

Longitudinal Effects of Juvenile Recidivism and Justice Contact on Parent-Adolescent Relationships

by

Jessica R. Norton

A dissertation submitted to the Graduate Faculty of
Auburn University
in partial fulfillment of the
requirements for the Degree of
Human Development and Family Science, Doctor of Philosophy

Auburn, Alabama
August 7, 2021

Keywords: juvenile recidivism, justice involvement, parent-adolescent relationships, longitudinal analysis

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Approved by

Adrienne M. Duke, Ph.D., Chair, Associate Professor Human Development and Family Science
Elif Dede Yildirim, Ph.D., Co-chair, Assistant Professor Human Development and Family Science

Stephen Erath, Ph.D., Professor Human Development and Family Science
Ben Hinnant Ph.D., Associate Professor Human Development and Family Science

Abstract

Research consistently shows that parents play a significant role in the etiology and desistance of delinquent behaviors (Cottle et al., 2001; Flanagan et al., 2019; Hoeve et al., 2009). However, much research has not examined whether delinquent behaviors prompt changes in parent-adolescent relationships; and even fewer studies have examined this effect for adolescents involved in the justice system (Calhoun et al., 2015; Cavanagh & Cauffman, 2017; Gault-Sherman, 2012; Meldrum et al., 2017; Tapia et al., 2015). The few studies that exist show that continued offending behaviors and justice involvement may hinder necessary resources and supports from parents, supports that are needed to encourage desistance from offending (Stern & Smith, 1999; Villeneuve et al., 2019; Weaver, 2019). Framed by family stress theory, this dissertation sought to understand how recidivism, via types of justice contact, may impact the relationship between justice-involved youth and their parents. Specifically, this project examined the association between adolescent justice contact (e.g., police contact, arrest, court appearance, adjudication, and placement) and change in their relationship with their parents using longitudinal mixture models.

Using secondary data from the Pathways to Desistance Study, a seven-year longitudinal study of serious adolescent offenders, this study modeled patterns of adolescent justice involvement and change in parental warmth and hostility over time. Specifically, this dissertation examined change and stability in justice contact using latent transition analysis (LTA). After modeling justice contact, adolescent-reported warmth and hostility from both mothers and fathers was used to examine the intercept and slope (or rate of change) parent-adolescent relationships overtime using parallel-process latent growth models. Finally, the LTA model was associated with the latent growth model to determine whether and how parent-adolescent relationships may be affected by youth justice involvement over time.

Results of this study showed consistency in parent-adolescent relationship quality for low-rate and desisting justice-involved youth and increases in parent-adolescent relationship quality for persistent and high-rate offending youth. These findings are interpreted using concepts of family stress theory, examined for limitations, and recommendations were made for future directions. This study's findings provide important information regarding how patterns of juvenile recidivism may affect parent-adolescent relationships and how particular justice contacts may impact adolescent's connection with their parents. This study, and those that come after, may be critical in informing practice and policy for justice-involved youth and their families by providing evidence for models of family involvement and family-based treatment for justice-involved youth (Paik, 2017; Perkins-Dock, 2001; Walker et al., 2015).

Acknowledgments

First, I would like to thank God for the vision and purpose he has always had for my life. I am thankful that this little Black girl from *the Hike* has climbed a new mountain, trekked a new path, and set an example for all of those who will come behind me. I am confident that the little girl who won the third-grade science fair was always meant to become the scholar I am today. I pray that God continues to light my way and keep me on the journey that will allow me to touch lives and bring him the glory in everything I do.

Second, I would like to thank my family and friends for their support and understanding, even when they did not know how to support and understand everything I was doing. Thank you to my parents, my siblings, and my extended family. You all have lifted me and kept me going. Although I may not say it often, thank you! You are the reason I kept going, the reason I am here, and the reason I will continue my work. In addition to your support, my perfectly imperfect family has kept me interested in my research areas and has given me the empathy, understanding, and passion for doing the work I do. Regardless of the difficulties, we love and support one another, and because of that, we will always be okay.

And, to my friends, thank you for keeping me grounded. Thank you for giving me a life beyond my work where I can disconnect and be me. The opportunity to reconnect with who I am away from my laptop has kept me sane and motivated me to finish because I want more time with you. Thank you for knowing when to check in on me, when to leave me to focus, and when to take me away. You have never held any of this journey against me, and I love you for it! Finally, for my newest friends, my cohort, my graduate school friends, my Black Graduate and Professional Student Association (B.G.P.S.A.) family, and my Doctoral T.R.I.B.E., thank you! You all are more than valuable to me! How could I have done it without you? Your motivation

has always been genuine and spot-on because we all were in the same boat. You all have held me accountable, listened to me vent, grown me professionally and academically, and have supported me the way only a colleague could. I hope to continue building our friendships and support network as we navigate this post-doctoral life. WE GOT THIS!

Next, a special thank you to my mentors and committee members. I would like to thank all of those who mentored me and gave me a chance. Nothing about me is perfect, but I am truly blessed to have crossed paths with people who saw my potential and helped me manifest it. I want to give a special thank you to Dr. George Flowers for being a support to me and all of Auburn's graduate students. As a student and a student leader, it meant the world to me to have an administrator who was genuinely concerned and supportive of the needs of students and showed thoughtful and effective leadership. To my committee members, Drs. Adrienne Duke, Elif Dede Yildirim, Stephen Erath, and Ben Hinnant, thank you. Dr. Duke, I am privileged to be your first doctoral student. Thank you for teaching me about academia, supporting my endeavors, providing me with new opportunities, and advocating for me when necessary. I would not have met many of my goals for graduate school if it were not for your support. Dr. Dede Yildirim, I would like to thank you for all of your support. You have gone above and beyond to teach and mentor me, and I cannot thank you enough. I am so happy that you agreed to serve on my qualifying committee and co-chair my dissertation; I would not have learned much of what I now know, it was not for you. Dr. Erath, thank you for your continued support throughout my doctoral journey. You are one of the people who gave me a chance because I would not be in Auburn H.D.F.S without you. I am forever grateful for the opportunity to learn in this department. And finally, to Dr. Hinnant, thank you so much for your support over the years. Not only have you been invaluable in my journey as a stats consultant and professor, but I will

always be grateful for your willingness to step up and support the Family Focus Lab. It may seem small, but to us students who love that work, we appreciate it more than you know.

Finally, I would like to dedicate this dissertation to my loved ones who did not make it to this part of my journey. First, to Dr. Margaret K. Keiley, the impetus for my desire to learn about advanced research methods. Her untimely death during my doctoral journey will forever be a heartbreak for me. I am sure she would be more than proud of what I have and will accomplish. Next, to my grandmother Delores Brown, who I lost during my dissertation. Due to the pandemic, her untimely death rocked our world, but it also brought my family closer together, which is all she ever wanted. To my Nana, who knew I would make it here someday. I know that you are in heaven, so proud of me right now, bragging as much as you can. And finally, to my granddad, Mr. Issac President. I know that you are more than proud of me. You have always touted education as most important, and so now, I have made it to the top! I am pleased to be the first doctor in your bloodline. I can only imagine the smile you have right now. Thank you for your early prayers that got me here! I believe that all things work together for the good of those who love the Lord, so I thank him for the angels he has put in my life to get me through.

This dissertation is also dedicated to my grandmothers Lila President and Daisy Norton. I am so happy that God allowed you to be here with me and witness this accomplishment. Thank you for your endless support and words of encouragement. To the next doctor in the family! I cannot wait to see who it will be. And to all the students trying to finish a Ph.D. in a pandemic! **YOU GOT THIS!**

And as a close, a final thank you to God, who is the start and the finish to everything I do. Thank you, God! I am PhinisheD!

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List of Abbreviations

LCA	Latent Class Analysis
LTA	Latent Transition Analysis

Introduction

For over half a century, scholars have examined the role of parents in the development of youth delinquent behaviors. Notably, research has found evidence that aspects of family, parenting, and parent-adolescent relationships contribute to the development of delinquent behaviors (Crocetti et al., 2016; Flanagan et al., 2019; Hoeve et al., 2009; Kapetanovic et al., 2019; Keiley, 2007; Khodabakhshi Koolaee et al., 2015; Kuthoos et al., 2016; Patterson et al., 1990). Given these findings, scholars began examining reciprocal associations between parents and adolescent delinquency and found that delinquent behaviors can also impact parenting and the parent-child relationship (Babinski et al., 2020; Crocetti et al., 2016; Evans et al., 2018; Gault-Sherman, 2012; Harris et al., 2017; Kapetanovic et al., 2019, 2019; Keijsers et al., 2011; Walker et al., 2015; Williams & Steinberg, 2011). Findings from these studies confirm an interrelated relationship, whereas parenting predicts delinquent behaviors and delinquent behaviors predict changes in parenting and parent-adolescent relationships.

Building on this literature, scholars are beginning to examine how youth formal justice involvement affects parent-adolescent relationships above and beyond delinquency. The current literature suggests that delinquency, which leads to justice involvement, may contribute to excessive family strain and impact parenting and the parent-child relationship (De Goede et al., 2009; Walker et al., 2015). For example, research shows that justice contact experiences like arrest and incarceration can prompt changes in parenting, and residential placement contributes to the deterioration of family relationships and parent-adolescent relationships (Kuthoos et al., 2016; Mowen & Boman, 2018). Moreover, research suggests that continued contact with the justice system can negatively impact wellbeing and positive adjustments for youth by impeding critical resources from families (Stern & Smith, 1999; Villeneuve et al., 2019). For parent-adolescent

relationships, specifically, continued offending behaviors decrease parental support, relationship quality, and expectations for their future (Calhoun et al., 2015; Cavanagh et al., 2019; Gault-Sherman, 2012; Meldrum et al., 2017; Sturges & Hanrahan, 2011; Tapia et al., 2015; Williams & Steinberg, 2011). Furthermore, evidence shows that families play an essential role in offending desistance and preventing youth justice involvement. Thus, decreases in parent-adolescent relationship quality may make it challenging to utilize parents to promote desistance for adolescent offenders.

Understanding the impact of youth justice involvement on parents over time is critical for applying family-involvement practices for juveniles in the justice system. Based on evidence that families can promote desistance for delinquent youth, these practices are being promoted to address youth reoffending and recidivism (Cauffman & Steinberg, 2012; Khodabakhshi Koolaee et al., 2015; Kuthoos et al., 2016; McCuish et al., 2018; Villeneuve et al., 2019; Walker et al., 2015). Although it has been found that high levels of family stress and dysfunction are barriers to family treatment (Perkins-Dock, 2001), existing research cannot fully explain how continued contact with the justice system may impact parent-adolescent relationships.

Unfortunately, research examining the direct impacts of justice involvement on parents, parenting, and parent-adolescent relationships is limited. Most of this research examines families' experience and satisfaction with the justice system itself, such as court and sanction requirements and a general understanding of justice processes (Vidal & Woolard, 2016). However, extant research has not examined how justice involvement can impact the intimate relationship between adolescents and their parents over time. Additionally, prior studies mainly use low-to-moderate risk community samples of youth, and only a few have examined offending behaviors in a high-risk justice-involved sample of adolescents (Lussier et al., 2015; Weaver, 2019). However, high-

risk adolescents, or those who are justice-involved, may have different experiences with their parents than low-risk community samples of adolescents. Given the evidence that shows that families can be negatively affected by adolescent delinquency but that quality relationships with parents are protective for adolescent recidivism, it is advantageous to examine how continued justice contact may impact parent-adolescent relationships (Folk et al., 2020; Paik, 2017). This study aims to understand how patterns of recidivism for system-involved youth impact parent-adolescent relationships over time.

Justice Contact and Processing

Juvenile courts aim to address the unique needs of young offenders who are believed to be incapable of criminal intent and easier to rehabilitate. Juvenile courts also aim to protect delinquent youth from the consequences of adult criminal courts and influence from convicted adults (*Zang - U.S. Age Boundaries of Delinquency 2016, 2017*). As such, law-violating conduct is designated as *criminal* for adults and *delinquent* for youth whose ages are within their states' age boundaries for juvenile courts, typically 17 years or younger (*Zang - U.S. Age Boundaries of Delinquency, 2016*).

Delinquent cases typically begin with an arrest; arrests can then be petitioned or summons to courts or not. Both petitioned and non-petitioned cases can result in a disposition which is equivalent to a sanction in the adult courts. Non-petitioned cases typically result in a fine, probation, community service, or dismissal. For petitioned cases, they may be waived to criminal court or remain in juvenile courts. Cases waived to criminal courts follow the processes of the adult criminal justice system. Petitioned cases processed in the juvenile justice system can either be adjudicated as delinquent- the equivalent of a conviction in the criminal justice system-or not adjudicated. Like non-petitioned cases, cases that are not adjudicated can result in a sanction, but they are typically less severe. Finally, cases adjudicated in the juvenile justice system usually result

in an out-of-home disposition of placement, probation, or an alternative sanction (Hockenberry & Puzzanchera, 2020). (See Appendix)

Delinquency rates in 2018 showed a nearly 15-year low of formally petitioned cases with 422,100 petitioned juvenile court cases. Of those cases, 52%, or 220,000, were adjudicated as delinquent. Among those, 31% of adjudicated cases were property-related charges, like burglary, theft, larceny, arson, and trespassing; 30% were person-related charges, such as homicide, rape, robbery, assault, or sexual offenses; and 28% were public order offenses, which include non-violent sex offenses, disorderly conduct, obstruction of justice, and liquor law violations (Hockenberry & Puzzanchera, 2020). On the other hand, drug-related crimes, which are the unlawful sale, purchase, or cultivation of controlled or illegal substances, accounted for the least number of the adjudicated cases, at 11% in 2018 (Hockenberry & Puzzanchera, 2020).

Most of the adolescents in 2018 were adjudicated and ordered to dispositions of out-of-home placement and probation, at 28% and 63%, respectively (Hockenberry & Puzzanchera, 2020). Only 19% of adjudicated cases resulted in a minimal disposition such as a fine, community service, treatment or a counseling program. As a reference, half of committed youth in out-of-home placement in 2017 were there for more than 114 days, with the greatest proportion of out-of-home placements resulting from person-related offenses (*Trends and Characteristics of Youth in Residential Placement, 2017*, 2018). Of the cases ordered to probation in 2018, about 30% of both person and property juvenile offenses were ordered to probation, as well as 26% of public order offenses.

In addition to the adjudicated delinquent cases, approximately 3,600 juvenile cases were waived to adult criminal courts in 2018 (Hockenberry & Puzzanchera, 2020). Juvenile cases waived into criminal courts tend to take longer to adjudicate and often result in more severe

sanctions and longer sentences for certain offenses; this is particularly true for non-violent and drug crimes (Kurlychek & Johnson, 2010; Redding, 2003). Of the majority of delinquent offenses waived to adult courts, 55% were person-related offenses and 27% property offenses. Drug and public order offenses were waived to adult courts similarly, each accounting for less than 10% of delinquent cases waived to adult courts (Hockenberry & Puzzanchera, 2020). Thus, serious offenses such as homicide, rape, robbery, assault, or sexual offenses were more likely to be referred to adult criminal court.

Effects of Justice Involvement

Although the justice system aims to improve outcomes of young offenders, involvement in the justice system, unfortunately, presents a myriad of harmful effects for youth. For instance, various aspects of youths' educational, social, and psychological development are disrupted by justice involvement (Cauffman & Steinberg, 2012; Steinberg, 2009). Specifically, justice-involved youth experience difficulties completing their education, increased risk of living in poverty in adulthood, difficulties with their physical and mental health, and poor family relationships (Dmitrieva et al., 2012; Hirschfield, 2004; Hjalmarsson, 2008; Sweeten, 2006; Villeneuve et al., 2019). Moreover, these adverse effects are linked to each stage of the juvenile justice process, including arrest, court appearances, adjudication, placement, and probation (Dmitrieva et al., 2012; Grunwald et al., 2010; Hirschfield, 2004; Hjalmarsson, 2008; Schubert et al., 2010; Sweeten, 2006).

Research shows that youth arrested as early as middle school are likely to repeat a grade, and youth arrested in high school are more likely to drop out (Hirschfield, 2004; Hjalmarsson, 2008). For example, adolescents who experience their first arrest in high school are up to three times more likely to drop out of school than those who are not arrested (Lopes et al., 2012;

Sweeten, 2006). Further, youth arrested in high school are 11% less likely to graduate, and youth who experience placement are 26% less likely to graduate high school than their non-justice-involved peers (Hjalmarsson, 2008). Moreover, court appearances quadruple the odds of high school dropout (Sweeten, 2006). Interestingly, however, the effect of court appearances on high school dropouts is less pronounced for adolescents who engage in a greater variety of offending behaviors (Sweeten, 2006). Ultimately, adolescents who engage in four or more delinquent behaviors are more likely to drop out of high school, regardless of whether they appear in court (Sweeten, 2006). These findings suggest that increases in sanction levels, or more severe justice processing, may have an additive effect on educational outcomes.

Moreover, educational outcomes appear to have cascading effects on adolescent socioeconomic circumstances into adulthood. Specifically, justice-involved youth who drop out of high school are 72% more likely to receive future welfare services, like food assistance, into adulthood (Lopes et al., 2012). In addition, adolescents who experience early police contact are more likely to be arrested in early adulthood, which increases their odds of welfare dependency by 57% by the age of 30 (Lopes et al., 2012). Early police contact also increases the odds of unemployment nine times from early to late adulthood (Lopes et al., 2012).

Adolescent justice-involved also increases psychosocial difficulties over time (Schubert et al., 2016). For example, adolescents who enter placement at a younger age, stay longer and are in restrictive facilities experience decreases in temperance, responsibility, and psychological maturity (Dmitrieva et al., 2012; Steinberg et al., 2004). Furthermore, punitive sanctions in the adult criminal justice system can negatively affect adolescent mental health and psychosocial development. Specifically, youth committed to adult facilities rarely receive appropriate treatment

and educational services and are often subjected to sexual and physical abuse, compared to youth placed in juvenile facilities (Lane et al., 2002; Redding, 2003; Steinberg et al., 2004).

These outcomes are all counterproductive to the goals of the juvenile justice system. Still, one of the most noteworthy adverse effects of justice involvement may be the increased risk for future justice involvement. Specifically, involvement in the justice systems negatively affects youth by increasing future offending and a shorter time to re-arrest, particularly for those who commit person offenses (Redding, 2003; Schubert et al., 2010; Steinberg, 2009; Steinberg et al., 2004). Adolescents' sociodemographic characteristics, such as adverse childhood experiences, living in extreme poverty, parents' mental health and substance use, neighborhood violence, and early delinquent behaviors, are linked to offending (Lussier et al., 2015; Weaver, 2019). Thus, these adolescents are more likely to recidivate or have repeated contact with the justice system, suggesting that justice involvement can adversely affect adolescents by increasing their subsequent offending rates.

Juvenile Recidivism

Formal justice processing seeks to intervene and prevent youths' subsequent offending behaviors. Subsequent delinquent acts that result in contact with the juvenile justice system, termed recidivism, is the most salient outcome for justice-involved youth. As such, researchers, policymakers, and programmers use recidivism as an objective measure of the cessation of offending behaviors or desistance (Alper et al., 2018; *Recidivism Is a Core Criminal Justice Concern*, 2008; Schwalbe et al., 2012). Abstaining from subsequent offending indicates successful rehabilitation for justice-involved youth (Calley, 2012; Gonzal, 2017; Schwalbe et al., 2012; Steinberg et al., 2004).

Rates of juvenile recidivism are primarily calculated at the local level, and official national rates of juvenile recidivism are unknown (Development Service Group, Inc., 2017). Notably, juvenile recidivism is measured differently across states and is either defined as a re-arrest, a subsequent court appearance, re-adjudication, or re-incarceration. Thus, recidivism rates vary in the literature, but rates are lower as the processing level increases (e.g., arrest, adjudication, placement) (Calley, 2012). However, the best approximation for national rates of youth recidivism indicates that 51% of individuals under the age of 24 are re-arrested within one year of being released from prison, and 84% of young offending recidivate within five years (Alper et al., 2018; Durose et al., 2014). These rates are similar to approximations that more than half of juveniles re-arrested within a year of release and youth abstained from recidivating for an average of 2.8 years during the transition to adulthood (Lussier et al., 2015; Snyder & Sickmund, 2006).

Several studies have documented the associations between individual, family, and contextual factors and juvenile recidivism. For example, justice-involved adolescents who are male, of a minority group, have a history of conduct and antisocial behaviors, or abuse substances are more likely to have subsequent contacts with the justice system (Cottle et al., 2001; Cuevas et al., 2019; Grunwald et al., 2010; Mallett et al., 2013; Ryan et al., 2013; Stoolmiller & Blechman, 2005). In addition, adolescents who are enrolled in special education, associate with delinquent peers, have a history of neglect within the child welfare system, or come from chaotic family environments tend to have higher recidivism rates (Cottle et al., 2001; Ryan et al., 2013).

Formal justice involvement, itself, can increase the likelihood of reoffending and recidivism (Petrosino et al., 2010). Research suggests that processing in the juvenile justice system may have criminogenic effects by exacerbating subsequent offending (Cauffman & Steinberg, 2012; Gatti et al., 2009; Petitclerc et al., 2013). For instance, after a first arrest, the likelihood of

youth being re-arrested increases partly due to the higher rates of consequent law enforcement surveillance and response, regardless of delinquent behaviors (Lieberman et al., 2014). Police intervention (i.e., arrest or an encounter with law enforcement) during adolescence is also linked to a greater likelihood of a future arrest in young adulthood (Lopes et al., 2012). Of the myriad of risk factors for juvenile recidivism, the age of first commitment and age at first law contact are the top two predictors of youth recidivism (Cottle et al., 2001).

Reoffending for justice-involved youth is associated with age at first arrest, the number of contacts with the justice system, court appearances, and type of offense (Calley, 2012; Cottle et al., 2001; Cuevas et al., 2019; Liberman et al., 2014; Mallett et al., 2013; Petitclerc et al., 2013; Villeneuve et al., 2019). Notably, early contact with justice systems increases the risk of recidivism, whereas 41% of first-time offenders recidivate (Cottle et al., 2001; Grunwald et al., 2010; Snyder & Sickmund, 2006). For instance, experiencing an arrest by the age of 15 is linked with a higher risk of reoffending and re-arrest (Lieberman et al., 2014). Additionally, younger age at first arrest, first offense, and release from placement increase the likelihood of recidivism for adolescent offenders (Cuevas et al., 2019; Liberman et al., 2014). Those who are older at first arrest or who commit drug offenses are more likely to recidivate with a drug offense and less likely to recidivate with a violent or property offense (Grunwald et al., 2010; Liberman et al., 2014). Additionally, adolescents who commit property, drug, or violent offenses are more likely to recidivate, while those who commit sexual offenses are less likely to recidivate (Cottle et al., 2001; Grunwald et al., 2010).

Furthermore, adolescents' risk for recidivism increases as their number of court appearances and the number of delinquent adjudications increase (Mallett et al., 2013). Older age at the time of release, prior probations, placements, or aftercare increases the likelihood of

recidivism (Cottle et al., 2001; Cuevas et al., 2019; Grunwald et al., 2010). Different aspects of juvenile placements, such as multiple stays and more restrictive juvenile placements, also increase the risk for recidivism (Cauffman & Steinberg, 2012; Cuevas et al., 2019; Gatti et al., 2009; Cottle et al., 2001; Cuevas et al., 2019; Mulvey et al., 2010). Additionally, more restrictive and more intense placements predict persistent recidivism into adulthood (Gatti et al., 2009).

Although the number of months in placement is associated with the odds of recidivism, it is unclear whether time in placement increases the likelihood of recidivism, delays recidivism, or is only related to first-time placements. For example, longer stays reduce the likelihood to recidivate within a year of release but has no effect on recidivism beyond a year; however, lengthier first-time placements are associated with recidivism (Calley, 2012; Cottle et al., 2001; McCuish et al., 2018). In addition, facility and aftercare supervision also appear to increase the likelihood of recidivism (Gatti et al., 2019; Grunwald et al., 2010). Specifically, aftercare supervision increases the likelihood of a subsequent drug offense, whereas placement increases the likelihood of a future property offense (Grunwald et al., 2010). Given these trends, the juvenile justice system may not effectively prevent subsequent offending behaviors or future juvenile justice contact (González, 2017; Petitclerc et al., 2013; Smith, 2005).

Desistance and Specialization in Offending Behaviors

Cessation of offending behaviors, or desistance, is the juvenile justice system's primary goal (Smith, 2005; Villeneuve et al., 2019; Weaver, 2019). Desistance is studied from two distinct perspectives: one which operationalizes desistance as an event, and the other which argues that desistance is instead a process (Mulvey et al., 2004; Weaver, 2019). Research that operationalizes desistance as an event specifies a time frame in which desistance results in the termination of offending behaviors. However, there is growing consensus that desistance is a de-escalation

process by which offending behaviors decrease over time (Lussier et al., 2015; Piquero, 2013; Weaver, 2019). The conceptualization of desistance as a process requires determining an appropriate length of non-offending time. These time frames are often ambiguous for justice-involved youth, as young offenders may re-offend even after a period of non-offending (Lussier et al., 2015). Most justice-involved youth decrease their offending behaviors over time, but few desist entirely from their offending behaviors into adulthood (Brame et al., 2018; Lussier et al., 2015; McCuish et al., 2018; Mulvey et al., 2010). As such, operationalizing desistance as an event may limit our understanding of youth's desistance through their transition to adulthood.

Several studies, which measure desistance as a process, examined patterns of offending based on stability and change in the number of offenses committed over time to assess if and how individuals persist in offending behaviors (Lussier et al., 2015). Studies have typically found two to seven trajectories that best describe patterns of adolescents' delinquency over 2-40 years (Eggleston et al., 2004; Jennings & Reingle, 2012; Monahan & Piquero, 2009; Van Hazebroek et al., 2019). These trajectories show that most adolescents decrease their offending behaviors into adulthood, following an *age-crime curve* that postulates that most externalizing behaviors, like offending, will follow a bell-shaped curve from childhood to adulthood. This curve illustrates low offending behaviors in childhood that peak in adolescence and decrease as youth transition into adulthood (Dishion & Patterson, 2015; Jennings & Reingle, 2012; Monahan & Piquero, 2009). This trend has been found for justice-involved youth as well, whereas adolescents' rates of offending and arrests increase through early and mid-adolescents and begin to decrease in late adolescence (Eggleston et al., 2004; Loeber et al., 2015; Monahan & Piquero, 2009; Mulvey et al., 2004; Van Hazebroek et al., 2019). Although most justice-involved youth decrease in offending behaviors through late adolescence and into adulthood, they tend to display chronic or persistent

offending and recidivism, and reductions in offending behaviors rarely result in the complete termination of offending behaviors (Farrington, 2015; Keijsers et al., 2012; Lussier et al., 2015; Monahan & Piquero, 2009). Specifically, approximately half of adolescents initiate desistance and remain low-rate offenders, and 25% of offending adolescents abstain from future offending (Lussier et al., 2015; Mulvey et al., 2010).

Patterns of recidivism are also examined using offending types (Cottle et al., 2001; Farrington et al., 1988; Massoglia, 2006; Villeneuve et al., 2019). Scholars suggest that what is often seen as desistance are shifts in offending behaviors that demonstrate qualitative, rather than quantitative, changes over time (Lussier et al., 2015; Massoglia, 2006; Van Hazebroek et al., 2019). According to displacement theory and other related conceptual frameworks, the types of offenses an individual engages in will change over time (Eng Leong, 2014; Massoglia, 2006). These shifts in types of behavior are operationalized in research as specialization and variety. Specialization refers to a tendency to repeat the same kinds of offenses, whereas variety describes the diversity or spread of types of offending behaviors in which an individual engages (MacDonald et al., 2014; Monahan & Piquero, 2009). Adolescents who persist in offending behaviors display significantly more variety in the types of offenses they engage in overtime (Farrington, 2015; Mazerolle et al., 2000). Specifically, research suggests that adolescents who committed *serious*, *violent*, or *sexual* offenses tend to not specialize in those types of crimes into adulthood (Lussier et al., 2015). Greater variety in offending may be partly driven by the increased opportunity to engage in different offending behaviors during the transition to adulthood (Andresen & Felson, 2012; Eng Leong, 2014; Massoglia, 2006; Van Hazebroek et al., 2019). For example, as adolescents come of age, traffic offenses increase because of their ability to drive. Studies show that vandalism offenses decreased with age, but traffic, drug, and weapon-related offenses

increased among groups of early-onset offenders, those who begin offending before adolescence (Mazerolle et al., 2000; Van Hazebroek et al., 2019; Villeneuve et al., 2019).

Evidence of offending specialization for adolescents is mixed. Early research found evidence of offending specialization for adolescents who had frequent contact with the justice system (Farrington et al., 1988), given their consecutive arrests tend to be for the same offense (Andresen & Felson, 2012; MacDonald et al., 2014; McGloin et al., 2009). However, Mazerolle and colleagues (2000) found that life-course-persistent offenders, who have an early onset of offending and continue into adulthood, tend to display more diverse offending behaviors than those who have late-onset offending. Yet, recent research shows that offending variety decreases with age (Wojciechowski, 2020). However, it appears that there may be confounding factors that contribute to patterns of offending type into adulthood for justice-involved youth. For instance, committing offenses with one or more individuals is associated with diversification of offending for justice-involved youth (Andresen & Felson, 2012).

Furthermore, research has found that adolescents who engage in more serious offenses display less specialization over time (MacDonald et al., 2014). For example, adolescents who commit a sexual offense are less likely to recidivate than youth who commit any other offense (Calley, 2012) and less likely to commit drug, violent, and property offenses in the future (Grunwald et al., 2010). In contrast, adolescents who commit or have a history of committing violent offenses, property offenses, or drug offenses are likely to commit the same offense in the future and are less likely to diversify (Grunwald et al., 2010). These findings suggest there may be a great deal of between- and within-individual factors that contribute to whether adolescents engage in few or many types of offending behaviors.

