arrest using physical force, etc.); whether the charge was a misdemeanor, felony, or open; whether the juvenile admitted or denied the charge; whether the charges were adjudicated or dismissed; the terms of probation; completion of consequences; the number of judges that presided over the juvenile’s various hearings; and the percent of hearings that the adjudicating judge presided over out of all of the juvenile’s various hearings. Although, some of the data that was originally anticipated but unable to be

collected would have added to the analyses, the additional data that was collected as a result of reconstructing the case file review measure, proved to be informative.

Eighth, due to court practices Pima County Juvenile Court Center only possessed audio recordings of hearings which only allowed for information to be gathered about verbal interactions between the judge and juvenile rather than verbal and physical interactions which could have been gathered through video recordings or direct observation of the hearings. Ninth, subjective procedural justice was not able to be measured. Due to the time and resource constraints a longitudinal study was not feasible, and data was examined retrospectively eliminating the possibility of examining the juvenile's perceptions of the procedural justice they received. Without information on the subjective procedural justice, I assumed that observed procedural justice uniquely contributed to juvenile's behavioral outcomes. It is possible that subjective and observed procedural justice interact or moderate/mediate the relationship between one another and behavioral outcomes; future research should examine this possibility.

Tenth, this study attempted to examine objective procedural justice through observation. It is possible that aspects of objective procedural justice were not entirely observable (e.g., "The judge indicated concern for the juvenile's situation"). Eleventh, this study attempted to examine observed procedural justice in a somewhat subjective manner, using Likert-type scales. Although not ideal, this limitation was addressed by utilizing multiple coders and examining intraclass correlation which better indicated the objectivity of the procedural justice items. Twelfth, some of the items in the Review of Recorded Court Hearing measure encompassed actions from the judge and/or other court

personnel which could have confounded the results. Thirteenth, due to issues with the observed procedural justice measure, not all procedural justice items could be utilized in analyses as it would severely affect the power of the analyses. Thus, the decision was made to only utilize four items from the observed procedural justice measure which could have limited the results.

Procedural Justice Measure

As briefly discussed in previous sections, procedural justice was measured using a procedural justice scale adapted from two sources including: the Center for Court Innovation's Measuring Perceptions of Fairness: An Evaluation Toolkit (Gold & Jensen, 2015) and Sunshine and Tyler (2016) which were modified and tailored by myself to juvenile court hearings by examining whether each of the items uniquely and objectively contributed to the concept of procedural justice; if they did, they were included. Additionally, if wording changes or clarifications were needed (e.g., to reflect juvenile populations), then the items were adjusted accordingly. I created three items as I deemed these items to directly related to procedural justice, but which were not present in the existing measures (i.e., B2, DH2, O1).

Despite the idea that the combination of questions relating to the various procedural justice components (i.e., voice, neutrality, respect, trust) would make a procedural justice scale (see Gold & Jensen, 2015; Sunshine & Tyler, 2016), this did not occur in the present study. When considered as a whole, these items did not align with the four components despite running an exploratory factor analysis restricting the components to four. These results could have been due to a variety of reasons. One

possible explanation is that these measures, which were drawn from self-assessment, courtroom observation, and defendant responses, were not able to accurately capture observed procedural justice. Second, these results could have been due to the population; the original measure (Gold & Jensen, 2015) was created for adults. Thus, it is possible that these questions do not represent procedural justice in juveniles.

Third, the original measure from Gold and Jensen (2015) drew from Tom Tyler's procedural justice literature (which indicates that the four components are voice, neutrality, respect, and trust), however, Gold and Jensen (2015) decided to include a fifth element. Gold and Jensen (2015) defined procedural justice as:

(1) *voice* (litigants' perception that their side of the story has been heard); (2) *respect* (litigants' perception that the judge, attorneys, and court staff treat them with dignity and respect), (3) *neutrality* (litigants' perception that the decision-making process is unbiased and trustworthy); (4) *understanding* (whether litigants comprehend the language used in court and the decisions that are made)...and (5) *helpfulness* (whether litigants perceive court actors as interested in their personal situation to the extent that the law allows. p. N/A).

As the majority of the procedural justice literature confirms the four-component model, the decision was made to collapse their fifth component into four. After an extensive review of the literature, the respect component is generally defined as an individual being treated with dignity, taken seriously, and whether their input is valued and attended to; whether the individual feels that they have been show respect in relation to their rights and status in society (Goodman-Delahunty, 2010; Tyler, 2000; Tyler & Lind, 1992).

Additionally, the respect component can be conveyed in a number of ways including, general courtesy and politeness, as well as providing information about the often confusing legal system such as what to do and where to go (Tyler, 2007).

Under this definition of procedural justice, Gold and Jensen's (2015) respect and understanding components could be combined. This combination and Gold and Jensen's (2015) definition of helpfulness aligning with the literature's trust component (whether the decision-making authority seriously considered the individual's arguments, are concerned with their situation, are sincere, honest, and open, and attempt to do what is right for them; Goodman-Delahunty, 2010; Tyler, 2000, 2007), resulted in the four-component procedural justice model that the literature suggests. The differences in components between the literature at large and Gold and Jensen (2015) could have contributed to the issues surrounding the procedural justice scale.

Additionally, these procedural justice items did not fall within the five (original) or four (modified) component models as expected. Specifically, when the number of components were not constrained a total of seven components were identified through exploratory factor analysis such that component 1 encompassed two neutrality and one trust items; component 2 encompassed two respect and one voice items; component 3 encompassed two neutrality items; component 4 encompassed three respect items; component 5 encompassed one voice, one trust, and one respect item; component 6 encompassed one respect item; and component 7 encompassed one respect item.

When the number of components was constrained to four, component 1 encompassed two neutrality, one trust, and two respect items; component 2 encompassed

two voice, one trust, and two respect items; component 3 encompassed two neutrality items; and component 4 encompassed four respect items. As evidenced by this exploratory factor analysis (specifically Components 1 and 2) the items adapted from previous research (Gold & Jensen, 2015) did not fall within the components given from the expected sources (i.e., voice, neutrality, respect, trust) for this study. The lack of validity in the Gold and Jensen's (2015) procedural justice measures, as indicated in this dissertation, could be due to the differences in population mentioned above, setting (the original measure reports that it was tested in small claims and family courts; Gold & Jensen, 2015), and/or lack of scale testing and refinement.

Fourth, it could be that some of these items were not appropriate for the adjudication hearing; this seems plausible as there were a few items that were not relevant in the majority of cases/hearings leading to small *Ns*, ultimately preventing the use of procedural justice subscales by each component. Thus, the necessary decision was made to examine these procedural justice items individually which was not originally anticipated. This, in combination with reliability of ratings (discussed below) led to the fifth and primary limitation associated with the procedural justice measure – data fishing. Data fishing is often described as analyzing data with the purpose of finding any possible relationships between the data which might lead to false positives or results that are due to chance alone. As such, all results should be interpreted with caution; these results could purely be a factor of the data fishing. With this major limitation in mind, the results of this dissertation are only presented as exploratory and should be used as impetus for future research.

The results of this study are severely limited for a variety of reasons, primarily originating from lack of resources. Due to the time-consuming nature of data collection, I could only spare a few weeks before school began and could not personally fund more than three coders for 10 hours each. Furthermore, due to time constraints at Pima County Juvenile Court Center, as discussed above, the data was not initially what I had anticipated leading to the data that was collected being messy. This lack of resources significantly contributed to the need to engage in data fishing.

Reliability of Procedural Justice Items

Across all procedural justice items there was a range of inter-rater reliability as determined by the intraclass correlation coefficient. These results could be due to a variety of factors. The additional coders were undergraduate psychology students; two of which had some knowledge of the juvenile justice system but no coding experience and one who had no knowledge of the juvenile justice system but did have coding experience. Additionally, coding occurred in the week prior to the start of their school semester. It is possible that the definitions might not have been clearly defined in the training. As I was the primary coder, I already knew the definition of the items and might not have adequately conveyed these to the additional coders. Although training was conducted and intraclass correlation coefficients were determined to be acceptable subsequently, it is possible that the additional coders began to create their own understanding and definitions of the items throughout the coding process (rather than sticking to the way the dissertation defined the items). My data was most reliable and thus, the data from the additional coders was only used to assess inter-rater reliability and was not utilized in analyses.

Additionally, as the primary coder, there was poor reliability of the procedural justice items in general. This could be due to items not properly relating to a juvenile justice adjudication hearing (as the original procedural justice measure was not designed for this population and setting; Gold & Jensen, 2015) leading to ambiguity in the assessment of the items. Similarly, I was not given prior access or examples of the casefiles or audio recordings prior to the first day of data collection which contributed to the unknown and unanticipated variables available and general ambiguity as to whether the measures would be sufficient, valid, or reliable. Procedures and measures were altered as the process evolved which is a significant limitation that no doubt affected the results. The poor reliability could also be due to time and resources constraints associated with data collection; data collection occurred in eleven days with the majority of casefiles and audio recordings not being available until the latter half. Lastly and most importantly, the poor reliability could have been due to researcher error at some point or throughout the data collection process. These issues with reliability could have impacted the magnitude of the results in this study. Poorer reliability leads to larger inconsistencies between the observed score and the estimated true score and thus, the results could be a product of substantial inconsistencies between the observed and estimated true score. It is possible that the results from this study indicate various phenomenon but do not accurately reflect their magnitude. Thus, more research is necessary to really examine the implications of these findings.

Lessons Learned

Despite the various limitations associated with this research, the findings are valuable to the juvenile justice system and add to the procedural justice and judge-

juvenile interaction literature. Although I encountered several difficulties in gaining access to and obtaining data as well as data analysis, this project was worthwhile both personally and for this field of study. This process was full of lessons learned. Foremost, if researchers are extracting data from case files, I would suggest having a flexible outlook on the data you hope to collect. Get as much information from the court as you can, as early as you can. Identify what data you really want to gather but also brainstorm alternative ways to examine your research questions that might not be ideal. Be ready to assess the situation and alter methods at a moment's notice – applied research rarely goes to plan. Ensure the validity and reliability of your measures personally before collecting data as this can save a substantial amount of time during data collection and analysis. Despite your best efforts, the data that is collected might not turn out as anticipated; take a step back and assess the options, even if they are not ideal. Analyze the data to the extent possible and share the results as much as you can because although the study is not perfect, it provides important information which could be the genesis for future lines of research. These lessons that I have learned throughout my dissertation process are invaluable and I will keep them with me throughout my research career.

Future Directions

The present study addressed gaps within the literature by examining observed procedural justice in juveniles and examining its association with behavioral outcomes during the course of the juvenile's case. This study acts as an important exploratory step for future research. Future research should further examine the relationships between behavioral outcomes and judge-juvenile interaction as well as observed procedural justice. However, what I think is absolutely necessary is the pilot testing and scale

refinement of an observed procedural justice measure that falls within the four-component procedural justice model, particularly for juveniles. Opportunities to further improve this line of research is to again utilize additional coders but for the entirety for the cases, rather than a subset, as well as improve and create supplemental trainings for all coders throughout the data collection process. The combination of these two improvements would greatly add to the limited knowledge about this topic. Along the lines of the hearing observation tool, utilizing video recorded or live hearings would add a wealth of information about physical interactions between judges and juveniles rather than just examining verbal interactions. Ideally, video recordings of adjudication hearings would be used as it would allow for the opportunity to gather data on number/length, verbal, and physical aspects of judge-juvenile interactions, followed by audio recordings which allows for data to be gathered on number/length and verbal aspects of judge-juvenile interactions, and lastly, transcripts which would only allow for data to be gathered on number/length aspects of judge-juvenile interactions. Human interaction encompasses both verbal and physical aspects and as such, utilizing video recorded or live adjudication hearings would provide a more complete picture of judge-juvenile interactions.

Future research should further consider ethical issues related to this type of work. Although, I gained consent from the court administrator at Pima County Juvenile Court Center, it is possible that judges would be resistant to future research examining observed procedural justice and judge-juvenile interactions. Data was archival, de-identified, and reported in aggregate, however, judges might be uncomfortable knowing that they were assessed in this way, without their express consent, and on something that

might appear menial to them. Future research should assess judges' willingness to participate in research that gathers data on observed procedural justice and judge-juvenile interactions. If judges are hesitant, researchers should emphasize that data would be de-identified and reported in aggregate and that the results from such studies could provide further support that there are concrete and achievable things that judges can say and do to promote positive short-term outcomes for juveniles.

Additionally, I suggest the use of a longitudinal design to allow for the interpretation of longer-term outcomes and the role that trauma-informed courts, versus those which are not as trauma-informed, might have on the observed procedural justice received as well as the resulting behavioral outcomes. The procedural justice literature suggests that aspects such as whether the courthouse is easy to navigate or whether signs in various languages are present, contribute to procedural justice and resulting behavioral outcomes. These environmental factors are indicators of a trauma-informed court, which future research should assess via an environmental scan of the courthouse. Trauma-informed courts typically provide kinder and gentler interactions and environments due to understanding that the effects of the courthouse environment, in conjunction with individuals' trauma, can impact individuals' well-being and behavior. When courts are trauma-informed and act in kinder and gentler ways, juveniles typically behave more positively. Pima County Juvenile Court Center has received various trainings on how to be trauma-informed as well as had multiple assessments on how trauma-informed their courthouse is. However, future research should examine whether how trauma-informed the courthouse was (at the time of the adjudication hearing) could be associated with the results on the observed procedural justice received and resulting behavioral outcomes.

Utilizing a longitudinal design would also allow for the addition of data collection on subjective procedural justice. Incorporating subjective procedural justice measures with the observed procedural justice measures would significantly further the literature pertaining to subjective and objective procedural justice and the relationship each of these has on behavioral outcomes as they might contribute differently to behavioral outcomes. This could further illustrate ways in which judges, other legal actors, and courts at large can effect change in juvenile behavioral outcomes.

More generally, future research should utilize a larger sample size with more racially diverse juveniles and judges; importantly for juveniles, race should be defined by the juvenile rather than the court. Additionally, although applied research does not always go as expected, efforts should be made to incorporate more courts and utilize random sampling of judges and juveniles/cases. Future research should further examine the recommendations, outlined above, to determine if the results of this study were due to its' exploratory nature. Specifically, future research should further examine the recommendations that judges should include the following practices during adjudication hearings: (1) provide an overview of what might happen during court, (2) explain court etiquette and rules at the beginning of the hearing, (3) provide an explanation for your actions, (4) engage in more back and forth between yourself and the juvenile, (5) engage in longer conversations with the juvenile, and (6) continue bias training. Judges should follow these recommendations in the meantime as they act as an excellent embarkation to providing juveniles with observed procedural justice.