Several salient individual, structural, and relational factors are also related to desistance for serious juvenile offenders into adulthood (Villeneuve et al., 2019). On an individual level, desistance is related to the age of onset, substance use, willingness to change, and future orientation (Villeneuve et al., 2019). Studies suggest that desistance in delinquency is less likely for adolescents with high rates of offending behaviors and early age of onset (Van Hazebroek et al., 2019; Villeneuve et al., 2019). Improvements in adolescent offenders' attitudes about the law, psychological maturity, and temperance differentiate adolescents who have recidivate and do not (Rocque et al., 2019; Schubert et al., 2016). Furthermore, an adolescents' belief that they can abstain from re-offending, or desistance self-efficacy, is negatively related to future re-offending (Johnston et al., 2019). Overall, adolescents who report more self-control, more perceived opportunities, and resistance to peer influence tend to have higher desistance self-efficacy, which, in turn, predicts decreases in offending over time. Those who associate with deviant peers or abuse substances and have lower desistance self-efficacy, in turn, increase in offending behaviors (Johnston et al., 2019).

Structural influences like neighborhood disadvantage, time in the community, education, and employment contribute to adolescents' desistance from crime (Villeneuve et al., 2019). For example, research has found that more time in the community is related to more offending for 75% of delinquent adolescents (Mulvey et al., 2010). Moreover, greater neighborhood disadvantage, particularly exposure to violence, reduces the likelihood of desistance (Villeneuve et al., 2019). Furthermore, although connections to educational institutions are commonly promoted as prevention for delinquency, it appears to be unrelated to desistance overtime (Schubert et al., 2016; Villeneuve et al., 2019). Finally, employment seems to deter future offending behaviors for adolescents because they perceive the risk of offending higher (Villeneuve et al., 2019).

Furthermore, relational factors are also associated with patterns of adolescent recidivism. Notably, prosocial peers are related to desistance, while deviant peers' presence is related to persistence (Villeneuve et al., 2019). Desisters' experience with nonjudgmental, supportive, receptive, and involved caseworkers helps facilitate their transition into desistance, highlighting the importance of adolescents' relationships with caseworkers in the justice system (Villeneuve et al., 2019). Adolescents' fear of damaging family bonds prompts desistance (Villeneuve et al., 2019), indicating the crucial role of quality relationships with family members in decreasing recidivism risk (Abrams, 2006; Cottle et al., 2001; Villeneuve et al., 2019). Research shows that supportive and strict discipline practices from parents and involvement in family activities are strong predictors of desistance (Villeneuve et al., 2019).

Parents and the Justice System

Research shows that parents have difficulty navigating the juvenile justice system and that system involvement can create barriers to parenting and supportive participation in their child's justice processes. Parent participation in the justice process can be critical for the successful treatment and rehabilitation of youth. For instance, parental visitation during adolescent placement decreases depressive symptoms for youth (Monahan et al., 2011). However, although parents want to play an active role in their child's justice processing and do their best to help their child understand the legal language and processes, parents often perceive the court processes as unfair, unjust, and challenging to understand (Saunders et al., 2020).

Parents report a myriad of practical, emotional, and relational factors that inhibit their participation in justice processes. Some of these factors include financial difficulties (e.g., poverty, job instability, transportation), mental health issues, parental substance use, and etiological parent-child relationship issues (Burke et al., 2014; Perkins-Dock, 2001; Simons et al., 2017). For

instance, practical barriers to parental involvement can limit parents' physical ability to participate in justice processes. A recent study outlined several of these factors, including travel issues (i.e., distance, financial situation, transportation), timing and schedule conflicts (e.g., work, family life), and other factors like lack of valid ID and physical disabilities (Simons et al., 2019).

Simons (2017) also found a subgroup of parent-related emotional and mental factors that impede parental participation in juvenile justice institutions, including personal and system-level factors. For example, parents report that their exhaustion with their child, their previous experiences and mental representations of the justice system, their negative emotions about the juvenile justice institutions, and their interactions with justice staff limit their involvement with their child's justice experiences. For the most part, parents reported that these factors caused hesitation and made it challenging to participate; however, they admitted that it ultimately did not stop them from engaging with their child and their processing.

Parents report negative experiences navigating the justice system, including juvenile courts and sanction requirements (Pennington, 2015; Saunders et al., 2020). For instance, Pennington (2015) conducted case studies following two parents' experiences of navigating the juvenile justice system. These parents initially had a great desire to engage with the legal processes as they believed the system would help their child. However, over time, the parents began to express concerns that the legal process was long and complex, with many points of contact (i.e., police, judges, attorneys). By the end of their child's justice processing, the parents reported negative experiences that impacted how they interacted with the justice system; they became more passive and disengaged. Their frustration caused them to skip legal procedures and "fly under the radar" of the legal authorities (Pennington, 2015). Pennington discussed that their disengagement resulted from feelings that they could not play a meaningful role in the process. An earlier study also found

that parents felt that court settings were intimidating and that their presence had little to no impact on their child's case outcome (Varma, 2007). As such, parents felt like bystanders in their child's justice processes. However, in the very few cases when parents were confident, had a strong presence in court, and asserted plans for their child, they felt that judicial decision-makers were mindful of their input (Varma, 2007).

It is necessary to include parents in the justice process in meaningful ways to improve youth and family outcomes (Peterson-Badali & Broeking, 2010). When practical barriers are non-existent, parents and their children might have better outcomes in the justice process. For instance, when parents have good interpersonal interactions with justice staff, including caseworkers and probation officers, it positively influences youth compliance during their probation (Saunders et al., 2020; Vidal & Woolard, 2016). Additionally, when parents felt that their relationship with their child's probation officer was supportive, fair, and respectful, their child had fewer technical probation violations (Vidal & Woolard, 2016).

Finally, Simons et al. (2019) identified several parent-adolescent factors that facilitate parent participation and one that hinders participation. Most aspects of the parent-adolescent relationship that encourage parental participation in the justice system are associated with positive interactions and relationship quality (i.e., good relationship, seeing positive characteristics in their child, missing their child, and being worried about them). The single factor that resulted in a lack of participation from parents was child opposition. Parents reported that they were not involved with their child's justice processing in these instances because of security procedures or their child's embarrassment. For example, parents said that when their children were embarrassed about their living situation or felt that visiting them at their facility was troublesome, they opposed their parents visiting them. Additionally, facility security procedures stopped one parent from seeing

her son. This mother reported that the invasive body inspections that her son would be subject to for visitation stopped her from visiting him (Simons et al., 2019).

Although there are several family involvement models and encouragement for families to engage with courts (Walker et al., 2015), there has not been much inquiry in understanding the parent-adolescent relationships for justice-involved youth or how those relationships develop over time as a result of justice involvement. Specifically, research and models of justice-involved youth and their families have not fully explored the relational barriers of family involvement due to delinquent behaviors and justice involvement. It is critical to consider parents' exasperation and the potential of a waned relationship between parents and their justice-involved children.

Effects of Juvenile Recidivism on Parent-Adolescent Relationships

Although family dynamics contribute to adolescents' participation in crime and delinquency, delinquency itself can impact the quality of parent-adolescent relationships. Although normative parent-child relationships tend to be stable from childhood to adolescence, they often become more challenging during adolescence (Loeber et al., 2000). As children seek greater autonomy and independence during the transition to adolescence, the quality of parent-adolescent communication and parental control and monitoring can heighten parent-adolescent conflict and reduce parent-adolescent closeness (Loeber et al., 2000).

These normative changes paired with delinquent behaviors tend to make parent-adolescent relationships quite challenging during this developmental stage (De Goede et al., 2009; Keijsers et al., 2011; Kõiv, 2014; Loeber et al., 2000). Specifically, research shows that parent-adolescent relationships are likely to become more strained for delinquent youth during this developmental stage (De Goede et al., 2009). As such, adolescents who engage in delinquent behaviors are more likely to perceive their relationship with their parents as less close and less loving than those who

do not engage in delinquent behaviors (Kõiv, 2014). Similarly, parents of adolescents who show delinquent behaviors reported significantly poorer relationships with their adolescents than parents of non-delinquent adolescents (Asscher et al., 2014). When these behaviors result in justice system involvement, it can add an extra layer of complexity to parent-adolescent relationships and closeness (Jagers et al., 2017; McCarthy & Adams, 2019a; Stern & Smith, 1999).

Research suggests a continuous cycle between parent and adolescent behaviors, whereas poor parent-adolescent relationships and adolescent offending affect each other over time (Osher & Hunt, 2002; Panuccio et al., 2012; Villeneuve et al., 2019). However, several studies show that delinquent behaviors have a direct adverse effect on parental warmth and involvement (Abeling-Judge, 2020; Crocetti et al., 2016; Huijsmans et al., 2019; Jagers et al., 2017; Kõiv, 2014; Tapia et al., 2015). Specifically, adolescent delinquent behaviors decrease parental involvement and warmth from both mothers and fathers (Huijsmans et al., 2019; Jagers et al., 2017). The effect of adolescent delinquent behaviors on family relationships is particularly concerning because families can be considered as a primary source of support for adolescents and play a critical role in the process of desistance from delinquent behaviors (Dunkley & Gardner, 2020; Jackson & Hay, 2013; Villeneuve et al., 2019). As such, continued delinquent and offending behaviors may affect critical resources that contribute to these at-risk youth's wellbeing (McCarthy & Adams, 2019a; Stern & Smith, 1999).

Research over the past decade has tested bidirectional associations between parenting and adolescent delinquency. Keijsers and colleagues (2011) examined reciprocal associations between the parent-child relationship and boys' involvement in delinquent behaviors. Their findings show that poor parent-child relationships predict delinquent behaviors, and delinquent behaviors predict decreases parent-child relationship quality. These effects are consistent from early childhood to

middle adolescence (Keijsers et al., 2011). Further, Williams and Steinburg (2011) found that more parental monitoring predicts less problem behavior and vice versa, whereas more problem behavior predicts less parental monitoring (Williams & Steinberg, 2011). Another study found negative reciprocal effects between parental attachment and adolescent delinquency, signifying decreases in parental attachment and parental involvement as delinquent behaviors increase (Gault-Sherman, 2012). Further research found that increases in antisocial behaviors predict increases in maternal conflict and decreases maternal support (Crocetti et al., 2016). This study also indicated that adolescent antisocial behavior predicts decreases in balanced relatedness, an adolescent's belief that their parent respects their opinions, wants, and needs; however, balanced relatedness is not related to adolescent antisocial behaviors (Crocetti et al., 2016).

Similarly, Besemer and colleagues (2016) tested the coercive interaction model to examine the bidirectional effects between externalizing behaviors and maladaptive parenting in a sample of high-risk adolescents and their primary caregivers. The authors found no evidence that changes in adolescent boy's interpersonal callousness, conduct problems, oppositional defiant disorder, or hyperactivity/impulsivity predicted changes in parental communication, physical punishment, or involvement six months later (Besemer et al., 2016). Another study, which used a sample of inner-city African-American youth, found that parental knowledge and deviance have negative reciprocal effects; but deviance has a positive reciprocal relationship with parental permissiveness (Harris et al., 2017). Finally, a more recent study found that parenting predicts delinquency, but findings did not indicate reciprocal effects between parental behavioral control and delinquency within or between families (Kapetanovic et al., 2019). Taken together, these studies suggest that not all aspects of parenting or delinquent behaviors are associated; and particularly that delinquency may affect certain aspects of parent-adolescent relationships differently. Notably,

only one of these studies used a sample of justice-involved youth; all others used community-based samples of adolescents who may or may not have been involved with the justice system (Williams & Steinberg, 2011). In addition, all of the studies focused on participant-reported delinquent behaviors, and none examined adolescent official offending, justice involvement, or recidivism.

Unfortunately, research examining the direct impacts of adolescent justice involvement on parents and parent-adolescent relationships is limited. Only a few studies have examined the effects of reoffending and recidivism for justice-involved youth. These studies found that continued offending predicts decreases in parent-adolescent relationship quality and maternal warmth (Cavanagh & Cauffman, 2017; Keijsers et al., 2012). Also, as mothers perceive more subsequent offending behaviors, they decrease expectations for a successful education, family, and career in their futures (Cavanagh et al., 2019). Studies that focused on official reoffending found that more subsequent arrests predict decreases in maternal support, while increases in subsequent adjudications predict increases in parent exasperation (Meldrum et al., 2017; Tapia et al., 2015). Specifically, when adolescents reach three or more arrests, parental support decreases at a slower rate (Tapia et al., 2015). These findings suggest that as adolescents' justice contacts accumulate, the impact of offending behaviors diminishes, potentially resulting from exasperation or disconnection from their child.

Few studies have examined how particular types of offending may predict parenting changes, but some evidence suggests that offenses related to property and violence affect parents most consistently. Specifically, parents feel less attached when adolescents engage in more violent offenses, and parents are less attached and less involved when adolescents engage in more property offenses (Gault-Sherman, 2012). Furthermore, parents of violent justice-involved youth are more

exasperated and fearful of their children. Specifically, parents whose adolescents both fight and carry weapons are more exasperated and afraid of their children than parents of adolescents who do not carry weapons (Calhoun et al., 2015). Parents report that these fears are rooted in concerns for their child's irrational paranoia, direct threats, and retaliation (Sturges & Hanrahan, 2011). These findings suggest that specific offending behaviors may contribute to the negative experiences of parents. Nevertheless, the type of offending behaviors may show differential impacts on parents' wellbeing and the quality of parent-adolescent relationships.

A few studies applied qualitative methods to understand how and why adolescent behaviors impact parenting and parent-adolescent relationships and documented the complex dynamics that exist between caregivers and their justice-involved children (Calhoun et al., 2015; Gueta, 2018; McCarthy & Adams, 2019a; Meldrum et al., 2017; Sturges & Hanrahan, 2011). These studies also provide insight into caregivers' struggles with responsibility, guilt, shame, trust, fear, and frustration regarding their child's behaviors (McCarthy & Adams, 2019a, 2019b, 2019c; Sturges & Hanrahan, 2011). For instance, McCarthy and Adams (2019a) found that some parents feel guilt for lax monitoring, being too authoritarian, and raising their sons in a hostile home environment (McCarthy & Adams, 2019a). In addition to feelings of guilt, parents also questioned the appropriateness of their support for their delinquent child. In some cases, parents questioned their ability to cope with continued offending behaviors and struggled with when they should stop supporting their child (McCarthy & Adams, 2019a). Some parents reported threatening to no longer help their child get out of trouble or show up for their child. Parents also expressed extensive adverse personal experiences due to their child's problem behavior before incarceration (McCarthy & Adams, 2019a). Parents report that stress caused by their child's continued offending contributed to strains in romantic relationships and marriages, affected their ability to maintain

employment, and even affected their mental and physical health (Forsbrey et al., 2005; McCarthy & Adams, 2019a).

Evidence shows that juvenile placement also affects parenting and parent-adolescent relationship quality (Kuthoos et al., 2016; Mowen & Boman, 2018). Even while their child is incarcerated, parents express stress and worry due to their adolescents' delinquent behaviors (McCarthy & Adams, 2019b). A meta-synthesis of qualitative studies found that parents struggle with their parenting efficacy while their children are incarcerated (Gueta, 2018). These parents report the burden of parenting their incarcerated child, balancing care, social stigma related to having an incarcerated child, and their identity as parents (Gueta, 2018). For parent-adolescent relationships, specifically, caregivers seem to be unequivocally dedicated to parenting even while their sons are incarcerated (McCarthy & Adams, 2019a). Despite pre-placement issues and logistical challenges of justice involvement, caregivers report providing emotional support and advocating for fair treatment for their sons while in the facility (Gueta, 2018; McCarthy & Adams, 2019a).

Remarkably, even amid the challenges, some parents report improvements in their relationships with their adolescents during incarceration (McCarthy & Adams, 2019b). Relationships that improved were described as either *challenging* or *good* pre-placement and improved via three processes. Most of the challenging relationships improved because placement provided caregivers with respite from their sons' problem behaviors. Thus, for these caregivers, incarceration provided a time to relieve the stress caused by their adolescent's problem behaviors. As for other challenging pre-placement relationships, caregivers reported that their relationships improved because of a traumatic event, like a suicide attempt, during placement, bringing the caregiver and adolescent closer together (McCarthy & Adams, 2019b). Such a traumatic event

may have initially exacerbated stress or worry for caregivers but ultimately provided an opportunity for additional support. For the most part, relationships that improved during incarceration were already considered *good* pre-incarceration. These relationships seemed to improve because caregivers and adolescents saw incarceration as an opportunity to rebuild ties, reflect on meaningful relationships, and strengthen their trust (McCarthy & Adams, 2019b). Moreover, adolescents whose parents participated in parenting classes or visited more often reported better family relationships after placement (Mowen & Visser, 2016). In contrast, adolescents who have prior adjudications, less family contact during placement, and mental health issues report declining family relationships (Mowen & Visser, 2016).

Justice-involved youth who experience family conflict during placement are likely to experience increases in family conflict post-release, suggesting that negative family dynamics may be exacerbated when adolescents return to their parents' care after placement (Mowen & Boman, 2018). Ultimately, improved relationships during incarceration are associated with positive reentry experience, lower post-release reoffending rates, higher employment rates, and decreases in drug use (Brunton-Smith & McCarthy, 2017; Cook & Gordon, 2012). Therefore to facilitate successful futures for justice-involved youth, it is vital to ensure they have strong relationships with their families throughout their time with the justice system (Abrams, 2006; Cottle et al., 2001; Villeneuve et al., 2019).

The Current Study

The factors associated with recidivism and desistance for adolescents have been well documented (Amemiya et al., 2017; Cottle et al., 2001; Villeneuve et al., 2019), but as previously outlined, there is much less known about the effects of recidivism and justice contact on relational outcomes. Given the role of families in the etiology of delinquency and the reciprocal associations

between parent-adolescent relationships, it is advantageous to understand how offending behaviors affect families. Amani and colleagues (2018) recommended that psychopathological or deficit-based approaches may not adequately explain the detrimental impact of adolescents' involvement with the juvenile justice system. Moreover, these approaches may not highlight the potentially irreparable damage such involvement may bring to parent-adolescent relationships. Thus, understanding the impact of justice involvement on families' relationships is vital to adolescent and familial wellbeing (Amani et al., 2018). Furthermore, examining the effects of justice involvement on families is critical for developing effective and holistic interventions for offending behaviors and family involvement (Paik, 2017). Similarly, such examination is necessary to appropriately inform policy and family-involvement practices in the juvenile justice system (Paik, 2017).

As previously discussed, research has shown that justice contact predicts recidivism for youth and that justice-involved youth have strained relationships with their parents (Cavanagh et al., 2019; Cavanagh & Cauffman, 2017; Jackson & Hay, 2013; Keijsers et al., 2012; Meldrum et al., 2017; Tapia et al., 2015). In addition, research shows that legal sanctions mediate the relationship between delinquent behaviors and increases in poor parenting practices such as punitive parenting, supervision, and discipline (Stewart et al., 2002). These findings suggest that official justice contact plays a meaningful role in the associations between delinquent behavior and parenting. Specifically, although research has found that delinquency predicts poor parenting, the combination of delinquent behaviors and justice involvement may strengthen delinquency's effect on parenting.

Although family stress, and stressors, has been used to understand the development of delinquent behaviors and justice involvement, it has not been used to understand how these

behaviors may contribute to stress within the family (Voisin et al., 2016, 2020). In fact, there are limited developmental and criminology theories that explain how delinquency may affect the parent-child relationship (Gault-Sherman, 2012). Family stress theory may be a relevant framework for understanding how adolescent offending behaviors, and consequences, affect parent-child relationships over time. The theory posits four factors that affect a families' adjustment to stressors: personal resources, internal resources, social support, and coping (McCubbin et al., 1980). Essentially, family stress theory postulates that certain life events can impact family dynamics and functioning (Malia, 2006; Weber, 2011). Within family stress theory, families construct meanings of stressful life events, which lead to the reorganization of family functioning and interactions. These life events, whether expected or unexpected, change the normative functioning within the family system. The meanings families attribute to stressful events affect their distress and how they cope with the stress. Although the provocation of stress within a family may seem less than ideal, successfully navigating stressful situations may strengthen the family and improve the overall functioning of those within the family system. For instance, suppose a family puts little meaning on a significant family stressor, like offending or justice involvement. In that case, they may not react with urgency and may, in turn, be unable to recover, which would cause a crisis (Malia, 2006).

This study aims to understand how adolescent recidivism patterns and level of justice processing affect the parent-adolescent relationship over time using prospective longitudinal data from a sample of serious adolescent offenders. Several studies have provided evidence that adolescent offending behaviors impact parents' interactions, support, and relationships with their children. Further, the impacts of juvenile offending on parenting are a continuous process by which adolescents' behaviors elicit changes and adjustments in parent behaviors to respond and seek new

solutions for better outcomes (Sturges & Hanrahan, 2011). However, the links between the patterns of adolescent recidivism and parent-adolescent relationships have not been extensively examined in the research. Examining the longitudinal associations between justice system involvement and parent-adolescent relationship from adolescence to early adulthood will help us better understand how adolescent recidivism trajectories may contribute to stability and change in parental warmth and hostility patterns across time.

Typically, studies that examine recidivism use one level of justice processing to measure recidivism. For example, some studies examine how arrests affect parent-adolescent relationships (Tapia et al., 2015), while others examine how adjudicated charges affect parent-adolescent relationships (Meldrum et al., 2017). Comparatively, the current study examined recidivism patterns over variations of justice processing based on the various justice contacts an adolescent may experience in a given timeframe. An earlier study attempted to examine how justice processes and sanctions predict future delinquency; however, that study was riddled with limitations of study design, making it difficult to test the effect of formal justice processing on future delinquency (Huizinga et al., 2003).

In the current study, coinciding adolescent justice processes were modeled using police contact, arrest, court appearance, adjudication, court monitoring programs, and placement over six years with growth in their relationship with their parents. This approach allows the current study to examine the unobserved heterogeneity of justice system involvement and disentangle the dyadic influences of adolescent recidivism and parent-adolescent relationships over time. Thus, this study simultaneously investigates the trajectories of juvenile recidivism and justice processes and parent-adolescent relationships by using data from serious adolescent offenders to understand how their justice involvement is related to stability and change in their relationships with their parents. Given

the evidence that suggests that delinquency justice involvement negatively affects aspects of the parent-adolescent relationship, it is hypothesized that trajectories of justice contact that show low justice involvement and desistance will predict stability in parental warmth and hostility. In contrast, it is hypothesized that trajectories that indicate persistent justice contact, including an escalation in justice contact, will negatively impact parent-adolescent relationships via decreases in parental warmth and hostility. Thus, this study's findings may provide fundamental knowledge on how recidivism affects parent-adolescent relationships and whether justice intervention impacts these adolescents' connection with their parents.

Method

Participants

This study uses data from the Pathways to Desistance Study (Mulvey et al., 2004), a longitudinal prospective study of adolescents adjudicated for serious juvenile offenses. Adolescents in the study were recruited from two sites after being found guilty of a serious offense. Data were primarily collected through self-reported measures assessed across several time points: baseline (within 90 days of the target adjudication), ten follow-ups (the bi-annually until year three and annually from year 4-7), and periodic release interviews within 30 days of release from a residential facility. In addition to self-reported measures, the PDS obtained collateral and official record data. Collateral data consist of measures completed at each time point from a person close to the study adolescent (parent, family member, or peer-nominated by the study participant). Official record data were routinely collected from federal and local data sources. Some official data was collected via adolescent-report but was validated and found to be reliable. Attrition rates for the PDS are low, whereas 84% of the PDS sample participated through the end of the study, and 63% participated in each wave of data collection.

The sample includes 1,354 male and female youth adjudicated in the juvenile and adult court systems in Maricopa County (Phoenix), Arizona (N = 654), and Philadelphia County, Pennsylvania (N = 700). At baseline, participants were 86% male, 44% African American, 29% Latino, 25% Caucasian, and 2% were of other races. Participants were enrolled after being adjudicated for a delinquent offense (32% first court petition) between the ages of 14 and 17 ($M = 16$ years old) and followed for seven years. Data was collected every six months for the first three years and annually thereafter for seven years. Each wave assessed adolescents' psychological development, behavior, social relationships, mental health, and experiences in the juvenile or criminal justice system. The primary variable in the current study is repeated measures of official recidivism, which is estimated to have occurred with 75-80% of the juvenile offenders in this sample over the seven years of this study (Brame et al., 2018).

Measures

Adolescent Recidivism The PDS Adolescent recidivism is via formal justice system processing. Contact with the justice system is assessed by six different contact types with the legal system, including police contact, arrest, court appearance, summons, court-ordered program, and placement. Arrests and court orders are from official record information regarding justice involvement, regularly obtained from the lead sites' local juvenile and adult court record information systems and annual FBI records for national arrests. Additionally, other justice contact was self-reported from adolescents in the sample.

Indicators of recidivism and justice contact are 1) picked up by the police but not charged, 2) summons, which indicates that an adolescent received a summons or letter telling them to appear in court, 3) court appearance, which indicate that an adolescent appeared in court for a crime they were accused of, 4) arrest which indicates an adolescent was arrested and charged with a crime or

delinquent act, 5) a court-ordered program such as probation community intensive supervision, drug court programs, court-ordered groups, and other types of court monitoring like house arrest, 6) and court-ordered placement which indicates adolescents served time in a jail, prison, or a juvenile correctional facility (Pennsylvania Youth Development Centers (YDC) or Arizona Department of Juvenile Corrections (ADJC)). In this study, police contact and court appearance were self-reported and arrest, court summons, court-monitoring program and placement were gathered from official record information.

Table 1

Frequencies of Justice System Contact at Each Timepoint

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
	N (%)	N (%)	N (%)	N (%)	N (%)	N (%)
Contact with Police	18.9%	11.2%	10.1%	7.5%	6.8%	6.0%
Arrested	28.4%	31.4%	29.7%	29.2%	29.9%	27.2%
Summons	20.3%	11.8%	8.0%	6.3%	5.5%	5.3%
Court Appearance	58.9%	42.4%	40.3%	32.8%	31.4%	30.4%
Court-Ordered Monitoring	80.7%	57.3%	39.0%	27.0%	24.6%	21.4%
Court-Ordered Placement	32.2%	36.7%	42.3%	41.3%	41.2%	38.9%

Parenting Adolescent-reported parent-adolescent relationships are used in this study. Although it would be ideal to examine parents' perception of the parent-adolescent relationship, parental involvement in data collection is inconsistent over time. Specifically, the PDS included collateral measures that provided a supplemental informant for the target adolescent who was either a parent, family, or friend from baseline to wave 6. At baseline, 81% of collateral reporters were parents; however, 12 months later, only 15% of collateral reporters were parents. Data from both male and female caregivers are used in the current study. Although research has found differences in

delinquency's effect on maternal and paternal figures' parenting, there is evidence that fathers are also affected by delinquent behaviors (Kõiv, 2014; McCarthy & Adams, 2019a, 2019b; Sturges & Hanrahan, 2011). Therefore, it is essential to include both male and female parent figures to gather a holistic understanding of the impacts of offending behaviors.

Parental Warmth and Hostility Parenting is assessed via data collected using an adapted version of The Quality of Parental Relationships Inventory (QPRI, Conger, Ge, Elder, Lorenz, & Simons, 1994). The QPRI measures the affective tone of the parental-adolescent relationship by assessing maternal warmth and hostility (MW and MH, respectively) as well as paternal warmth and hostility (PW and PH, respectively) (e.g., “How often does your mother/father let you know she really cares about you?”, “How often does your mother/father get angry at you?”). The QPRI consists of 42-items (21 to assess the MW (9) and MH (12) and 21 to assess the PW (9) and PH (12)) on a 4-point Likert scale ranging from “Always” to “Never.” Composite scores were only generated from adolescents with more than 75% of valid subscale data (7 of 9 items for warmth, 9 of 12 for hostility). The PDS reversed coded items to generate composite scores to allow higher scores on the warmth scale to indicate a more supportive and nurturing relationship with parents. Higher scores on the hostility scale indicate a more hostile parent-adolescent relationship. Baseline reliability for parental warmth and hostility is strong (MW = 0.92, PW = 0.95, MH = 0.85, PH = 0.88) and showed similar consistencies through wave 4 (24 months) (MW: 0.92-0.93, PW: 0.95-0.96, MH: 0.79-82, PH: 0.78-0.83).