Conclusion

This dissertation examined the relationships between various aspects including procedural justice, judge-juvenile interactions, judge and juvenile characteristics as well as characteristic match, and short-term behavioral outcomes. Due to the difficulties discussed above, results pertaining to procedural justice items should be interpreted with caution. However, this exploratory research provides an impetus for future research. Further, examining the relationship between judge-juvenile interactions and procedural justice can identify concrete actions for judges to ensure that juveniles are receiving procedural justice in an observable way, ultimately influencing positive short-term behavioral outcomes. The results from this dissertation are consistent with procedural justice research and indicate that aspects of judge-juvenile interactions such as longer and fewer conversations with more interaction during those conversations, might improve procedural justice and ultimately juveniles' short-term behavioral outcomes.

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Appendix A: IRB Approval Letter

University of Nevada, Reno
775.327.2368 / 775.327.2369 fax www.unr.edu/research-integrity

Research Integrity
218 Ross Hall / 331,
Reno, Nevada 89557

DATE: July 5, 2019
 TO: Shawn Marsh
 FROM: University of Nevada, Reno Institutional Review Board (IRB)

PROJECT TITLE: [1456403-1] Voice, neutrality, respect, and trust: Assessing the association between observed measures of procedural justice in juvenile justice cases and juvenile behavioral outcomes

REFERENCE #: Social Behavioral
 SUBMISSION TYPE: New Project

ACTION: APPROVED
 APPROVAL DATE: July 5, 2019
 EXPIRATION DATE: July 5, 2020
 REVIEW TYPE: Expedited Review
 REVIEW: Expedited review # 7
 CATEGORY:
 ANNUAL UPDATE TYPE: Continuing review

The UNR IRB has reviewed and approved in the above-referenced protocol in accordance with the requirements of the Code of Federal Regulations on the Protection of Human Subjects (45 CFR 46 and 21 CFR 50 and 56). This approval is based on assessment that the research met all applicable regulatory criteria. The research must be conducted in accordance with this approved submission. This submission has received Expedited Review based on applicable federal regulations.

Please prepare a Continuing Review / Progress Report Request at least 4 weeks prior to the approval expiration date using IRBNet <https://www.irbnet.org>. IRBNet will send you a courtesy reminder to that effect. Unless updated, the IRB is only authorized to approve a study activity for 12 months or less. There is no grace period. The study will be closed on the above stated expiration date unless the IRB receives and approves your annual update.

Instructions for preparing a modification, continuing review, or status report are located at <http://www.unr.edu/research-integrity/human-research/irbnet>. Call our office if you have any questions or problems with use of IRBNet software.

Approved Documents

- Application Form - IRB Application 6-24-19.docx (UPDATED: 06/26/2019)
- Consent Waiver - Consent Waiver Request Form 6-27-19.docx (UPDATED: 06/27/2019)
- Other - Documentation of permission from Pima County Juvenile Court Center 6-27-19.docx (UPDATED: 06/27/2019)
- Other - Formatted Recorded Hearing Measure 6-24-19.docx (UPDATED: 06/27/2019)
- Other - File Review Measure 6-27-19.docx (UPDATED: 06/27/2019)
- Other - IRB population children.docx (UPDATED: 06/26/2019)
- University of Nevada, Reno - Part I, Cover Sheet - University of Nevada, Reno - Part I, Cover Sheet (UPDATED: 06/26/2019)

If you have any questions, please contact Nancy Moody at 775.327.2367 or at nmoody@unr.edu.

NOTE for VA Researchers: You are not approved to begin this research until you receive an approval letter from the VASNHCs Associate Chief of Staff for Research stating that your research has been approved by the Research and Development Committee.

Sincerely,



Richard Bjur, PhD
Co-Chair, UNR IRB
University of Nevada Reno



Janet Usinger, PhD
Co-Chair, UNR IRB
University of Nevada Reno

This letter has been electronically signed in accordance with all applicable regulations, and a copy is retained within University of Nevada, Reno IRB's record.

Appendix B: File Review Measure

Case

1. Length of contact with the system:
 - a. Petition filing date: _____
 - b. Last contact with the system: _____
2. Number of continuances: _____
3. Number of initial offenses: _____
4. Number of subsequent offenses: _____
5. Type of adjudication hearing:
 - a. Trial Admit/plea
6. Completion of consequences?
 - a. Yes No
7. Successful termination?
 - a. Yes No

Judge

1. Adjudicating judge: _____

Juvenile

1. Age at time of petition filing: _____
2. Gender
 - a. Male Female Other (describe)
3. Race (as given by the court):
 - a. White
 - b. Black
 - c. Asian/Oriental
 - d. American Indian
 - e. Other
4. Prior juvenile justice system involvement?
 - a. Yes No
5. Anything of interest to note?

Charges

1. List of charges + initial/subsequent designation:
 - a.
 - b.
 - c.
 - d. ...
2. Severity of charges (i.e., misdemeanor, felony)
 - a.

- b.
 - c.
 - d. ...
3. Type of charges (i.e., initial file charge, probation violation):
- a.
 - b.
 - c.
 - d. ...
4. Outcome of charges:
- | | | |
|----------|-------------|-----------|
| a. Admit | Adjudicated | Dismissed |
| b. Admit | Adjudicated | Dismissed |
| c. Admit | Adjudicated | Dismissed |
| d. ... | | |
5. List of hearing dates and judges:
- a.
 - b.
 - c.
 - d. ...

Appendix C: Review of Recorded Hearing Measure

Court #: _____ Judge: _____ Observer

Initials: _____

Date: _____ Hearing Start Time: _____ End

Time: _____

Tally of times the judge-juvenile interact: _____

Length of judge-juvenile conversations: _____

	Question	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
Beginning of Hearing						
B1_Respect	The judge introduced him/herself by name.	1	2	3	4	5
B2_Respect	The judge thanked audience members for being present.	1	2	3	4	5
B3_Respect	The judge provided some overview of what might happen during court.	1	2	3	4	5
B4_Respect	The judge or other court staff explained court etiquette and rules at the beginning of the court session.	1	2	3	4	5
During the Hearing						
DH1_Voice	The judge gave the juvenile or their lawyer a chance to tell their side of the story.	1	2	3	4	5
DH2_Trust	The judge indicated concern for the juvenile's situation. [Concern is indicated by	1	2	3	4	5

	things such as care, interest, or worry]					
	~Pre-Decision~					
PD1_Voice	The judge solicited suggestions from the juvenile when deciding what to do.	1	2	3	4	5
PD2_Trust	The judge indicated that they are trying to find the best solutions for the juvenile's problems.	1	2	3	4	5
PD3_Trust	The judge indicated they are trying to do what is best for the juvenile.	1	2	3	4	5
PD4_Neutrality	The judge explained the process by which decisions will be made.	1	2	3	4	5
PD5_Neutrality	The judge assured the juvenile that all of the admissible evidence would be considered before making any decision.	1	2	3	4	5
PD6_Neutrality	The judge assured the juvenile that they would base their decisions upon facts.	1	2	3	4	5
	Decision/Ruling					
D1_Voice	The judge indicated that they considered the juvenile's opinions when deciding what to do.	1	2	3	4	5
D2_Trust	The judge gave an explanation for their actions.	1	2	3	4	5
D3_Respect	The judge described what the juvenile must do to comply with the court order or sentence.	1	2	3	4	5
D4_Respect	The judge asked the juvenile to repeat back	1	2	3	4	5

	his/her understanding of the sentence and/or next steps.					
D5_Respect	The juvenile was provided oral reminders about future court dates.	1	2	3	4	5
Overall						
O1_Respect	The judge and/or other legal actors were polite to the juvenile. [Polite is indicated by things such as saying 'please' and 'thank you', being civil, and avoiding being rude]	1	2	3	4	5
O2_Voice	The judge and/or other legal actors asked open-ended questions (versus yes/no questions) to solicit questions from the juvenile.	1	2	3	4	5
O3_Respect	The judge and/or other legal actors used plain language (i.e., non-legal jargon) to explain the case procedure and outcome.	1	2	3	4	5
O4_Neutrality	The judge and/or other legal actors did not make jokes or other commentary that could be perceived as derogatory or insensitive to certain class of court users (e.g., gender, race). [Being derogatory or insensitive is indicated by things such as being disparaging, disdainful, uncomplimentary, expressing a low opinion, detracting from someone's character,	1	2	3	4	5