Given the nature of this study and the items included in the measures, a principal components analysis (PCA) of the warmth and hostility scales was conducted to ensure the appropriateness of the indicators for parent-adolescent relationships across justice contact experiences. For example, although items like “My mother gets so mad at you that she broke or

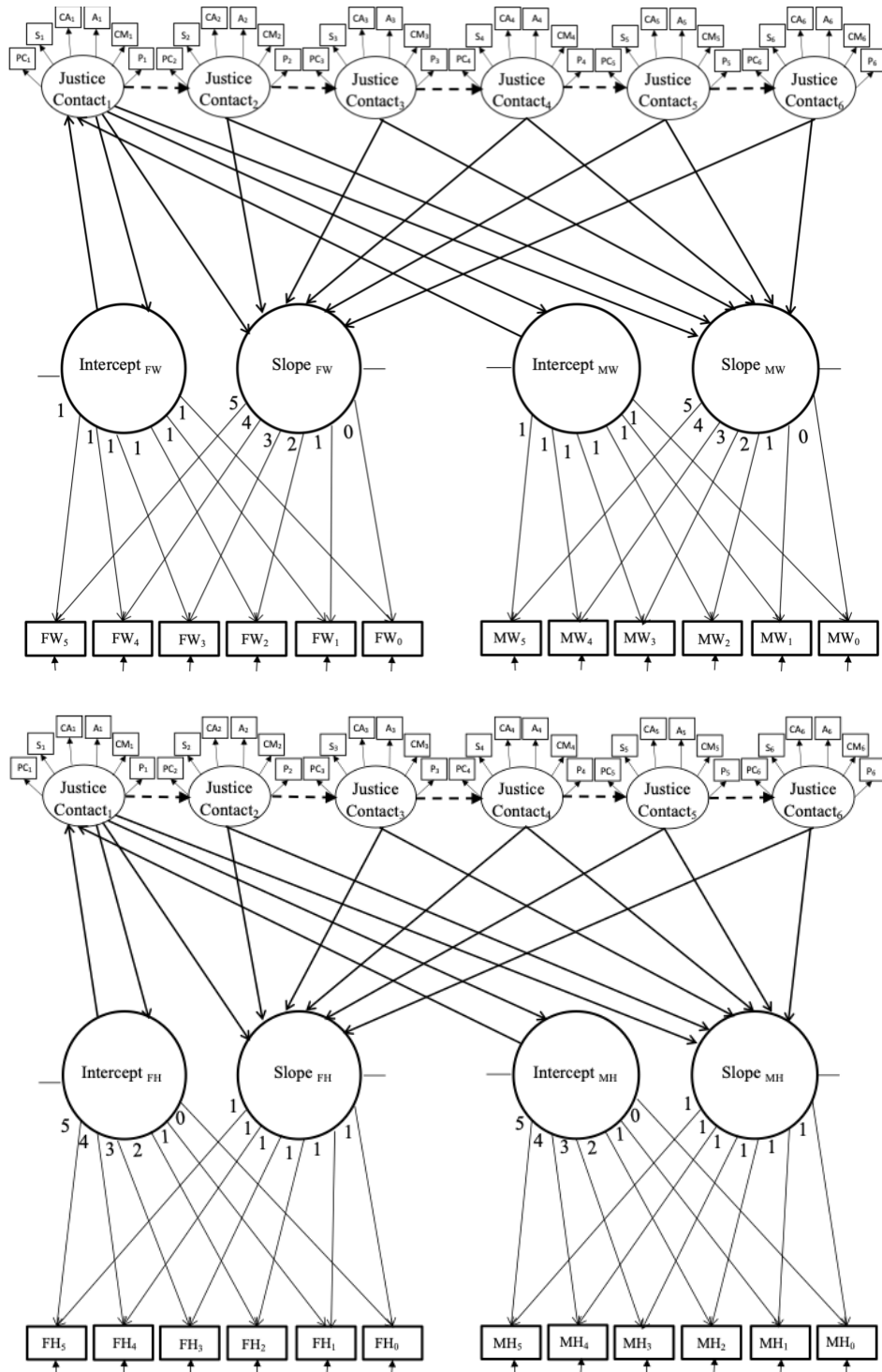
threw things” are validated hostility items, this may be an inappropriate question to ask an adolescent who may be in placement. Two PCA’s were conducted to identify whether all warmth and hostility items may have been similar enough to be included in the analysis. Results show that all nine items on the warmth scale fit onto a I single factor. However, for hostility, eight items fit onto one factor while four fit onto another. These items were identified as eight physical hostility items (i.e., “push grab hit or shove you”) and four emotional hostility items (i.e., get angry at you”). Given these findings, the emotional hostility items for the analysis were retained. Following this decision, a reliability analysis of the four emotional hostility items was conducted to ensure the new hostility construct provided sufficient internal consistency for parental hostility. The reduction in items decreased the reliability of the hostility construct but still showed an acceptable Cronbach’s alpha for both mother and father hostility at baseline (0.78 and 0.68, respectively). For item descriptions, PCA results, reliably (See Tables 2 – 3).

Analysis Plan

The current study aims to extend existing scholarship in the field of adolescent delinquency and justice involvement for youth by using person-centered analyses to model patterns of recidivism and justice processing and associating trajectories of justice contact with growth in parent-adolescent relationships. The data analysis was conducted in five steps using cross-sectional latent class analysis, longitudinal latent class analysis, latent transition analysis, latent growth curve models, and associative latent transition analysis.

Figure 1

Hypothesized Models



Note: The study models will establish latent classes of justice contact (e.g., Arrested (A), court appearances (CA), court-monitoring program (PC), court-ordered placement (P), police contact (PC), and summons (S)) using latent class analyses (LCA) at each of the six time points. Stability and change in group membership over time will be examined using latent transition analysis (LTA). Parent-adolescent relationship will be modeled using a parallel-process latent growth model concurrently with justice contact and regressed on the LTA model of justice contact.

Step 1: Cross Sectional Latent Class Analysis

Latent class analysis (LCA) was used to approximate homogeneous groups, or classes, of adolescent offenders based on the highest level of contact justice involvement each year. LCA establishes mutually exclusive and exhaustive groups of individuals that are similar based on specified indicators. These groups use parameter values to identify intra-group homogeneity and inter-group heterogeneity. Parameters establish group membership probabilities, the probability of endorsing a particular response on an indicator, and the probability of an individual being in a specific class. Many studies have applied semi-parametric approaches to assess how delinquency changes over the life-course and examined trajectories of delinquency persistence and desistance, and identified three to five trajectories that best-fit changes in adolescents' delinquent behaviors over time (Eggleston et al., 2004; Jennings & Reingle, 2012; Monahan & Piquero, 2009; Van Hazebroek et al., 2019). Thus, two to six class solutions were examined at each time point in the current study using the six indicators of justice contact, namely police contact, arrests, court appearances, court-monitoring program, court-ordered placement, and summons (See Figure 1).

The final number of classes at each time point was determined by the fit statistics of each measurement model. Specifically, the Bayesian Information Criterion (BIC), Sample-size Adjusted Bayesian Information Criterion (SABIC), Akaike Information Criterion (AIC), Lo-

Mendell-Rubin likelihood ratio test (LMR), Relative Entropy, and the range of class probabilities were examined to determine the appropriate number of classes at each time point (Nylund, Asparouhov, & Muthen, 2007). Lower values on the BIC, SABIC, and AIC indicate a good model fit. Values on these criteria were compared to the values from the previous LCA model ($k - 1$). The LMR test compares model improvements between the number of classes in the current model to the number of classes in the previous model. A significant result of the LMR indicates that the number of classes in the current model is more appropriate for the data than the model with one less class ($k - 1$). A one class solution was not tested at any timepoint because a significant LMR in the two-class solution indicates that a two-class solution is a significantly better fit than a one-class solution (See Tables 4-9). The Entropy statistic verifies a good separation of classes. An entropy coefficient greater than 0.8 indicates distinct characteristics between classes (Ramaswamy et al., 1993). Finally, higher probabilities of an individual belonging to a class indicate an appropriate number of classes and a good fit of the data. In this study, the range of probabilities was considered to determine the proper number of classes at each time point. These seven criteria were used to decide the number of classes to retain at each time point. No criterion was valued more than another; however, the LCA model with the greatest number of favorable criteria was decided to be the most appropriate number of classes for the data. Analysis was completed using MPlus Software (Muthen & Muthen, 2020) and imported into R using the “*MPlusAutomation*” package (Hallquist & Wiley, 2018). Missing data were addressed using Full Information Maximum Likelihood, and Maximum Likelihood estimation were used to estimate LCA parameters.

Step 2: Longitudinal Latent Class Analysis

Step two examined similarity and differences of the LCA models across time points using measurement invariance approach to ensure that the latent classes at each time point can be interpreted similarly. Measurement invariance can be considered as a prerequisite of LTA; it might reduce the number of estimated parameters and ease the interpretation of LTA results by constraining similar indicator parameters within classes. Two sets of LCA models tested: (a) non-invariance models, which allowed each parameter (time point, class, and indicator) to be fit freely, and (b) threshold similarity models, which item thresholds were constrained to be equal across similar classes at each point, and model were compared using the Loglikelihood chi-square tests.

Step 3: Latent Transition Analysis

In the third step, the study modeled change and stability in justice contact using latent transition analysis (LTA). LTA provides the means to examine heterogeneity in justice contact involvement across time to investigate how individuals transition from one group to others over time and have been extensively used to model recidivism for adolescents (Conduct Problems Prevention Research Group et al., 2010; Pepler et al., 1991). In this step, I modeled autoregressive paths between latent classes across time points. These paths establish transition probabilities which estimate the likelihood of an individual transitioning from a particular latent class at time T into another latent class status at time $T+1$ (Collins & Lanza, 2010). For example, LTA estimates transitions for an individual from time 1 to time 2, time 2 to time 3, time 3 to time 4, and so on through all time points.

Step 4: Parallel-Process Latent Growth Models

In this step, I examined parent-adolescent relationships over time using latent growth curve models. Latent growth curve model is a structural equation modeling method that allows the longitudinal analysis of repeatedly measured continuous data to examine inter-individual change and intra-individual development of constructs. Repeated measure indicators create two latent

growth factors, intercept and slope, describe the mean and variance of the indicators. The latent growth intercept represents the baseline values of the indicator variables, while the slope represents the average rate of change of the repeated indicators at the included time points. Model fit is evaluated by comparative fit index (CFI), Tucker-Lewis index (TLI), and root mean square error of approximation (RMSEA). Good model fit, which means the model adequately fits the data, is determined if $CFI \geq .90$, $TLI \geq .90$, and $RMSEA \leq .08$ (Bentler, 1990; Steiger, 1990; Tucker & Lewis, 1973). Parallel-process growth models describe the concurrent development of constructs by covarying growth factors in multiple growth models. Specifically, in a parallel-process growth model, two or more latent growth models are associated to examine how the intercept and slope of constructs in one model are related to the intercept and slope of the other. Trends in mother and father warmth and hostility were examined over time using parallel-process latent growth models.

Parallel-process latent growth models were constructed through a two-step process. First, four unconditional univariate latent growth models were conducted for each parenting construct (i.e., mother warmth, father warmth, mother hostility, and father hostility). Adolescent-reported parenting data was used to model univariate growth models from baseline through year five when adolescents were over 18 years old. These models resulted in an intercept and slope growth factor for each construct. In addition, model fit was examined for each unconditional model.

Next, two parallel-process models were tested using the parent-adolescent relationship quality constructs—the first associated mother and father warmth models and the second associated mother and father hostility models. Thus, two parallel-process models were examined separately, one pair linking growth in mother and father warmth and another linking growth in mother and father hostility (See Figure 2). The approach was used to examine independent growth

in mother and father warmth and hostility and examine how trajectories may jointly be affected by adolescent justice contact.

Step 5: Associate Latent Transition Analysis

Finally, LTA models were associated with latent parallel- process growth models of maternal and paternal warmth and hostility to examine how parent-adolescent relationships may be affected by justice involvement over time. Specifically, parental warmth and hostility intercept and slopes were added as distal outcomes of the LTA models. The mean of parental warmth and hostility were estimated for every two timepoints. This method was completed for all six time points and parameter estimates and significance levels were reported.

Results

Step 1: Explore Cross-sectional Latent Class Analysis Models of Justice Contact

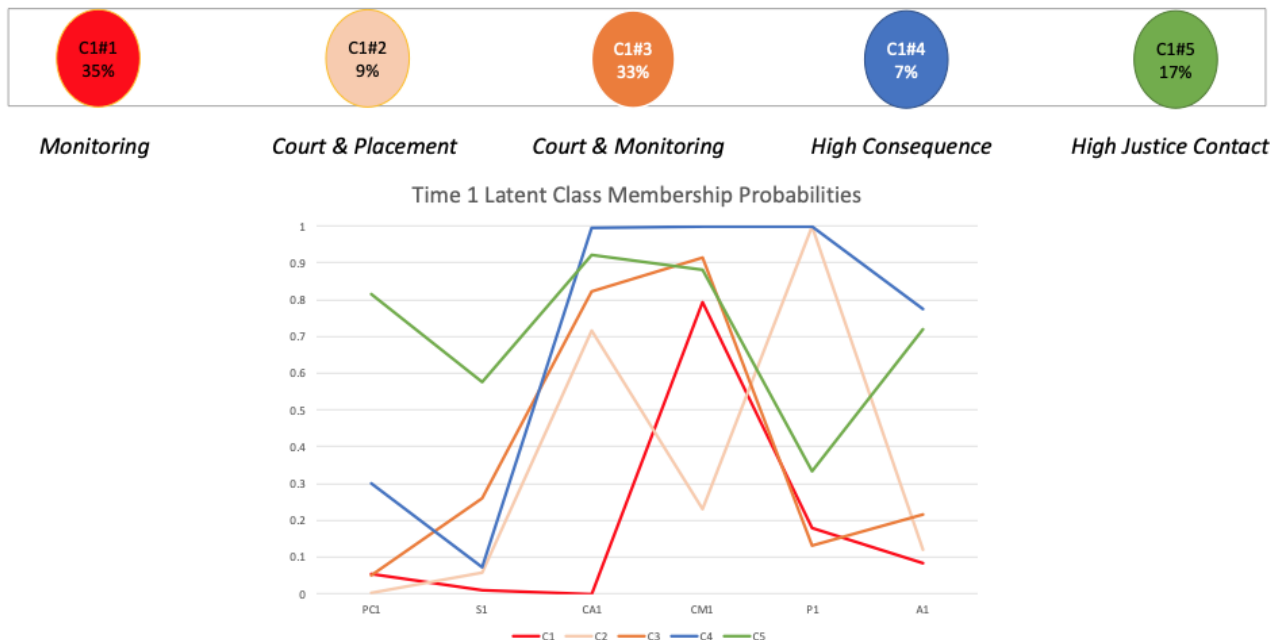
The probability of having justice contact on each item was modeled at each time point. The battery of LCA models show that three-solution to five-solution models were favored determined by the fit indices. As shown in Table 10, group labels were created based on the probability of an event occurring (justice contact item) being significantly higher than the probability of the event not happening in the wave. Groups were simply labeled based on the affirmative items. See table ten to review indicators used to determine cross-sectional LCA decisions.

Time-point 1 Results from time one LCA showed that a five-class model was the best fit for the data (AIC = 8125.82, BIC = 8302.99, ABIC = 8194.99, Entropy = 0.69, LMR $p = 0.032$). The range of individuals' class membership probabilities was 0.72 - 0.91. The largest class, *Monitoring* (Class 1), included 469 (34.6%) youth. The second-largest class (Class 3) included 442 (32.6%) youth who reported *Court & Monitoring* class.

Figure 2

Description of Time 1 Latent Class Memberships

Time 1



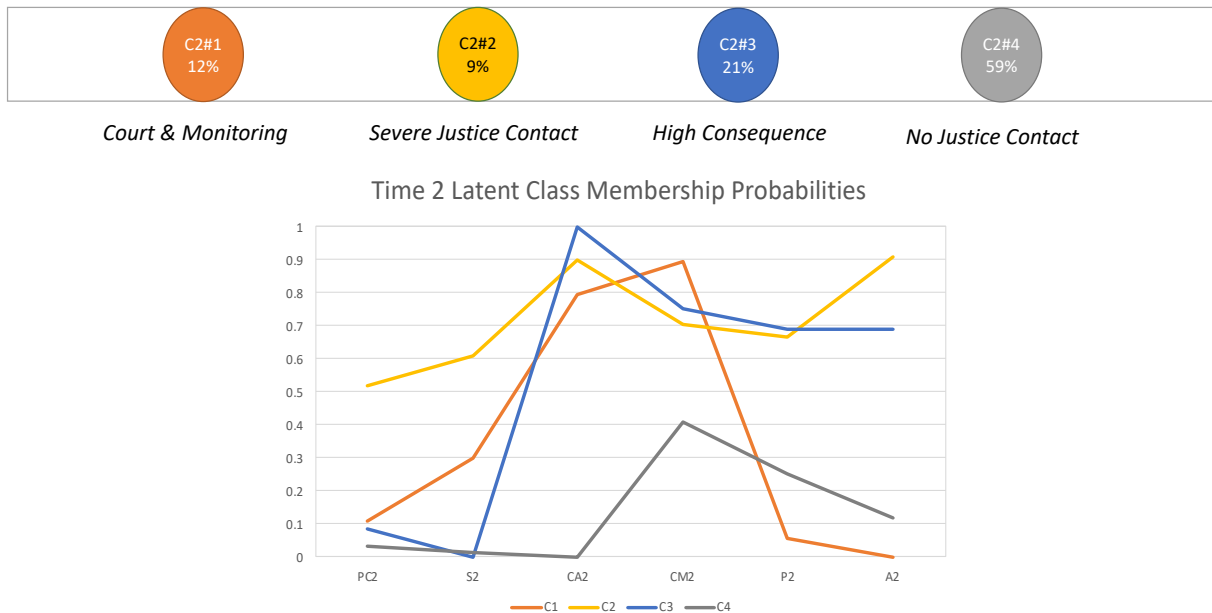
Note: Six indicators of justice contact are shown on the x-axis (i.e., arrested (A), court appearances (CA), court-monitoring program (PC), court-ordered placement (P), police contact (PC), and summons (S)). The y-axis shows the probability of an affirmative justice contact at T1.

Time-point 2 Results from time two LCA showed that a four-class model was the best fit for the data (AIC = 7793.98, BIC = 7934.67, ABIC = 7848.90, Entropy = 0.78, LMR $p < 0.001$). The range of individuals' class membership probabilities was 0.65 - 0.99. The largest class, *No Justice Contact* (Class 4), included 798 (58.9%) youth. The second-largest class (Class 3) included 281 (20.8%) youth who reported the *High Consequence* class.

Figure 3

Description of Time 2 Latent Class Memberships

Time 2



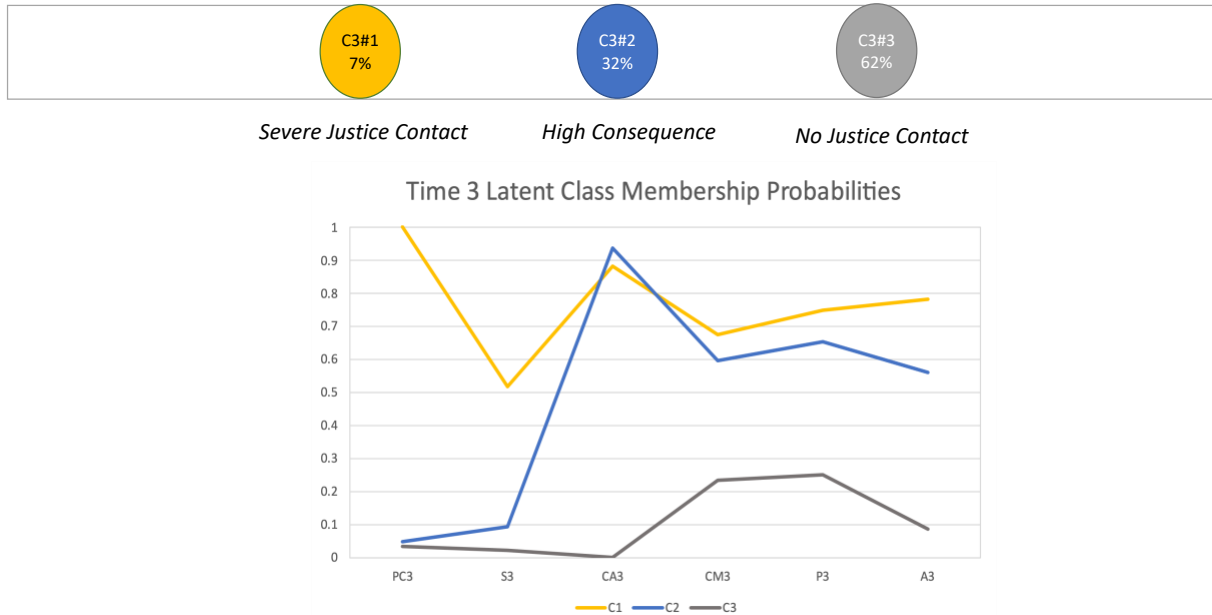
Note: Six indicators of justice contact are shown on the x-axis (i.e., arrested (A), court appearances (CA), court-monitoring program (PC), court-ordered placement (P), police contact (PC), and summons (S)). The y-axis shows the probability of an affirmative justice contact at T2.

Time-point 3 Results from time three LCA showed that a three-class model was the best fit for the data (AIC = 7517.36, BIC = 7621.58, ABIC = 7558.05, Entropy = 0.86, LMR $p < 0.001$). The range of individuals' class membership probabilities was 0.87 - 0.99. The largest class (Class 3) included 832 (61.5%) youth in the *No Justice Contact* class. The second-largest class (Class 2) included 434 (32.1%) youth who reported the *High Consequence* class.

Figure 4

Description of Time 3 Latent Class Memberships

Time 3



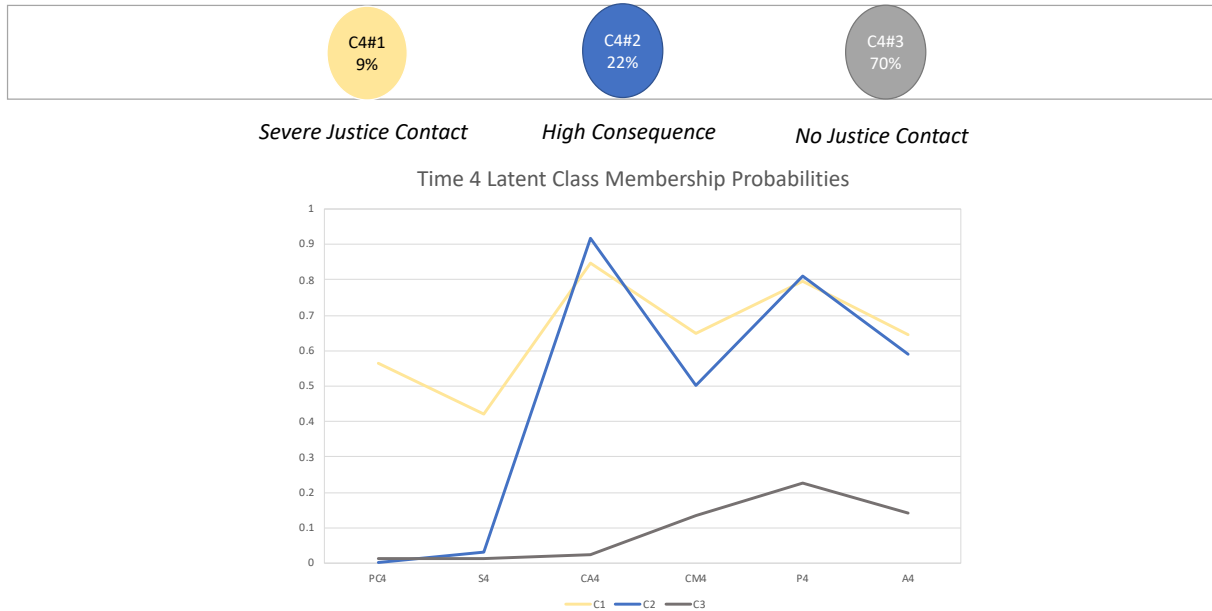
Note: Six indicators of justice contact are shown on the x-axis (i.e., arrested (A), court appearances (CA), court-monitoring program (PC), court-ordered placement (P), police contact (PC), and summons (S)). The y-axis shows the probability of an affirmative justice contact at T3.

Time-point 4 Results from time four LCA showed that a three-class model was the best fit for the data (AIC = 6881.10, BIC = 6985.32, ABIC = 6921.79, Entropy = 0.79, LMR $p < 0.001$). The range of individuals' class membership probabilities was 0.72 - 0.98. The largest class (Class 3) included 944 (69.7%) youth in the *No Justice Contact* class. The second-largest class (Class 2) included 294 (21.7%) youth who reported the *High Consequence* class.

Figure 5

Description of Time 4 Latent Class Memberships

Time 4



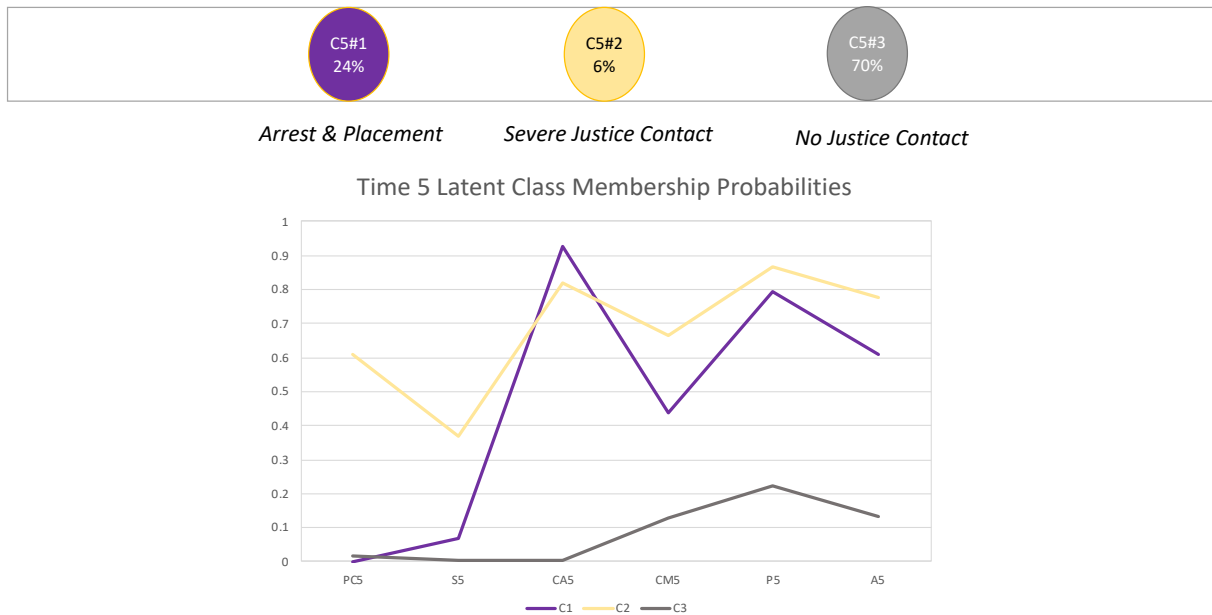
Note: Six indicators of justice contact are shown on the x-axis (i.e., arrested (A), court appearances (CA), court-monitoring program (PC), court-ordered placement (P), police contact (PC), and summons (S)). The y-axis shows the probability of an affirmative justice contact at T4.

Time-point 5 Results from time five LCA showed that a three-class model was the best fit for the data (AIC = 6623.60, BIC = 6727.81, ABIC = 6664.28, Entropy = 0.84, LMR $p < 0.001$). The range of individuals' class membership probabilities was 0.68 - 0.99. The largest class (Class 3) included 947 (69.9%) youth in the *No Justice Contact* class. The second-largest class (Class 1) included 320 (23.6%) youth who reported the *Arrest & Placement* class.

Figure 6

Description of Time 5 Latent Class Memberships

Time 5



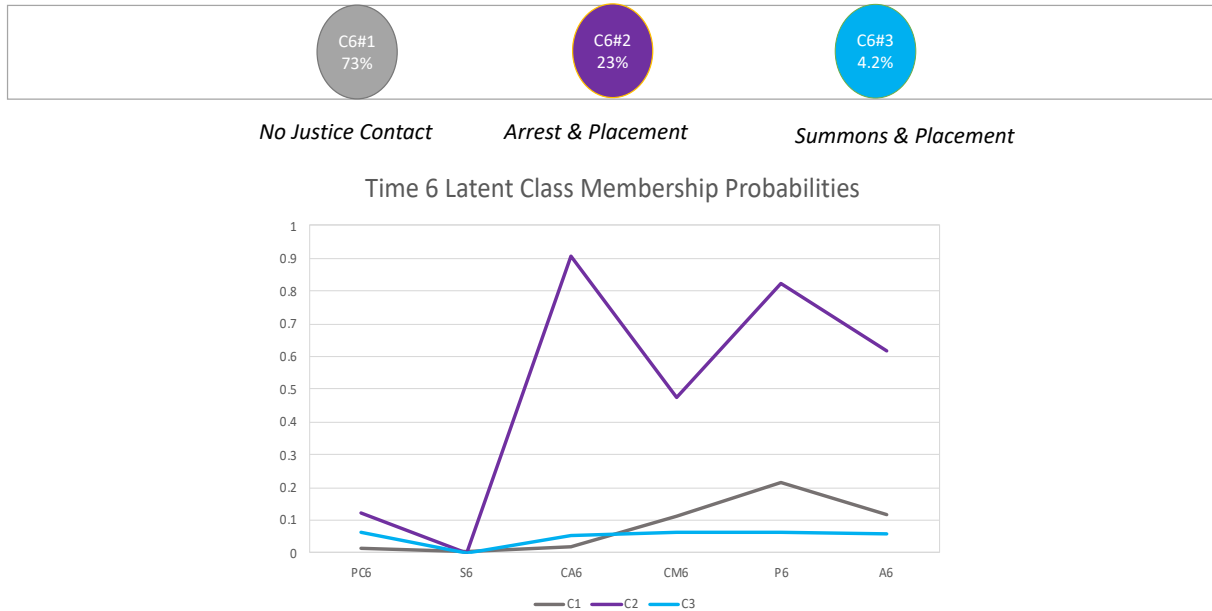
Note: Six indicators of justice contact are shown on the x-axis (i.e., arrested (A), court appearances (CA), court-monitoring program (PC), court-ordered placement (P), police contact (PC), and summons (S)). The y-axis shows the probability of an affirmative justice contact at T5.

Time-point 6 Results from time six LCA showed that a three-class model was the best fit for the data (AIC = 6353.89, BIC = 6458.11, ABIC = 6394.58, Entropy = 0.89, LMR $p < 0.001$). The range of individuals' class membership probabilities was 0.89 - 0.99. The largest class (Class 1) included 988 (73.0%) youth in the *No Justice Contact* class. The second-largest class (Class 2) included 308 (22.7%) youth who reported *Arrest, & Placement* class.

Figure 7

Description of Time 6 Latent Class Memberships

Time 6



Note: Six indicators of justice contact are shown on the x-axis (i.e., arrested (A), court appearances (CA), court-monitoring program (PC), court-ordered placement (P), police contact (PC), and summons (S)). The y-axis shows the probability of an affirmative justice contact at T6.

Step 2: Longitudinal Latent Class Analysis Models of Justice Contact

Based on the LCA results, partial measurement invariance was established as the number of classes varied across time points, but parameters were constrained across time for similar classes at each time point (See figure 13). The Loglikelihood chi-square test results also indicated that the invariance model was a better fit for the data. Among latent classes, *No Justice Contact* class appeared at 5 timepoints (95-73%), *High Consequence* class appeared at 4 time points (7-32%), *Severe Justice Contact* class appeared at 4 timepoints (6-9%), and both *Arrest & Placement* (23-24%) and *Court & Monitoring* (12-33%) classes appeared at two timepoints.

Step 3: Latent Transition Model

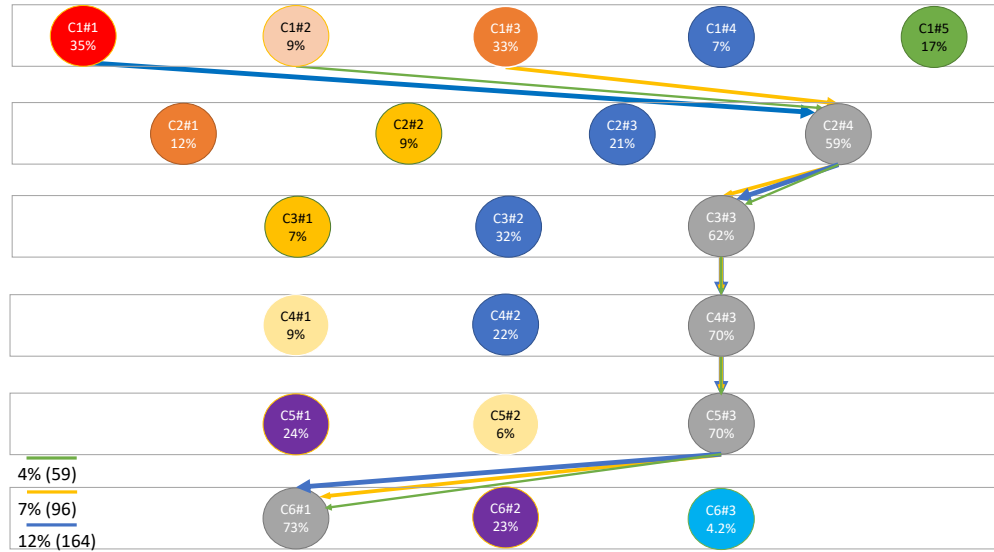
The LTA of justice contact showed a good classification of trajectories with an entropy of 0.75. The estimated transition probabilities matrixes are shown in Tables 11-15. Each table shows the probability of transitions between T and $T+1$. The diagonal of the matrix display the probability of an individual remaining in the same class over time. Results of the LTA show that youth tend to transition between classes in the first two years, and class membership becomes more stable during the later years of the study. Specifically, common transition patterns across time include justice contact in the early years and desistance as adolescents transition into adulthood. In total, 1,620 justice contact trajectories were observed across all six time points; 59 trajectories were observed when T to $T+1$ transitions were examined. The average trajectory group included the following patterns 143331 ($n = 164$, 12.1%), 343331 ($n = 96$, 7.1%), 243331 ($n = 59$, 4.4%). These trajectory groups followed patterns of desistance, whereas the class memberships from T2-T6 indicated membership in the *No Justice Contact* classes (classes 4, 3, 3, 3, and 1, respectively).

No adolescents in the sample followed the *Highest Justice Contact* trajectory group (classes 5, 4, 1, 1, 2, and 3, respectively). However, the most common trajectory for adolescents who had the most justice involvement at T1 (*Court & Placement* or *High Justice Involvement* classes). The *Court & Placement* class (C2) contains adolescents who appeared in court and were subsequently adjudicated to out-of-home placement ($n = 127$, 9.4%). The *High Justice Involvement* class (C5) contains adolescents who were affirmative on all but one of the indicators of justice contact, placement; thus, these adolescents were contacted by police, arrested, summons to court, appeared in court, and was adjudicated to a court monitoring program ($n = 226$, 17%). The most likely trajectories for those who were in the *Court & Placement* class (C2) at T1 was 243331 ($n = 59$, 4.4%); and the most likely trajectories for those who were in the *High Justice Involvement* class (C5) at T1 were 543331 ($n = 31$, 2.3%) and 533331 ($n = 19$, 1.4%). Although the 19 adolescents in the 533331 trajectory show a second year of justice contact at T2, all of the most likely trajectories desist from justice involvement, which

means that regardless of the severity of justice involvement at T1, adolescents are likely to desist from justice contact. In order to simplify the interpretation of the transitions, I will describe transitions between T and $T+1$ for the most prevalent transitions (See Figures 14-18).

Figure 8

Most Prevalent Latent Transition Patterns Across All Timepoints

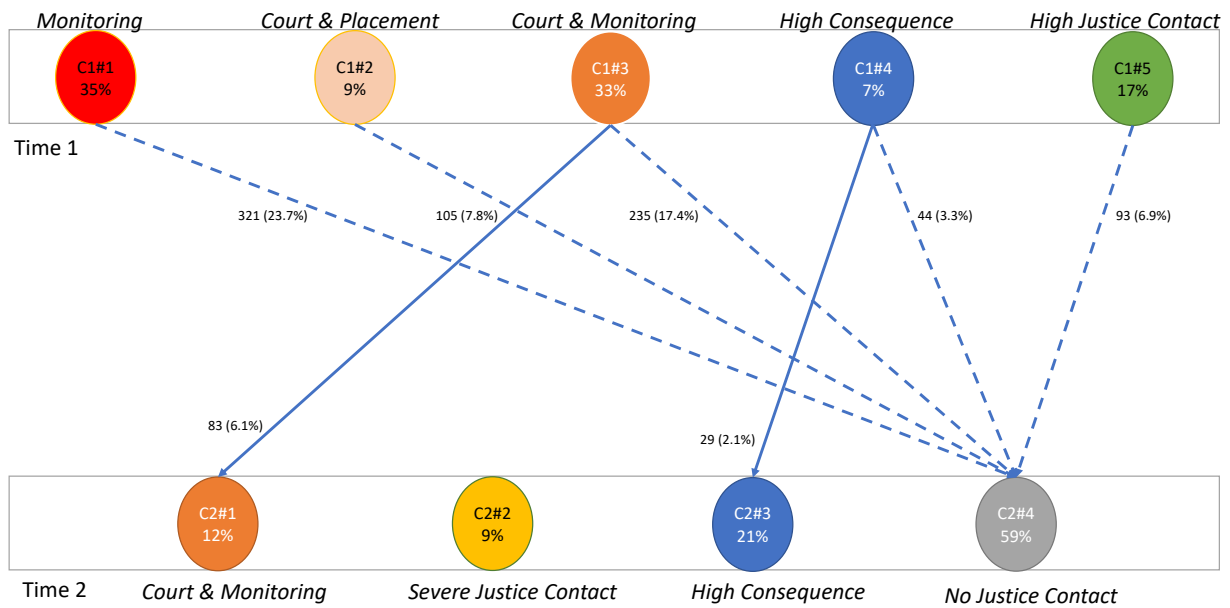


Note: The figure shows the most likely transitions across six timepoints. The blue line is the 143331 trajectory (n = 164, 12.1%); the yellow line is the 343331 trajectory (n = 96, 7.1%); and the green line is the 243331 trajectory (n = 59, 4.4%).

Time 1-2 Class transitions were prevalent between T1 and T2. The most likely transitions were from the *Monitoring* class (Class 1) to the *No Justice Contact* class (Class 4) (n = 321, 23.7%; P = 0.70). The most likely transition for all five classes at T1 was to the *No Justice Contact* class at T2. Timepoints 1 and 2 have two similar classes, *Court & Monitoring* (C3 at T1 and C1 at T2) and *High Consequence* (C4 at T1 and C3 at T2). Adolescents who remained in these classes from T1-T2 would be considered to have stable class membership. Therefore, 83 (6.1%; P = 0.25) adolescents remained in the *Court & Monitoring* class from T1 to T2 and 29 (2.1%; P = 0.33) adolescents remained in the *High Consequence* class from T1 to T2. (See Figure 14)

Figure 9

Latent Transitions between Time 1 and Time 2 Classes

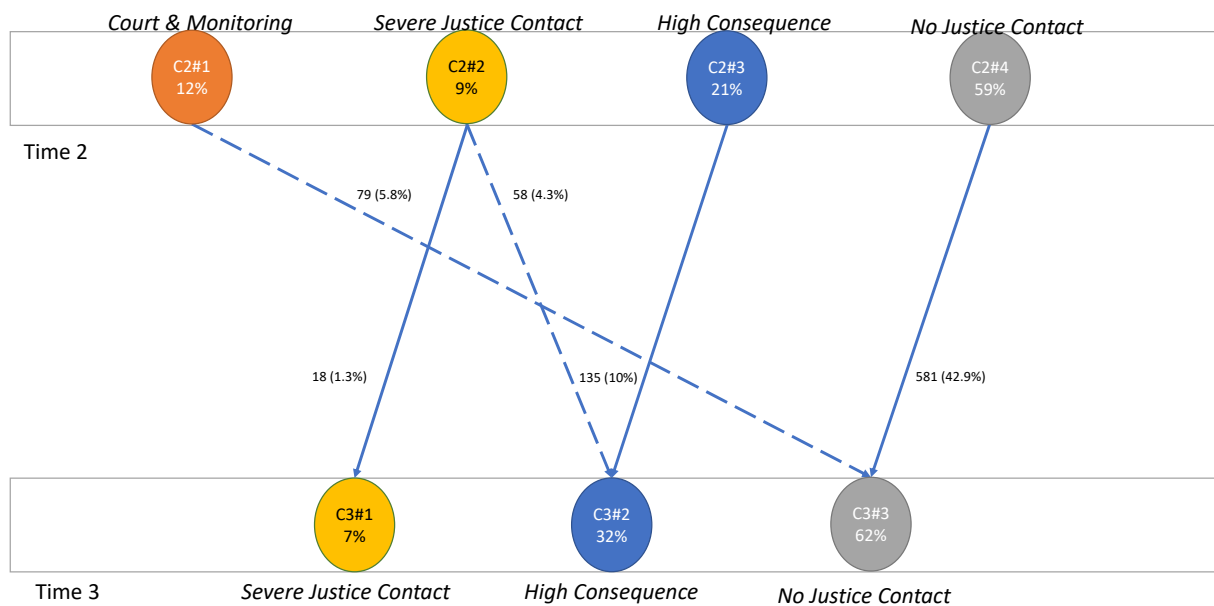


Note: The figure shows the most likely transitions across T1 and T2. Solid lines indicate stable class membership, while dotted lines indicate a transition to a escalating or desisting class.

Time 2-3 Timepoints 2 and 3 have three similar classes, *Severe Justice Contact* class (C2 at T2 and C1 at T3), *High Consequence* class (C3 at T2 and C2 at T3), and *No Justice Contact* class (C4 at T2 and C3 at T3). Class membership showed more stability than change between T2 and T3. The most likely transitions were from T2 *Court & Monitoring* class (Class 1) to T3 *No Justice Contact* class (Class 3) ($n = 79$, 5.8%; $P = 0.47$) and T2 *Severe Justice Contact* class (Class 2) to T3 *High Consequence* class (Class 2) ($n = 58$, 4.3%; $P = 0.54$). Adolescents who remain in similar classes from T2-T3 are considered to have stable class membership. Therefore, 18 (1.3%; $P = 0.17$) adolescents remained in the *Severe Justice Contact* class, 135 (10%; $P = 0.55$) remained in the *High Consequence* class, and 581 (42.9%; $P = 0.73$) adolescents remained in the *No Justice Contact* class from T2 to T3.

Figure 10

Latent Transitions between Time 2 and Time 3 Classes



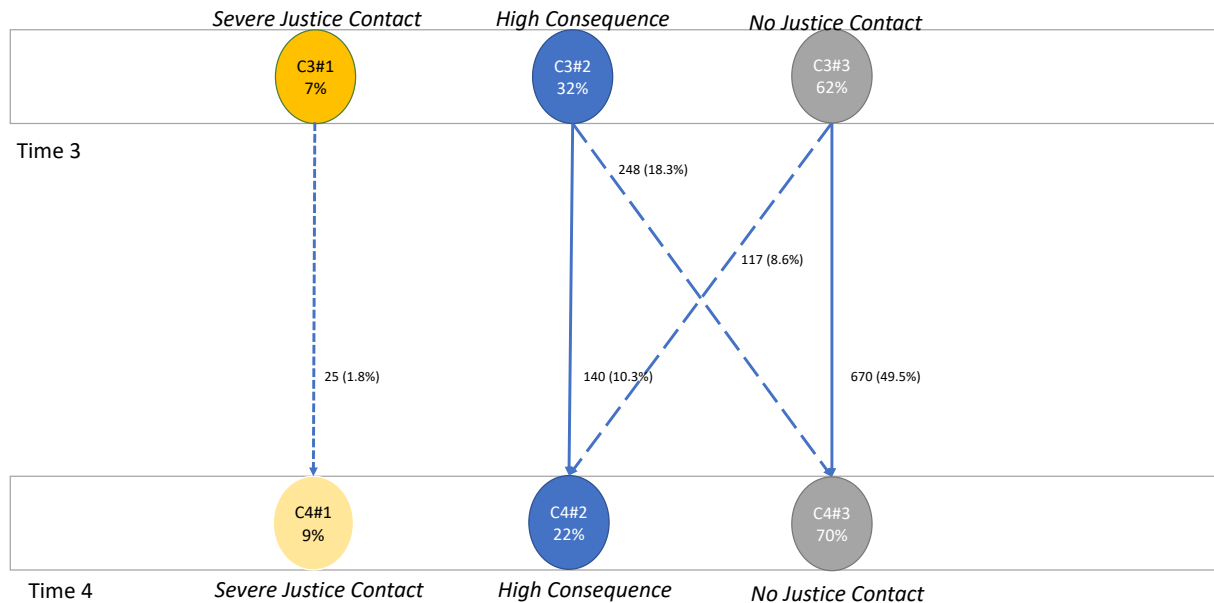
Note: The figure shows the most likely transitions across T2 and T3. Solid lines indicate stable class membership, while dotted lines indicate a transition to a escalating or desisting class.

Time 3-4 Timepoints 3 and 4 have three similar classes, *Severe Justice Contact* class (C1 at T3 and C1 at T4), *High Consequence* class (C2 at T3 and C2 at T4), and *No Justice Contact* class (C3 at T3 and C3 at T4). Class 1 at T3 and Class 1 and T4 are similar classes; thus, both classes will be described as *Severe Justice Contact*, and transitions between the two will be considered stable. The only difference between the class descriptions indicates a court summons; this difference is noted. Class membership between T3 and T4 was more likely to be stable than to change. Between T3 and T4, 140 (10.3%; $P = 0.34$) adolescents remained in the *High Consequence* class, 25 (1.8%; $P = 0.44$) adolescents remained in the *Severe Justice Contact* class, and 670 (49.5%; $P = 0.81$) remained in the *No Justice Contact* class. The most likely transitions were from T3 *High Consequence* class (Class 2) to T4 *No Justice Contact* class (Class 3) ($n = 248$, 18.3%; P

= 0.54) and T3 *No Justice Contact* class (Class 3) to T4 *High Consequence* class (Class 2) ($n = 117$, 8.6%; $P = 0.12$).

Figure 11

Latent Transitions between Time 3 and Time 4 Classes

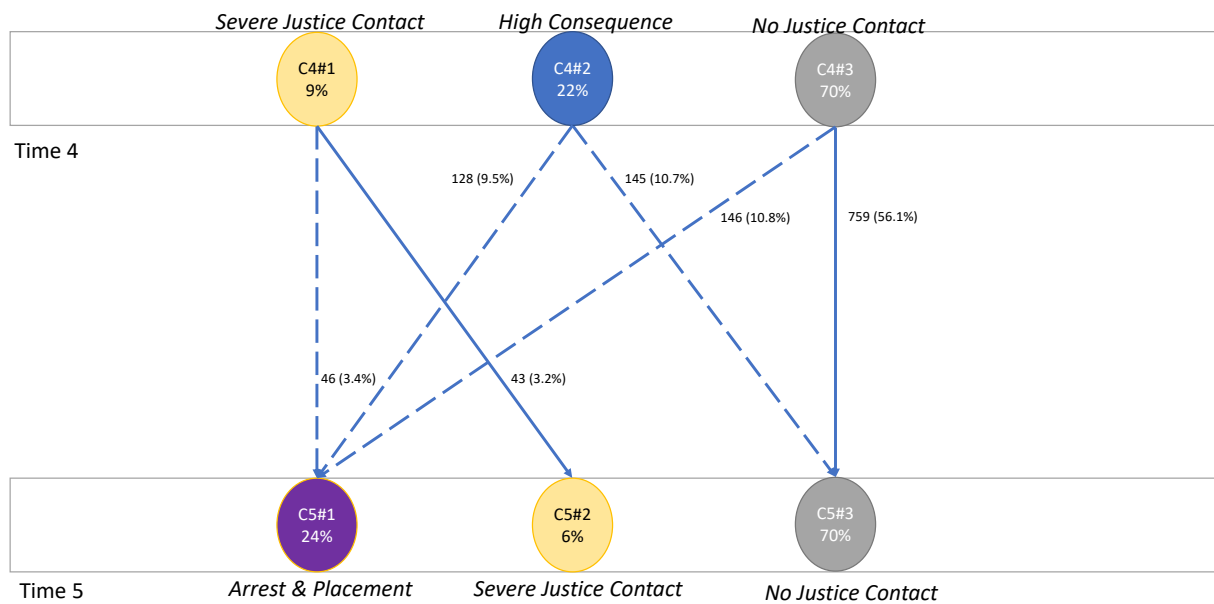


Note: The figure shows the most likely transitions across T3 and T4. Solid lines indicate stable class membership, while dotted lines indicate a transition to an escalating or desisting class.

Time 4-5 Timepoints 4 and 5 have two similar classes, *Severe Justice Contact* class (C1 at T4 and C2 at T5) and *No Justice Contact* class (C3 at T4 and C3 at T5). Adolescents in the *Severe Justice Contact* class at T4 were nearly as likely to remain in the *Severe Justice Contact* class ($n = 43$, 3.2%; $P = 0.36$) as they were to transition to the *Arrest & Placement* class at T5 ($n = 46$, 3.4%; $P = 0.34$). Adolescents in the *High Consequence* class at T4 were likely to transition into the *Arrest & Placement* class ($n = 128$, 9.5%; $P = 0.49$) and the *No Justice Contact* class ($n = 145$, 10.7%; $P = 0.45$) at T5. *No Justice Contact* class membership between T4 and T5 was likely to be stable between T4 and T5 ($n = 759$, 56.1%; $P = 0.81$); however, 146 (10.8%; $P = 0.14$) of adolescents who were in the *No Justice Contact* class at T4 transitioned to the *Arrest & Placement* class at T5.

Figure 12

Latent Transitions between Time 4 and Time 5 Classes

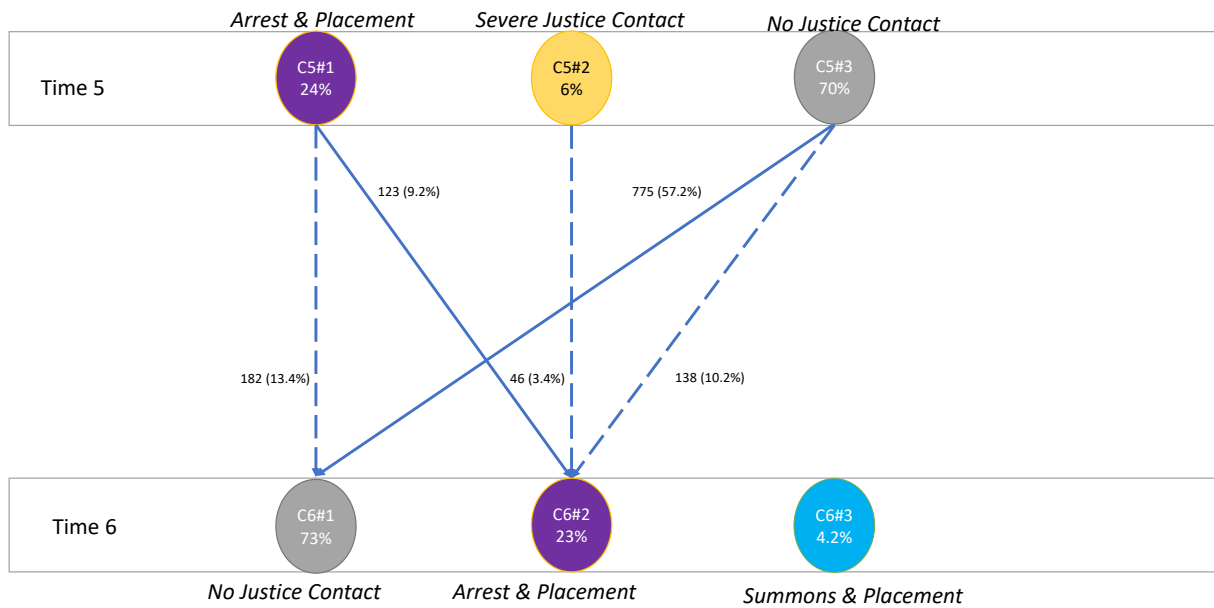


Note: The figure shows the most likely transitions across T4 and T5. Solid lines indicate stable class membership, while dotted lines indicate a transition to an escalating or desisting class.

Time 5-6 Timepoints 5 and 6 have two similar classes, the *Arrest & Placement* class (C1 at T5 and C2 at T6) and *No Justice Contact* class (C3 at T5 and C1 at T6). More adolescents in the *Arrest & Placement* class at T5 were transitioned to the *No Justice Contact* class ($n = 182$, 13.4%; $P = 0.55$) than remained in the *Arrest & Placement* class at T6 ($n = 123$, 9.2%; $P = 0.41$). Most adolescents in the *Severe Justice Contact* class at T5 transitioned into the *Arrest & Placement* class ($n = 46$, 3.4%; $P = 0.62$). Most adolescents in the *No Justice Contact* class at T5 remained in the *No Justice Contact* class at T6 ($n = 775$, 57.2%; $P = 0.82$); however 10.2% ($n = 138$; $P = 0.14$) of adolescents who were in the *No Justice Contact* class T5 transitioned to the *Arrest & Placement* class at T6.

Figure 13

Latent Transitions between Time 5 and Time 6 Classes



Note: The figure shows the most likely transitions across T5 and T6. Solid lines indicate stable class membership, while dotted lines indicate a transition to a escalating or desisting class.

Step 4: Parallel-Process Latent Growth Curve Models

As indicated in figure 2, the growth model for maternal warmth shows a significant intercept and slope ($\chi^2 = 59.70$, $df = 21$, $p < 0.001$; CFI = 0.98; RMSEA = 0.037, $p = 0.97$; $\mu = 2.20$, $p < 0.001$; $\beta = -0.04$, $p < 0.001$). On average, at baseline adolescents perceived their mothers to be warm often, but overtime adolescents reported significant decreases in the level of warmth they perceived from their mother. The mean of the intercept for fathers' warmth is significant ($\chi^2 = 43.53$, $df = 21$, $p < 0.01$; CFI = 0.98; RMSEA = 0.032, $p = 0.99$; $\mu = 1.74$, $p < 0.001$); however, the slope of father warmth is not significant ($\beta = -0.02$, $p = 0.122$). On average, adolescents perceived that their fathers are often warm toward them, and their level of warmth remained consistent overtime.

Similarly, the growth model for maternal hostility shows a significant intercept and slope ($\chi^2 = 460.033$, $df = 21$, $p < 0.001$; CFI = 0.71; RMSEA = 0.125, $p < 0.001$; $\mu = 0.86$, $p < 0.001$; $\beta = -0.07$, $p < 0.001$). On average, at baseline adolescents perceived that their mothers are sometimes hostile towards them, but overtime adolescents reported significant decreases in the level of hostility they perceived from their mothers. The mean of the intercept and slope of fathers' hostility are significant ($\chi^2 = 414.355$, $df = 21$, $p < 0.001$; CFI = 0.38; RMSEA = 0.133, $p < 0.001$; intercept = 0.70, $p < 0.001$; $\beta = -0.12$, $p < 0.001$). On average, adolescents perceived that their fathers are sometimes hostile toward them and their level of hostility significantly decreased overtime. After testing univariate maternal and paternal warmth and hostility trajectories, maternal and paternal parenting constructs were modeled together using parallel process growth models.

Figure 14

Parallel-Process Growth Model of Adolescent Reported Parental Warmth

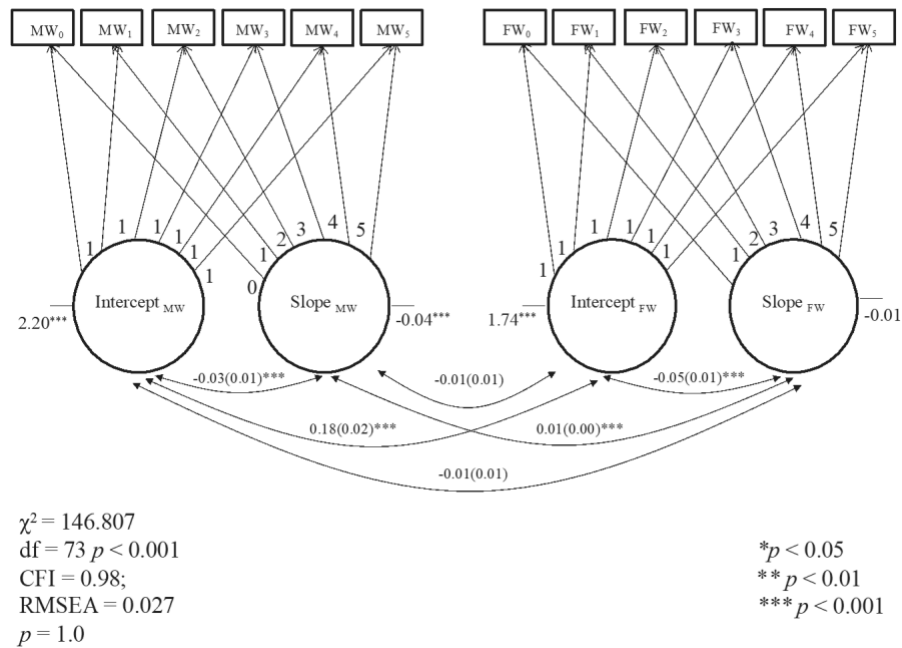
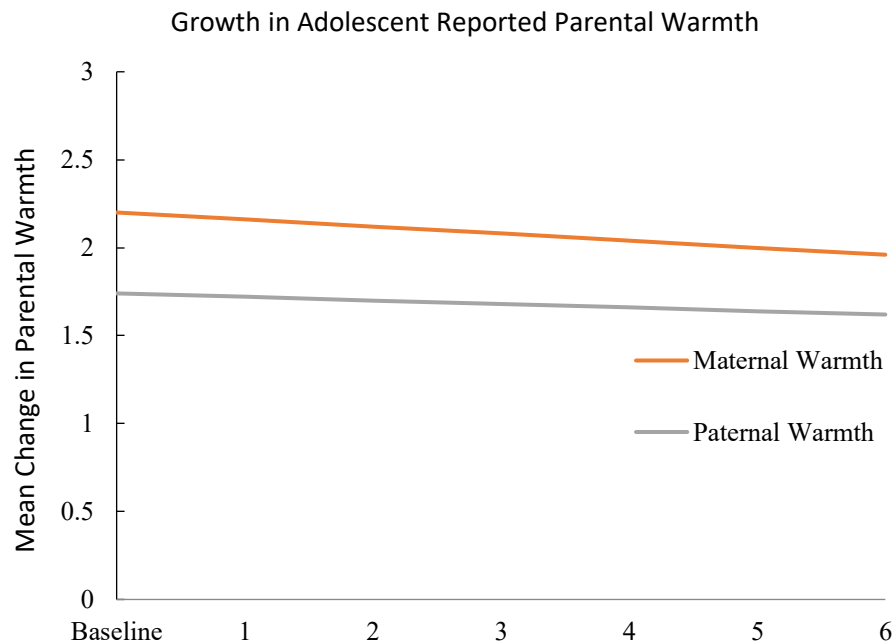


Figure 15

Growth in Adolescent Reported Parental Warmth



Note: Baseline represents the intercept of parental warmth.

Warmth The unconditional parallel-process growth model for mother and father warmth indicated a good fit of the data ($\chi^2 = 146.81$, $df = 73$, $p < 0.001$; CFI = 0.98; TFI = 0.98; RMSEA = 0.027, $p = 1.0$). The results indicate that predictive variance remains in the model, thus predictors may improve the full model fit. The results of the covariances show a significant positive association between warmth intercepts for mothers and fathers, indicating a positive relationship between parents' level of warmth at baseline. Although results show a significant association between the change (slope) in mother and father warmth, the effect is small.

Figure 16

Parallel-Process Growth Model of Adolescent Reported Parental Hostility

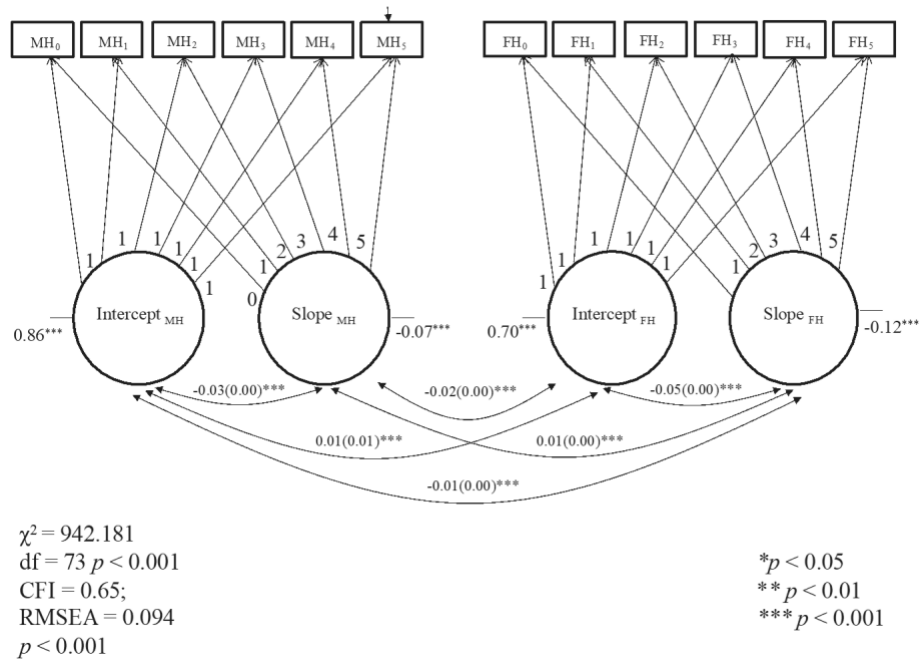
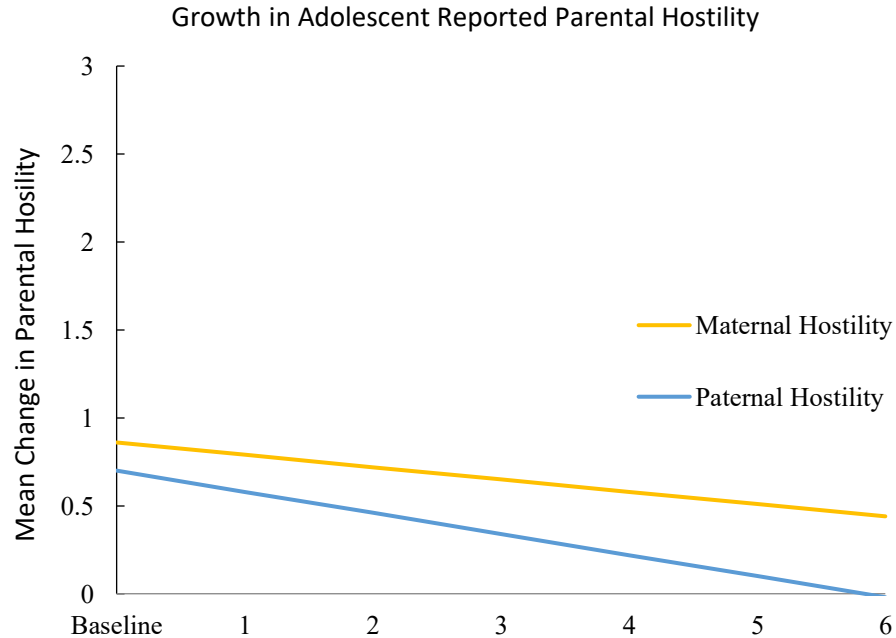


Figure 17

Growth in Adolescent Reported Parental Hostility



Note: Baseline represents the intercept of parental hostility.