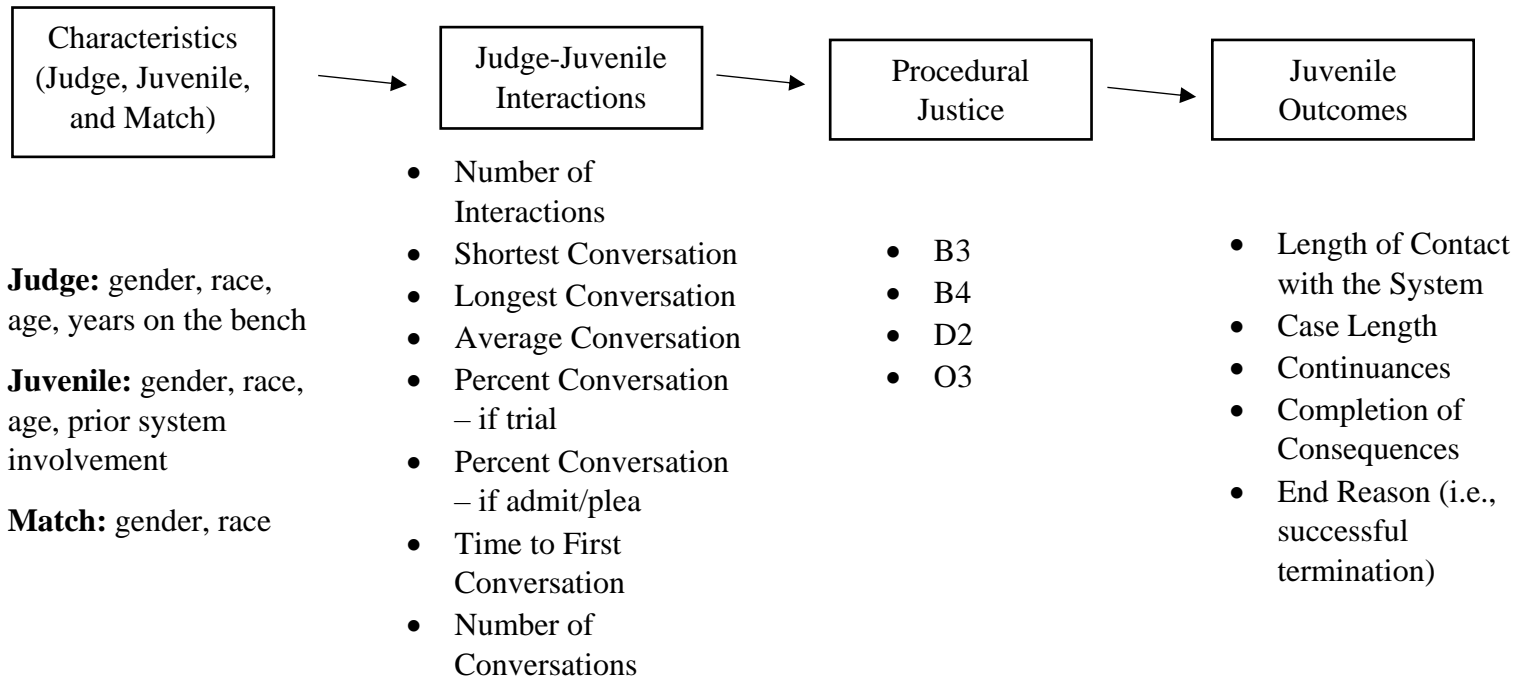
	belittling, degrading, and showing little or no regard for others' feelings]					
O5_Neutrality	The judge and/or other legal actors avoided showing preferences towards certain prosecutors or defense attorneys (e.g., cutting off, rushing, talking over, etc. one attorney but not the other within the same case).	1	2	3	4	5

Appendix D: Research Questions Variables of Interest

Type	Name	Measurement
Independent (IV)		
	Procedural Justice Items	
	B3 (Respect; “The judge provided some overview of what might happen during court”)	Ordinal/Continuous
	B4 (Respect; “The judge ff explained court etiquette and rules at the beginning of the court session”)	Ordinal/Continuous
	D2 (Trust; “The judge gave an explanation for their actions”)	Ordinal/Continuous
	O3 (Respect; “The judge and/or other legal actors used plain language [i.e., non-legal jargon] to explain the case procedure and outcome”)	Ordinal/Continuous
	Judge-Juvenile Interaction	
	Number of Interactions	Continuous (Ratio)
	Shortest Conversation	Continuous (Ratio)
	Longest Conversation	Continuous (Ratio)
	Average Conversation	Continuous (Ratio)
	Percent Conversation – if trial	Continuous (Ratio)
	Percent Conversation – if admit/plea	Continuous (Ratio)
	Time to First Conversation	Continuous (Ratio)
	Number of Conversations	Continuous (Ratio)
	Judge Characteristics	
	Gender	Categorical (Nominal)
	Race	Categorical (Nominal)
	Years on the Bench	Continuous (Ratio)
	Juvenile Characteristics	
	Gender	Categorical (Nominal)
	Race	Categorical (Nominal)
	Age	Continuous (Ratio)
	Prior System Involvement	Categorical (Dichotomous)
	Judge-Juvenile Characteristics Match	
	Gender	Categorical (Dichotomous)
	Race	Categorical (Dichotomous)
	Case Characteristics	
	Offense Severity (i.e., misdemeanor, felony)	Categorical (Dichotomous)
Dependent (DV)		
	Length of Contact with the System	Continuous (Ratio)
	Case Length	Continuous (Ratio)

	Continuances	Continuous (Ratio)
	Completion of Consequences	Categorical (Dichotomous)
	End Reason (i.e., successful termination)	Categorical (Dichotomous)

Appendix E: Conceptual Model



¹ Procedural justice items

- B3 (a respect component): “The judge provided some overview of what might happen during court”
- B4 (a respect component): “The judge or other court staff explained court etiquette and rules at the beginning of the court session”
- D2 (a trust component): “The judge gave an explanation for their actions”
- O3 (a respect component): “The judge and/or other legal actors used plain language [i.e., non-legal jargon] to explain the case procedure and outcome”