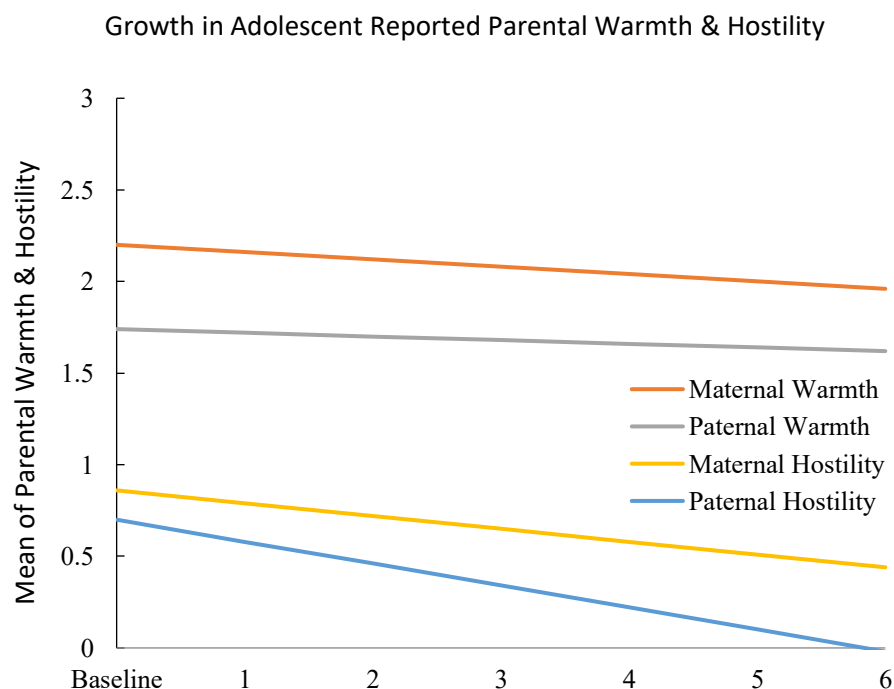
Hostility The model testing maternal and paternal hostility showed a poor model fit ($\chi^2 = 942.181$, $df = 73$, $p < 0.001$; $CFI = 0.65$; $TFI = 0.69$; $RMSEA = 0.094$, $p < 0.001$); however,

predictive variance remains in the model which means predictors may improve the full model fit. Hostility covariances indicate significant, but small, associations between hostility growth factors for mothers and fathers.

I also tested the model controlling for sex and self-reported offending behaviors. Neither variable showed to be a significant contributor to the model, which suggested they did not affect the development of parent-adolescent relationships (Williams & Steinberg, 2011); therefore, I did not retain them as covariates in the final growth models. However, unexplained variance remained in both models, which indicated that I could use the models as an outcome to better understand if there are more meaningful changes between adolescents. Thus to answer the research question, I associated the growth models with the LTA of justice contact.

Figure 18

Growth in Adolescent Reported Parental Warmth & Hostility



Note: Baseline represents the intercept of parental warmth and hostility.

Step 5: Associating LTA with Distal Growth Outcome

Parental warmth and hostility intercept and slopes were added as distal outcomes of the LTA models. The conditional LTA models showed the average intercept and rate of change in parental warmth and hostility based on justice contact trajectories. For ease of interpretation, I focus my reporting on average parent-adolescent relationship ratings for trajectories of persistence and desistance between each time point and the trajectories that show the most significant changes (slopes) in parental warmth and hostility.

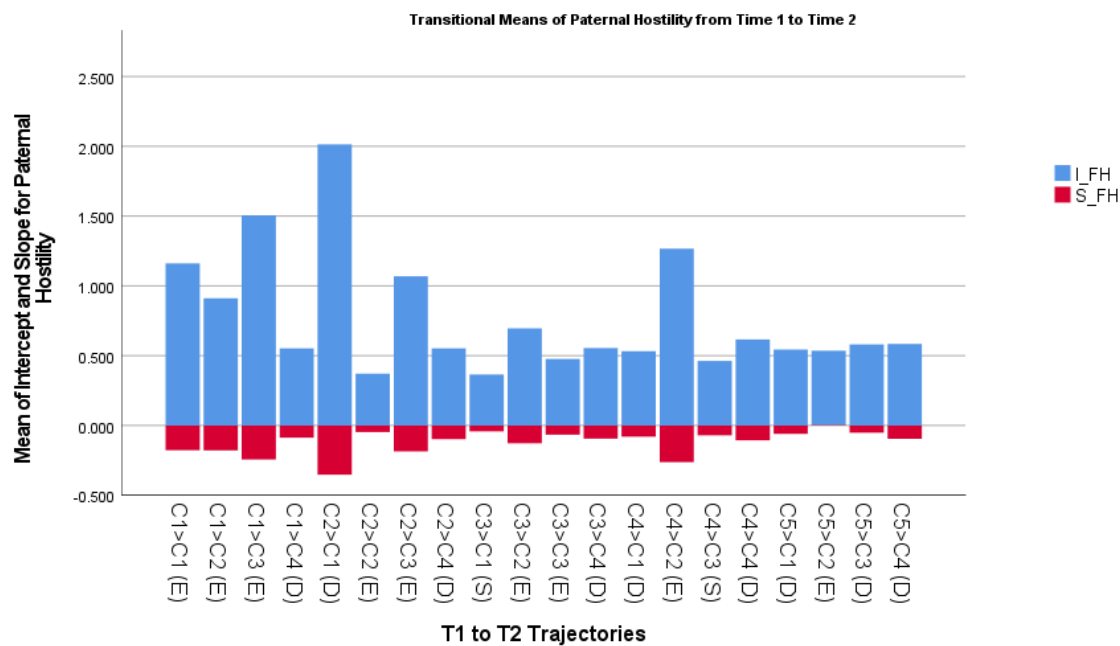
Time 1-2 For the most prevalent transitions were from the *Monitoring* class (Class 1) to the *No Justice Contact* class (Class 4) ($n = 321, 23.7\%$). Adolescents who were in a monitoring program at T1 and had no justice contact at T2 had a high intercept of maternal and paternal warmth ($b_{0M} = 2.37, b_{0F} = 1.96$) and low intercept of maternal and paternal hostility ($b_{0M} = 0.76, b_{0F} = 0.56$). Adolescents who followed this pattern reported small but significant decreases in their parent's warmth ($b_{1M} = -0.06, b_{1F} = -0.03$) and hostility ($b_{1M} = -0.06, b_{1F} = -0.09$). Of the adolescents who experienced persistent justice contact from T1 to T2. Additionally, 29 (2.1%) adolescents remained in the *High Consequence* meaning they were arrested, appeared in court, and were adjudicated to placement and a court monitoring program. These adolescents reported high and moderate intercept of maternal and paternal warmth ($b_{0M} = 2.55, b_{0F} = 2.15$) and low intercepts of maternal and paternal hostility ($b_{0M} = 0.63, b_{0F} = 0.46$). Adolescents who followed this pattern reported small but significant decreases in their parent's warmth ($b_{1M} = -0.05, b_{1F} = -0.04$) and hostility ($b_{1M} = -0.03, b_{1F} = -0.07$).

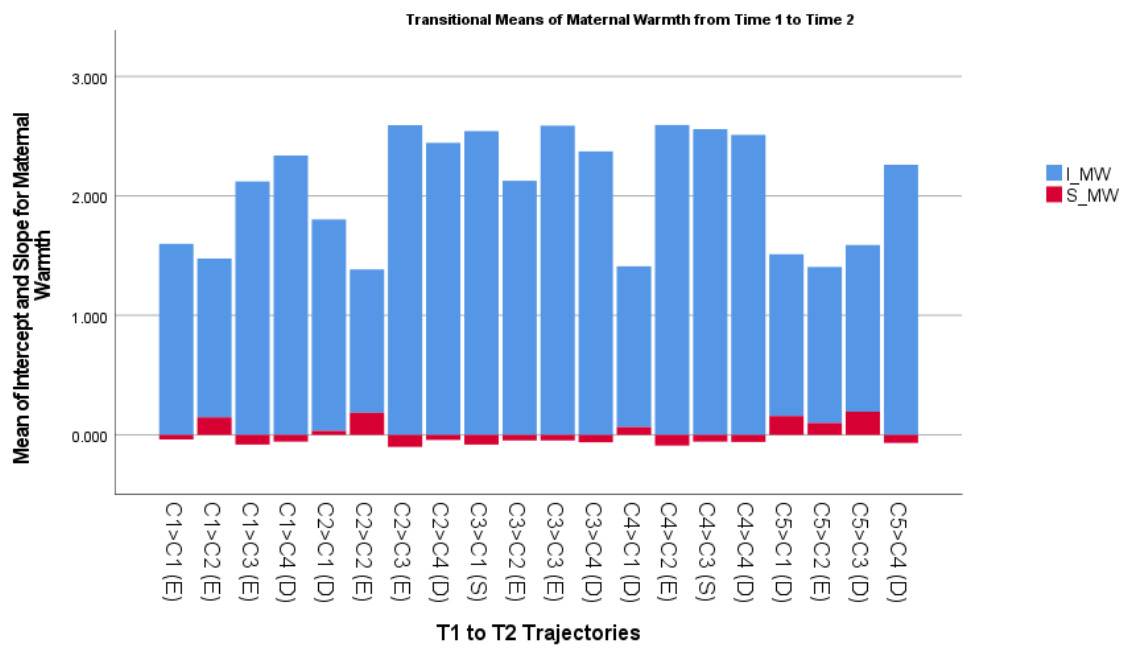
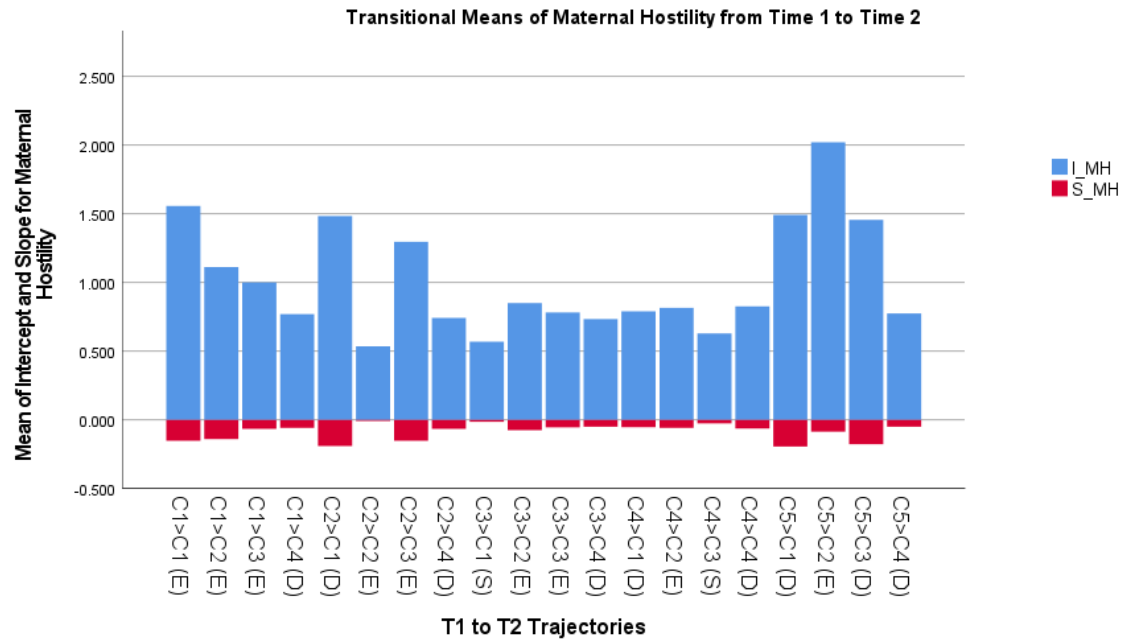
The trajectories which showed the greatest changes in parent-adolescent relationships from T1 to T2 were transitions from the *Court & Placement* class (Class 2) to the *Court & Monitoring* class (Class 1) ($n = 29, 2.1\%$). Adolescents who followed this pattern had significant decreases in

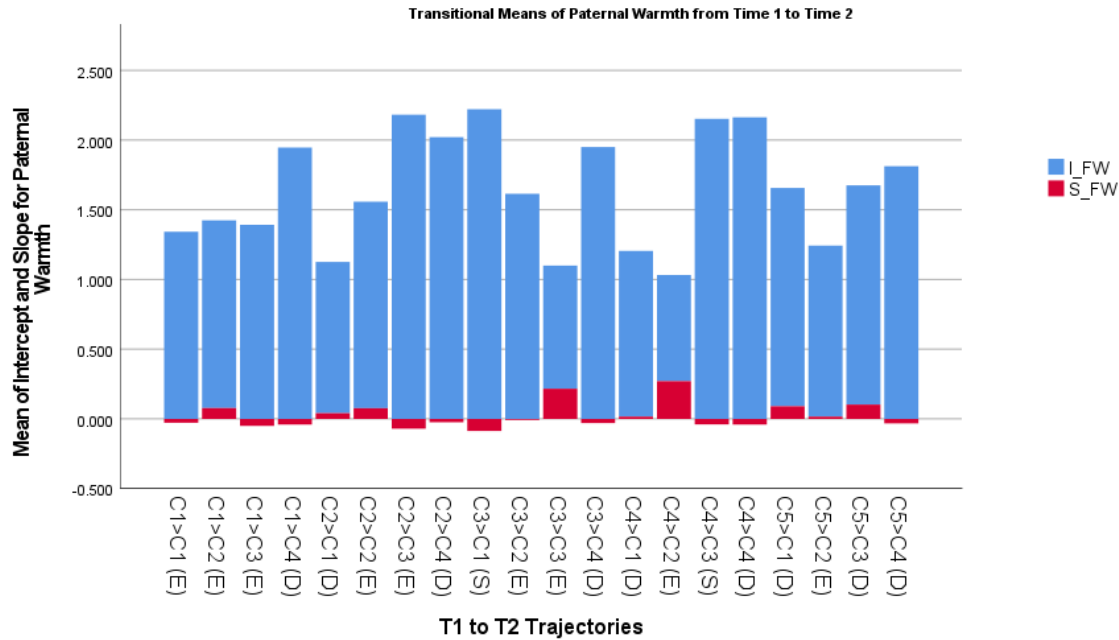
paternal hostility ($b_{0F} = 1.82$, $b_{1F} = -0.35$). Adolescents who were members of the *High Justice Contact* class (Class 5) at T1 and *Court & Monitoring* class (Class 1) at T2 ($n = 23$, 1.7%) also reported significant decreases in maternal hostility ($b_{0M} = 1.49$, $b_{1M} = -0.19$). For parental warmth, adolescents who transitioned from *High Consequence* class (Class 4) to the *Severe Justice Contact* class (Class 2) ($n = 24$, 1.8%) reported great significant increases in paternal warmth ($b_{0F} = 0.78$, $b_{1F} = 0.27$). Furthermore, adolescents who transitioned from the *High Justice Contact* class (Class 5) at T1 to the *High Consequence* class (Class 3) at T2 ($n = 6$, 0.4%) reported significant increases in maternal warmth ($b_{0M} = 1.40$, $b_{1M} = 0.16$).

Figure 19

Mean Growth in Parental Warmth and Hostility from Time 1 to Time 2







Note: The figures show the mean intercept and slope in parental warmth and hostility for mothers and fathers from T1 to T2. The y-axis shows the mean intercept (baseline) level and slope (change) of warmth and hostility. Intercepts are represented in blue and slopes are represented in red. The x-axis shows the transition patterns from T1 to T2. The transitions were described based on escalating (E), decreasing (D), and stable (S) class membership from T1 to T2.

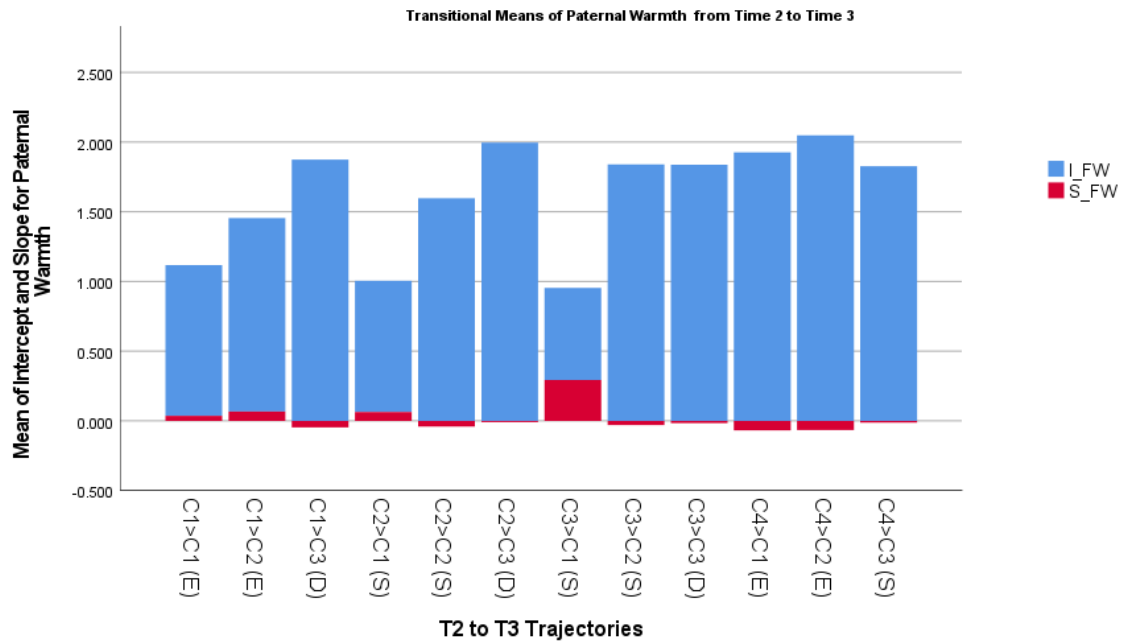
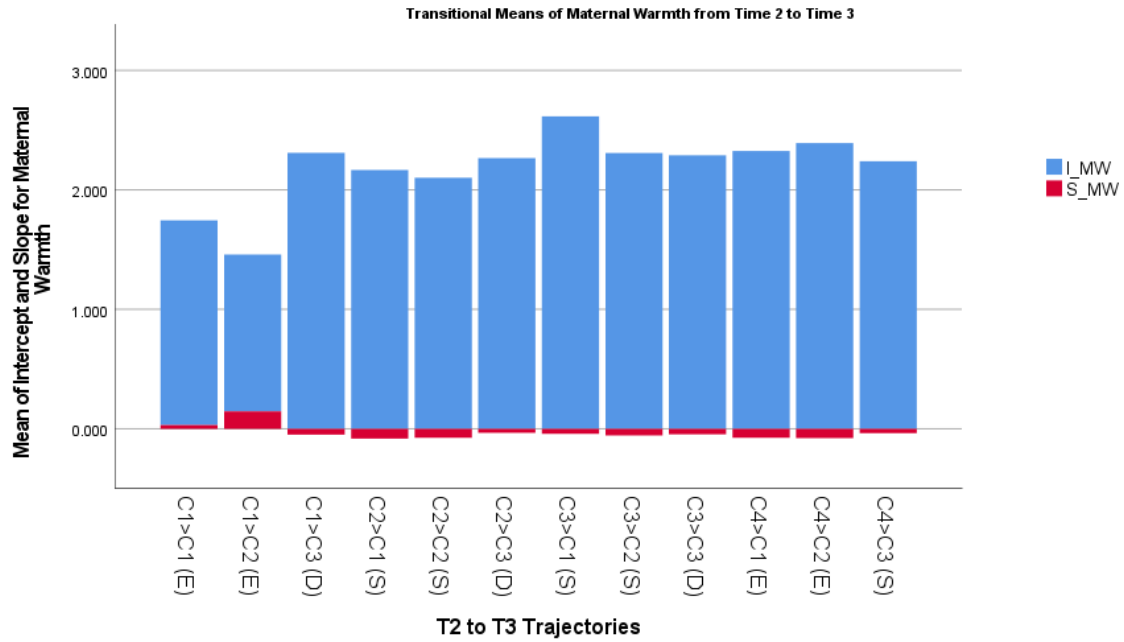
Time 2-3 Adolescents who remained in the *No Justice Contact* class ($n = 581, 42.9\%$) and who transitioned from *Court & Monitoring* class (Class 1) to T3 *No Justice Contact* class (Class 3) ($n = 79, 5.8\%$) from T2 to T3 had similar changes in their parent-adolescent relationship. Adolescents who showed these transitions had a moderate intercept of maternal and paternal warmth ($b_{0M} = 2.24, b_{0F} = 1.82$) and low intercept of maternal and paternal hostility ($b_{0M} = 0.77, b_{0F} = 0.58$). Adolescents who followed this pattern (*No Justice Contact*) reported small but significant decreases in their parent's warmth ($b_{1M} = -0.04, b_{1F} = -0.01$) and hostility ($b_{1M} = -0.06, b_{1F} = -0.10$).

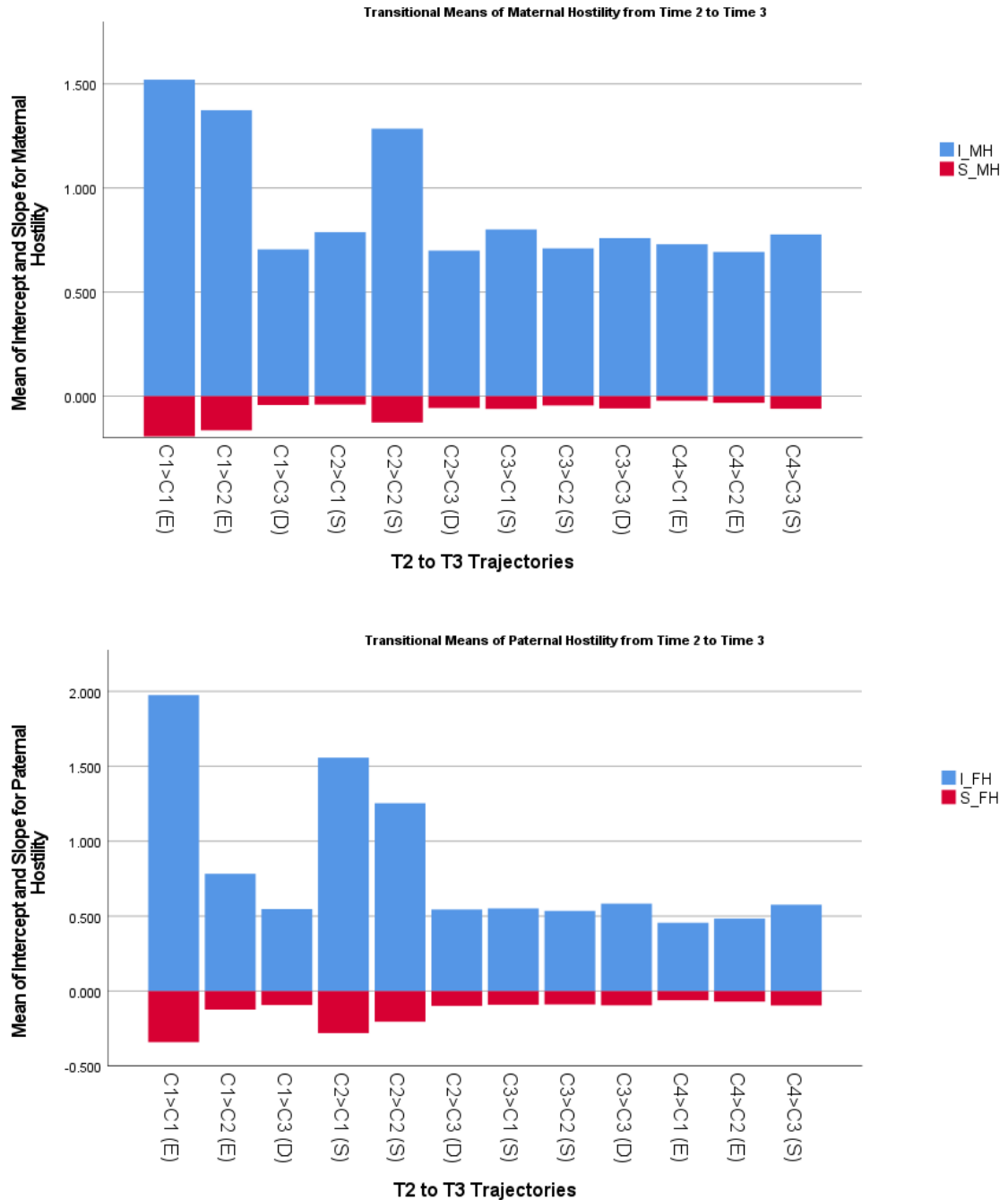
The adolescents who persisted in the *High Consequence* class ($n = 135$, 10%) from T2 to T3 show moderate intercept of maternal and paternal warmth ($b_{0M} = 2.30$, $b_{0F} = 1.84$) and low intercept of maternal and paternal hostility ($b_{0M} = 0.71$, $b_{0F} = 0.54$). Adolescents who followed this pattern reported small but significant decreases in their parent's warmth ($b_{1M} = -0.06$, $b_{1F} = -0.03$) and hostility ($b_{1M} = -0.05$, $b_{1F} = -0.09$). Finally, for the 18 (1.3%) adolescents who remained in the *Severe Justice Contact* class from T2 to T3 they report moderate intercept of maternal warmth and low intercept of paternal warmth ($b_{0M} = 2.18$, $b_{0F} = 0.98$) and low intercept of maternal hostility and moderate paternal hostility ($b_{0M} = 0.8$, $b_{0F} = 1.53$). Adolescents who followed this pattern reported small but significant changes in paternal warmth ($b_{1M} = -0.08$, $b_{1F} = 0.07_{ns}$) hostility ($b_{1M} = -0.04$, $b_{1F} = -0.28$).

The trajectories which showed the greatest changes in parent-adolescent relationships from T2 to T3 were transitions from the *Court & Monitoring* class (Class 1) to the *Severe Justice Contact* class (Class 1) ($n = 32$, 2.4%). Adolescents who followed this pattern had significant decreases in maternal and paternal hostility ($b_{0M} = 1.52$, $b_{1M} = -0.19$; $b_{0F} = 1.98$, $b_{1F} = -0.34$). Additionally, adolescents who were members of the *Court & Monitoring* class (Class 1) at T2 and *High Consequence* class (Class 2) at T3 reported significant increases in maternal warmth ($b_{0M} = 1.33$, $b_{1M} = 0.14$) ($n = 85$, 6.3%). Adolescents who transitioned from *High Consequence* class (Class 3) to the *Severe Justice Contact* class (Class 1) reported great significant increases in paternal warmth ($b_{0F} = 0.70$, $b_{1F} = 0.29$) ($n = 41$, 3%).

Figure 20

Mean Growth in Parental Warmth and Hostility from Time 2 to Time 3





Note: The figures show the mean intercept and slope in parental warmth and hostility for mothers and fathers from T2 to T3. The y-axis shows the mean intercept (baseline) level and slope (change) of warmth and hostility. Intercepts are represented in blue and slopes are represented in red. The x-axis shows the transition patterns from T2 to T3. The transitions were

described based on escalating (E), decreasing (D), and stable (S) class membership from T2 to T3.

Time 3-4 Similar classes were present for T3 and T4 - the *Severe Justice Contact* class, the *High Consequence* class (Class 1), and the *No Justice Contact* class. Adolescents who stayed in the *Severe Justice Contact* class between T3 and T4 ($n = 25$ 1.8%) had a low intercept of maternal and paternal warmth ($b_{0M} = 1.33$, $b_{0F} = 1.30$) and low intercept of maternal and paternal hostility ($b_{0M} = 1.55$, $b_{0F} = 1.08$). Adolescents who followed this pattern reported small but significant increases in their parent's warmth ($b_{1M} = 0.14$, $b_{1F} = 0.05$) and larger significant decreases in hostility ($b_{1M} = -0.20$, $b_{1F} = -0.18$).

The adolescents who desisted from justice contact, from the *High Consequence* class (Class 2) to T4 *No Justice Contact* class (Class 3) ($n = 248$, 18.3%), reported moderate intercept of maternal and paternal warmth ($b_{0M} = 2.18$, $b_{0F} = 1.72$) and low intercept of maternal and paternal hostility ($b_{0M} = 0.84$, $b_{0F} = 0.65$). Adolescents who followed this pattern reported a small but significant decrease in maternal warmth ($b_{1M} = -0.03$, $b_{1F} = 0.0_{ns}$) and maternal and paternal hostility ($b_{1M} = -0.07$, $b_{1F} = -0.11$).