Appendix F: Analysis Map

Steps	Action Taken
1	Entered data
2	Cleaned data
3	Conducted preliminary analyses (e.g., descriptives)
4	Assessed variable normality via P-P plots
5	Conducted various transformations for non-normally distributed variables
6	Reassessed variable normality and decided transformations did not increase normality and thus would not be used
7	Conducted and assessed inter-rater reliability of data points for cases in which there was data from additional coders through intraclass correlation (ICC) analyses
8	Conducted an exploratory factor analysis and refined the number of factors to four
9	Compared the results from the exploratory factor analysis to the initial (non-modified) measures; decided that results from the factor analysis did not comport with the initial measures
10	Despite the factor analysis not indicating that the procedural justice elements supported the initial measures, subscales of the procedural justice components (i.e., voice, neutrality, respect, trust) were created and assessed
11	Examined the Cronbach's alpha; conducted analyses for research questions 1 and 2 utilizing the two scales with an acceptable Cronbach's alpha
12	Assessed the results deciding that there were not enough valid cases; decided to select and run analyses with procedural justice items individually
13	Examined the inter-rater reliability of individual procedural justice items
14	Conducted multiple linear and binomial logistic regressions first in block format in which each block containing one procedural justice component (i.e., voice, neutrality, respect, trust), second in non-block format (all together), and third with individual multiple regressions with one procedural justice component in non-block format (all together) on each dependent variable
15	Identified procedural justice item variables with the most significance
16	Ruled out multilevel modeling analyses as cases were randomly assigned to judges
17	Conducted analyses for research question 1 <ul style="list-style-type: none"> Examined the strength and direction of linear relationships via Pearson's product-moment correlation for procedural justice item variables and all continuous dependent variables

	<ul style="list-style-type: none"> • Examined the relationship between the procedural justice item variables and all continuous dependent variables while controlling for offense severity via multiple linear regression • Examined the relationship between the procedural justice item variables and all dichotomous dependent variables while controlling for offense severity via binomial logistic regression
18	<p>Conducted analyses for research question 2</p> <ul style="list-style-type: none"> • Examined the strength and direction of linear relationships via Pearson's product-moment correlation for procedural justice item variables and all judge-juvenile interaction variables • Examined the relationship between the procedural justice item variables and judge-juvenile interaction variables while controlling for offense severity via multiple linear regression
19	<p>Conducted analyses for research question 3</p> <ul style="list-style-type: none"> • Examined the relationship between demographic match variables and judge-juvenile interaction variables while controlling for offense severity via multiple linear regression • Examined the relationship between judge characteristic variables and judge-juvenile interaction variables while controlling for offense severity via multiple linear regression • Examined the relationship between juvenile characteristic variables and judge-juvenile interaction variables while controlling for offense severity via multiple linear regression

Appendix G: Exploratory Analysis Tables

Table 9. Exploratory (Non-Hypothesized Variable) Correlations Among Variables of Interest

	1	2	3	4	5	6	7	8	9
1 Juvenile Age	1								
2 Juvenile Gender	-.02	1							
3 Juvenile Race	-.21**	.20*	1						
4 Prior System Involvement	.47***	-.07	-.38***	1					
5 Length of Contact with the System	-.24**	.08	-.11	-.23**	1				
6 Case Length	-.33***	-.03	-.20*	-.23**	.75***	1			
7 Continuances	-.23**	-.06	.03	-.22*	.51***	.44***	1		
8 Any Charges Admitted	.08	.03	-.27**	.42***	-.03	.06	-.06	1	
9 Any Charges Adjudicated	.05	-.05	.05	-.09	-.02	-.03	-.17	-.31***	1
10 Felony Charges	-.00	-.22**	-.10	-.07	.18*	.18*	.24**	.09	.03
11 Any Subsequent Charges	-.03	-.04	-.33***	.03	.39***	.34***	.39***	.08	-.11
12 Number of Initial Charges	-.07	-.08	-.15	.10	-.01	.08	-.04	.28***	-.06
13 Number of Subsequent Charges	-.01	.06	-.29***	.04	.43***	.35***	.30***	.03	-.05
14 Number of Adjudicated Charges	.01	-.08	.05	-.01	-.01	-.03	-.13	-.26**	.89***
15 Number of Admitted Charges	-.09	.02	-.25**	.08	.33***	.35***	.25**	.25**	-.36***
16 Complete Consequences	-.23**	-.13	.20*	-.36***	-.03	-.06	.07	-.37***	-.03
17 Years on the Bench	.09	.02	-.21*	.28***	.00	-.08	-.11	.34***	-.18*
18 Female Judge	.04	.08	-.09	.14	-.10	-.14	-.16	.06	.01
19 Gender Match	.07	.08	.04	-.05	-.04	.05	.15	.08	-.05
20 Judge Race	-.14	.16	.18	-.18*	.02	.06	.08	-.07	-.04
21 Race Match	.08	-.22**	-.46***	.27**	.02	.04	-.15	.09	.04
22 B3	.33***	-.12	-.19*	.25**	-.15	-.05	-.22**	.17	-.05
23 B4	-.08	-.06	.01	-.12	-.06	.11	-.25**	-.22**	.31***
24 D2	.27***	.03	-.05	.13	-.26**	-.12	-.18*	.11	.05
25 O3	-.16	-.18*	-.09	.05	.23**	.24**	.22**	.02	-.21**
26 Successfully Terminated	-.05	-.07	-.07	-.12	.09	.23**	.07	-.06	-.01

Note. *** $p \leq .01$, ** $p \leq .05$, * $p \leq .10$. B3: “The judge provided some overview of what might happen during court”. B4: “The judge or other court staff explained court etiquette and rules at the beginning of the court session”. D2: “The judge gave an explanation for their actions”. O3: “The judge and/or other legal actors used plain language [i.e., non-legal jargon] to explain the case procedure and outcome”.

Table 9 Continued. Exploratory (Non-Hypothesized Variable) Correlations Among Variables of Interest

	10	11	12	13	14	15	16	17	18
1 Juvenile Age									
2 Juvenile Gender									
3 Juvenile Race									
4 Prior System Involvement									
5 Length of Contact with the System									
6 Case Length									
7 Continuances									
8 Any Charges Admitted									
9 Any Charges Adjudicated									
10 Felony Charges	1								
11 Any Subsequent Charges	.26**	1							
12 Number of Initial Charges	.09	-.06	1						
13 Number of Subsequent Charges	.24**	.80***	-.04	1					
14 Number of Adjudicated Charges	.09	-.15	.06	-.06	1				
15 Number of Admitted Charges	.14	.46***	.50***	.57***	-.31***	1			
16 Complete Consequences	-.20*	-.25**	-.22*	-.20*	-.07	-.19	1		
17 Years on the Bench	.05	.27***	.13	.16	-.16	.13	-.22*	1	
18 Female Judge	-.11	-.08	.21**	-.05	.02	.09	-.03	.34***	1
19 Gender Match	.08	.02	-.18*	-.13	-.06	-.16	-.03	-.05	-.45***
20 Judge Race	-.02	.16	-.17	-.04	-.07	-.15	.07	-.00	-.22**
21 Race Match	.01	.05	.18	.19*	.06	.23**	-.24**	-.18	-.17
22 B3	-.15	.00	-.01	.07	.01	.01	-.10	.04	-.05
23 B4	-.03	-.17	-.10	-.13	.25**	-.27***	.00	-.15	-.12
24 D2	.04	-.09	.03	-.18	-.04	-.13	-.15	-.08	-.10
25 O3	.19*	.24**	.24**	.27***	-.17	.42***	.00	.11	-.08
26 Successfully Terminated	.17	.04	-.13	.09	-.01	.05	-.03	-.12	-.03

Note. *** $p \leq .01$, ** $p \leq .05$, * $p \leq .10$. B3: “The judge provided some overview of what might happen during court”. B4: “The judge or other court staff explained court etiquette and rules at the beginning of the court session”. D2: “The judge gave an explanation for their actions”. O3: “The judge and/or other legal actors used plain language [i.e., non-legal jargon] to explain the case procedure and outcome”.

Table 9 Continued. Exploratory (Non-Hypothesized Variable) Correlations Among Variables of Interest

	19	20	21	22	23	24	25	26
1 Juvenile Age								
2 Juvenile Gender								
3 Juvenile Race								
4 Prior System Involvement								
5 Length of Contact with the System								
6 Case Length								
7 Continuances								
8 Any Charges Admitted								
9 Any Charges Adjudicated								
10 Felony Charges								
11 Any Subsequent Charges								
12 Number of Initial Charges								
13 Number of Subsequent Charges								
14 Number of Adjudicated Charges								
15 Number of Admitted Charges								
16 Complete Consequences								
17 Years on the Bench								
18 Female Judge								
19 Gender Match	1							
20 Judge Race	-.00	1						
21 Race Match	-.15	-.26**	1					
22 B3	-.02	-.09	.18	1				
23 B4	.03	.18*	.24**	.04	1			
24 D2	.12	.06	.01	.22**	.17	1		
25 O3	.02	-.31***	.13	.14	-.05	.07	1	
26 Successfully Terminated	.16	-.03	.17	.14	.18*	-.08	.22**	1

Note. *** $p \leq .01$, ** $p \leq .05$, * $p \leq .10$. B3: “The judge provided some overview of what might happen during court”. B4: “The judge or other court staff explained court etiquette and rules at the beginning of the court session”. D2: “The judge gave an explanation for their actions”. O3: “The judge and/or other legal actors used plain language [i.e., non-legal jargon] to explain the case procedure and outcome”.

Table 10. Exploratory Analysis - Match Variables: Multiple Linear Regressions

Variable	Length of Contact with the System			Case Length			Continuances			B3		
	<i>B</i>	<i>SE_B</i>	β	<i>B</i>	<i>SE_B</i>	β	<i>B</i>	<i>SE_B</i>	β	<i>B</i>	<i>SE_B</i>	β
Intercept	182.63	33.61		217.57	38.00		1.16	.28		2.34	.19	
Gender Match	20.51	34.10	.07	34.72	38.91	.10	.24	.28	.10	.01	.19	.00
Race Match	-8.85	34.02	-.03	19.47	38.80	.06	-.42	.28	-.17	.31	.19	.18*
Felony Charges	95.84	34.53	.30***	113.49	39.23	0.32***	.40	.29	.15	-.35	.19	-.20*
<i>R</i> ²		.10			.12			.07			.07	
<i>F</i>		2.82**			3.31**			1.77			2.03	

Note. *** $p \leq .01$, ** $p \leq .05$, * $p \leq .10$. Tolerance was assessed and determined by assessing correlations and variance inflation factors and determined to be acceptable. B3: “The judge provided some overview of what might happen during court”. B4: “The judge or other court staff explained court etiquette and rules at the beginning of the court session”. D2: “The judge gave an explanation for their actions”. O3: “The judge and/or other legal actors used plain language [i.e., non-legal jargon] to explain the case procedure and outcome”.

Table 10 Continued. Exploratory Analysis - Match Variables: Multiple Linear Regressions

Variable	B4			D2			O3		
	<i>B</i>	<i>SE_B</i>	β	<i>B</i>	<i>SE_B</i>	β	<i>B</i>	<i>SE_B</i>	β
Intercept	1.63	.30		3.30	.27		2.64	.29	
Gender Match	.04	.31	.02	.22	.28	.09	.06	.30	.02
Race Match	.67	.31	.24**	.04	.28	.02	.34	.30	.13
Felony Charges	-.17	.31	-.06	.05	.29	.02	.53	.30	.19*
<i>R</i> ²		.06			.01			.05	
<i>F</i>		1.70			.23			1.49	

Note. *** $p \leq .01$, ** $p \leq .05$, * $p \leq .10$. Tolerance was assessed and determined by assessing correlations and variance inflation factors and determined to be acceptable. B3: “The judge provided some overview of what might happen during court”. B4: “The judge or other court staff explained court etiquette and rules at the beginning of the court session”. D2: “The judge gave an explanation for their actions”. O3: “The judge and/or other legal actors used plain language [i.e., non-legal jargon] to explain the case procedure and outcome”.

Table 11. Exploratory Analysis - Judge Characteristics: Multiple Linear Regressions

Variable	Length of Contact with the System			Case Length			Continuances			B3		
	<i>B</i>	<i>SE_B</i>	β	<i>B</i>	<i>SE_B</i>	β	<i>B</i>	<i>SE_B</i>	β	<i>B</i>	<i>SE_B</i>	β
Intercept	176.24	40.80		285.68	50.47		1.23	.33		2.61	.22	
Female Judge	30.47	36.65	.10	-1.78	45.99	-.01	-.01	.29	-.01	-.26	.20	-.16
Judge Race	6.91	13.50	.06	-1.91	16.75	-.01	.10	.11	.11	.03	.09	.03
Judge Years on Bench	-3.61	4.16	-.10	-3.91	5.27	-.09	-.06	.03	-.22*	.01	.02	.06
Felony Charges	96.87	34.23	.31***	107.73	42.39	.28***	.53	.28	.21*	-.41	.19	-.24**
<i>R</i> ²		.10			.09			.10			.07	
<i>F</i>		2.06*			1.79			2.11*			1.51	

Note. *** $p \leq .01$, ** $p \leq .05$, * $p \leq .10$. Tolerance was assessed and determined by assessing correlations and variance inflation factors and determined to be acceptable. B3: “The judge provided some overview of what might happen during court”. B4: “The judge or other court staff explained court etiquette and rules at the beginning of the court session”. D2: “The judge gave an explanation for their actions”. O3: “The judge and/or other legal actors used plain language [i.e., non-legal jargon] to explain the case procedure and outcome”.

Table 11 Continued. Exploratory Analysis - Judge Characteristics: Multiple Linear Regressions

Variable	B4			D2			O3		
	<i>B</i>	<i>SE_B</i>	β	<i>B</i>	<i>SE_B</i>	β	<i>B</i>	<i>SE_B</i>	β
Intercept	1.91	.38		3.53	.31		3.47	.34	
Female Judge	-.07	.33	-.02	-.21	.28	-.09	-.53	.29	-.20*
Judge Race	.28	.16	.20*	.24	.11	.24**	-.45	.12	-.40***
Judge Years on Bench	-.06	.04	-.18	-.03	.03	-.12	.08	.04	.25**
Felony Charges	.22	.32	.08	-.06	.26	-.03	.21	.28	.08
<i>R</i> ²		.06			.09			.22	
<i>F</i>		1.24			1.82			5.42***	

Note. *** $p \leq .01$, ** $p \leq .05$, * $p \leq .10$. Tolerance was assessed and determined by assessing correlations and variance inflation factors and determined to be acceptable. B3: “The judge provided some overview of what might happen during court”. B4: “The judge or other court staff explained court etiquette and rules at the beginning of the court session”. D2: “The judge gave an explanation for their actions”. O3: “The judge and/or other legal actors used plain language [i.e., non-legal jargon] to explain the case procedure and outcome”.