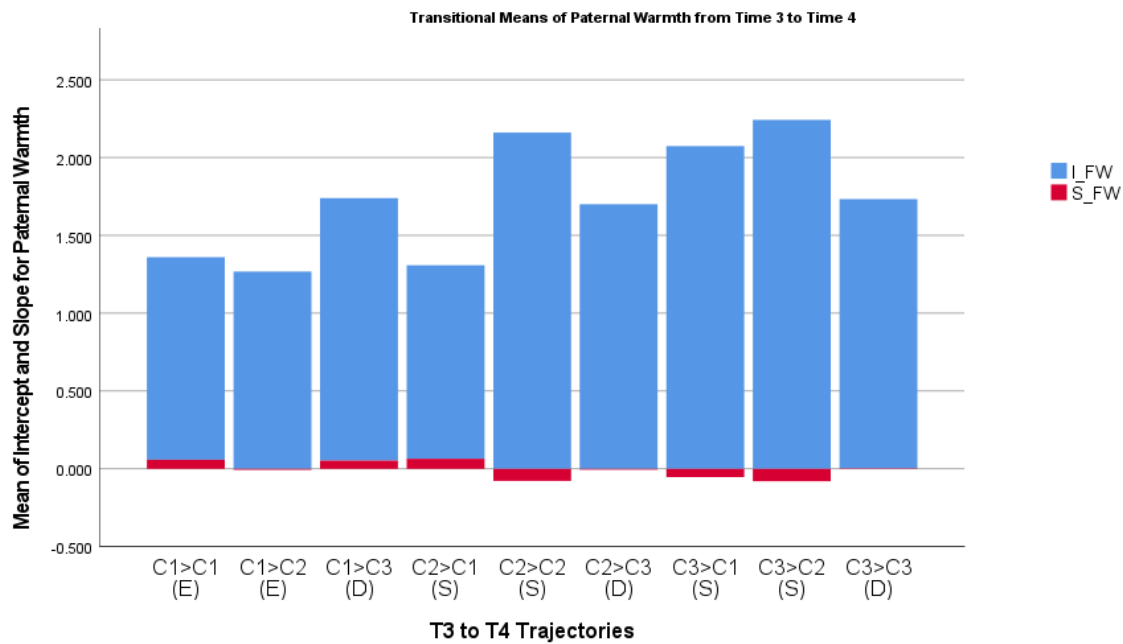
Finally, the 670 (49.5%) adolescents remained in the *No Justice Contact* class from T3 to T4 report moderate intercept of maternal and paternal warmth ($b_{0M} = 2.18$, $b_{0F} = 1.72$) and low intercept of parental hostility ($b_{0M} = 0.84$, $b_{0F} = 0.65$). Adolescents who remained in the *No Justice Contact* class from T3 to T4 reported small but significant changes in paternal warmth ($b_{1M} = -0.03$, $b_{1F} = 0.00_{ns}$) and hostility ($b_{1M} = -0.07$, $b_{1F} = -0.11$).

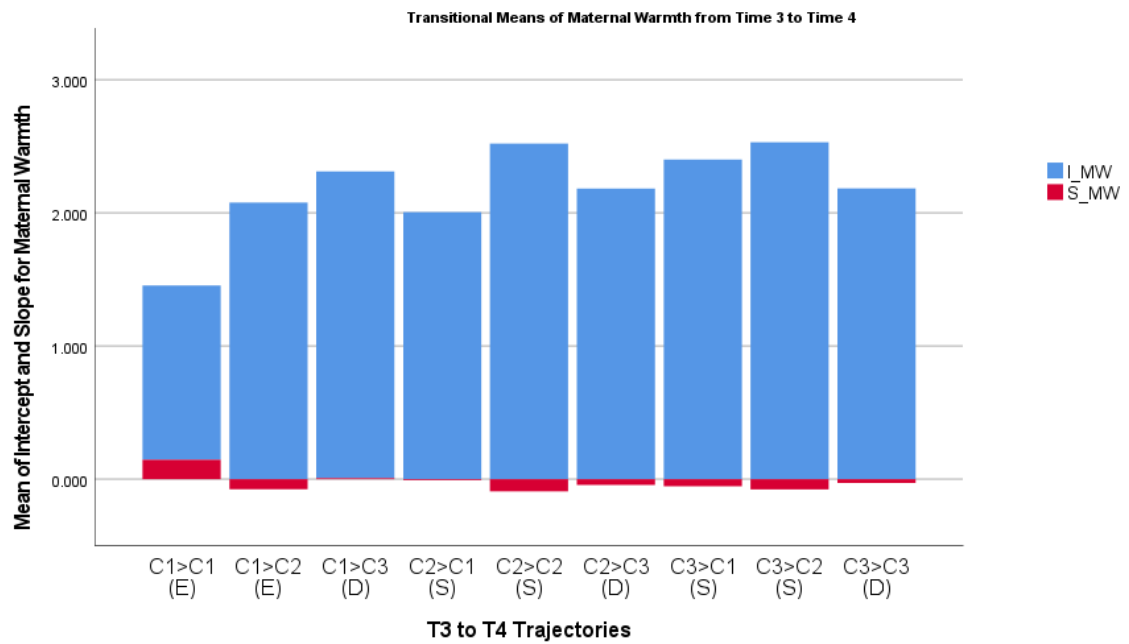
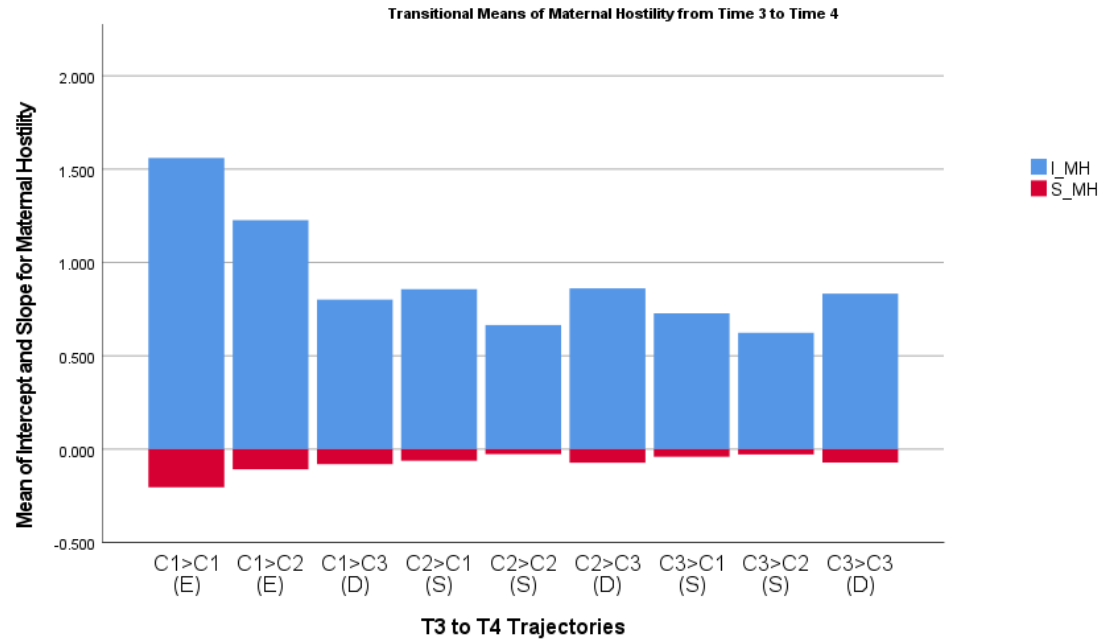
The trajectories which showed the greatest changes in parent-adolescent relationships from T3 to T4 were for adolescents who remained in the *Severe Justice Contact* class (Class 1) over the two time points ($n = 55$, 4.1%). Adolescents who followed this pattern had significant changes in

maternal warmth and hostility ($b_{0M} = 1.33$, $b_{1M} = 0.14$; $b_{0M} = 1.55$, $b_{1M} = -0.20$, respectively). Additionally, adolescents who were members of the *Severe Justice Contact* class (Class 1) at T3 and *High Consequence* class (Class 2) at T4 reported significant decreases in paternal hostility ($b_{0F} = 1.65$, $b_{1F} = -0.27$) ($n = 101$, 7.5%).

Figure 21

Mean Growth in Parental Warmth and Hostility from Time 3 to Time 4







Note: The figures show the mean intercept and slope in parental warmth and hostility for mothers and fathers from T3 to T4. The y-axis shows the mean intercept (baseline) level and slope (change) of warmth and hostility. Intercepts are represented in blue and slopes are represented in red. The x-axis shows the transition patterns from T3 to T4. The transitions were described based on escalating (E), decreasing (D), and stable (S) class membership from T3 to T4.

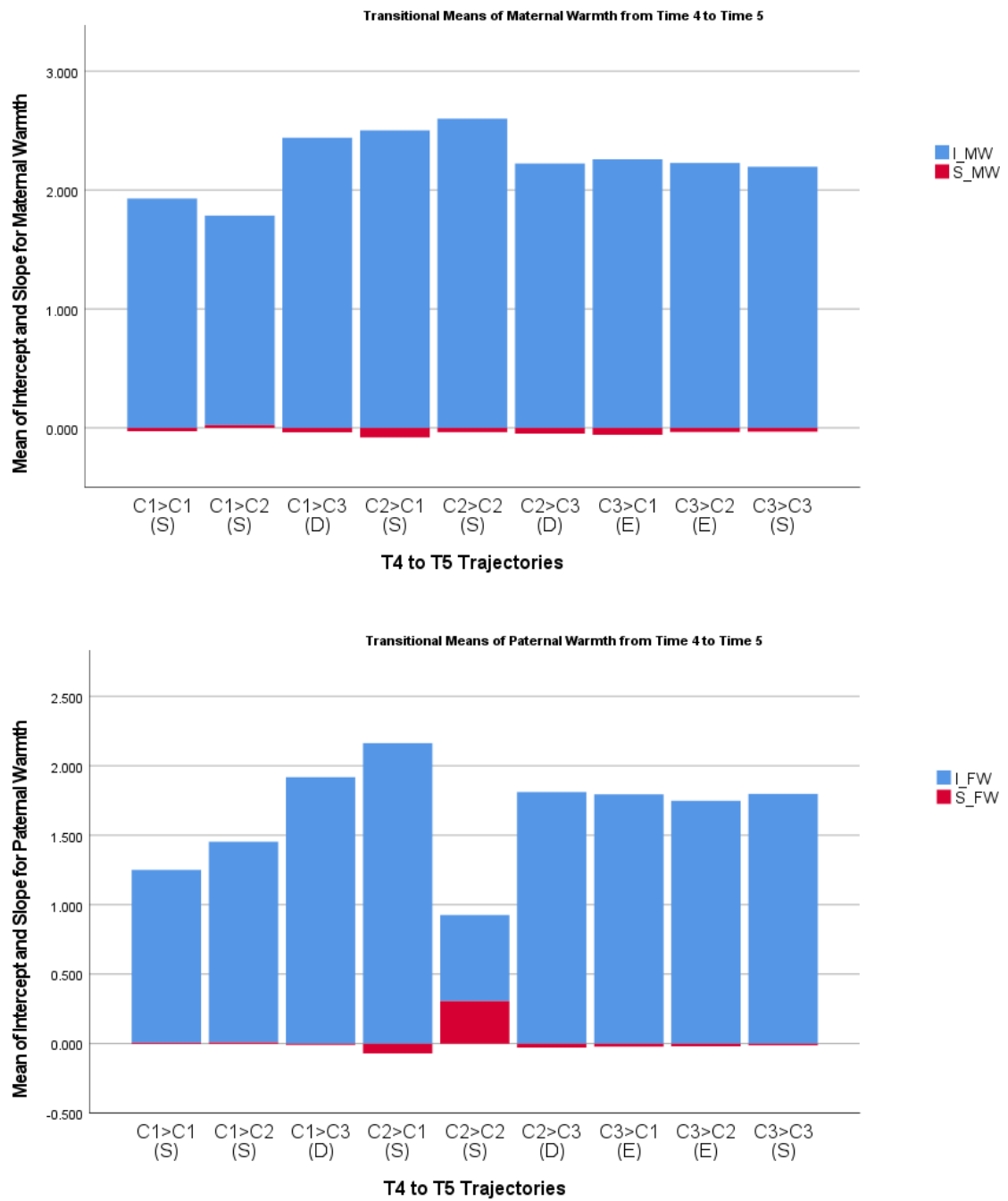
Time 4-5 Timepoints 4 and 5 have two similar classes, *Severe Justice Contact* class (C1 at T4 and C2 at T5) and *No Justice Contact* class (C3 at T4 and C3 at T5). Adolescents who persist in justice contact and remained in the *Severe Justice Contact* class ($n = 43$, 3.2%) have a moderate intercept of maternal warmth and a low intercept of paternal warmth ($b_{0M} = 1.77$, $b_{0F} = 1.44$) and low intercept of maternal and paternal hostility ($b_{0M} = 0.94$, $b_{0F} = 0.63$). Adolescents who followed this pattern reported no significant changes in their parent's warmth ($b_{1M} = 0.02_{ns}$, $b_{1F} = 0.01_{ns}$) and small significant decreases in hostility ($b_{1M} = -0.07$, $b_{1F} = -0.10$). The adolescents who desisted from justice contact, from the *High Consequence* class (Class 2) to *No Justice Contact* class ($n =$

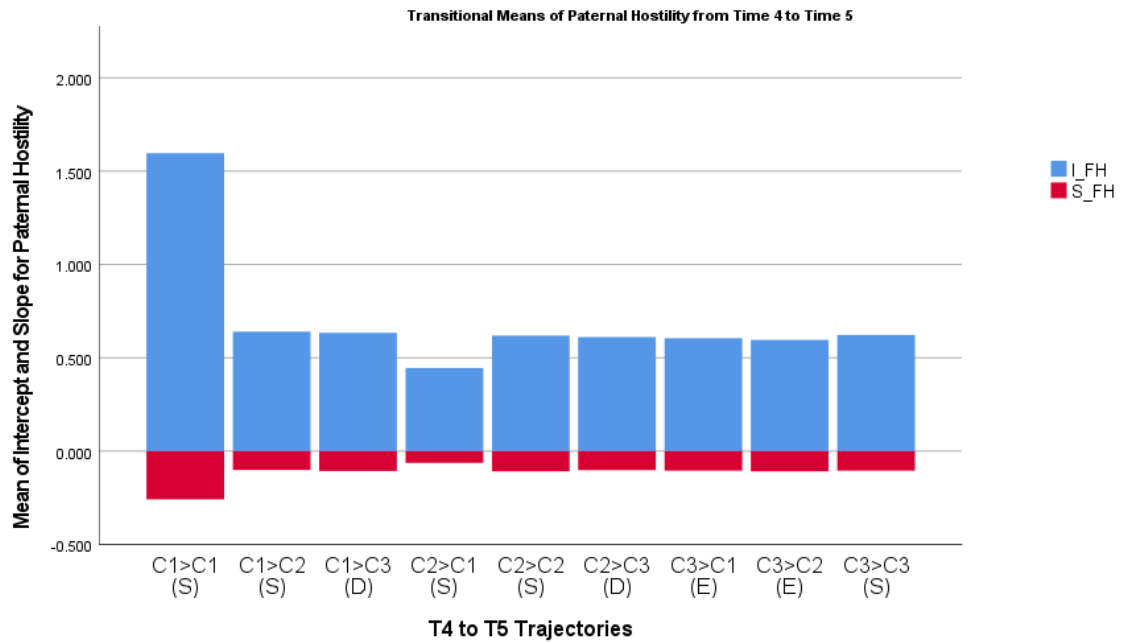
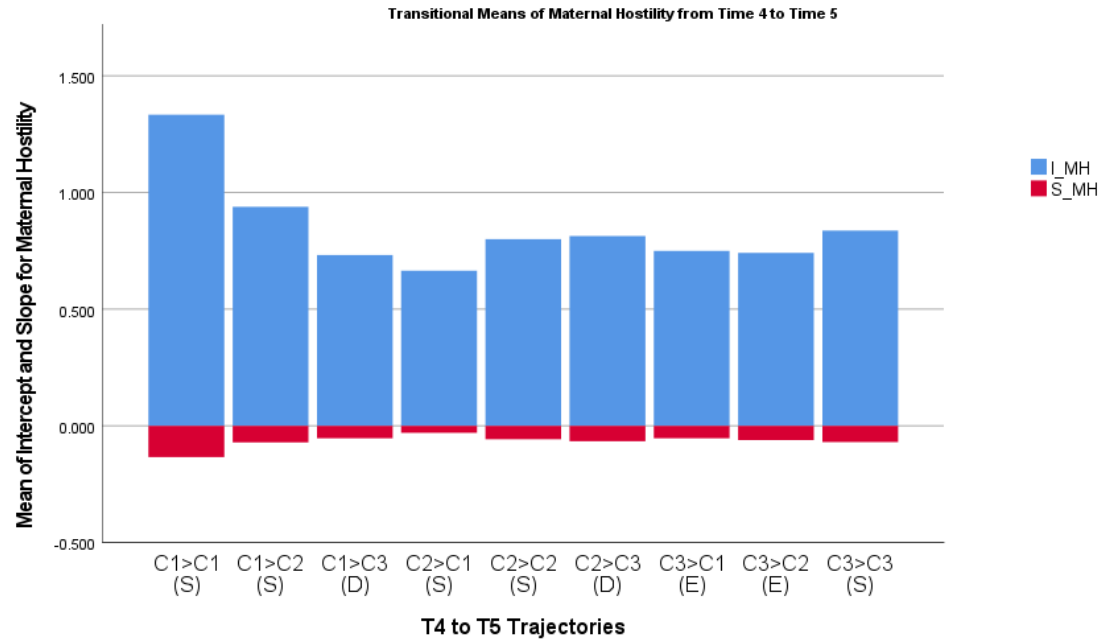
145, 10.7%) at T5, reported moderate intercept of maternal and paternal warmth ($b_{0M} = 2.20$, $b_{0F} = 1.80$) and low intercept of maternal and paternal hostility ($b_{0M} = 0.84$, $b_{0F} = 0.63$). Adolescents who followed this pattern reported small but significant decreases in parental warmth ($b_{1M} = -0.03$, $b_{1F} = -0.01$) and maternal and paternal hostility ($b_{1M} = -0.07$, $b_{1F} = -0.10$). Finally, the 759 (56.1%) adolescents who remained in the *No Justice Contact* class from T4 to T5 report moderate intercept of maternal and paternal warmth ($b_{0M} = 2.20$, $b_{0F} = 1.80$) and low intercept of parental hostility ($b_{0M} = 0.84$, $b_{0F} = 0.62$). Adolescents who remained in the *No Justice Contact* class from T4 to T5 reported small but significant decreases in paternal warmth ($b_{1M} = -0.03$, $b_{1F} = -0.01$) and hostility ($b_{1M} = -0.07$, $b_{1F} = -0.10$).

The trajectories which showed the greatest changes in parent-adolescent relationships from T4 to T5 were transitions from the *Severe Justice Contact* class (Class 1) to the *Arrest & Placement* class (Class 1) ($n = 124$, 9.2%). Adolescents who followed this pattern had significant decreases in maternal and paternal hostility ($b_{0M} = 1.33$, $b_{1M} = -0.13$; $b_{0F} = 1.59$, $b_{1F} = -0.26$). Additionally, adolescents who were members of the *High Consequence* class (Class 2) at T4 and transitioned to *Severe Justice Contact* class (Class 2) at T5 reported large significant increases in paternal warmth ($b_{0F} = 0.64$, $b_{1F} = 0.30$) ($n = 35$, 2.6%).

Figure 22

Mean Growth in Parental Warmth and Hostility from Time 4 to Time 5





Note: The figures show the mean intercept and slope in parental warmth and hostility for mothers and fathers from T4 to T5. The y-axis shows the mean intercept (baseline) level and slope (change) of warmth and hostility. Intercepts are represented in blue and slopes are represented in red. The x-axis shows the transition patterns from T4 to T5. The transitions were

described based on escalating (E), decreasing (D), and stable (S) class membership from T4 to T5.

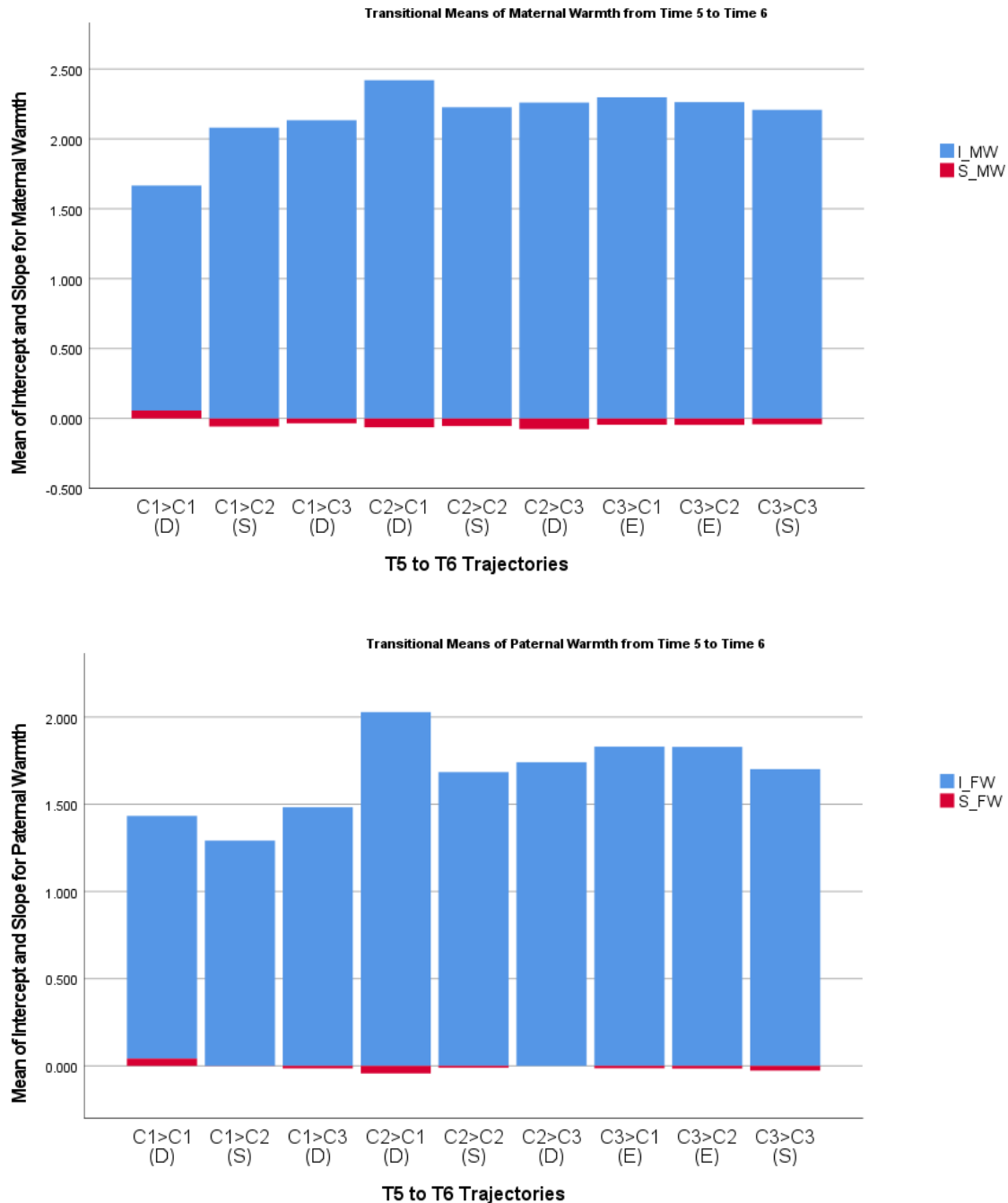
Time 5-6 Timepoints 5 and 6 have two similar classes, the *Arrest & Placement* class (C1 at T5 and C2 at T6) and *No Justice Contact* class (C3 at T5 and C1 at T6). Adolescents who desisted transitioned from the *Arrest & Placement* class at T5 to the *No Justice Contact* class at T6 ($n = 182$, 13.4%). These adolescents have low to moderate intercepts of parental warmth ($b_{0M} = 1.60$, $b_{0F} = 1.39$) and moderate and low intercept for maternal hostility and paternal hostility, respectively ($b_{0M} = 1.39$, $b_{0F} = 0.94$). Adolescents who followed this pattern reported no significant changes in their parent's warmth ($b_{1M} = 0.06_{ns}$, $b_{1F} = 0.04_{ns}$) and small significant decreases in hostility ($b_{1M} = -0.16$, $b_{1F} = -0.15$). Adolescents who persisted in justice contact and transitioned from *Severe Justice Contact* class (Class 2) to *Arrest & Placement* class at T6 ($n = 46$, 3.4%) reported moderate intercept of maternal and paternal warmth ($b_{0M} = 2.21$, $b_{0F} = 1.68$) and low intercept of maternal and paternal hostility ($b_{0M} = 0.72$, $b_{0F} = 0.52$). Adolescents who followed this pattern reported small but significant decreases in maternal warmth ($b_{1M} = -0.05$, $b_{1F} = -0.01_{ns}$) and maternal and paternal hostility ($b_{1M} = -0.04$, $b_{1F} = -0.08$). Finally, the 775 (57.2%) adolescents who remained in the *No Justice Contact* class from T5 to T6 report moderate intercept of maternal and paternal warmth ($b_{0M} = 2.29$, $b_{0F} = 1.83$) and low intercept of parental hostility ($b_{0M} = 0.77$, $b_{0F} = 0.59$). Adolescents who remained in the *No Justice Contact* class from T5 to T6 reported small but significant decreases in paternal warmth ($b_{1M} = -0.05$, $b_{1F} = -0.01$) and hostility ($b_{1M} = -0.06$, $b_{1F} = -0.10$).

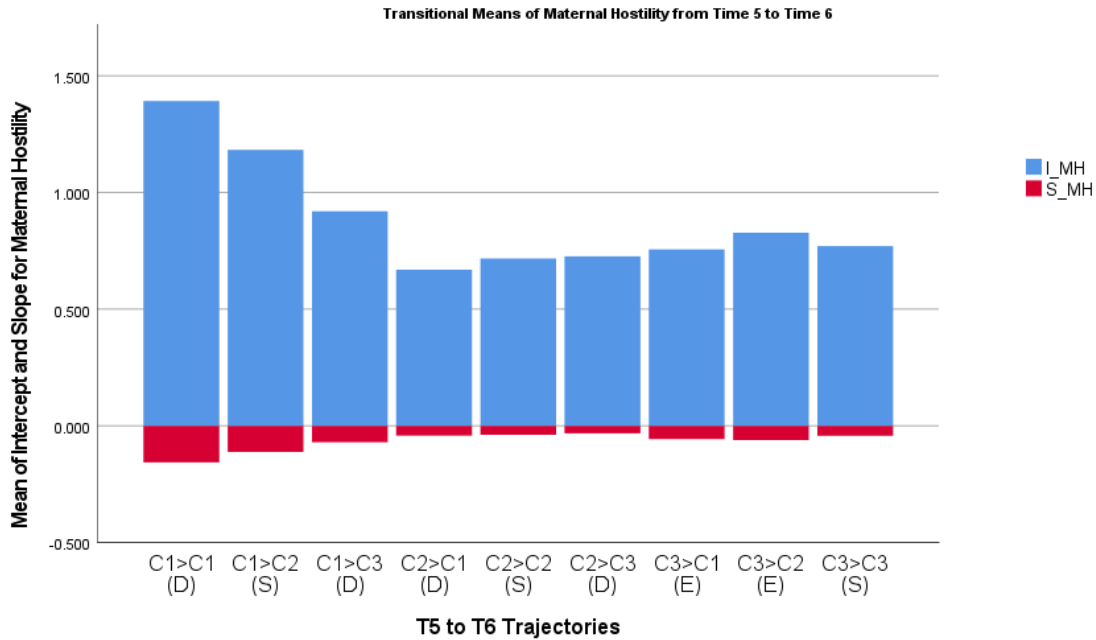
The trajectories which showed the greatest changes in parent-adolescent relationships from T5 to T6 were transitions from the *Arrest & Placement* class (Class 1) to the *No Justice Contact* class (Class 1) and the *Arrest & Placement* class (Class 2). Adolescents who desisted between T5 and T6 (C1 to C1) reported significant decreases in maternal hostility ($b_{0M} = 1.39$, $b_{1M} = -0.16$) (n

= 154, 11.4%). Finally, adolescents who were members of the *Arrest & Placement* class (Class 1) at T5 and remained in the *Arrest & Placement* class (Class 2) at T6 reported significant decreases in paternal warmth ($b_{0F} = 1.63$, $b_{1F} = -0.28$) ($n = 105$, 7.8%).

Figure 23

Mean Growth in Parental Warmth and Hostility from Time 5 to Time 6





Note: The figures show the mean intercept and slope in parental warmth and hostility for mothers and fathers from T5 to T6. The y-axis shows the mean intercept (baseline) level and slope (change) of warmth and hostility. The x-axis shows the transition patterns from T5 to T6. The transitions were described based on escalating (E), decreasing (D), and stable (S) class membership from T5 to T6.

Discussion

The purpose of this study was to examine the longitudinal impacts of justice contact on parent-adolescent relationships. Specifically, this study aimed to explore the effect of adolescent justice involvement on the development of parent-adolescent relationships for justice-involved youth as they transition into adulthood. By using a sample of serious adolescent offenders currently involved in the justice system, I modeled adolescents' formal and informal justice contacts (i.e., picked up by the police, arrested, summons, court appearances, court-monitoring program, and court-ordered placement) using latent class and latent transition analyses to establish patterns of justice involvement for these youth. Furthermore, I utilized these adolescents' perceptions of their relationships with their parents to model linear and non-linear changes in parental warmth and hostility over the six-year study period. Finally, I modeled conditional LTA models with parental warmth and hostility as distal outcomes to understand how adolescent trajectories of justice contact predict changes in these important relationships. It was hypothesized that trajectories of justice contact would follow patterns of desistance and persistence resulting in the termination of justice contact, the continuation of justice contact, or escalation in justice contact over the study period. Additionally, these trajectories would predict differential changes in parent-adolescent relationships that indicate improvements or increases in parental warmth and decreases in parental hostility for adolescents who show patterns of desistance and vice versa for adolescents who have prolonged justice involvement. The results of the study analyses are vast and provide several interesting findings at each stage of the analysis.