Table 12. Exploratory Analysis - Juvenile Characteristics: Multiple Linear Regressions

Variable	Length of Contact with the System			Case Length			Continuances			B3		
	<i>B</i>	<i>SE_B</i>	β	<i>B</i>	<i>SE_B</i>	β	<i>B</i>	<i>SE_B</i>	β	<i>B</i>	<i>SE_B</i>	β
Intercept	654.13	184.57		1017.87	211.87		2.88	1.61		.29	.99	
Female Juvenile	13.51	37.72	.04	-22.19	44.78	-.05	.06	.33	.02	-.19	.21	-.10
Juvenile Race	-39.70	16.07	-.28**	-54.10	19.49	-.300***	.05	.14	.04	-.09	.09	-.12
Juvenile Age	-23.61	12.02	-.22**	-39.27	13.98	-.32***	-.11	.11	-.13	.16	.07	.28**
Prior System Involvement	-69.44	37.35	-.22*	-82.65	44.63	-.22*	-.34	.34	-.14	.08	.21	.05
Felony Charges	99.48	32.83	.31***	78.26	38.67	.21**	.37	.30	.14	-.38	.19	-.22**
<i>R</i> ²		.26			.30			.08			.18	
<i>F</i>		5.00***			6.22***			1.29			3.31***	

Note. *** $p \leq .01$, ** $p \leq .05$, * $p \leq .10$. Tolerance was assessed and determined by assessing correlations and variance inflation factors and determined to be acceptable. B3: “The judge provided some overview of what might happen during court”. B4: “The judge or other court staff explained court etiquette and rules at the beginning of the court session”. D2: “The judge gave an explanation for their actions”. O3: “The judge and/or other legal actors used plain language [i.e., non-legal jargon] to explain the case procedure and outcome”.

Table 12 Continued. Exploratory Analysis - Juvenile Characteristics: Multiple Linear Regressions

Variable	B4			D2			O3		
	<i>B</i>	<i>SE_B</i>	β	<i>B</i>	<i>SE_B</i>	β	<i>B</i>	<i>SE_B</i>	β
Intercept	2.12	1.64		-.02	1.48		5.89	1.60	
Female Juvenile	-.47	.35	-.15	.11	.32	.04	-.64	.34	-.21*
Juvenile Race	-.41	.16	-.29***	-.02	.15	-.01	.03	.15	.02
Juvenile Age	.06	.11	.07	.23	.10	.29**	-.20	.11	-.23*
Prior System Involvement	-.69	.35	-.26**	-.04	.32	-.02	.37	.34	.14
Felony Charges	-.16	.30	-.06	.09	.28	.04	.42	.30	.16
<i>R</i> ²		.12			.08			.12	
<i>F</i>		2.03*			1.27			2.12*	

Note. *** $p \leq .01$, ** $p \leq .05$, * $p \leq .10$. Tolerance was assessed and determined by assessing correlations and variance inflation factors and determined to be acceptable. B3: “The judge provided some overview of what might happen during court”. B4: “The judge or other court staff explained court etiquette and rules at the beginning of the court session”. D2: “The judge gave an explanation for their actions”. O3: “The judge and/or other legal actors used plain language [i.e., non-legal jargon] to explain the case procedure and outcome”.

Table 13. Exploratory Analysis - 'Any' Variables: Multiple Linear Regressions

Variable	Length of Contact with the System			Case Length			Continuances			B3		
	<i>B</i>	<i>SE_B</i>	β	<i>B</i>	<i>SE_B</i>	β	<i>B</i>	<i>SE_B</i>	β	<i>B</i>	<i>SE_B</i>	β
Intercept	194.65	28.13		256.91	36.60		1.35	.24		2.33	.16	
Any Charges Admitted	-45.51	35.05	-.15	15.59	45.54	.04	-.72	.29	-.27**	.31	.20	.18
Any Charges Adjudicated	-20.77	42.78	-.06	-39.39	55.69	-.08	-.67	.36	-.21*	.04	.24	.02
Any Subsequent Charges	100.95	38.79	.29***	160.46	49.93	.36***	.87	.32	.29***	.04	.22	.02
Felony Charges	64.27	34.99	.21*	40.01	45.69	.10	.34	.29	.13	-.28	.20	-.16
<i>R</i> ²		.18			.18			.21			.05	
<i>F</i>		4.03***			3.92***			4.81***			1.06	

Note. *** $p \leq .01$, ** $p \leq .05$, * $p \leq .10$. Tolerance was assessed and determined by assessing correlations and variance inflation factors and determined to be acceptable. B3: "The judge provided some overview of what might happen during court". B4: "The judge or other court staff explained court etiquette and rules at the beginning of the court session". D2: "The judge gave an explanation for their actions". O3: "The judge and/or other legal actors used plain language [i.e., non-legal jargon] to explain the case procedure and outcome".

Table 13 Continued. Exploratory Analysis - 'Any' Variables: Multiple Linear Regressions

Variable	B4			D2			O3		
	<i>B</i>	<i>SE_B</i>	β	<i>B</i>	<i>SE_B</i>	β	<i>B</i>	<i>SE_B</i>	β
Intercept	2.21	.26		3.27	.24		3.10	.25	
Any Charges Admitted	-.45	.32	-.16	.35	.30	.15	-.23	.31	-.08
Any Charges Adjudicated	.55	.42	.16	.15	.39	.05	-.80	.37	-.24**
Any Subsequent Charges	-.61	.36	-.20*	-.38	.33	-.14	.59	.34	.20*
Felony Charges	-.05	.32	-.02	.20	.30	.08	.36	.31	.13
<i>R</i> ²		.13			.04			.13	
<i>F</i>		2.67**			.77			2.81**	

Note. *** $p \leq .01$, ** $p \leq .05$, * $p \leq .10$. Tolerance was assessed and determined by assessing correlations and variance inflation factors and determined to be acceptable. B3: "The judge provided some overview of what might happen during court". B4: "The judge or other court staff explained court etiquette and rules at the beginning of the court session". D2: "The judge gave an explanation for their actions". O3: "The judge and/or other legal actors used plain language [i.e., non-legal jargon] to explain the case procedure and outcome".

Table 14. Exploratory Analysis - 'Number' Variables: Multiple Linear Regressions

Variable	Length of Contact with the System			Case Length			Continuances		
	<i>B</i>	<i>SE_B</i>	β	<i>B</i>	<i>SE_B</i>	β	<i>B</i>	<i>SE_B</i>	β
Intercept	205.04	31.46		233.20	37.70		1.19	.27	
Number of Initial Charges	-31.58	12.62	-.35***	-33.04	16.71	-.29**	-.21	.11	-.29*
Number of Subsequent Charges	1.24	12.90	.02	-9.46	16.00	-.09	.08	.12	.11
Number of Admitted Charges	33.52	15.74	.40**	65.07	18.95	.62***	.21	.14	.30
Number of Adjudicated Charges	20.23	22.01	.11	17.80	28.40	.07	-.03	.21	-.02
Number of Dismissed Charges	.	.	.	.	.	.	.	.	.
Felony Charges	73.97	33.42	.24**	83.20	41.49	.22**	.37	.29	.14
<i>R</i> ²		.22			.28			.17	
<i>F</i>		4.22***			5.63***			3.04**	

Note. *** $p \leq .01$, ** $p \leq .05$, * $p \leq .10$. Tolerance was assessed and determined by assessing correlations and variance inflation factors and determined to be acceptable. B3: “The judge provided some overview of what might happen during court”. B4: “The judge or other court staff explained court etiquette and rules at the beginning of the court session”. D2: “The judge gave an explanation for their actions”. O3: “The judge and/or other legal actors used plain language [i.e., non-legal jargon] to explain the case procedure and outcome”.