The LCAs show that adolescents in the sample experience varying levels of justice contact over six years. At T1, five classes emerged, which indicated varying levels of justice contact. The sample consists of severe offenders within 90 days of a target offense; thus, all adolescents had

some form of justice contact at T1. Thus it was expected that all classes in the first year would show some level of justice involvement. Primarily adolescents' most serious sanction was a court monitoring program at year one. Most of these adolescents had low justice contact with either a monitoring program alone or a court appearance in conjunction with a court monitoring program (Monitoring class and Court & Monitoring class). Approximately 16% of adolescents at T1 were in placement (Court & Placement class and High Consequence class). All of whom appeared in court and were subsequently adjudicated to placement; some of these adolescents, however, were adjudicated to both court monitoring and placement in the same year (High Consequence class).

Of the four classes identified at T2, all but one indicated formal justice sanctioning. Specifically, other than the newly identified *No Justice Contact* class, only one indicated low justice contact (Court & Monitoring). The other two indicated additional arrest, court appearance, and adjudications into court-monitoring programs and placement (High Consequence and Severe Justice Contact). For the remaining time points, three classes were identified. At each of the remaining time points, a *No Justice Contact* class emerged as the most prevalent class. The two additional classes indicated additional arrests, court appearances, and placements (*Severe Justice Contact* class, *High Consequence* class, *Arrest & Placement* class, and *Summons & Placement* class). Based on the literature that suggests that formal justice contact increases the likelihood of further justice contact (Cauffman & Steinberg, 2012; Petitchlerc et al., 2013; Petrosino et al., 2010), it is not shocking that various classes of justice contact emerged at each timepoint. This sample shows similar but lower rates of recidivism at year two (41%) than is discussed in the literature (~50%); however, national estimates of recidivism tend to focus on re-offending for youth and young adults after placement (Alper et al., 2018; Durose et al., 2014; Lussier et al., 2015; Snyder & Sickmund, 2006). In this sample, approximately 85% of the youth were not in placement at time

1; this may be why time two recidivism rates are lower than national estimates. However, after year two, all justice-involved classes included placement, but most adolescents were in *No Justice Contact* classes at each remaining time point.

The next step in the analysis was to model justice contact across time. The results of the LTAs show that most adolescents desist from justice contact after the target offense. Specifically, the LTA shows that the three most likely trajectories of adolescent justice contact are desisting trajectories that indicate no justice contact after time 1. These findings suggest that adolescents are not likely to recidivate over time, which is an encouraging finding. Although results of the LCAs show justice contact to be likely for more than a quarter of adolescents at each timepoint, across time, 23% of adolescents are most likely to remain in the *No Justice Contact* class after T1. In addition, two of the trajectories begin with low justice contact classes (*Monitoring* class and *Court & Monitoring* class). These patterns do not suggest that adolescents do not re-offend or re-engage in delinquent behaviors; instead, it shows that their contact with formal processing is limited.

Furthermore, although the potential of justice contacts *spilling over* from year to year was considered, the data suggest that persisting adolescents are experiencing new justice contacts from year to year. As such, there were no sanction-only classes beyond the baseline adjudication. Adolescents seem to have new justice processing from year to year (i.e., arrests, court appearances, and sanctions); thus, justice contacts from year to year are likely independent and represent new offenses and recidivism.

Finally, to answer the study's research question, I first examined changes in parent-adolescent relationships by modeling parallel-process growth models of mother and father warmth and mother and father hostility, and then the latent trajectories were associated with the

intercept and slopes of parental warmth and hostility. The growth models show that over time adolescents reported high levels of maternal warmth and moderate levels of paternal warmth at baseline, and on average maternal warmth decreases very slightly, while paternal warmth did not change over time. Additionally, mother and father hostility were both low, and on average, they decreased slightly over time. These rates are similar to what was previously found in this sample; minor differences may be a result of averaging warmth and hostility between mothers and fathers (Williams & Steinberg, 2011). These findings support the suggestion that dimensions of parental warmth and hostility are not dependent on each other. Instead, they may be independent constructs that and should be measured as separate dimensions. Thus, warmth and hostility can simultaneously decrease for adolescents. However, although statistically significant, the slopes for parental warmth and hostility are not practically significant. Thus, these changes are not expected to be meaningful in interpreting relationship quality between parents and their adolescents.

Final sets of analysis estimated the means of parental warmth and hostility for the adolescents who were in each trajectory group. To simplify the model estimation process and interpretation, the estimates were made for every two timepoints. Overall, the most prevalent or likely, transitions did not show meaningful changes in parent-adolescent relationships. Thus, as shown in the overall growth model, the average rate of change in warmth and hostility is near zero. As it relates to the study hypotheses, however, the study results showed the opposite of what was expected. Specifically, desisters showed no positive or negative changes in parent-adolescent relationships; and although this fluctuated some, it is the most common pattern throughout all six timepoints. These decreases, although significant, are not practically significant, meaning that they may not be true observable changes in parent-adolescent

relationship quality. Instead, persisters, or those who either maintained a similar level of justice contact or increased in justice contact, reported the greatest increase in parental warmth and decreased parental hostility. These trajectories consistently showed improved relationships for persisters in this sample. To be clear, all persistent youth did not show moderate to large changes in parental warmth and hostility, but of those that did show meaningful changes, they were primarily persistent youth. When persistent patterns were examined more closely, it appeared that classes that included a court-ordered monitoring program showed the greatest improvements in parent-adolescent relationship measures. Although most classes that included a monitoring program also included placement, when Arrest and Placement class appeared at Time 5, which did not include monitoring, it showed a different direction of meaningful change in parent-adolescent relationship quality. Specifically, it was the only persister trajectory that showed meaningful increases in parental hostility, indicating poorer relationship quality; however, this effect was only found at the final time point for adolescents arrested and in placement in the final year.

These findings emphasize the importance of examining differences between groups of adolescents. If we assumed that the rate of change in the overall sample represented justice contact on parent-adolescent relationships, we would miss the nuance in this study's findings which suggests that justice-involved adolescents feel that their relationships with their parents improve as they become more involved in the justice system. Interestingly, this is counter to what most laypeople and even researchers postulate as previous findings suggest that justice involvement decreases parental support and causes strain on the parent-adolescent relationship (Cavanagh et al., 2019; Cavanagh & Cauffman, 2017; Jackson & Hay, 2013; Keijsers et al., 2012; Meldrum et al., 2017; Tapia et al., 2015). However, recent qualitative research, which was

previously outlined, gives some indications of these findings. McCarthy and Adams (2019) found that most parents felt that their relationship with their children improved while incarcerated. Parents reported various reasons why they believe their relationships improved with their justice-involved child. This quantitative study supports the notion that relationships can improve amidst justice involvement. Although it was interpreted as an effect of perception given respite and increased empathy, there may be more to these experiences.

The findings of this study support an alternative interpretation of how justice contact may affect families of justice-involved youth. Family stress theory suggests that stressful situations within a family can disrupt family functioning and interactions. To successfully navigate these stressors, families must find effective ways of coping. The level and type of coping for families are dependent on the meaning and value the family gives to the particular stressor. Successful navigation of these stressors via effective coping improves the family's overall well-being; whereas unsuccessful coping or undervaluing the importance of the stress will result in poorer family relationships and functioning. The original application of this theory in answering the research question suggested that families involved in the justice system may not attribute appropriate meaning to continued justice contact. It was postulated that undervaluing justice contact could be present initially due to family history in the justice system or that it may be gradual desensitization of their child's continued contact with the justice system. Either way, it was thought that families of justice-involved youth would undervalue their child's contact with the justice system that would reinforce offending and recidivating behaviors and impact parent-adolescent relationships negatively and cause crisis within the families. Although this does not appear to be the case for persistent justice-involved youth, family stress theory remains a salient framework to understand the impact of justice involvement on families.

The findings of this study emphasize how family stress theory can guide our understanding of families in this context. Specifically, the results of this study seem to support the Double ABCX model of family stress. This version of family stress theory is supported given the longitudinal nature of this study and its inclusion of stressor *pileup*, which emphasizes the effect of a chronic or persistent stressor (Malia, 2006; McCubbin et al., 1980; Weber, 2011). The concept of stressor *pileup* can be used to interpret the meaningful improvements in parent-adolescent relationships for persistent justice-involved youth. Stress pileup should lead to adverse outcomes for those who accumulate new stressors before they have time to deal with their initial stressors (Malia, 2006). Given this study's results, this concept further supports the notion that parents of persistent youth are coping successfully and timely to their child's justice contacts.

Furthermore, the ABCX model includes an examination of pre-and post-crisis variables that are related to the stressors. This is a meaningful inclusion given that most youth in this sample had prior justice contact, suggesting that parents have some experience with their child's offending behaviors. Parents may have learned to successfully cope with the particular stressor of offending and justice involvement over time; whereas, we do not see negative changes in parent-adolescent relationships for persistent adolescents. Alternatively, the improvements observed with persistent youth could be a result of court-based programming. Particularly, persistent youth who are consistently in the justice system may participate in family-based programming that improve their relationships with parents. Targeted programming may assist families in coping with justice involvement and should be examined in further research to understand holistic experience of justice-involved youth and their families.

In contrast, desisting adolescents have limited or periodic involvement in the justice system, which tend to elicit no meaningful changes in parent-adolescents as the coping process may not be as urgent or consistent for these families. Essentially, parents of justice-involved youth may attribute appropriate meaning and urgency to their child's justice involvement and develop appropriate coping mechanisms to improve their relationship with their child. If we step away from the deficit view of families in the justice system, this study shows that parents are not disconnecting from their justice-involved children; instead, they are becoming more nurturing and supportive toward their child and less hostile and rejecting.

Alternatively, however, these findings suggest that even when parent-adolescent relationships improve, they may not elicit desistance for adolescents. This postulation should be further explored in future research, but these findings show consistent and meaningful increases in warmth and decreases in hostility for adolescents who persist across timepoints; these changes were not seen for adolescents who desist. Thus, it may be that the improvements in parent-adolescent relationships are more strongly associated with recidivism than with abstaining from offending behaviors. This supposition is not an aspect of this study's research question, but it may be an area of exploration for serious adolescent offenders. Previous studies have examined bidirectional effects of delinquency and parent-adolescent relationships, but they do not use a justice-involved sample (Crocetti et al., 2016; Huijsmans et al., 2019; Jagers et al., 2017; Kapetanovic et al., 2019). The findings of this study may be different given the focus on justice involvement, which seems to have a different effect on parents than delinquency alone.

Furthermore, these findings may suggest that consistent parenting may be protective for these adolescents. Perhaps, parents enable justice-involved adolescents who perceive better relationships with their parents or interpret better relationships supporting their behaviors. It is

true that persistent adolescents, in particular, require support from their parents given their difficult circumstances; however, future research should explore ways in which quality parent-adolescent relationships can be positive for these adolescents and not enabling. Additionally, these findings are encouraging for practice, as families of justice-involved youth seem to be connected and may be open and willing to participate in family-based treatment for these persistent adolescents. This may be a way to apply these findings to promote desistance as it does not appear that positive relationships alone promote decreases in offending behaviors.

This study successfully addressed the limitations of previous studies by using a sample of justice-involved youth, modeling longitudinal patterns of recidivism and parent-adolescent relationships, using multiple indicators of recidivism and official justice records. By doing so, I was able to understand justice-involved youth's nuanced experiences of formal and informal justice contact and how those various measures of recidivism influenced changes in parent-adolescent relationship quality over time. This study is the first of its kind and provides a blueprint of how future studies can examine the actual effects of justice contact for adolescents. For example, instead of deciding on one measure of recidivism to understand the effects of the justice system, studies can use person-centered models, such as LCA, to examine specific experiences of justice involvement and the circumstances surrounding those experiences. Additionally, this study examined the longitudinal effects of justice involvement for serious youth offenders. Most studies examine offending trajectories for community samples or first-time offenders. Instead, this study examined justice involvement patterns for adolescents who were adjudicated for serious felony-level charges.

This study is not without limitations. A study of this type had not yet been conducted, so there are several ways this research question could not be answered and several ways this study

could be improved. First, although this study utilized warmth and hostility measures for both mothers and fathers, the measures were limited for fathers. Many of the adolescents in the sample came from a single mother household and did not have father figure data. Although this was accounted for in the analysis, this should be considered while interpreting the father's warmth and hostility results. Additionally, adolescents in the study were able to report on any parental figure at each time point; thus, the parental figures can vary over time for a single adolescent. This is considered as a limitation in the current study because previous research has found that changes in caregivers is related to levels of delinquency. Specifically, as adolescent boys experience more changes in their primary caregiver, they report more delinquent behaviors (Krohn et al., 2009). Examining changes in primary caregivers could strengthen this study, because these changes may contribute to the persistent behaviors as found by Krohn and colleagues. Additionally, it may help explain the improvements in parent adolescent relationships; as transitioning to a new caregiver may contribute to higher, or better, ratings of parent-adolescent relationship quality. A future study should consider changes in parental figures as a confounding factor in this research.

Furthermore, this study did not classify latent classes of adolescent offenders using covariates. Although classification was tested using a binary indicator of prior justice contact, it was decided that the unconditional latent models were most appropriate for exploration in the current study. As a note, however, the distal outcome of parent-adolescent relationship is considered a classification variable in this study. Future studies should examine how classification variables, such as prior justice contact or offense type, may assist in differentiating latent classes and provide a better understanding of longitudinal patterns of justice contact for adolescents.

Finally, the findings of this study should not be overstated. Although they are important to note, they serve as a starting point for this research. As such, this study addressed many methodological limitations from previous studies, a few considerations should be noted and addressed in future research. Specifically, statistical considerations should be made regarding these findings. For instance, understanding whether the greater changes in parent-adolescent relationships is a result of regression to the mean phenomenon would be important. Although I do not believe that it is the case in this study because the changes in parent-adolescent relationships are less like the mean - showing meaningful increases and decreases rather than stable slopes - there is not true way to measure this phenomenon.

Future research should further examine the use of family stress theory to understand the effects of justice involvement on families. This study specifically applied this theory to youth justice involvement, but family stress theory can be applied to any family member involved in the justice system. Notably, future research can apply this theory to examine how children may cope and adjust to their adult parents' involvement in the criminal justice system. Additionally, as mentioned previously, the ABCX model of family stress includes pre-and post-stressor variables. Although the methods of this study examined baseline justice involvement and parent-adolescent relationship qualities, it did not include etiological factors that can help better understand the pre-crisis experiences of these families. Therefore, future studies should examine pre-justice contact family variables that may contribute to adolescent delinquent behaviors or successful coping for these families. Finally, given the many inequalities and disparities that we are aware of in the justice system, future research should examine how demographic factors (e.g., race and economic status) affect justice involvement patterns and how those patterns may impact the families of underserved, under-protected, and vulnerable youth.

Conclusion

Much research has not examined whether delinquent behaviors prompt changes in parent-adolescent relationships; and even fewer studies have examined this effect for adolescents involved in the justice system (Calhoun et al., 2015; Cavanagh & Cauffman, 2017; Gault-Sherman, 2012; Meldrum et al., 2017; Tapia et al., 2015). The few studies that exist show that continued offending behaviors and justice involvement may hinder necessary resources and supports from parents, supports that are needed to encourage desistance from offending (Stern & Smith, 1999; Villeneuve et al., 2019; Weaver, 2019). Framed by family stress theory, this dissertation sought to understand how recidivism may impact the relationship between justice-involved youth and their parents via types of justice contact. Specifically, this project examined the association between adolescent justice contact (e.g., police contact, arrest, court appearance, adjudication, and placement) and change in their relationship with their parents using longitudinal mixture models. This method may be the best approach to assess unobserved heterogeneity of justice system involvement and disentangle the dyadic influences of adolescent recidivism and parent-adolescent relationships over time. This study's findings provide important information regarding how patterns of juvenile recidivism affect parent-adolescent relationships and how particular justice contacts may impact adolescent's connection with their parents. Contrary to this study's original stance, persistent and chronic justice-involved youth experience increases in parental warmth and decreases in hostility, suggesting that parents are becoming more nurturing and supportive to their justice-involved youth. Whether these improvements in relationship quality are beneficial to adolescents may be as nuanced of an answer as this study's findings. It may be that improved relationships are better for some aspects of adolescents' adjustment, but not for offending behaviors. Although complex, these findings can help inform practice and policy for justice-

involved youth and their families by providing evidence for family involvement models and family-based treatment for justice-involved youth (Paik, 2017; Perkins-Dock, 2001; Walker et al., 2015). Ultimately, we should further explore these critical relationships to better understand how to increase parent's involvement and relationships in a way that promotes desistance into adulthood for these high-risk adolescents.

References

- Abeling-Judge, D. (2020). Social bonding experiences facilitating desistance in adolescence. *Crime & Delinquency*, 0011128720940952. <https://doi.org/10.1177/0011128720940952>
- Alper, M., Durose, M. R., & Markman, J. (2018). *2018 Update on Prisoner Recidivism: A 9-year Follow-up Period (2005-2014)* (No. 250975; p. 24). Bureau of Justice Statistics.
- Amani, B., Milburn, N. G., Lopez, S., Young-Brinn, A., Castro, L., Lee, A., & Bath, E. (2018). Families and the juvenile justice system: Considerations for family-based interventions. *Family & Community Health*, 41(1), 55–63. <https://doi.org/10.1097/FCH.0000000000000172>
- Amemiya, J., Vanderhei, S., & Monahan, K. C. (2017). Parsing apart the persisters: Etiological mechanisms and criminal offense patterns of moderate- and high-level persistent offenders. *Development and Psychopathology*, 29(3), 819–835. <https://doi.org/10.1017/S095457941600050X>
- Andresen, M. A., & Felson, M. (2012). Co-offending and the diversification of crime types. *International Journal of Offender Therapy and Comparative Criminology*, 56(5), 811–829. <https://doi.org/10.1177/0306624X11407154>
- Asscher, J. J., Wissink, I. B., Deković, M., Prinzie, P., & Stams, G. J. J. M. (2014). Delinquent behavior, poor relationship quality with parents, and involvement with deviant peers in delinquent and nondelinquent adolescents: Different processes, informant bias, or both? *International Journal of Offender Therapy and Comparative Criminology*, 58(9), 1001–1019. <https://doi.org/10.1177/0306624X13491389>
- Babinski, D. E., Mazzant, J. R., Merrill, B. M., Waschbusch, D. A., Sibley, M. H., Gnagy, E. M., Molina, B. S. G., & Pelham, W. E., Jr. (2020). Lifetime caregiver strain among mothers

- of adolescents and young adults with attention-deficit/hyperactivity disorder. *Journal of Family Psychology*, 34(3), 342–352. <https://doi.org/10.1037/fam0000609>
- Bentler, P. M. (1990). Comparative fit indexes in structural models. *Psychological Bulletin*, 107(2), 238–246. <https://doi.org/10.1037/0033-2909.107.2.238>
- Besemer, S., Loeber, R., Hinshaw, S. P., & Pardini, D. A. (2016). Bidirectional associations between externalizing behavior problems and maladaptive parenting within parent-son dyads across childhood. *Journal of Abnormal Child Psychology*, 44(7), 1387–1398. <https://doi.org/10.1007/s10802-015-0124-6>
- Brame, R., Mulvey, E. P., Schubert, C. A., & Piquero, A. R. (2018). Recidivism in a sample of serious adolescent offenders. *Journal of Quantitative Criminology*, 34(1), 167–187. <https://doi.org/10.1007/s10940-016-9329-2>
- Brunton-Smith, I., & McCarthy, D. J. (2017). The effects of prisoner attachment to family on re-entry outcomes: a longitudinal assessment. *The British Journal of Criminology*, 57(2), 463–482. <https://doi.org/10.1093/bjc/azv129>
- Burke, J. D., Mulvey, E. P., Schubert, C. A., & Garbin, S. R. (2014). The challenge and opportunity of parental involvement in juvenile justice services. *Children and Youth Services Review*, 39, 39–47. <https://doi.org/10.1016/j.childyouth.2014.01.007>
- Calhoun, G. B., Glaser, B. A., Peiper, J., & Carr, B. M. (2015). Parental monitoring and perceptions related to juvenile offenders who fight and carry weapons. *Journal of Family Violence*, 30(5), 643–650. <https://doi.org/10.1007/s10896-015-9682-1>
- Calley, N. G. (2012). Juvenile offender recidivism: An examination of risk factors. *Journal of Child Sexual Abuse*, 21(3), 257–272. <https://doi.org/10.1080/10538712.2012.668266>

- Cauffman, E., & Steinberg, L. (2012). Emerging findings from research on adolescent development and juvenile justice. *Victims & Offenders*, 7(4), 428–449.
<https://doi.org/10.1080/15564886.2012.713901>
- Cavanagh, C., & Cauffman, E. (2017). The longitudinal association of relationship quality and reoffending among first-time juvenile offenders and their mothers. *Journal of Youth and Adolescence*, 46(7), 1533–1546. <https://doi.org/10.1007/s10964-017-0679-3>
- Cavanagh, C., Mahler, A., & Cauffman, E. (2019). How does juvenile offending relate to mothers' aspirations and expectations for their sons? *Journal of Research on Adolescence*, 29(2), 493–507. <https://doi.org/10.1111/jora.12400>
- Conduct Problems Prevention Research Group, Miller, S., Malone, P. S., & Dodge, K. A. (2010). Developmental trajectories of boys' and girls' delinquency: Sex differences and links to later adolescent outcomes. *Journal of Abnormal Child Psychology*, 38(7), 1021–1032.
<https://doi.org/10.1007/s10802-010-9430-1>
- Cook, A. K., & Gordon, J. A. (2012). Get him out of my house: Parental competencies of juvenile probationers. *Youth Violence and Juvenile Justice*, 10(2), 205–223.
<https://doi.org/10.1177/1541204011418352>
- Cottle, C. C., Lee, R. J., & Heilbrun, K. (2001). The prediction of criminal recidivism in juveniles: A meta-analysis. *Criminal Justice and Behavior*, 28(3), 367–394.
<https://doi.org/10.1177/0093854801028003005>
- Crocetti, E., Moscatelli, S., Van der Graaff, J., Keijsers, L., van Lier, P., Koot, H. M., Rubini, M., Meeus, W., & Branje, S. (2016). The dynamic interplay among maternal empathy, quality of mother-adolescent relationship, and adolescent antisocial behaviors: New

- insights from a six-wave longitudinal multi-informant study. *PLoS ONE*, 11(3).
<https://doi.org/10.1371/journal.pone.0150009>
- Cuevas, C., Wolff, K. T., & Baglivio, M. T. (2019). Dynamic risk factors and timing of recidivism for youth in residential placement. *Journal of Criminal Justice*, 60, 154–166.
<https://doi.org/10.1016/j.jcrimjus.2018.10.003>
- De Goede, I. H. A., Branje, S. J. T., & Meeus, W. H. J. (2009). Developmental changes in adolescents' perceptions of relationships with their parents. *Journal of Youth and Adolescence*, 38(1), 75–88. <https://doi.org/10.1007/s10964-008-9286-7>
- Development Service Group, Inc. (2017). *Juvenile Reentry*. Office of Juvenile Justice and Delinquency Prevention. <https://www.ojjdp.gov/mpg/litreviews/Aftercare.pdf>
- Dishion, T. J., & Patterson, G. R. (2015). The development and ecology of antisocial behavior in children and adolescents. *Developmental Psychopathology* (pp. 503–541). Wiley-Blackwell. <https://doi.org/10.1002/9780470939406.ch13>
- Dmitrieva, J., Monahan, K. C., Cauffman, E., & Steinberg, L. (2012). Arrested development: The effects of incarceration on the development of psychosocial maturity. *Development and Psychopathology*, 24(3), 1073–1090. <https://doi.org/10.1017/S0954579412000545>
- Dunkley, L., & Gardner, A. (2020). *Parental Behavior and Juvenile Offending: How Paternal and Maternal Behavior Influences Desistance*. /paper/Parental-Behavior-and-Juvenile-Offending%3A-How-and-Dunkley-Gardner/0cedb94d7aa57c4697b8c1561b1f8e205964ede0
- Durose, M. R., Cooper, A. D., & Snyder, H. N. (2014). *Recidivism of Prisoners Released in 30 States in 2005: Patterns from 2005 to 2010* (p. 31).

- Eggleston, E. P., Laub, J. H., & Sampson, R. J. (2004). Methodological sensitivities to latent class analysis of long-term criminal trajectories. *Journal of Quantitative Criminology*, 20(1), 1–26. <https://doi.org/10.1023/B:JOQC.0000016696.02763.ce>
- Evans, M. M., Frissen, I., & Wensley, A. K. P. (2018). Organisational information and knowledge sharing: uncovering mediating effects of perceived trustworthiness using the process approach. *Journal of Information & Knowledge Management*, 17(1), 1850001. <https://doi.org/10.1142/S0219649218500016>
- Farrington, D. P. (2015). Prospective longitudinal research on the development of offending. *Australian & New Zealand Journal of Criminology*, 48(3), 314–335. <https://doi.org/10.1177/0004865815590461>
- Farrington, D. P., Snyder, H. N., & Finnegan, T. A. (1988). Specialization in juvenile court careers. *Criminology*, 26(3), 461–488. <https://doi.org/10.1111/j.1745-9125.1988.tb00851.x>
- Flanagan, I. M. L., Auty, K. M., & Farrington, D. P. (2019). Parental supervision and later offending: A systematic review of longitudinal studies. *Aggression and Violent Behavior*, 47, 215–229. <https://doi.org/10.1016/j.avb.2019.06.003>
- Forsbrey, D., Frabutt, J. M., & Smith, H. L. (2005). Social isolation among caregivers of court-involved youths: a qualitative investigation. *Journal of Addictions & Offender Counseling*, 25(2), 97–113. <https://doi.org/10.1002/j.2161-1874.2005.tb00196.x>
- Gatti, U., Grattagliano, I., & Rocca, G. (2019). Evidence-based psychosocial treatments of conduct problems in children and adolescents: An overview. *Psychiatry, Psychology and Law*, 26(2), 171–193. <https://doi.org/10.1080/13218719.2018.1485523>

- Gault-Sherman, M. (2012). It's a two-way street: the bidirectional relationship between parenting and delinquency. *Journal of Youth and Adolescence*, 41(2), 121–145.
<https://doi.org/10.1007/s10964-011-9656-4>
- Gonzal, T. (2017). Youth incarceration, health, and length of stay. *Fordham Urban Law Journal*, 45(1), 45–82.
- Grunwald, H. E., Lockwood, B., Harris, P. W., & Mennis, J. (2010). Influences of neighborhood context, individual history and parenting behavior on recidivism among juvenile offenders. *Journal of Youth and Adolescence*, 39(9), 1067–1079.
<https://doi.org/10.1007/s10964-010-9518-5>
- Gueta, K. (2018). The experience of prisoners' parents: a meta-synthesis of qualitative studies. *Family Process*, 57(3), 767–782. <https://doi.org/10.1111/famp.12312>
- Hallquist, M. N., & Wiley, J. F. (2018). MplusAutomation: An r package for facilitating large-scale latent variable analyses in mplus. *Structural Equation Modeling: A Multidisciplinary Journal*, 25(4), 621–638.
<https://doi.org/10.1080/10705511.2017.1402334>
- Harris, C., Vazsonyi, A. T., & Bolland, J. M. (2017). Bidirectional relationships between parenting processes and deviance in a sample of inner-city african american youth. *Journal of Research on Adolescence*, 27(1), 201–213. <https://doi.org/10.1111/jora.12267>
- Hirschfield, P. (2004). *Impact of Juvenile Justice Involvement on Educational Outcomes*. 415.
- Hjalmarsson, R. (2008). Criminal justice involvement and high school completion. *Journal of Urban Economics*, 63(2), 613–630. <https://doi.org/10.1016/j.jue.2007.04.003>
- Hockenberry, S., & Puzzanchera, C. (2020). *Juvenile Court Statistics, 2018*. 114.