Table 14 Continued. Exploratory Analysis - 'Number' Variables: Multiple Linear Regressions

Variable	B3			B4			D2			O3		
	<i>B</i>	<i>SE_B</i>	β	<i>B</i>	<i>SE_B</i>	β	<i>B</i>	<i>SE_B</i>	β	<i>B</i>	<i>SE_B</i>	β
Intercept	2.50	.18		2.36	.30		3.56	.27		2.45	.27	
Number of Initial Charges	-.27	.15	-.55*	-.07	.13	-.09	.04	.11	.05	.07	.11	.10
Number of Subsequent Charges	-.14	.13	-.33	-.10	.13	-.13	-.12	.11	-.16	.06	.12	.08
Number of Admitted Charges	.18	.14	.40	-.10	.16	-.13	-.08	.14	-.12	.17	.14	.25
Number of Adjudicated Charges	.14	.19	.12	.39	.28	.16	-.17	.23	-.09	-.27	.22	-.14
Number of Dismissed Charges	.36	.17	.52**	.	.	.	.	.	.	.	.	.
Felony Charges	-.31	.19	-.18	-.21	.32	-.07	.37	.28	.16	.43	.29	.16
<i>R</i> ²		.11			.13			.06			.22	
<i>F</i>		1.66			2.27*			.83			4.28***	

Note. *** $p \leq .01$, ** $p \leq .05$, * $p \leq .10$. Tolerance was assessed and determined by assessing correlations and variance inflation factors and determined to be acceptable. B3: “The judge provided some overview of what might happen during court”. B4: “The judge or other court staff explained court etiquette and rules at the beginning of the court session”. D2: “The judge gave an explanation for their actions”. O3: “The judge and/or other legal actors used plain language [i.e., non-legal jargon] to explain the case procedure and outcome”.

Table 15. Exploratory Analysis - Match Variables: Binomial Logistic Regressions

Variable	Complete Consequences						Successfully Terminated from Juvenile Justice System					
	<i>B</i>	<i>SE</i>	Wald	Odds Ratio	95% C.I. for Odds Ratio		<i>B</i>	<i>SE</i>	Wald	Odds Ratio	95% C.I. for Odds Ratio	
					Lower	Upper					Lower	Upper
Constant	1.19	.56	4.49	3.27			-.76	.47	2.58	.47		
Gender Match	-.30	.52	.33	.74	.27	2.06	.70	.48	2.12	2.01	.79	5.13
Race Match	-1.09**	.53	4.27	.34	.12	.95	.82*	.48	2.93	2.27	.89	5.81
Felony Charges	-.92*	.53	3.05	.40	.14	1.12	.77	.49	2.48	2.16	.83	5.63
Pseudo R ²		.14						.11				
Model χ^2		7.39*						7.30*				

Note. *** $p \leq .01$, ** $p \leq .05$, * $p \leq .10$.

Table 16. Exploratory Analysis - Judge Characteristics: Binomial Logistic Regressions

Variable	Complete Consequences						Successfully Terminated from Juvenile Justice System					
	<i>B</i>	<i>SE</i>	Wald	Odds Ratio	95% C.I. for Odds Ratio		<i>B</i>	<i>SE</i>	Wald	Odds Ratio	95% C.I. for Odds Ratio	
					Lower	Upper					Lower	Upper
Constant	.66	.63	1.12	1.94			.51	.56	.85	1.67		
Female Judge	.26	.54	.23	1.30	.45	3.76	.13	.50	.07	1.14	.43	3.02
Judge Race	.15	.22	.51	1.17	.77	1.78	-.03	.18	.03	.97	.68	1.38
Judge Years on Bench	-.12*	.07	3.13	.89	.78	1.01	-.07	.06	1.49	.93	.84	1.04
Felony Charges	-.81	.51	2.54	.45	.16	1.21	.78	.48	2.61	2.17	.85	5.58
Pseudo R ²		.12						.06				
Model χ^2		6.71						4.05				

Note. *** $p \leq .01$, ** $p \leq .05$, * $p \leq .10$.

Table 17. Exploratory Analysis - Juvenile Characteristics: Binomial Logistic Regressions

Variable	Complete Consequences ¹						Successfully Terminated from Juvenile Justice System					
	B	SE	Wald	Odds Ratio	95% C.I. for Odds Ratio		B	SE	Wald	Odds Ratio	95% C.I. for Odds Ratio	
					Lower	Upper					Lower	Upper
Constant	3.68	3.19	1.33	39.49			.79	2.67	.09	2.19		
Female Juvenile	-1.56**	.77	4.06	.21	.05	.96	-.40	.54	.54	.67	.23	1.94
Juvenile Race	.47	.31	2.24	1.59	.87	2.93	-.20	.23	.73	.82	.53	1.29
Juvenile Age	-.16	.21	.59	.85	.57	1.28	.01	.18	.00	1.01	.72	1.42
Prior System Involvement	-1.83***	.69	7.10	.16	.04	.62	-.76	.57	1.80	.47	.15	1.42
Felony Charges	-1.42**	.64	5.00	.24	.07	.84	.64	.49	1.67	1.89	.72	4.96
Pseudo R ²		.39						.09				
Model χ^2		23.02***						5.70				

Note. *** $p \leq .01$, ** $p \leq .05$, * $p \leq .10$. ¹ A Bonferroni correction was applied using all terms in the model.

Table 18. Exploratory Analysis - 'Any' Variables: Binomial Logistic Regressions

Variable	Complete Consequences						Successfully Terminated from Juvenile Justice System					
	B	SE	Wald	Odds Ratio	95% C.I. for Odds Ratio		B	SE	Wald	Odds Ratio	95% C.I. for Odds Ratio	
					Lower	Upper					Lower	Upper
Constant	2.00	.62	10.23	7.37			.49	.40	1.44	1.62		
Any Charges Admitted	-2.39***	.69	11.92	.09	.02	.36	-.41	.50	.68	.66	.25	1.76
Any Charges Adjudicated	-1.31*	.78	2.82	.27	.06	1.24	-.37	.60	.38	.69	.21	2.25
Any Subsequent Charges	-1.73**	.73	5.55	.18	.04	.75	-.05	.55	.01	.95	.32	2.78
Felony Charges	-.84	.60	1.97	.43	.13	1.40	.76	.52	2.20	2.15	.78	5.89
Pseudo R ²		.37						.05				
Model χ^2		23.00***						2.96				

Note. *** $p \leq .01$, ** $p \leq .05$, * $p \leq .10$.

Table 19. Exploratory Analysis - 'Number' Variables: Binomial Logistic Regressions

Variable	Complete Consequences ¹						Successfully Terminated from Juvenile Justice System					
	<i>B</i>	<i>SE</i>	Wald	Odds Ratio	95% C.I. for Odds Ratio		<i>B</i>	<i>SE</i>	Wald	Odds Ratio	95% C.I. for Odds Ratio	
					Lower	Upper					Lower	Upper
Constant	1.31	.56	5.49	3.72			.53	.46	1.33	1.70		
Number of Initial Charges	-.98	.63	2.38	.38	.11	1.30	-.29	.39	.55	.75	.35	1.61
Number of Subsequent Charges	-.78	.56	1.94	.46	.15	1.37	-.06	.31	.03	.95	.51	1.74
Number of Admitted Charges	.59	.58	1.02	1.80	.57	5.66	.24	.36	.47	1.28	.64	2.56
Number of Adjudicated Charges	.54	.66	.66	1.72	.47	6.29	.10	.45	.05	1.11	.46	2.70
Number of Dismissed Charges	.83	.67	1.55	2.29	.62	8.44	-.07	.44	.02	.94	.40	2.22
Felony Charges	-.61	.55	1.21	.55	.19	1.61	.79	.51	2.43	2.20	.82	5.92
Pseudo R ²		.19						.09				
Model χ^2		10.85*						5.96				

Note. *** $p \leq .01$, ** $p \leq .05$, * $p \leq .10$. ¹ A Bonferroni correction was applied using all terms in the model.