- Hoeve, M., Dubas, J. S., Eichelsheim, V. I., van der Laan, P. H., Smeenk, W., & Gerris, J. R. M. (2009). The relationship between parenting and delinquency: A meta-analysis. *Journal of Abnormal Child Psychology*, 37(6), 749–775. <https://doi.org/10.1007/s10802-009-9310-8>
- Huijsmans, T., Nivette, A. E., Eisner, M., & Ribeaud, D. (2019). Social influences, peer delinquency, and low self-control: An examination of time-varying and reciprocal effects on delinquency over adolescence. *European Journal of Criminology*, 1477370819838720. <https://doi.org/10.1177/1477370819838720>
- Huizinga, D., Schumann, K., Ehret, B., & Elliott, A. (2003). *The Effect of Juvenile Justice System Processing on Subsequent Delinquent and Criminal Behavior: A Cross-National Study: (513142006-001)* [Data set]. American Psychological Association. <https://doi.org/10.1037/e513142006-001>
- Jackson, D. B., & Hay, C. (2013). The conditional impact of official labeling on subsequent delinquency: Considering the attenuating role of family attachment. *Journal of Research in Crime and Delinquency*, 50(2), 300–322. <https://doi.org/10.1177/0022427812444931>
- Jagers, J. W., Tomek, S., Hooper, L. M., Malone, M. T., & Church II, W. T. (2017). Delinquency, anger, and parental warmth: An analysis of youth who are minorities and living in extreme poverty. *Child Welfare*, 95(6), 29–61.
- Jennings, W. G., & Reingle, J. M. (2012). On the number and shape of developmental/life-course violence, aggression, and delinquency trajectories: A state-of-the-art review. *Journal of Criminal Justice*, 40(6), 472–489. <https://doi.org/10.1016/j.jcrimjus.2012.07.001>
- Kapetanovic, S., Boele, S., & Skoog, T. (2019). Parent-adolescent communication and adolescent delinquency: Unraveling within-family processes from between-family

- differences. *Journal of Youth and Adolescence*, 48(9), 1707–1723.
<https://doi.org/10.1007/s10964-019-01043-w>
- Keijsers, L., Loeber, R., Branje, S., & Meeus, W. (2011). Bidirectional links and concurrent development of parent-child relationships and boys' offending behavior. *Journal of Abnormal Psychology*, 120(4), 878–889. <https://doi.org/10.1037/a0024588>
- Keijsers, L., Loeber, R., Branje, S., & Meeus, W. (2012). Parent-child relationships of boys in different offending trajectories: A developmental perspective. *Journal of Child Psychology and Psychiatry*, 53(12), 1222–1232. <https://doi.org/10.1111/j.1469-7610.2012.02585.x>
- Keiley, M. K. (2007). Multiple-family group intervention for incarcerated adolescents and their families: A pilot project. *Journal of Marital and Family Therapy*, 33(1), 106–124.
<https://doi.org/10.1111/j.1752-0606.2007.00009.x>
- Khodabakhshi Koolae, A., Rahmatizadeh, M., Shaghelanilor, H., & Pocock, L. (2015). Comparison of family power structure and identity style between delinquent and non-delinquent juveniles. *Iranian Journal of Psychiatry and Behavioral Sciences*, 9(4).
<https://doi.org/10.17795/ijpbs-1446>
- Kõiv, K. (2014). Delinquent and nondelinquent male adolescents' conceptions of their intimate relationships with parents. *The European Journal of Social & Behavioural Sciences*, 9(2), 1383–1392. <https://doi.org/10.15405/ejsbs.122>
- Krohn, M. D., Hall, G. P., & Lizotte, A. J. (2009). Family transitions and later delinquency and drug use. *Journal of Youth and Adolescence*, 38(3), 466–480.
<https://doi.org/10.1007/s10964-008-9366-8>

- Kurlychek, M. C., & Johnson, B. D. (2010). Juvenility and punishment: Sentencing juveniles in adult criminal court*. *Criminology*, 48(3), 725–758. <https://doi.org/10.1111/j.1745-9125.2010.00200.x>
- Kuthoos, H. M. A., Endut, N., Selamat, N. H., Hashim, I. H. M., & Azmawati, A. A. (2016). *Juveniles and Their Parents: Narratives of Male & Female Adolescents in Rehabilitation Centres*. 7.
- Lane, J., Lanza-Kaduce, L., Frazier, C. E., & Bishop, D. M. (2002). Adult versus juvenile sanctions: voices of incarcerated youths. *Crime & Delinquency*, 48(3), 431–455. <https://doi.org/10.1177/0011128702048003004>
- Liberman, A. M., Kirk, D. S., & Kim, K. (2014). Labeling effects of first juvenile arrests: secondary deviance and secondary sanctioning. *Criminology*, 52(3), 345–370. <https://doi.org/10.1111/1745-9125.12039>
- Loeber, R., Drinkwater, M., Yin, Y., Anderson, S. J., Schmidt, L. C., & Crawford, A. (2000). Stability of family interaction from ages 6 to 18. *Journal of Abnormal Child Psychology*, 28(4), 353–369. <https://doi.org/10.1023/A:1005169026208>
- Loeber, R., Farrington, D. P., Hipwell, A. E., Stepp, S. D., Pardini, D., & Ahonen, L. (2015). Constancy and change in the prevalence and frequency of offending when based on longitudinal self-reports or official records: Comparisons by gender, race, and crime type. *Journal of Developmental and Life-Course Criminology*, 1(2), 150–168. <https://doi.org/10.1007/s40865-015-0010-5>
- Lopes, G., Krohn, M. D., Lizotte, A. J., Schmidt, N. M., Vásquez, B. E., & Bernburg, J. G. (2012). Labeling and cumulative disadvantage: the impact of formal police intervention

- on life chances and crime during emerging adulthood. *Crime & Delinquency*, 58(3), 456–488. <https://doi.org/10.1177/0011128712436414>
- Lussier, P., McCuish, E., & Corrado, R. R. (2015). The adolescence–adulthood transition and desistance from crime: Examining the underlying structure of desistance. *Journal of Developmental and Life-Course Criminology*, 1(2), 87–117. <https://doi.org/10.1007/s40865-015-0007-0>
- MacDonald, J. M., Haviland, A., Ramchand, R., Morral, A. R., & Piquero, A. R. (2014). Linking specialization and seriousness in criminal careers. *Advances in Life Course Research*, 20, 43–55. <https://doi.org/10.1016/j.alcr.2014.01.006>
- Malia, J. A. (2006). Basic concepts and models of family stress. *Stress, Trauma, and Crisis*, 9(3–4), 141–160. <https://doi.org/10.1080/15434610600853717>
- Mallett, C. A., Fukushima, M., Stoddard-Dare, P., & Quinn, L. (2013). Factors related to recidivism for youthful offenders. *Criminal Justice Studies*, 26(1), 84–98. <https://doi.org/10.1080/1478601X.2012.705539>
- Massoglia, M. (2006). Desistance or displacement? The changing patterns of offending from adolescence to young adulthood. *Journal of Quantitative Criminology*, 22(3), 215–239. <https://doi.org/10.1007/s10940-006-9009-8>
- Mazerolle, P., Brame, R., Paternoster, R., Piquero, A., & Dean, C. (2000). Onset age, persistence, and offending versatility: comparisons across gender*. *Criminology*, 38(4), 1143–1172. <https://doi.org/10.1111/j.1745-9125.2000.tb01417.x>
- McCarthy, D., & Adams, M. (2019a). “Yes, I can still parent. Until I die, he will always be my son”: Parental responsibility in the wake of child incarceration. *Punishment & Society*, 21(1), 89–106. <https://doi.org/10.1177/1462474517745892>

- McCarthy, D., & Adams, M. (2019b). Can family–prisoner relationships ever improve during incarceration? Examining the primary caregivers of incarcerated young men. *The British Journal of Criminology*, 59(2), 378–395. <https://doi.org/10.1093/bjc/azy039>
- McCarthy, D., & Adams, M. (2019c). Assessing the deployment of informal support networks for mothers of incarcerated young men. *European Journal of Criminology*, 1477370819884253. <https://doi.org/10.1177/1477370819884253>
- McCubbin, H. I., Joy, C. B., Cauble, A. E., Comeau, J. K., Patterson, J. M., & Needle, R. H. (1980). Family stress and coping: A decade review. *Journal of Marriage and Family*, 42(4), 855–871. <https://doi.org/10.2307/351829>
- McCuish, E., Lussier, P., & Raymond Corrado. (2018). Incarceration as a turning point? The impact of custody experiences and identity change on community reentry. *Journal of Developmental and Life-Course Criminology*, 4(4), 427–448. <https://doi.org/10.1007/s40865-018-0088-7>
- McGloin, J. M., Sullivan, C. J., & Piquero, A. R. (2009). Aggregating to versatility? Transitions among offender types in the short term. *The British Journal of Criminology*, 49(2), 243–264. <https://doi.org/10.1093/bjc/azn072>
- Meldrum, R. C., Encalada, T. M., & Connolly, G. M. (2017). At the end of their rope: A research note on the influence of parental low self-control and juvenile delinquency on parental exasperation. *Youth Violence and Juvenile Justice*, 15(3), 314–324. <https://doi.org/10.1177/1541204016635258>
- Monahan, K. C., Goldweber, A., & Cauffman, E. (2011). The effects of visitation on incarcerated juvenile offenders: How contact with the outside impacts adjustment on the

- inside. *Law and Human Behavior*, 35(2), 143–151. <https://doi.org/10.1007/s10979-010-9220-x>
- Monahan, K. C., & Piquero, A. R. (2009). Investigating the longitudinal relation between offending frequency and offending variety. *Criminal Justice and Behavior*, 36(7), 653–673. <https://doi.org/10.1177/0093854809335527>
- Mowen, T. J., & Visser, C. A. (2016). Changing the ties that bind. *Criminology & Public Policy*, 15(2), 503–528. <https://doi.org/10.1111/1745-9133.12207>
- Mulvey, E. P., Steinberg, L., Fagan, J., Cauffman, E., Piquero, A. R., Chassin, L., Knight, G. P., Brame, R., Schubert, C. A., Hecker, T., & Losoya, S. H. (2004). Theory and research on desistance from antisocial activity among serious adolescent offenders. *Youth Violence and Juvenile Justice*, 2(3), 213–236. <https://doi.org/10.1177/1541204004265864>
- Mulvey, E. P., Steinberg, L., Piquero, A. R., Besana, M., Fagan, J., Schubert, C., & Cauffman, E. (2010). Trajectories of desistance and continuity in antisocial behavior following court adjudication among serious adolescent offenders. *Development and Psychopathology*, 22(2), 453–475. <https://doi.org/10.1017/S0954579410000179>
- Muthén, B., & Asparouhov, T. (2020). Latent transition analysis with random intercepts (RI-LTA). *Psychological Methods*.
- Nylund, K.L., Asparouhov, T., & Muthén, B. (2007). Deciding on the number of classes in latent class analysis and growth mixture modeling. A Monte Carlo simulation study. *Structural Equation Modeling*, 14, 535-569.
- Paik, L. (2017). Good parents, bad parents: Rethinking family involvement in juvenile justice. *Theoretical Criminology*, 21(3), 307–323. <https://doi.org/10.1177/1362480616649430>

- Patterson, G. R., DeBaryshe, B. D., & Ramsey, E. (1990). A developmental perspective on antisocial behavior. *American Psychologist*, 44, 329–335.
<https://doi.org/10.4324/9781315094908-2>
- Pennington, L. (2015). A case study approach to procedural justice: parents' views in two juvenile delinquency courts in the united states. *The British Journal of Criminology*, 55(5), 901–920. <https://doi.org/10.1093/bjc/azu109>
- Pepler, D. J., Rubin, K. H., & Centre, E. C. and F. (1991). *The Development and Treatment of Childhood Aggression*. Psychology Press.
- Perkins-Dock, R. E. (2001). Family interventions with incarcerated youth: A review of the literature. *International Journal of Offender Therapy and Comparative Criminology*, 45(5), 606–625. <https://doi.org/10.1177/0306624X01455006>
- Peterson-Badali, M., & Broeking, J. (2010). Parents' involvement in the youth justice system: Rhetoric and reality. *Canadian Journal of Criminology and Criminal Justice*, 52(1), 1–27. <https://doi.org/10.3138/cjccj.52.1.1>
- Petitclerc, A., Gatti, U., Vitaro, F., & Tremblay, R. E. (2013). Effects of juvenile court exposure on crime in young adulthood. *Journal of Child Psychology and Psychiatry*, 54(3), 291–297. <https://doi.org/10.1111/j.1469-7610.2012.02616.x>
- Petrosino, A., Turpin-Petrosino, C., & Guckenburg, S. (2010). Formal system processing of juveniles: Effects on delinquency. *Campbell Systematic Reviews*, 6(1), 1–88.
<https://doi.org/10.4073/csr.2010.1>
- Piquero, A. R. (2013). *Somewhere between persistence and desistance: The intermittency of criminal careers*. After Crime and Punishment; Willan.
<https://doi.org/10.4324/9781843924203-13>

- Ramaswamy, V., Desarbo, W. S., Reibstein, D. J., & Robinson, W. T. (1993). An empirical pooling approach for estimating marketing mix elasticities with PIMS data. *Marketing Science*, 12(1), 103–124. <https://doi.org/10.1287/mksc.12.1.103>
- Recidivism Is a Core Criminal Justice Concern*. (2008). National Institute of Justice. <https://nij.ojp.gov/topics/articles/recidivism-core-criminal-justice-concern>
- Redding, R. E. (2003). The effects of adjudicating and sentencing juveniles as adults: research and policy implications. *Youth Violence and Juvenile Justice*, 1(2), 128–155. <https://doi.org/10.1177/1541204002250875>
- Rocque, M., Beckley, A. L., & Piquero, A. R. (2019). Psychosocial maturation, race, and desistance from crime. *Journal of Youth and Adolescence*, 48(7), 1403–1417. <https://doi.org/10.1007/s10964-019-01029-8>
- Ryan, J. P., Williams, A. B., & Courtney, M. E. (2013). Adolescent neglect, juvenile delinquency and the risk of recidivism. *Journal of Youth and Adolescence*, 42(3), 454–465. <https://doi.org/10.1007/s10964-013-9906-8>
- Saunders, B. J., Lansdell, G., & Frederick, J. (2020). Understanding children’s court processes and decisions: Perceptions of children and their families. *Youth Justice*, 20(3), 272–292. <https://doi.org/10.1177/1473225419890691>
- Schubert, C. A., Mulvey, E. P., Loughran, T. A., Fagan, J., Chassin, L. A., Piquero, A. R., Losoya, S. H., Steinberg, L., & Cauffman, E. (2010). Predicting outcomes for youth transferred to adult court. *Law and Human Behavior*, 34(6), 460–475. <https://doi.org/10.1007/s10979-009-9209-5>

- Schubert, C. A., Mulvey, E. P., & Pitzer, L. (2016). Differentiating serious adolescent offenders who exit the justice system from those who do not. *Criminology*, 54(1), 56–85.
<https://doi.org/10.1111/1745-9125.12098>
- Schwalbe, C. S., Gearing, R. E., MacKenzie, M. J., Brewer, K. B., & Ibrahim, R. (2012). A meta-analysis of experimental studies of diversion programs for juvenile offenders. *Clinical Psychology Review*, 32(1), 26–33. <https://doi.org/10.1016/j.cpr.2011.10.002>
- Simons, I., Mulder, E., Breuk, R., Mos, K., Rigter, H., van Domburgh, L., & Vermeiren, R. (2017). A program of family-centered care for adolescents in short-term stay groups of juvenile justice institutions. *Child and Adolescent Psychiatry and Mental Health*, 11(1), 61. <https://doi.org/10.1186/s13034-017-0203-2>
- Simons, I., Vaart, W. van der, Vermeiren, R., Rigter, H., Breuk, R., Domburgh, L. van, & Mulder, E. (2019). Parental participation in juvenile justice institutions: parents' perspectives on facilitating and hindering factors. *International Journal of Forensic Mental Health*, 18(2), 124–137. <https://doi.org/10.1080/14999013.2018.1526231>
- Smith, D. J. (2005). The effectiveness of the juvenile justice system. *Criminal Justice*, 5(2), 181–195. <https://doi.org/10.1177/1466802505053497>
- Snyder, H. N., & Sickmund, M. (2006). Juvenile offenders and victims: 2006 national report. In *Office of Juvenile Justice and Delinquency Prevention*. Office of Juvenile Justice and Delinquency Prevention. <https://eric.ed.gov/?id=ed495786>
- Steiger, J. H. (1990). Structural model evaluation and modification: An interval estimation approach. *Multivariate Behavioral Research*, 25(2), 173–180.
https://doi.org/10.1207/s15327906mbr2502_4

- Steinberg, L. (2009). Adolescent development and juvenile justice. *Annual Review of Clinical Psychology*, 5(1), 459–485. <https://doi.org/10.1146/annurev.clinpsy.032408.153603>
- Steinberg, L., Chung, H. L., & Little, M. (2004). Reentry of young offenders from the justice system: A developmental perspective. *Youth Violence and Juvenile Justice*, 2(1), 21–38. <https://doi.org/10.1177/1541204003260045>
- Stern, S. B., & Smith, C. A. (1999). Reciprocal relationships between antisocial behavior and parenting: Implications for delinquency intervention. *Families in Society*, 80(2), 169–169. aph.
- Stewart, E. A., Simons, R. L., Conger, R. D., & Scaramella, L. V. (2002). Beyond the interactional relationship between delinquency and parenting practices: The contribution of legal sanctions. *Journal of Research in Crime and Delinquency*, 39(1), 36–59. <https://doi.org/10.1177/002242780203900102>
- Stoolmiller, M., & Blechman, E. A. (2005). Substance use is a robust predictor of adolescent recidivism. *Criminal Justice and Behavior*, 32(3), 302–328. <https://doi.org/10.1177/0093854804274372>
- Sturges, J. E., & Hanrahan, K. J. (2011). The effects of children’s criminality on mothers of offenders. *Journal of Family Issues*, 32(8), 985–1006. <https://doi.org/10.1177/0192513X10396805>
- Sweeten, G. (2006). Who will graduate? Disruption of high school education by arrest and court involvement. *Justice Quarterly*, 23(4), 462–480. <https://doi.org/10.1080/07418820600985313>

- Tapia, M., Alarid, L. F., & II, D. T. H. (2015). Youthful arrest and parental support: Gendered effects in straining the parent–child relationship. *Deviant Behavior*, 36(8), 674–690. <https://doi.org/10.1080/01639625.2014.951584>
- Tucker, L. R., & Lewis, C. (1973). A reliability coefficient for maximum likelihood factor analysis. *Psychometrika*, 38(1), 1–10. <https://doi.org/10.1007/BF02291170>
- Van Hazebroek, B. C. M., Blokland, A. A. J., Wermink, H. T., De Keijser, J. W., Popma, A., & Van Domburgh, L. (2019). Delinquent development among early-onset offenders: Identifying and characterizing trajectories based on frequency across types of offending. *Criminal Justice and Behavior*, 46(11), 1542–1565. <https://doi.org/10.1177/0093854819876306>
- Varma, K. N. (2007). Parental involvement in youth court. *Canadian Journal of Criminology & Criminal Justice*, 49(2), 231–260. <https://doi.org/10.3138/9565-1823-66UT-507K>
- Vidal, S., & Woolard, J. (2016). Parents’ perceptions of juvenile probation: Relationship and interaction with juvenile probation officers, parent strategies, and youth’s compliance on probation. *Children and Youth Services Review*, 66, 1–8. <https://doi.org/10.1016/j.childyouth.2016.04.019>
- Villeneuve, M.-P., F.-Dufour, I., & Turcotte, D. (2019). The transition towards desistance from crime among serious juvenile offenders: A scoping review. *Australian Social Work*, 72(4), 473–489. <https://doi.org/10.1080/0312407X.2019.1586967>
- Voisin, D. R., Elsaesser, C., Kim, D. H., Patel, S., & Cantara, A. (2016). The relationship between family stress and behavioral health among African American adolescents. *Journal of Child and Family Studies*, 25(7), 2201–2210. <https://doi.org/10.1007/s10826-016-0402-0>

- Voisin, D. R., Kim, D. H., Bassett, S. M., & Marotta, P. L. (2020). Pathways linking family stress to youth delinquency and substance use: Exploring the mediating roles of self-efficacy and future orientation. *Journal of Health Psychology, 25*(2), 139–151.
<https://doi.org/10.1177/1359105318763992>
- Walker, S. C., S. Bishop, A., D. Pullmann, M., & Bauer, G. (2015). A research framework for understanding the practical impact of family involvement in the juvenile justice system: The juvenile justice family involvement model. *American Journal of Community Psychology, 56*(3), 408–421. <https://doi.org/10.1007/s10464-015-9755-6>
- Weaver, B. (2019). Understanding desistance: A critical review of theories of desistance. *Psychology, Crime & Law, 25*(6), 641–658.
<https://doi.org/10.1080/1068316X.2018.1560444>
- Weber, J. G. (2011). The ABCX formula and the double ABCX model. *Individual and Family Stress and Crises, 82*–96.
- Williams, L. R., & Steinberg, L. (2011). Reciprocal relations between parenting and adjustment in a sample of juvenile offenders. *Child Development, 82*(2), 633–645.
<https://doi.org/10.1111/j.1467-8624.2010.01523.x>
- Wojciechowski, T. (2020). The relevance of the dual systems model of self-control for age-related deceleration in offending variety among juvenile offenders. *Journal of Criminal Justice, 70*, 101716. <https://doi.org/10.1016/j.jcrimjus.2020.101716>
- Zang—*U.S. Age Boundaries of Delinquency 2016*. (2018). Retrieved June 11, 2020, from <http://www.ncjj.org/Publication/U.S.-Age-Boundaries-of-Delinquency-2016.aspx>

Appendix

Table 2

Principal Components Analysis for Maternal Warmth & Hostility

Items	Component 1	Component 2	Component 3
	Warmth	Physical Hostility	Emotional Hostility
Often mom help you do something important	.65	.34	.02
Often mom get angry at you	-.45	.38	.46
Often mom let you know she cares	.70	.43	.07
Often mom listen your point of view	.74	.26	-.03
Often mom got so mad she broke/threw things	-.51	.39	-.08
Often mom shout because she was mad at you	-.50	.43	.35
Often mom threat to hurt you physically	-.55	.38	-.23
Often mom act supportive toward you	.67	.35	.02
Often mom act loving toward you	.68	.42	.07
Often mom criticize your ideas	-.52	.18	.32
Often mom have good laugh with you	.59	.37	.06
Often mom push/grab/hit/shove you	-.50	.50	-.33
Often mom argue with you when disagreed	-.46	.32	.50
Often mom slap or hit you with her hands	-.45	.54	-.30
Often mom let know appreciates you/your ideas	.67	.42	.01
Often mom strike you with object	-.51	.44	-.44
Often mom boss you around	-.46	.24	.34
Often mom throw things at you	-.50	.44	-.30
Often mom say she loves you	.68	.46	.10
Often mom insult swear at you	-.59	.35	.11
Often mom understand way you feel	.70	.34	-.06
Reliability			.78

Table 3*Principal Components Analysis for Paternal Warmth & Hostility*

Items	Component 1 Warmth	Component 2 Physical Hostility	Component 3 Emotional Hostility
Often dad help you do something important	.70	0.36	0.04
Often dad get angry at you	-.60	0.38	0.39
Often dad let you know she cares	.74	0.49	0.09
Often dad got so mad she broke/threw things	-.41	0.46	-0.24
Often dad listen your point of view	.78	0.34	-0.01
Often dad shout because she was mad at you	-.55	0.52	0.35
Often dad act supportive toward you	.77	0.40	0.04
Often dad threat to hurt you physically	-.55	0.49	-0.12
Often dad criticize your ideas	-.49	0.34	0.19*
Often dad act loving toward you	.75	0.45	0.07
Often dad push/grab/hit/shove you	-.54	0.55	-0.22
Often dad have good laugh with you	.66	0.37	0.08
Often dad argue with you when disagreed	-.52	.41	.44
Often dad slap or hit you with her hands	-.44	.56	-.28
Often dad let know appreciates you/your ideas	.77	.41	-.01
Often dad strike you with object	-.38	.51	-.50
Often dad boss you around	-.53	.42	.28*
Often dad throw things at you	-.31	.44	-.51
Often dad say she loves you	.70	.50	.09
Often dad insult swear at you	-.61	.41	.21
Often dad understand way you feel	.77	.35	-.02
Reliability			.68

Table 4*Goodness-of-fit Statistics for Latent Class Models of Justice Contact at Time 1*

Time 1 Class	AIC	BIC	ABIC	Entropy	VLMR	LMR	LRT	min N	max N	min Prob	max Prob
2	8267.80	8335.54	8294.24	0.59	0.00	0.00	0.00	489	865	0.85	0.91
3	8172.26	8276.47	8212.94	0.67	0.00	0.00	0.00	126	752	0.74	0.89
4	8138.45	8279.14	8193.37	0.71	0.00	0.00	0.00	104	697	0.66	0.87
5	8125.82	8302.99	8194.99	0.69	0.03	0.03	0.00	90	469	0.72	0.91

Table 5*Goodness-of-fit Statistics for Latent Class Models of Justice Contact at Time 2*

Time 2 Class	AIC	BIC	ABIC	Entropy	VLMR	LMR	LRT	min N	max N	min Prob	max Prob
2	7909.02	7976.76	7935.47	0.76	0.00	0.00	0.00	582	772	0.93	0.94
3	7829.20	7933.42	7869.89	0.68	0.00	0.00	0.00	223	773	0.61	0.98
4	7793.98	7934.67	7848.90	0.78	0.00	0.00	0.00	119	798	0.65	0.99
5	7794.53	7971.70	7863.70	0.75	0.68	0.69	0.15	26	796	0.52	0.99

Table 6*Goodness-of-fit Statistics for Latent Class Models of Justice Contact at Time 3*

Time 3 Class	AIC	BIC	ABIC	Entropy	VLMR	LMR	LRT	min N	max N	min Prob	max Prob
2	7569.11	7636.85	7595.56	0.78	0.00	0.00	0.00	549	805	0.93	0.95
3	7517.36	7621.58	7558.05	0.86	0.00	0.00	0.00	88	832	0.87	0.99
4	7499.56	7640.25	7554.48	0.69	0.19	0.19	0.00	92	632	0.65	0.89
5	7498.72	7675.89	7567.89	0.81	0.05	0.05	0.19	39	638	0.49	1.00

Table 7*Goodness-of-fit Statistics for Latent Class Models of Justice Contact at Time 4*

Time 4 Class	AIC	BIC	ABIC	Entropy	VLMR	LMR	LRT	min N	max N	min Prob	max Prob
2	6914.16	6981.90	6940.60	0.80	0.00	0.00	0.00	410	944	0.90	0.98
3	6881.10	6985.32	6921.79	0.79	0.00	0.00	0.00	116	944	0.72	0.98
4	6875.58	7016.28	6930.51	0.76	0.54	0.55	0.02	41	920	0.32	0.98
5	6876.26	7053.43	6945.43	0.79	0.31	0.32	0.19	10	940	0.38	0.98

Table 8*Goodness-of-fit Statistics for Latent Class Models of Justice Contact at Time 5*

Time 5 Class	AIC	BIC	ABIC	Entropy	VLMR	LMR	LRT	min N	max N	min Prob	max Prob
2	6652.38	6720.12	6678.82	0.83	0.00	0.00	0.00	398	956	0.90	0.99
3	6623.60	6727.81	6664.28	0.84	0.00	0.00	0.00	87	947	0.68	0.99
4	6608.44	6749.13	6663.36	0.83	0.08	0.09	0.00	73	899	0.59	0.97
5	6610.07	6787.24	6679.23	0.74	0.08	0.08	0.19	42	823	0.60	1.00

Table 9*Goodness-of-fit Statistics for Latent Class Models of Justice Contact at Time 6*

Time 6 Class	AIC	BIC	ABIC	Entropy	VLMR	LMR	LRT	min N	max N	min Prob	max Prob
2	6370.53	6438.27	6396.98	0.82	0.00	0.00	0.00	369	985	0.89	0.99
3	6353.89	6458.11	6394.58	0.89	0.00	0.00	0.00	58	988	0.89	0.99
4	6346.54	6487.23	6401.46	0.77	0.14	0.14	0.01	25	932	0.62	0.98
5	6347.72	6524.89	6416.89	0.71	0.14	0.15	0.15	28	759	0.58	1.00

Table 10*LCA Item Probabilities for Each Timepoint*

Item	Item Probabilities				
	Class 1	Class 2	Class 3	Class 4	Class 5
Time 1					
Picked Contact	0.053	0.001	0.052	0.300	0.816
Summons	0.011	0.058	0.260	0.073	0.576
Court Appearance	0.000	0.715	0.824	0.994	0.922
Court Monitoring	0.794	0.231	0.914	1.000	0.880
Placement	0.181	1.000	0.131	1.000	0.335
Arrest	0.085	0.122	0.215	0.774	0.719
Time 2					
Picked Contact	0.109	0.517	0.087	0.035	
Summons	0.300	0.608	0.000	0.015	
Court Appearance	0.795	0.899	1.000	0.000	
Court Monitoring	0.894	0.704	0.752	0.407	
Placement	0.056	0.668	0.688	0.252	
Arrest	0.000	0.908	0.688	0.118	
Time 3					
Picked Contact	1.000	0.048	0.034		
Summons	0.518	0.094	0.022		
Court Appearance	0.882	0.937	0.000		
Court Monitoring	0.675	0.597	0.235		
Placement	0.749	0.653	0.250		
Arrest	0.781	0.560	0.087		
Time 4					
Picked Contact	0.563	0.000	0.013		
Summons	0.420	0.03	0.011		
Court Appearance	0.846	0.916	0.024		
Court Monitoring	0.650	0.502	0.135		
Placement	0.796	0.809	0.226		
Arrest	0.646	0.589	0.141		
Time 5					
Picked Contact	0.000	0.609	0.017		
Summons	0.070	0.367	0.004		
Court Appearance	0.926	0.818	0.002		
Court Monitoring	0.437	0.663	0.128		
Placement	0.793	0.868	0.223		
Arrest	0.608	0.776	0.133		
Time 6					
Picked Contact	0.012	0.121	0.064		
Summons	0.005	0.000	0.000		
Court Appearance	0.018	0.905	0.052		
Court Monitoring	0.114	0.475	0.063		
Placement	0.214	0.824	0.062		
Arrest	0.116	0.619	0.058		

Note: Probability of an affirmative justice contact, or the event occurring, at each timepoint.

Table 11*Transition Probabilities from Time 1 to Time 2*

Time 1 Class	Time 2 Class			
	1	2	3	4
1	0.055	0.094	0.147	0.704
2	0.000	0.000	0.148	0.852
3	0.252	0.098	0.192	0.458
4	0.000	0.200	0.325	0.475
5	0.100	0.234	0.351	0.315

Table 12*Transition Probabilities from Time 2 to Time 3*

Time 2 Class	Time 3 Class		
	1	2	3
1	0.075	0.451	0.474
2	0.174	0.544	0.282
3	0.028	0.550	0.421
4	0.046	0.220	0.734

Table 13*Transition Probabilities from Time 3 to Time 4*

Time 3 Class	Time 4 Class		
	1	2	3
1	0.440	0.406	0.153
2	0.129	0.336	0.535
3	0.062	0.121	0.818

Table 14*Transition Probabilities from Time 4 to Time 5*

Time 4 Class	Time 5 Class		
	1	2	3
1	0.337	0.358	0.305
2	0.492	0.056	0.452
3	0.139	0.049	0.812

Table 15*Transition Probabilities from Time 5 to Time 6*

Time 5 Class	Time 6 Class		
	1	2	3
1	0.549	0.413	0.038
2	0.244	0.621	0.136
3	0.819	0.142	0.038

